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Cognitive Vulnerability to Depression: Investigating the Role of Culture

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UNIVERSITY OF CALGARY

Cognitive Vulnerability to Depression:

Investigating the Role of Culture

by

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Abstract

Differences in the presentation of depressive symptoms between Westerners and Chinese have been reported. These differences, and reported differences in cognition, provided the impetus for this investigation of cultural variation in cognitive processes in depression. Two studies were conducted that utilized data from the same three samples of Euro-Canadians, Chinese-Canadians, and Hong Kong Chinese. Self-construals were measured in the first study and a culture priming method was tested to make causal statements about the role of culture in rumination and avoidance, which were investigated in the second study. A culture prime effect was only found for the Euro-Canadians. The pattern of self-construals largely followed prediction, particularly in consideration of this prime effect; the Euro- and Chinese-Canadians reported greater independence than the Hong Kong Chinese, whereas the Chinese-Canadians and Hong Kong Chinese reported greater interdependence than the Euro-Canadians.

The small and inconsistent associations between self-construals and cognitive vulnerability to depression suggested that self-construals may have had a minimal influence on levels of rumination and avoidance. However, the culturally graded nature of the samples, and the largely graded pattern of differences in levels of rumination and avoidance among the samples suggested that the present findings were attributable to some aspect of culture. The fact that the Euro-Canadians largely endorsed greater levels of rumination and cognitive behavioural avoidance than the Chinese samples parallels findings that Westerners psychologise depression more than Chinese. In contrast, avoidant coping was found to be greater among the Hong Kong Chinese, which suggests that avoidant coping may represent a different form of avoidance that is differentially

prevalent among Chinese and Euro-Canadians. Differences across cultural groups were also found for the associations between levels of rumination and avoidance, and between levels of avoidance rumination and depressive symptoms.

The pattern of findings provides evidence that culture influences the use and function of rumination and avoidance in association with depressive symptoms. These results also suggest further questions for empirical investigation. The strengths, limitations, and implications of the research were discussed.

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Cognitive Vulnerability to Depression: Investigating the Role of Culture

The word “depression” has been used to refer to a range of emotional experience, from a temporary sad mood, to a prolonged and significant episode of suffering (Gotlib, Roberts, & Gilboa, 1996). According to the current Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013), a diagnosis of Major Depressive Disorder requires a period of at least two weeks encompassed by depressed mood or a loss of interest or pleasure in most daily activities, in addition to a combination of several other symptoms: weight loss or gain, sleep disturbance, psychomotor agitation or retardation, fatigue, feelings of guilt or worthlessness, difficulties in thinking and concentration, and suicidality. Therefore, clinical depression is complex and includes a breadth of symptoms in the physical (somatic), behavioral, emotional, and cognitive realms of functioning.

Lifetime prevalence rates for depression have been determined to range from 10-25% for women and from 5-12% for men (American Psychiatric Association, 2000), and depression is often cited as the single most common of the mental disorders. However, prevalence rates have been found to vary considerably around the world (Ryder & Chentsova-Dutton, 2012). In particular, studies have found lower prevalence and incidence rates of depression in China than in North America (Ryder & Chentsova-Dutton, 2012; Ryder, Yang, & Heine, 2002; Ryder et al., 2008). Considerable research has examined this discrepancy in rates and provided explanations either relating to cross-cultural differences in the expression of symptoms or to differences in the subjective experience of depression across cultural contexts (Ryder & Chentsova-Dutton, 2012). In 1982, Kleinman published the first of a series of studies in the field debating this issue.

He argued that depression and neurasthenia were two separate culturally shaped syndromes, the former more prevalent in China and the latter more prevalent in Western countries. Neurasthenia described a syndrome characterized by an emphasis on somatic symptoms, such as physical and mental fatigue, but otherwise akin to Major Depressive Disorder (Ryder & Chentsova-Dutton, 2012). Recent research has confirmed these early findings that Chinese tend to endorse the somatic symptoms of depression to a greater extent than Westerners, and has further found that Westerners tend to endorse psychological symptoms to a greater extent than Chinese (Parker, Cheah, & Roy, 2001; Ryder et al., 2008). In fact, the effect of “Western psychologization” was found to be greater in both studies than “Chinese somatisation”. Recent research has argued that these cross-cultural differences result from an emphasis on some of the symptoms of depression more than others, rather than describing them as separate cultural syndromes (Ryder & Chentsova-Dutton, 2012).

The observed differences in the cross-cultural presentation of depressive symptoms suggest that models developed in the West to explain the experience and expression of depression may not provide an accurate explanatory framework among Chinese. A number of biological, psychological and social models have been developed in the West to explain the disorder. Within the psychological realm, the cognitive features of depression have generated considerable interest, both in terms of the conceptualization and treatment of the disorder (Dozois & Dobson, 2001). This focus is understandable given that multiple cognitive deficits have frequently been reported among depressed individuals, at least in the West. These deficits include poor concentration, forgetfulness, and intrusive negative thoughts (Gotlib et al., 1996), and

collectively they demonstrate the importance of cognition as a central feature of the disorder. Two specific cognitive models of depression have received considerable attention in the literature: response styles theory and avoidance theory. Both models predict that specific cognitive styles predispose an individual to depression, and serve to maintain or exacerbate a current depressive episode. Not only has the literature pointed to cultural variation in depressive symptoms, but the literature has evidenced cultural variation in cognition between Westerners and Asians (e.g., memory, perception, reasoning; c.f. Nisbett, 2003, Norenzayan, Choi, & Peng, 2007). Thus, there is considerable impetus for investigating cognitive models of depression among Chinese.

Psychological models of depression inform psychological treatments of depression. Treatments that fall under the rubric of Cognitive-Behaviour Therapy (CBT), such as Cognitive Therapy and Behavioural Activation, are widely disseminated evidence-based treatments for depression focused on changing cognition and behaviour to alleviate symptoms. CBT is informed by cognitive and behavioural models of depression, including rumination and avoidance. If Western models of depression may operate differently among Chinese, then the applicability of these treatments may also be questionable. In order to effectively service Canada's multicultural population, it is important to have an accurate understanding of cultural differences in the experience and expression of depression; cultural competence is not just about having culturally-informed clinical practices but about having culturally-informed models of psychopathology upon which to base treatment. The Chinese community is the largest, and growing, non-European ethnic group in Canada (Statistics Canada, 2001). Thus, gaining a better specific understanding of Chinese experiences of depression is of

particular relevance. In addition, appropriate treatment of depression is important considering the often debilitating nature of the disorder. Depression has been found to result in negative effects on the individual's interpersonal functioning and social networks (Joiner & Coyne, 1999) and on their physical health (Goodnick, 1997; Shapiro, Lidagoster, & Glassman, 1997). In addition, the risk for depressive relapse is approximately 60% after one episode, and the risk of further relapse increases with every subsequent episode (American Psychiatric Association, 2000). Depression has also resulted in substantial societal costs, in terms of reduced work productivity and increased health care utilization (Murray & Lopez, 1996; Rice & Miller, 1995).

Considering the above noted differences in depressive symptoms, in concert with the differences in cognition among Asians compared with Westerners, an investigation of how cognitive models may apply cross-culturally was a compelling next step in the field. The present research included two studies which addressed the question, "does culture influence cognitive vulnerability to depression?" The purpose of the first study was to test a culture priming method within a cultural psychopathology framework and to thereby enable the possibility of making more causal statements about the influence of culture on cognitive vulnerability to depression. The purpose of the second study was to investigate the association between culture and cognitive models of depression. Both studies utilized data collected from the same three samples, recruited primarily from the community. These groups of participants included a Euro-Canadian sample, an immigrant Chinese-Canadian sample with origins in Hong Kong, and a Hong Kong Chinese sample in Hong Kong. Below, a review of the literature and hypotheses are outlined for each study separately.

Study 1: Priming Culture

Culture operationalized. It is widely recognized that culture and psychological processes are mutually influential (Lehman, Chiu, & Schaller, 2004), and further that culture plays an important role in the experience, expression, and conceptualization of mental illness (Carter, 2005; Marsella & Yamada, 2007). The individualism-collectivism (IC) paradigm, drawn from Hofstede's (1980) seminal work on national differences in work-related values, has been the most frequently employed cultural framework used to measure and understand culture in these contexts. In brief, the IC paradigm suggests that individuals are more or less focused on the self (individualistic) or focused on their social context (collectivistic). More specifically, individualism is generally associated with self-expression, the pursuit of personal goals and desires, hedonism, the importance of personal uniqueness, and attention to internal attributes (Triandis, 2001). In contrast, collectivism is generally associated with conformity, tradition, modesty, self-sacrifice, harmony, and the self as defined only within the context of relationships (Triandis, 2001).

Oyserman et al. (2002) conducted a seminal meta-analysis of the cross-national and within-United States individualism-collectivism differences, from a two-dimensional perspective. They combined Canadian data with American data for all of their comparisons, arguing that the two countries are similar to one another in terms of individualism-collectivism. They found that samples from Hong Kong were moderately lower on individualism than combined Americans and Canadians. Interestingly, samples from Hong Kong were only slightly more collectivistic than Americans and Canadians. To put these findings into perspective, the differences between Japanese samples (grouped into the East Asian category along with Hong Kong) and American and

Canadian samples were even smaller; Japanese samples were only slightly less individualistic than American and Canadian samples, and counter to popular belief, were also slightly *less* collectivistic than American and Canadian samples. In contrast, the largest differences compared with American and Canadian samples were found for Egypt on individualism, in that Egyptians were significantly less individualistic than Americans and Canadians, and for Peru on collectivism, as Peruvians were significantly more collectivistic than Americans and Canadians. The within-US comparisons were only analyzed by regional group: Asian Americans were found to be slightly less individualistic than European Americans, and moderately more collectivistic than European Americans.

Despite its widespread use, the individualism-collectivism dimension has been criticized in the literature. Many of these criticisms were summarized through a series of articles in response to Oyserman et al.'s (2002) meta-analysis. One of the foremost criticisms was that individualism and collectivism are not the same at the national level as at the individual level (Bond, 2002; Fiske, 2002; Kitayama, 2002; Miller, 2002). Such criticisms emphasize the need for measuring individualism-collectivism at the individual level and not inferring individualism-collectivism based on nationality of the comparison samples. In relation to this argument, it has been contended that in fact culture varies within as well as across cultures thereby highlighting the importance of context (Bond, 2002; Fiske, 2002, Kitayama, 2002; Miller, 2002). The construct of individualism-collectivism has also been criticized as being too broadly operationalized; many consider these constructs to not only be orthogonal but multifaceted (Bond, 2002; Fiske, 2002) and that broad operationalizations detract from the sensitivity of nuanced interpretations of

cultural differences (Miller, 2002). Measurement of the construct of individualism-collectivism by means of self-report has also been criticized because it has been argued that culture is not a conscious aspect of our socialization; it is more deeply embedded in our minds, and we may not have sufficient conscious knowledge of its role for accurate self-report (Bond, 2002; Fiske, 2002; Kitayama, 2002). In addition, cultural variation in the nature of completion of self-report measures of individualism-collectivism may confound and thereby attenuate any actual cross-cultural differences (Fiske, 2002; Kitayama, 2002). Oyserman, Kimmelmeier, and Coon (2002) agreed with these criticisms on many fronts, but argued that despite these limitations, the constructs of individualism and collectivism have provided a useful paradigm for systematically describing the ways in which cultures can differ.

Advancements in the field have addressed several of the concerns described above. The literature that has adapted the IC paradigm to the level of the individual is one such important advancement (e.g., Markus & Kitayama, 1991; Singelis, 1994; Triandis, Bontempo, & Villareal, 1988; Triandis, Leung, Villareal, & Clark, 1985). Markus and Kitayama's (1991) theory of self-construals is one of the most widely cited conceptualizations of individualism-collectivism at the individual level (Cross, Hardin, & Gercek-Swing, 2011). A self-construal is a collection of thoughts, feelings, and behaviours regarding the individual's connectedness to, or distinctiveness from, other individuals (Singelis, 1994). These aspects of the self are orthogonal, and are referred to as independent and interdependent self-construals, respectively (Markus & Kitayama, 1991; Singelis, 1994). More specifically, Markus and Kitayama (1991) defined an independent self-construal as a "bounded, unitary, stable self" (p. 226) that is distinct

from the individual's social context. Individuals with an independent self-construal value internal abilities, thoughts, and feelings, being unique, self-expression, direct communication, the realization of internal attributes, and the promotion of personal goals. In contrast, individuals with an interdependent self-construal value belonging and fitting in, social roles and appropriate social behaviours, indirect communication and mind-reading, and external or public features such as status and relationships. Interdependent self-construals define the self as flexible and variable. According to this theory, culture influences the development of self-construals; collectivist cultures encourage the development of interdependent self-construals and individualist cultures encourage the development of independent self-construals. However, both self-construals may be present at differing levels within an individual (Markus & Kitayama, 1991; Oyserman & Lee, 2007; Singelis, 1994). In other words, self-construals, and the IC paradigm more broadly, are two-dimensional (Lehman et al., 2004; Oyserman, 1993; Oyserman & Lee, 2007; Singelis, 1994). Thus, there may be variability across the individuals of a particular cultural group in terms of self-construals. The hypotheses in the present study were based on the general assumption of self-construals theory that individualism and collectivism predict self-construals. Thus, previous research on both individualism-collectivism and self-construals was consulted and the two terms are often used throughout this document almost interchangeably. However, it was recognized that not all research has supported this theorized link (c.f. Cross, Hardin, & Gercek-Swing, 2011), hence the importance of measuring self-construals directly.

The literature has accumulated significant evidence for the impact of self-construals on cognition, affect, motivation, self-regulation, and social or interpersonal

behaviour (Cross et al., 2011). Cross et al. provided a comprehensive summary of the evidence base in each of these areas, in relation to Markus and Kitayama's (1991) original postulations based on self-construals theory. Some have argued that interdependent self-construals, or collectivism, should be further separated into group and relational interdependent self-construals (e.g., Brewer & Chen, 2007). Brewer and Chen explained that relational collectivism refers to dyadic relationships with close others and group collectivism refers to depersonalized relationships with others in common symbolic groups. In reviewing the literature Cross et al. differentiated between group and relational interdependent self-construals. An amalgamation of the evidence for these two proposed subcomponents of the interdependent self-construal is presented here. Cross et al. concluded that research on the role of self-construals in both social and non-social cognition has centered on context-dependent versus context-independent cognition and on the tendency to differentiate versus connect information. They found that an interdependent self-construal was associated with greater context and relationship sensitivity, connection and assimilation. In contrast, an independent self-construal was associated with low context sensitivity, differentiation, separation and contrast. Cross et al. remarked that studies that have measured self-construals when examining the association between self-construals and affect are few and far between. However, the available evidence suggests that an interdependent self-construal is associated with a preference for socially engaging emotions and well-being is based on the quality of close relationships, adherence to social norms and harmony with others. An independent self-construal is associated with a preference for socially disengaging emotions and well-being is based on self-consistency, emotional experiences and high self-esteem.

The literature on motivation and self-regulation, on the other hand, is considerably more elaborated. Cross et al. (2011) determined that an interdependent self-construal was associated with self-criticism, a focus on prevention, other-enhancement, the pursuit of relational goals, and valuing group harmony, secondary control strategies, and warm relationships. An independent self-construal was associated with self-enhancement, a focus on promotion, and valuing individualistic ideals and primary control strategies. Cross et al. determined that scant research has examined social or interpersonal behaviour in relation to self-construals. They reported that the evidence suggests that an interdependent self-construal is associated with social behaviour that is group oriented, relationship-promoting, involves indirect communication, imitation, pursuit of proximity to others, avoidance of confrontation by use of cooperative strategies, adjustments to close others, and a focus on common benefits for a relationship. In contrast, an independent self-construal is associated with interpersonal behaviour that is self-promoting and involves direct communication and a willingness to use domineering or confrontational strategies. It is important to note that many of the studies reviewed by Cross et al. examined the role of self-construals through culture priming, but many others did not even measure self-construals, rather they relied on proxies of self-construal such as culture of origin.

While also not without criticism (c.f., Levine et al., 2003), the concept of self-construals has evidently proven very useful in the cross-cultural literature for explaining observed differences across cultures in a variety of domains. Self-construals were thus adopted to operationalize culture in the present study, within and across samples. Self-construals were measured within each sample pre-prime in order to have a baseline

comparison between samples to compare with previous findings, and in the event that the priming procedure did not work.

Oyserman et al. (2002) noted that the majority of their dataset came from undergraduate student samples. They contended that students tend to be higher on socioeconomic status than nonstudents, and higher socioeconomic status is associated with higher individualism and lower collectivism. Thus, the effect sizes reported above may actually underestimate differences in individualism-collectivism assessed among nonstudents. It should also be noted that the largest number of studies included in the analyses were comparisons between North American samples and East Asian samples (including Mainland China and Hong Kong). As such, those effect sizes may be more robust than other effect sizes. Hong Kong has been influenced by Western culture for a long time due to British rule from the 1800's through 1997. When Hong Kong regained sovereignty, Westernization continued due to globalization, which may suggest attenuated cross-cultural differences in cultural values between Hong Kong and other Western societies. However, the impact of Western influence on Hong Kong culture is an empirical question. The present study captured current levels of individualism-collectivism, at the individual level (i.e., self-construals), in a sample of participants from Hong Kong. Despite the potential for attenuated differences in self-construals, by comparing two advanced industrial societies other potential explanations for cross-cultural differences such as modernization and urbanization were reduced. Therefore, a stronger argument for culture as an explanatory variable may be made.

Oyserman et al. (2002) also noted that there were far fewer studies looking at within-US comparisons because it is an emerging field. Thus, the present study

contributed to this body of knowledge by investigating self-construals among a Chinese immigrant sample in Canada, with potential influence from both Chinese and Canadian culture. Hong and colleagues (Hong, 2009; Hong, Morris, Chiu, & Benet-Martínez, 2000; Hong, Wan, No, & Chiu, 2007) have conducted research on immigrant populations in Canada and the United States and have promoted a dynamic constructivist approach to culture and cognition. In their view, individuals exposed to more than one culture gain knowledge of multiple knowledge traditions (i.e., cultures). In line with the concept of schemas, the more frequently these knowledge traditions are called upon to understand experience, the more cognitively accessible they become. Similarly, Ryder, Alden, and Paulhus (2000) argued that individuals exposed to more than one culture can have more than one cultural self. According to their bidimensional model of acculturation, immigrants may endorse the host culture and their own heritage culture, to different degrees. They referred to the endorsement of these two cultural selves as Mainstream Cultural Identification and Heritage Cultural Identification. Research by Shim and Schwartz (2008) reinforced the conceptualization of acculturation as a combination of mainstream and heritage cultural identification, in a study with Korean immigrants in the United States. They found no single variable that significantly predicted psychological distress, but that lower mainstream cultural identification, stronger adherence to Asian values (higher heritage cultural identification), and fewer years of living or being educated in the United States, cumulatively predicted greater psychological distress.

If Americans and Canadians tend to be more individualist than collectivist, and Chinese tend to be more collectivist than individualist, the acculturation process for Chinese-Canadian immigrants may involve a shift in individualism-collectivism. In fact,

Ryder et al. (2000) found an explicit link between acculturation and self-construals in an undergraduate student sample that self-identified as having Chinese ancestry. They found that interdependent self-construals were associated with the heritage dimension, whereas independent self-construals were associated with the mainstream dimension. Conceivably then, an increase on either dimension may result in an increase in respective endorsements of independent and interdependent self-construals.

Priming self-construals. Similar to Hong and colleagues' (Hong, 2009; Hong et al., 2000; Hong et al., 2007) dynamic constructivist approach, Oyserman and colleagues (Oyserman, 2011; Oyserman & Lee, 2007; Oyserman & Lee, 2008; Oyserman & Sorensen, 2009; Oyserman, Sorensen, Reber, & Chen, 2009) proposed the concept of culture as "situated cognition", whereby culture is not uniformly transmitted to or endorsed by all members of a cultural group, nor is it static over time. What elements of culture are accessible in the moment depends on the requirements of the task at hand (Oyserman & Lee, 2007). The methodological response to the dynamic constructivist approach and the concept of culture as situated cognition represents another advancement in the field; culture priming. The purpose of a culture prime is to increase the salience of a particular cultural frame or knowledge tradition in order to test the impact of that cultural frame or knowledge tradition on a dependent variable (e.g., well-being). Oyserman and Lee (2007) argued that in a field dominated by correlational data, priming provides a way of making more causal statements about the impact of culture, given the ability to experimentally manipulate culture.

The priming literature has focused specifically on the manipulation of individualism and collectivism. Many different types of priming methods have been

employed (Oyserman, 2011; Oyserman & Lee, 2007; Oyserman & Lee, 2008), from the simple use of language as a prime, to tasks involving thinking about relationships with others, tasks that involve unscrambling sentences, subliminal tasks, and group formation or intergroup competition tasks. Oyserman and Lee (2008) conducted a meta-analysis of culture priming tasks and found that culture priming tends to have a significant and small to moderate effect on culture-relevant content (i.e., values, self-concept, and relationality), and process (cognition), relatively robust to prime type. Results were not significantly different among Asian, Asian American, and European, or European American samples, demonstrating that both individualism and collectivism can be primed at the individual level among these cultures.

Culture priming has been extensively used in cultural psychology, but to the best of the author's knowledge, only a handful of culture priming studies have been conducted in the field of cultural psychopathology, and these have focused on the impact of culture priming on well-being (e.g., Gardner, Gabriel, & Hochschild, 2002; Lee, Aaker, & Gardner, 2000; Oishi, Wyer, & Colcombe, 2000; Ross, Xun, & Wilson, 2002; as cited in Oyserman & Lee, 2008). In addition, many studies have examined the effects of priming on cognition (e.g., Kühnen & Haberstroh, 2004; Kühnen, Hannover, & Schubert, 2001; Kühnen & Oyserman, 2002; as cited in Oyserman & Lee, 2008), but again to the author's knowledge no studies have examined the impact of priming on cognition associated with depression. It is conceivable that priming may have an impact on cognition related to depression given its effectiveness on well-being and other types of cognition. Thus, the present study tested the use of culture priming within a cultural psychopathology framework. The purpose of priming culture was to enable the discussion of the potential

association between culture and cognitive vulnerability to depression in more causal terms (Study 2).

Hypotheses. Based on the literature review several predictions were made about potential similarities and differences between the Euro-Canadians, Chinese-Canadians and Hong Kong Chinese on pre-prime self-construals. It was predicted that the Euro-Canadians would endorse more independent and fewer interdependent self-construals, than the Hong Kong Chinese. It was also predicted that independent self-construals would be greater than interdependent self-construals for the Euro-Canadians, and interdependent self-construals would be greater than independent self-construals for the Hong Kong Chinese. It was predicted that the Euro-Canadians would have the highest mean independent self-construal scores, followed by the Chinese-Canadians and Hong Kong Chinese. Conversely, it was predicted that the Hong Kong Chinese would have the highest mean interdependent self-construal scores, followed by the Chinese-Canadians and Euro-Canadians. Last, it was predicted that acculturation would be associated with self-construals for the Chinese-Canadians; greater Mainstream Cultural Identification would correlate with higher independent self-construals and greater Heritage Cultural Identification would correlate with higher interdependent self-construals.

The second set of predictions referred to the participants' pre- to post-prime self-construal scores within each priming condition, collapsed across cultural group. Mean independent self-construal scores were predicted to be higher in the individualism-prime than in the collectivism-prime condition. In contrast, mean interdependent self-construal scores were predicted to be higher in the collectivism-prime than in the individualism-prime condition. The third set of predictions referred to the participants' post-prime self-

construal scores. It was predicted that participants in the individualism-prime condition would report higher independent self-construals and lower interdependent self-construals than those in the collectivism-prime condition. In addition, it was predicted that the Euro-Canadians in the individualism-prime condition would score higher on independent self-construals, followed by the Chinese-Canadians and Hong Kong Chinese.

Conversely, it was predicted that the Hong Kong Chinese in the collectivism-prime condition would score higher on interdependent self-construals, followed by the Chinese-Canadians and Euro-Canadians. Last, it was predicted that higher independent self-construals would be found for the individualism-prime than the collectivism-prime condition, and that higher interdependent self-construals would be found for the collectivism prime, relative to the individualism-prime condition.

Study 2: Cognitive Vulnerability to Depression across Cultures

Rumination. The construct of rumination has received considerable empirical attention over the past couple of decades (Smith & Alloy, 2009). While several theories of rumination have been explored, the most widely investigated and empirically supported conceptualization of rumination is Nolen-Hoeksema's (1987, 1991) response styles theory (Smith & Alloy, 2009). According to response styles theory, rumination involves a repetitive and passive focus on the causes, consequences and symptoms of current distress and negative affect (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Although rumination is correlated with a number of cognitive styles that involve negatively valenced content, rumination is defined as a process without specifying content *per se* (Nolen-Hoeksema, et al.). Of the several forms of self-focused attention, rumination has been found to be the most consistently and strongly related to depression

(Mor & Winquist, 2002). In addition, rumination contributes uniquely to depression above and beyond its contribution to negative cognitive styles (Nolen-Hoeksema et al.). Rumination has been found to predict the onset (Just and Alloy, 1997; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Spasojević & Alloy, 2001), severity, duration (Just and Alloy, 1997; Bagby, Rector, Bacchiochi, & McBride, 2004; Nolen-Hoeksema, Morrow, & Frederickson, 1993; Nolen-Hoeksema, 1991), and relapse (Michalak, Hölz, Teismann, 2011) of a depressive episode. As such, it is considered to be a trait characteristic or cognitive vulnerability (Hankin & Abramson, 2001; Roberts, Gilboa, & Gotlib, 1998). Rumination can also increase suicidal ideation (Miranda & Nolen-Hoeksema, 2007; Treynor et al., 2003). According to Nolen-Hoeksema and colleagues, rumination is considered to contribute to depression by increasing the salience of negative thoughts and memories, diminishing problem solving abilities, decreasing instrumental behaviours and reducing social support. Rumination has also been associated with other psychopathologies that involve avoidance behaviours such as alcohol misuse and nonsuicidal self-injury (Nolen-Hoeksema, et al.). The association between rumination and avoidance is discussed further below.

Rumination has not been uniformly defined across studies (Smith & Alloy, 2009) which may reflect its potential multifaceted nature; some researchers have argued that there are both adaptive and maladaptive components to rumination (Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Trapnell & Campbell, 1999). This argument is similar to the argument that there are both adaptive and maladaptive components to self-focused attention (Mor & Winquist, 2002) and to repetitive negative thought (Watkins, 2008). However, separating out adaptive and maladaptive components from the broader

construct of rumination has been debated in the literature and the results do not always support this distinction (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Aldao & Nolen-Hoeksema, 2010; Aldao, Nolen-Hoeksema, & Schweizer, 2010).

Response styles theory was originally proposed as a model for explaining the gender difference in depression; the prevalence of depression is cited as being at least twice as high for women as it is for men (e.g., McGrath, Keita, Strickland, & Russo, 1990; Nolen-Hoeksema, 1990; Weissman, Leaf, Holzer, Myers, & Tischler, 1984). According to the theory, women are more likely than men to engage in ruminative responses, contributing to depressive symptoms, a prediction that has been borne out in the literature (Treyner, et al, 2003). However, rumination is not exclusively associated with women; it is a construct that is related to depression in both genders (e.g., Panayiotou & Papageorgious, 2007). In addition, it has been argued that much less pronounced gender differences in personality, self-construal, values, and emotions are observed in Asian cultures, if at all (Guimond, 2008).

Avoidance. The role of avoidance in depression has received relatively less attention in the literature than rumination, despite a comparatively earlier introduction by Ferster in 1973. Instead, avoidance has received considerable attention as a feature of anxiety and over a longer period of time; Mowrer's two-stage theory of fear implicating the role of avoidance as a maintenance factor in anxiety was introduced in 1947. The large body of evidence for the role of avoidance in anxiety resulted in the development of treatments that highlight avoidance as a primary target of intervention for various anxiety disorders. Recently, there has been renewed theoretical and clinical interest in the role of avoidance in depression (Ottenbreit & Dobson, 2004). The development of Behavioural

Activation as a treatment for depression (BA; Jacobson, Martell, & Dimidjian, 2001; Martell, Addis, & Jacobson, 2001) is both a reflection of this renewed interest (Moulds et al., 2007; Cribb, Moulds, & Carter, 2006) and has been a catalyst for research on the role of avoidance in depression. In particular, BA conceptualizes rumination as a form of avoidance and this proposed link between the two constructs has generated considerable investigation in recent years (e.g., Moulds et al., 2007; Cribb et al., 2006; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Dickson, Ciesla, & Reilly, 2012; Aldao & Nolen-Hoeksema, 2010; Bjornsson, Carey, Hauser, Karris, Kaufmann, & Sheets, 2010; Giorgio et al., 2010; Morina, 2011).

Ferster (1973) originally theorized that when depressed, individuals engage in avoidance and escape from aversive internal and external events and thereby engage in fewer behaviors that could be positively reinforced. As reviewed by both Ottenbreit and Dobson (2004) and Aldao et al. (2010), avoidance has since been conceptualized in a variety of different ways. Ottenbreit and Dobson (2004) categorized the various lines of research into avoidance as a coping strategy, a problem-solving style, or a personality dimension. Under the rubric of avoidant coping they reviewed studies of cognitive and behavioural avoidance, and concluded that the majority of the research supports a positive association between avoidance and depressive symptoms (e.g., Blalock & Joiner, 2000; Kuyken & Brewin, 1994). They included thought suppression as an avoidant coping strategy conceptually equivalent to cognitive avoidance. They further reviewed studies that defined avoidance as an ineffective problem-solving style, associated with a differential influence on the various domains of functioning. Last, they reviewed studies that examined the personality dimension of 'Harm Avoidance' and concluded that while

consistent support has been shown for an association between depression and ‘Harm Avoidance’, it is questionable as to whether it constitutes a trait or a state dimension.

Aldao et al. (2010) categorized the various definitions of avoidance somewhat differently in their review. They conceptualized suppression as including both expressive suppression and thought suppression, and differentiated suppression from avoidance. They considered the latter to include both experiential and behavioural avoidance. They defined behavioural avoidance based on the anxiety literature but were not specific regarding its application to depression. They described experiential avoidance based on the formulation by Hayes et al. (1999), as a broad avoidance of thoughts, emotions, sensations, memories, and urges. They explained that according to Hayes and colleagues, experiential avoidance results in a variety of problems including low mood because it prevents appropriate action and increases negative cognition (Hayes et al., 2004). Aldao et al. (2010) found large effects for the association between avoidance and depression and medium to large effects for the association between suppression and depression.

Despite the continued use of various definitions of avoidance in the literature, the association between avoidance and depressive symptoms is now well-established. Ottenbreit and Dobson’s (2004) conceptualization of avoidance was based on an empirically supported integration of various definitions of avoidance. They defined avoidance as the act of refraining, or escaping from an action, person, or thing and contended that it may vary along two dimensions: cognitive versus behavioural and social versus non-social. In order to differentiate this integrated conceptualization of avoidance from other definitions of avoidance in the literature, it is referred to as cognitive-behavioural avoidance in the present study.

Cross-cultural studies of rumination and avoidance. Response styles theory and the avoidance theory of depression have largely been studied in Western samples to date. Thus, there is question as to the generalizability of the constructs to non-Western populations, particularly given the established variability in symptom presentation of depression between Western and Chinese populations. Cribb, Moulds, and Carter (2006) argued that given research demonstrating cultural differences in some areas of cognition, future research should examine the relationships between rumination, avoidance, and depression (and cognitive concreteness due to the focus of their study) across cultures. In Mor and Winquist's (2002) meta-analysis of self-focused attention and negative affect, they highlighted the fact that the majority of the studies included in their review were conducted in the United States. They also recommended that future research examine self-focused attention in non-Western cultures, particularly in light of research on cultural differences in self-perceptions.

Rumination. A growing number of studies have examined rumination across cultures in recent years, with mixed methods and results. For example, Eshun, Chang, and Owusu (1998) administered the 71-item Response Styles Questionnaire to Ghanaian and American students. They found that Ghanaian students scored higher than American students on the rumination subscale. Roger, Garcia de la Banda, Lee, and Olason (2001) administered the Emotion Control Questionnaire to large samples of undergraduate students from Spain, Korea, and the U.S. They performed a factor analysis to determine whether the original four subscales would be evidenced cross-culturally and found that the rumination and emotional inhibition (similar to avoidance) subscales were replicated reasonably well in the Korean sample, indicating that these two constructs can be found

in a Korean sample. Unfortunately, neither study administered a depression inventory, thus it is not possible to examine the relationship between these cognitive processes and levels of depression. In a second study by Eshun (2000), White Americans and Black Ghanaians completed the Adult Suicidal Ideation Questionnaire (ASIQ) and the rumination scale of the RSQ. They found that while the American students scored significantly higher on the ASIQ than the Ghanaian students, there were no differences between the two groups in terms of rumination, and rumination was found to be a significant moderate predictor of suicide ideation in both groups. These results suggest that another variable might be contributing to suicide ideation, in conjunction with rumination, in the Ghanaian sample. Epp, Dobson, Fata, and Hernandez-Guzman (2005) did not find significant differences between Canadian, Mexican, and Iranian undergraduate students on rumination, as assessed by an adapted version of the Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991). However, they found a significant gender difference in rumination in Iran, where women scored significantly higher on rumination than men. Interestingly, rumination was more highly correlated with levels of depression for Iranian men than for Iranian women, suggesting that rumination may reflect the norm for Iranian women without contributing to higher levels of depression.

Of greater specific relevance to the present study, Tally (2003) found that rumination, as assessed by the Ruminative scale (Nolen-Hoeksema, 1994), was greater among a sample of American adolescents than among a sample of Chinese adolescents, as were depressive symptoms. Conversely, Chang, Tsai, and Sanna (2010), and Tsai, Chang, Sanna, and Herringshaw (2011) found greater rumination, as assessed by the

Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991), and greater depressive symptoms among Asian American undergraduate students than among the European American undergraduate students. Similarly, Jose and Schurer (2010) found that both Maori and Asian adolescents in New Zealand reported greater levels of rumination than European New Zealanders but that none of the groups differed on a general measure of maladjustment. Prentice, Epp, and Dobson (2013) found no differences on rumination, as assessed by the Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991), or depressive symptoms among Euro-Canadian undergraduate students compared with a mixed sample of Asian American students. Although not specifically regarding rumination or avoidance, Stewart et al. (2004) found that while depressive symptoms and hopelessness were higher among a large sample of adolescents from Hong Kong, self-efficacy and negative cognitive errors were lower than in the United States. Based on this review, it was apparent that rumination may vary across cultures. However, the variability in the use of measures, the definition of the samples, the focus of the analyses, and the findings in this small but growing literature precluded definitive conclusions about the specific nature of cultural variability in rumination. The fact that not all of the reviewed studies were published also rendered the formulation of conclusions questionable.

Avoidance. The cross-cultural literature with regard to avoidance and depression is similarly mixed. Epp and colleagues (2005) utilized the Cognitive-Behavioural Avoidance Scale (Ottenbreit & Dobson, 2004) with their student samples and found that the Iranian and Canadian samples both scored higher on behavioural social avoidance than the Mexican sample, the Iranian sample scored higher on behavioural non-social

avoidance than the Canadian and Mexican samples, and the Mexican sample scored higher on distraction than the Canadian and Iranian samples. Only two cross-cultural studies were found that specifically compared an Asian and a Western sample on cognitive-behavioural avoidance. Ottenbreit and Dobson (2004) found that Asian-Canadian undergraduate students reported greater use of avoidance strategies than Caucasian-Canadian undergraduate students, and avoidance scores correlated moderately with both depression and anxiety scores for both groups. In contrast, Prentice et al. (2013) found roughly equivalent levels of avoidance between their Asian-Canadian and Euro-Canadian samples (undergraduate students), as well as roughly equivalent levels of depressive symptoms.

Cross-cultural studies of avoidant coping have received relatively more attention in the literature. In fact, cross-cultural studies of stress and coping more broadly have experienced significant growth over the past two decades (Kuo, 2011). According to Kuo (2011), the emphasis on culture in the stress and coping literature dates back to Lazarus and Folkman's (1984) seminal postulation that "a person's internalized cultural values, beliefs, and norms affect the appraisal process of stressors and the perceived appropriateness of coping responses" (p. 1084). The cross-cultural literature on avoidant coping was thus consulted to provide guidance in understanding how cognitive-behavioural avoidance may vary cross-culturally. Björck, Cuthbertson, Thurman, and Lee (2001) found that both Korean and Filipino Americans reported greater use of escape-avoidance than Caucasian Americans and did not find any differences among ethnicities on depressive symptoms. Similarly, Chang (1996) found that Asian Americans reported greater use of problem avoidance and social withdrawal, despite a

lack of differences between the samples on depressive symptoms. Prentice et al. (2013) found that the Asian-Canadian students reported greater use of avoidant coping than the Euro-Canadian students, despite the lack of differences between samples on cognitive-behavioural avoidance. Gross and John (2003) found that expressive suppression was greater among ethnic minorities and among men, than among Caucasians. Butler, Lee, and Gross (2007) found that emotional suppression has less of a negative impact for Asians than for Americans. Bonnano, Papa, Lalande, Zhang, and Noll (2005) also found greater deliberate grief avoidance among bereaved Chinese than bereaved Americans. In his comprehensive review of the literature, Kuo (2011) concluded that avoidant coping is common and may not be maladaptive among Asian populations.

Understanding cross-cultural differences. The above reviewed studies on rumination and avoidance suggest the potential for cultural specificity in risk factors for depression. In other words, rumination and avoidance may operate differently across cultures, and not necessarily as would be predicted based on theory or precedent with Western samples. In addition, the relatively small amount of research that has examined rumination and avoidance outside of Western society, and the variability in methods, focus, and results of the studies that exist, indicate that further research is required in this area. However, a simple cross-national comparison of rumination and avoidance would not provide a sufficient understanding of the underlying mechanisms by which rumination and avoidance may vary. Kuo (2011) argued that because coping is strongly determined by the values and beliefs of a culture, it is imperative to distinguish the cultural dimensions along which coping may vary. He further argued that the literature points to the utility of self-construals as a valuable explanatory mechanism to

conceptualize cultural differences in coping. Ryder, Yang, and Heine (2002) also argued for the utility of self-construals theory in “unpacking culture”. Considering the influence self-construals have been found to exert across a number of domains (Cross, et al., 2011), self-construals were investigated in the present study as a potential explanation for cross-cultural variability in cognition related to depression.

Self-construals theory and cognitive vulnerability to depression. Markus and Kitayama (1991) proposed that any emotional activity or reaction that implicates the self will be moderated by the nature of the self-system. Further, they provided evidence that individuals from interdependent cultures tend to restrain their inner feelings, particularly the overt expression of these feelings, which has resulted in well-developed avoidance strategies. Conversely, they argued that self-focused emotional activity will be more frequently expressed, and perhaps experienced, by individuals with independent self-construals. In the context of the present research question then, if an individual with an independent self-construal tends to focus on their own internal abilities, thoughts, feelings, and attributes, rumination (i.e. repetitive self-reflection) may be a natural, though maladaptive cognitive process. However, rumination does not fit within the framework of an interdependent self-construal, where the focus is on others rather than the self. A more culture-congruent and therefore comfortable response to depressive thoughts and feelings for individuals with predominantly interdependent self-construals may be to avoid these thoughts and feelings.

Self-construals theory and coping. Kuo, Roysircar, and Newby-Clark (2006) explicitly examined the link between self-construals and coping styles. This literature was consulted to provide further guidance in understanding the potential association

between self-construals and cognitive vulnerability to depression in the present study. Kuo et al. (2006) reviewed the literature on Asian values, individualism-collectivism, and coping with stress, and argued that there is increasing evidence of a link between interdependent self-construals and coping, that reflects interdependent tendencies. As such, they developed the Cross-cultural Coping Scale (CCCS; Kuo et al.), as part of their program of research on stress and coping among Chinese Canadian adolescents (Kuo et al.; Wester, Kuo, & Vogel, 2006). They identified a three-factor structure in the CCCS which they labelled: a) Collective Coping (i.e., items refer to turning to family and others from one's ethnic group for guidance and support and to cultural and ethnic norms), b) Engagement Coping (or individualistic coping, i.e., items refer to self-focused direct actions and adjustments), c) Avoidance Coping (i.e., items refer to physically or emotionally separating oneself). This description of Avoidance Coping is akin to the description of avoidance in the depression literature, as the passive act of refraining or escaping from an action, person, or thing. There is also a similarity between Engagement Coping and rumination; they both involve an emphasis on self-focus though the former involves taking action and the latter involves passivity and non-action.

Kuo et al. (2006) found that individuals who endorsed more interdependent self-construals also endorsed more Collective Coping strategies, and more Avoidance Coping strategies. They suggested that the latter association may be due to the specifics of Asian collectivism; one accepts things as they are, and one avoids direct confrontation with others. These associations were moderated by level of acculturation and religious affiliation, where less acculturation and greater religious affiliation resulted in greater endorsement of both Collective and Avoidance Coping. Conversely, they found that

individuals who endorsed more independent self-construals also endorsed more Engagement Coping strategies.

Summary. The above review indicates that cognitive vulnerability to depression, specifically rumination and avoidance, may operate differently across cultures, but there is insufficient evidence thus far to explain how or why. The self-construals literature offers a potential explanation for this cross-cultural variability, suggesting that emotional activity that involves the self will be moderated by the nature of the self-system. The stress and coping literature has found that self-construals map onto differences in coping styles across cultures, providing precedent for the current investigation, from a parallel body of literature. The purpose of the present study was thus to investigate whether an association can be made between self-construals and cognitive vulnerability to depression, as an explanation for cross-cultural differences in rumination and avoidance. The premise of conducting a culture priming procedure in Study 1 was to be able to make more causal statements about the associations between self-construals and cognitive vulnerability to depression in Study 2.

Hypotheses. Based on the above review, some primary predictions were made. It was predicted that a greater endorsement of interdependent self-construals would be associated with higher levels of avoidance. In contrast, it was predicted that a greater endorsement of independent self-construals would be associated with higher levels of rumination. Because rumination and avoidance have been specifically associated with levels of depression in Western samples, it was considered important to investigate this association in the present study. However, specific predictions were not made because a

link had to first be established among self-construals and rumination and avoidance, before their association with depression could be predicted.

Method

Studies 1 and 2 were two consecutive parts of a larger study, with a single set of participants. Study 1 represented a test of the proposed methodology, whereas Study 2 was a test of the theory. As such, methodological details for both studies are provided jointly below. The same three samples were utilized for both studies: a Chinese-Canadian sample, a Euro-Canadian sample, and a Hong Kong Chinese sample. Both the Chinese-Canadian and Euro-Canadian samples were recruited in Canada and the Hong Kong Chinese sample was recruited in Hong Kong. The study was therefore conducted in both Chinese (spoken in Cantonese and written in Traditional Chinese) and English. In order to conduct the study in two countries and in two languages, the assistance of several individuals in both countries was required.

Training and Standardization

Participant recruitment and testing were conducted in Hong Kong by collaborators at the University of Hong Kong (a Psy.D. student and her supervisor) and their research assistants. Recruitment and testing of the Chinese-Canadian sample were conducted in Calgary with the assistance of six bilingual (English and Chinese) volunteer research assistants who were undergraduate psychology students at the University of Calgary and Mount Royal University. Recruitment and testing of the Euro-Canadian sample were conducted by the primary investigator in Calgary, Alberta and in Yellowknife, NWT. Screening and testing procedures were standardized across samples. The primary investigator travelled to Hong Kong prior to recruitment there and

familiarized the primary collaborator with the study purpose, method, materials, and protocol. The six research assistants in Calgary were also trained by the primary investigator with regard to the study purpose, method, materials, and protocol. The study protocol was first demonstrated to these research assistants, by conducting the study with them. They were given the opportunity to ask questions and to discuss the protocol. An effort was then made to observe each research assistant conducting their first testing session, either by the primary investigator or by a senior trained research assistant. All research collaborators and assistants were also provided with a detailed script to enable them to conduct the study in a standardized manner across samples. A subset of these collaborators and research assistants were also involved with translation of the study materials (as described below) and served as culture brokers, providing advice and assistance with all cultural aspects of the study, from testing through data interpretation and write-up.

Participant Recruitment

Participants were recruited from the community through a variety of methods as appropriate and necessary for each sample. These methods included posters, media interviews (television and newspaper), community organizations (notably the Calgary Chinese Community Service Association) and events, social media announcements, personal contacts and snowball sampling. Recruitment and participation were completed in a stepped fashion in order to attempt sample matching; the Chinese-Canadian sample began the study first, followed by the Hong Kong Chinese sample, and then the Euro-Canadian sample. In an effort to match the samples on age, recruitment of the Euro-Canadian sample was extended to Yellowknife due to the opportunity to recruit an older

demographic in that locale. Due to recruitment through personal contacts, a percentage of the Chinese-Canadian sample consisted of undergraduate students in various departments at the University of Calgary. As such, a percentage of the Hong Kong and Euro-Canadian samples were recruited through the undergraduate psychology departments at the University of Hong Kong and the University of Calgary respectively, in an effort to match samples on the percentage of student participants. Recruitment and participation were completed over the course of 16 months from April 2010 through July 2011.

Participant Selection

Specific inclusion and exclusion criteria for each sample were derived so that each sample would reflect a culturally distinct adult (aged 18 through 65) representation of each population. Participants eligible to participate in the Euro-Canadian sample were born in Canada, and at least one parent was also born in Canada. They identified their heritage culture as European (including any specific country, region, or culture within Europe), and their ancestry originated in Europe (parents, grandparents, or more distant relatives if their family had lived in Canada for generations). Heritage culture was defined as the culture, other than North American culture, that had influenced the individual the most or that had had an impact on previous generations of the individual's family (Ryder et al., 2000). These participants were also fluent in English (speak, read, write). Individuals of various ethnicities were eligible to participate, if they met the above criteria.

Participants eligible to participate in the Chinese-Canadian sample were born in Hong Kong or Canada, and both of their parents were born in China (i.e., Hong Kong or

Mainland China). Their first language was Cantonese, and the primary language spoken in the home was either English or Cantonese. They identified their heritage culture as Chinese. Participants eligible to participate in the Hong Kong Chinese sample were born in China (i.e., Hong Kong or Mainland China), they identified their heritage culture as Chinese, and their ancestry originated in Hong Kong or Mainland China. Their first language was Cantonese and Cantonese was the primary language spoken in the home. One Chinese-Canadian and two Hong Kong Chinese participants self-identified as being from Macau. Their data were retained based on information obtained from the culture brokers that Macau is culturally and linguistically very similar to Hong Kong, with the primary difference being that each was colonized by a different Western European culture.

Measures

Background information form. The background information form contained questions about participant demographic information: sex, age, nationality, ethnic origins, heritage culture, religion, country of birth, parents' country of birth, grandparents' country of birth, length of time in current country, languages spoken, current occupation, highest level of education obtained, and parents' highest level of education obtained. Along with the screening questions, this information was used to ensure participants who were recruited for the study met inclusion criteria. In addition, this form provided further descriptive information about each sample, and enabled the assessment of demographic differences among the samples.

Self-Construal Scale (SCS; Singelis, 1994). The SCS is a 30-item self report measure that assesses self-construals; 15 items assess the extent to which an individual

endorses independent self-construals, and 15 items assess the extent to which an individual assesses interdependent self-construals, thereby yielding two orthogonal subscale scores. The authors added six items to the original 12-item scale for the purposes of improving scale reliability. Respondents were asked to indicate their agreement with the items according to a 7-point Likert scale from “strongly disagree” to “strongly agree”. Items included statements such as, “I have respect for authority figures with whom I interact”, and “I’d rather say ‘no’ directly, than risk being misunderstood. The measure was originally developed with a diverse sample of university students from Hawaii (European Americans, Japanese, Koreans, Hawaiians, Filipinos, and mixed), and demonstrated adequate reliabilities ($\alpha = .69$ & $.70$ for the independent subscale, and $\alpha = .73$ & $.74$ for the interdependent subscale), high face validity, construct validity, and predictive validity (Singelis, 1994). The measure has also been used with a variety of cultural groups, including Hong Kong Chinese (e.g., Kimmelmeier & Cheng, 2004).

As part of their review, Oyserman et al. (2002) examined how individualism-collectivism has been operationalized and measured. They identified seven major domains relating to individualism (independence, goals, competition, uniqueness, private, self-knowing, direct communication), and eight major domains relating to collectivism (relatedness, belonging, duty, harmony, advice seeking, context dependent, hierarchical, group oriented). They found that of 27 distinct individualism-collectivism scales (i.e., contained items not previously published in another scale, or containing no single primary source for items), 11 measured individualism-collectivism as a single bipolar construct, 16 measured individualism-collectivism as orthogonal constructs, and no single scale was dominant. In addition, they determined that only three measures in

current use come close to addressing all of the above critical domains of individualism-collectivism: a) the Self-Construal Scale (Singelis, 1994), b) the Singelis, Triandis, Bhawuk, & Gelfand (1995) horizontal-vertical individualism-collectivism scale, and c) the INDCOL scale (Hui, 1988). Cross et al. (2011) ascertained that the Self-Construal Scale (Singelis, 1994) is the most commonly used of the self-construal scales.

For the purposes of the present study, the SCS was selected as the most appropriate measure of self-construals for several reasons. The SCS is relatively brief, two-dimensional, and has demonstrated adequate reliability for each subscale, particularly in comparison to the INDCOL scale ($\alpha = \sim .60$; Shulruf, Hattie, & Dixon, 2007). In addition, the priming task selected for this study has demonstrated moderate effects on self-construals compared with other culture priming tasks, using measures of self-construals such as the SCS. While there is considerable argument that including the horizontal-vertical dimension in the measurement of individualism-collectivism (independent/interdependent self-construals) provides an enriched understanding of culture, priming tasks that specifically prime the horizontal-vertical dimension have not yet been developed. Thus, it is not clear what results the selected priming task would produce on the Singelis et al. (1995) horizontal-vertical individualism-collectivism scale, for example. Other recent measures of individualism-collectivism have been proposed to address some of the shortcomings of current measures. For example, Shulruf et al. (2007) developed a scale that addresses all of the critical individualism-collectivism dimensions identified by Oyserman et al. (2002), and resolves the reference-group effect (Heine, Lehman, Peng, & Greenholtz, 2002) by using frequency ratings instead of agreement ratings. Also, Harb and Smith (2008) recently developed a self-construal scale

that measures six subcategories of self-construals, including aspects of horizontal-vertical individualism-collectivism. These measures may be found to provide a more comprehensive and rich assessment of culture. However, because they have not yet been used in priming research, it is not clear how they would reflect the effects of priming individualism-collectivism, particularly since priming tasks have not yet been developed to target multifactorial concepts of self-construals.

Vancouver Index of Acculturation (VIA; Ryder et al., 2000). The VIA is a 20-item self-report acculturation instrument that assesses values, social relationships, and adherence to traditions. Acculturation is measured along two orthogonal dimensions: Heritage and Mainstream Cultural Identification. As such, two subscale scores are produced indicating the extent to which the individual has adopted a Mainstream Cultural Identity, and the extent to which the individual has maintained their Heritage Cultural Identity. Individuals were instructed to indicate the extent to which they agreed with 20 statements on a nine-point Likert scale, from “strongly disagree” to “strongly agree”. For example, “I often participate in my heritage cultural traditions”, and “I enjoy typical North American jokes and humour”.

The scale was originally developed with a Chinese-Canadian undergraduate student sample consisting of first- and second-generation individuals. However, the measure has been used with a variety of other cultural groups (e.g., Muslims: Asvat & Malcarne, 2008; Mizos: Varte & Zokaitluangi, 2006; Indo-Asians: Kennedy, Parhar, Samra, & Gorzalka, 2005). Ryder et al. (2000) found that the VIA demonstrated good internal consistency in Chinese, East Asian, and miscellaneous samples (Heritage dimension: $\alpha = .91$, $\alpha = .92$, $\alpha = .91$, respectively, and Mainstream dimension: $\alpha = .89$, α

= .85, $\alpha = .87$, respectively), and good mean inter-item correlations (Heritage dimension: $r = .52, .53, .51$, respectively, and Mainstream dimension: $r = .45, .38, .44$, respectively). Huynh, Howell, and Benet-Martínez (2009) found the highest reliability estimates on the VIA for Chinese samples and concluded that the items may most effectively cohere for this group. In terms of internal structure or orthogonality, they found small negative inter-correlations between the two subscales: $r = -.18, p < .01, r = -.13, p = ns, r = -.01, p = ns$, for Chinese, East Asian, and miscellaneous samples, respectively. For all three samples, significant correlations were obtained for several concurrent validity indicators: percentage of time lived in the West, percentage of time educated in the West, generational status, anticipation of remaining in the West, status of English as a first or second language, Western identification in a unidimensional manner, and mean score on the most commonly used unidimensional measure of acculturation (Suinn-Lew Asian Self-Identity Acculturation Scale; Suinn, Ahuna, & Khoo, 1992; Suinn, Rickard-Figueiroa, Lew, & Vigil, 1987, as cited in Ryder et al., 2000). Factorial validity was established through principal-components analysis where two components (Heritage identity items and Mainstream identity items) were extracted, in line with theoretical expectations, in four cultural groups.

The VIA assesses acculturation according to a bidimensional model which posits that there are differences among individuals in the extent to which culturally based values, attitudes, and behaviours play a role in self-identity, and that individuals can have multiple cultural identities that vary independently in strength (Ryder et al., 2000). As such, an individual may adhere to both the mainstream cultural traditions of their new society, and they may also maintain and value their own heritage culture traditions. In

contrast, unidimensional models posit that as an individual adopts or assimilates to new cultural traditions, they lose their heritage cultural traditions (Ryder et al., 2000).

Unidimensional models have the advantage of parsimony, but they provide an incomplete picture of acculturation; they fail to consider alternatives to assimilation (Ryder et al., 2000). In a series of studies, Ryder et al. (2000) found support for a bidimensional model as assessed by the VIA; they found that the two subscales were reliable, orthogonal, and correlated as predicted in distinctive ways with certain dependent variables (e.g., demographic variables, self-construals, and adjustment).

Berry (1980; 1989; 1997) has been a prominent investigator and advocate for bidimensional models of acculturation. His particular framework is the most widely researched bidimensional approach to acculturation (Ryder et al., 2000). According to Berry (1989), there are four acculturation strategies that derive from conceptualizing the two dimensions as yielding four quadrants: integration, assimilation, separation, and marginalization. While Berry's model has provided a comprehensive understanding of the acculturation process, it has been criticized for yielding widely different scale inter-correlations that contradict theoretical expectations, among other conceptual and methodological concerns (Ryder et al., 2000). In addition, at a very basic level, it compromises parsimony without providing additional benefit. The VIA has the advantage of providing an enriched understanding of the acculturation process, in a brief and simple format. Huynh et al. (2009) emphasized the importance and utility of bidimensional measures of acculturation, such as the VIA.

Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977).

The CES-D is a 20-item self-report instrument designed to measure current depressive

symptoms in the general population. Individuals were asked to read a series of statements and indicate how often they felt that way during the past week, from “rarely or none of the time (less than 1 day)” to “all of the time (5-7 days)”. For example, individuals were asked to respond to items such as, “I did not feel like eating; my appetite was poor”, and “I felt sad”. Radloff (1977) found that the CES-D demonstrated high internal consistency ($\alpha = \sim .85$ in the general population; $\alpha = \sim .90$ in a patient sample), acceptable test-retest reliability (ranging from $r = .32$ to $r = .67$), excellent concurrent validity (e.g., discriminated well between psychiatric inpatient and general population samples, correlated well with other self-report measures of depressive symptoms), and good evidence of construct validity (e.g., the factors obtained through factor analysis represent the components of depression that constructed the scale). Factor analysis revealed four symptom domains: a) depressive affect, b) interpersonal problems, c) somatic symptoms, and d) positive affect (Radloff, 1977). Radloff (1977) recommended that the total score be used in epidemiologic research, because of the high internal consistency of the scale and the fact that all of the items reflect symptoms of depression.

While the CES-D was originally developed for use in epidemiological studies in the general population, it has since been used to study both depressive symptoms and clinical depression, with a variety of older adult, adult, and adolescent populations from different cultural groups. Of particular relevance to the present study, the CES-D has been studied with Hong Kong Chinese (Cheung & Bagley, 1998), mainland Chinese (Lin, 1989), and Chinese-Americans (Kuo, 1984; Ying, 1988). Factor analyses revealed different factor structures within the Hong Kong Chinese and Chinese-American samples. Specifically, Kuo (1984) and Ying (1988) found a three-factor structure, as

opposed to a four-factor structure: a) somatic and depressed, b) interpersonal problems, c) positive affect. Cheung and Bagley (1988) found support for a two-factor structure: a) somatic and depressed, b) interpersonal problems. Thus, two of the original four factors according to Radloff (1977; somatic symptoms and depressive affect) were collapsed due to the Chinese tendency to lack discrimination, or to emphasize the linkage between affective and somatic problems (Cheung & Bagley, 1998; Kuo, 1984; Ying, 1988). Cheung and Bagley (1988) argued that emphasizing this linkage results in a tendency for Hong Kong Chinese to somatize. Despite these differences in factor structures, they contended that the CES-D has adequate construct validity to measure depression in Hong Kong Chinese. The CES-D was selected over other self-report measures of depressive symptoms (e.g., Beck Depression Inventory – Second Edition; Beck, Steer, & Brown, 1996) because some have argued that it is more appropriate for use with Chinese samples (D. Lai, personal communication, February 11, 2009).

Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991). The RRS is a 22-item self-report instrument that measures the dispositional tendency to engage in ruminative responses when feeling “down, sad, or depressed”. Individuals were asked to indicate the frequency with which they engaged in the described ruminative responses, from “almost never”, to “almost always”. Items reflect responses focused on the self (e.g., “I think back to other times I have been depressed”), on symptoms (e.g., “I think about how hard it is to concentrate”), and on the possible consequences and causes of their mood (e.g., “I go away by myself and think about why I feel this way”). The RRS is a subscale of the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991) and is the most widely used rumination scale (Nolen-

Hoeksema et al., 2008). The RRS has demonstrated high internal consistency ($\alpha = .89$: Nolen-Hoeksema & Morrow, 1991; $\alpha = .90$: Nolen-Hoeksema, Parker, & Larson, 1994), and acceptable convergent and predictive validity (Nolen-Hoeksema et al., 1994). Efforts were made to revise the scale, due to concerns about item overlap between the RRS and depressive symptoms (Treyner, Gonzalez, & Nolen-Hoeksema, 2003), which also resulted in the detection of the two factors of rumination, “brooding” and “pondering”. However, subsequent research has questioned the utility of separating out these two factors (Aldao & Nolen-Hoeksema, 2010; Aldao et al., 2010; Nolen-Hoeksema et al. 2008) and the original RRS remains the most widely used rumination instrument. Several recent studies have employed the RRS (22-item or 21-item versions) with Asian samples, though they did not report on the psychometric properties of the scale in their samples (Asian-Americans: Chang et al., 2010; Hong Kong Chinese: Lo, Ho, & Hollon, 2008; Asian-Americans: Tsai et al., 2011). The RRS was selected for use in the present research because of its wide use, good psychometric properties, and direct linkage with response styles theory (Nolen-Hoeksema, 1987, 1991).

Cognitive-Behavioral Avoidance Scale (CBAS; Ottenbreit & Dobson, 2004).

The CBAS is a 31-item self-report measure that examines the endorsement of avoidance strategies for dealing with situations and problems. Participants were asked to indicate how true, in general, each item was for them using a five point Likert-type scale from “not at all true for me” to “extremely true for me”. Responses can be analyzed along four subscales, where higher scores on each subscale reflect greater use of each type of avoidance: Behavioral-Social (BS), Cognitive-Nonsocial (CN), Cognitive-Social (CS), and Behavioral-Nonsocial (BN). A composite avoidance score can also be computed. At

the end of the CBAS is an item measuring belief in the utility of one's avoidance strategies, for which participants respond using a Likert scale from "not at all helpful" to "extremely helpful". The CBAS has demonstrated adequate internal consistency (α for each subscale = 0.86, .080, 0.78, 0.75, respectively, and for the total scale = 0.91), good test-retest reliability (reliability coefficient = 0.92 for the total scale, and 0.86, 0.94, 0.58, 0.88 for each subscale, respectively), and good convergent and divergent validity in a Western sample (Ottenbreit & Dobson, 2004). The CBAS has also demonstrated good internal consistency in a Mexican sample (α = .89, .87, .64, .67, .66, for the total scale, and subscales) and in an Iranian sample (α = .93, .75, .73, .75, .86, for the total scale, and subscales; Epp et al., 2005). Thus, it has demonstrated some cross-cultural utility.

Cross-Cultural Coping Scale (CCCS; Kuo, Roysircar, & Newby-Clark, 2006). The CCCS is a 27-item self-report measure designed to assess coping styles employed when experiencing a negative life event in adolescents and adults. The measure has three subscales that stem from items that were conceptualized to map onto the individualism-collectivism dimension: Avoidance Coping, Collective Coping, and Engagement Coping. The measure was also specifically created to examine styles of coping that may be particular to Asian populations. Participants were asked to recall and briefly describe a stressful situation they experienced in a close relationship. This instruction deviates from the original, where participants were asked to read one of a selection of scenarios. Participants were then asked to indicate the extent to which a series of statements accurately described the coping strategies they would typically use in a similar situation, from "very inaccurate" to "very accurate." This instruction also deviates somewhat from the original instruction to, "Rate how well the statements

describe what you would do on a scale from 1 (a very inaccurate description of you) to 6 (a very accurate description of you) if the situation were to happen to you". These adaptations were made to suit the current study population; the majority of the scenarios developed and provided by the authors of the CCCS relate to school, acculturative, or work stress. Given the wide age range and cross-cultural nature of the current study population, if a scenario were provided, participants may not be able to relate and thus their responses may not accurately reflect their coping tendencies. So as to provide some uniformity to the stimuli, as intended by the provision of a scenario, participants were given some direction on the nature of the stressful situation they were to generate (i.e., a stressful situation in a close relationship) and were provided with some examples, but were otherwise asked to describe a personally relevant situation. Kuo and colleagues (2006) suggested that research could attempt such a strategy so that participant responses would not be constrained by the details of the scenarios. The last item on the scale asked participants to indicate how stressful the recalled negative life event was from "not at all" to "extremely." The CCCS has demonstrated high internal consistencies across subscales with adults and adolescents, using two different stress scenarios, $\alpha = .74 - .80$ (collective coping), $\alpha = .63 - .77$ (avoidance coping) and $\alpha = .59 - .65$ (engagement coping), as well as good test-retest reliability after 4 weeks ($\alpha = .88$ for the total scale; Kuo et al., 2006).

Priming Task: Similarities and Differences with Family and Friends

A number of common cultural priming tasks exist, including the Similarities and Differences with Family and Friends Task (SDFF; Trafimow, Triandis, & Goto, 1991), the Pronoun Circling Task (Gardner, Gabriel, & Lee, 1999, as cited in Oyserman & Lee, 2007), the Scrambled Sentence Task (Srull & Wyer, 1979, as cited in Oyserman & Lee,

2007), the Sumerian Warrior Story (Trafimow, Triandis, & Goto, 1991), comparison of the use of specific languages, and subliminal priming techniques such as presenting target words or pictures at a speed too fast for conscious processing (Oyserman & Lee, 2007). All of these tasks are considered conceptual primes, in that they make salient relevant values, ways of being a self, ways of engaging with others, and ways of making sense of the world (Oyserman & Lee, 2007). Each task can either prime individualism or collectivism. When priming individualism, tasks usually focus on broad differences and separateness, the individual self, or the self as different or unique (Oyserman & Lee, 2007). On the other hand, collectivism can be primed on more than one level. Specifically, priming may focus on relational (friends and family with whom you likely have a bond) or collective group (larger groups where close bonds are unlikely) identities, in terms of both connection and similarity or obligation (Oyserman & Lee, 2007).

Oyserman and Lee (2008) examined overall main effects of priming, and the specific effects of prime type, on a variety of dependent variables. Although they found that culture priming results in significant small to moderate effects overall, they found differences in effects by dependent variable as well as by prime type. For example, they found moderate mean weighted effect sizes for the Sumerian Warrior Story and SDFP, small for the Pronoun Circling and Scrambled Sentence Tasks, and particularly small for language primes. They attributed the latter finding to the fact that it is uncertain as to what language actually primes. They also found a moderate strength of effect when priming collectivism with a task that includes both relational and collective group levels, compared with a task that primes only one level or the other (small).

In terms of differences in effects by dependent variable, overall, Oyserman and Lee (2008) found moderate-to-large effects of culture priming on relationality and cognition, and significant but small-to-moderate effects on values and self-concept. There were also differences in effects on these dependent variables according to the priming task used. The Sumerian Warrior Story, SDFP, and Scrambled Sentence tasks demonstrated a moderate impact on accessibility of cultural values, compared with smaller effects demonstrated by other tasks. The effect of culture priming on self-concept also differed by priming task; the Sumerian Warrior Story, Pronoun Circling Task, and language primes, among others, demonstrated small effects on average, whereas the SDFP demonstrated a moderate effect on average. Oyserman and Lee (2007) suggested that the latter finding may have been a result of the fact that the SDFP primes content that is very similar to that which is measured by self-construal scales. With regard to the effects of priming on relationality, the SDFP again demonstrated greater effects (large on average), along with the Scrambled Sentence Task, than the Sumerian Warrior Story and Pronoun Circling tasks (moderate on average). In contrast, all tasks demonstrated a moderate to large impact on both cognitive content and process.

In comparison to a control condition, both individualism and collectivism primes produced only small effects, though it should be noted that most studies did not include a control condition (Oyserman & Lee, 2007) and so these effects may be an underestimation of true effects. Oyserman and Lee (2008) also found that individualism primes produced greater shifts compared with a control condition, than collectivism primes. However, the Scrambled Sentence Task and collectivism primes that involved both relational and group-level collective focus created greater shifts in collectivism

compared with a control condition. Oyserman and Lee (2007) concluded that while there is no gold standard culture priming task, mixed-level collectivism primes and Scrambled Sentence Tasks appear to provide a good combination of ecological validity and control.

The SDFP was selected as the most appropriate priming procedure for the present study. The SDFP is one of the most frequently employed culture priming tasks, and has demonstrated effects in both eastern and western cultures (Oyserman & Lee, 2008). In addition, the SDFP has demonstrated moderate effects on self-construals (compared with small effects produced by other tasks), and moderate to large effects on cognition (Oyserman & Lee, 2008). For Study 1, participants within each cultural group were randomly assigned to an individualism- or a collectivism-prime condition. Participants assigned to the individualism-prime condition were asked, both verbally and in written format to, “Please spend the next 5 minutes writing about what makes you different from your family and friends, and what you expect of yourself”. Participants assigned to the collectivism-prime condition were asked, both verbally and in written format to, “Please spend the next 5 minutes writing about what you have in common with your family and friends, and what they expect of you”. Participants were asked to keep their written task in view while filling out the subsequent questionnaires and/or study administrators placed the written tasks in view above the questionnaires.

The procedure utilized in Study 1 differed in three ways from the original SDFP task designed by Trafimow et al. (1991). First, in order to allow the investigators to analyze the content of the SDFP post-completion and to provide a focus for participants, participants were asked to answer the question posed by the task in written format, instead of simply thinking about the question. An audio recorded “think aloud”

procedure was contemplated, however, that was not deemed to be logistically feasible given the necessity to therefore test all participants individually and in a private space, and given concerns about participants' comfort with such a procedure. Second, participants were asked to spend five minutes, instead of two minutes, answering the task question, given the additional requirement of writing their answer as opposed to simply thinking about it. Last, participants were asked to write about what they expect *of* themselves, or what their family and friends expect *of* them, instead of being asked "what do you expect yourself to do?" and "what do they expect of you?", to increase the clarity of the question.

Translation Procedure

All of the measures and study materials (e.g., consent form, debriefing form) for the present two studies were made available in both English and Chinese. Participants in the Euro-Canadian sample participated in English and participants in the Hong Kong sample participated in Chinese. Participants in the Chinese-Canadian sample had the choice to participate in English or Chinese, based on their self-determined level of comfort in each of the languages. The World Health Organization (WHO) Guidelines for the Process of Translation and Adaptation of Instruments (WHO, 2007) were consulted and a forward (English to Traditional Chinese) and back-translation (Traditional Chinese to English) procedure was employed. The collaborator at the University of Hong Kong was enlisted to assist with the translation procedures. She had completed her undergraduate degree in Translation. While her mother tongue was Cantonese, she was bilingual and completed her Psy.D. studies in English. She also supervised a few research assistants at the University of Hong Kong in the translation procedure. Four of

the volunteer research assistants in Calgary were also enlisted to assist with the translation process. Three of the research assistants were from Hong Kong and one was from Canton Province in China. Cantonese was the mother tongue for all four research assistants but they were also fluent in English and completing their undergraduate degrees in English.

The Hong Kong team completed forward translations of all of the measures and the Calgary team completed forward translations of the study materials. Back translations were then completed by different research assistants in Calgary than those who had completed the forward translations. The back-translated versions of the documents were then compared with the original English versions, and discrepancies were discussed in team meetings in Canada and over email to Hong Kong. The principal investigator moderated the discussions between the research assistants in Calgary and the Hong Kong team, and provided input on the intended English meanings of the materials. Changes were made to the Traditional Chinese versions when a consensus was reached on more appropriate phrasing. The Calgary team ensured that the changes were also suitable for the Chinese-Canadian population in Calgary. Draft versions of the completed translations were then sent to a research assistant with translation experience in another department (Social Work) at the University of Calgary for separate review, and edits were reviewed, negotiated, and implemented by the Calgary team. Finally, edited versions of the Traditional Chinese questionnaires were reviewed back and forth between the Calgary team and the Hong Kong team to ensure that typographical and other minor errors were all corrected.

Participation and Randomization

Participants in all three samples participated either individually, or in small groups. Chinese-Canadian participants and Euro-Canadian participants participated on campus at the University of Calgary or at various locations in the community (e.g., coffee shops, libraries, in their homes, meeting rooms, etc.). Individuals who participated at the University of Calgary were provided with a free parking pass for the duration of their participation in the study. Hong Kong Chinese participants participated on campus at the University of Hong Kong or in one of two community centres. Participants from the community were thanked for their participation with a small gift certificate appropriate to the location and population. In Calgary, participants each received a \$10 gift certificate for use in one of several shopping malls in the Calgary area. In Yellowknife, NWT, participants received a \$10 gift card for use at a Tim Horton's coffee shop. The Hong Kong Chinese participants were provided with a gift certificate for use in a grocery store in Hong Kong, valued at approximately \$8 CAD. The Hong Kong collaborators determined that this form and amount of compensation was appropriate for the Hong Kong sample. In order to increase the number of participants in the Chinese-Canadian sample, a recruitment incentive was provided; individuals who participated in the study were invited to provide participation information to friends and family in return for an additional \$5 mall gift certificate per referred individual who completed the study. Euro-Canadian and Hong Kong Chinese student participants who were recruited through the Departments of Psychology at either the University of Calgary or the University of Hong Kong received course credit in exchange for participation, in lieu of a gift certificate.

Participants were screened to ensure they met inclusion and did not meet exclusion criteria for the study prior to participation. Eligible participants were randomly assigned to one of the two priming conditions. Given that some individuals participated individually, and others participated in groups, priming condition assignment was random to study session. In other words, when a study session (an individual or group) was scheduled, a coin was flipped to determine which priming condition would be assigned to the session (for study administration in Canada). For the Chinese-Canadian sample, when significant over-representation of participants occurred in one of the two conditions, the randomization procedure was adjusted. Each of the conditions was assigned to a series of numbers on a dice, so that more numbers on the dice represented the condition that contained too few participants, thereby weighting the dice in favour of that condition. The dice was thrown when a study session was scheduled, in order to determine which condition would be assigned to those participants. This adjustment ensured that the final sample of Chinese-Canadians contained roughly equivalent numbers of participants in each condition. In Hong Kong, questionnaire packages were prepared in advance so that alternate administration of the two priming tasks between group administrations resulted in randomization.

Study Protocol

All study materials are provided in the Appendices. At the start of each study session, the study administrator reviewed the consent process with all participants. Information about the study was provided, including the right to discontinue participation at any time without penalty, the approximate amount of time required for participation (45 minutes to 1.5 hours), the nature of compensation for participation, details about

participant anonymity and confidentiality, and what was to be done with the data that were collected. A written consent form was also provided and participants were asked to sign if they voluntarily agreed to participate, after the verbal explanation of consent and the opportunity to read the form were provided. A modified consent form was provided to the Hong Kong Chinese participants, written in accordance with the ethical requirements for research in Hong Kong. Participants then completed the SCS (Singelis, 1994), followed by the Background Information Form, the CES-D (Radloff, 1977), the VIA (Ryder et al., 2000), and the CCCS (Kuo et al., 2006). The latter four measures were randomly ordered for each participant to account for potential cross-measure priming effects. Participants were then given verbal and written instructions to complete the SDFP priming task according to the assigned condition for that session. Following the five minute priming task, participants completed the SCS (Singelis, 1994), the CBAS (Ottenbreit & Dobson, 2004), and the RRS (Nolen-Hoeksema & Morrow, 1991) in random order, with their written task out and visible in front of them. Participants then completed a series of additional measures in random order, not used for the purposes of the present two studies. Upon completion of the questionnaires, participants were thanked, provided with a gift certificate, debriefed (verbally and provided with a written Debriefing Form), and encouraged to ask questions. While there was no inherent risk to participants involved in the present two studies, they may have been made aware of current depressive symptomatology on the CES-D. As such, a document containing information and resources about depression was provided to participants in the Euro-Canadian and Chinese-Canadian samples. In Hong Kong, participants were asked to

approach the principal investigator or study administrators if they were alerted to depressive symptoms after participating in the study.

Based on feedback from the first 30 (approximately) Chinese-Canadian participants, the second administration of the SCS (Singelis, 1994) was aesthetically modified for the remainder of participants across samples (see “SEUX” in Appendix C), in an effort to reduce its recognisability from the first administration. Another adjustment was made to the study protocol by the collaborators in Hong Kong, in order to render it more appropriate for the Hong Kong sample; measure titles were removed and all measures were presented together as one long questionnaire, with all Likert scales presented in the same ascending order. These changes were made prior to the first administration in Hong Kong. The study protocol as described herein was approved by the University of Calgary Conjoint Faculties Research Ethics Board and the Research Ethics Committee of the Department of Psychology at the University of Hong Kong.

Results

Data Entry

Data for the Hong Kong Chinese sample were entered in Hong Kong, with the exception of coding for the SDFP written task. Research assistants translated questionnaire responses that were completed in Chinese to English for the Chinese-Canadian sample, and data for the Chinese-Canadian and Euro-Canadian samples were entered in Canada. The SDFP written tasks were scanned to pdf documents for all three samples, and were then coded and entered in Canada. The collaborators in Hong Kong were provided with a Predictive Analytics Software (PASW) version 18.0 data template with variable names and value labels included. They were also provided with a detailed

data coding sheet that included variable names/labels, value labels, instructions for reverse scoring when necessary, and general instructions for entering item level data. A completed PASW 18 data spreadsheet was sent to Canada from Hong Kong with item level data entered, and summary scores were then computed in Canada.

Some decisions were made about data entry in Canada, given that some participants provided insufficient or questionable data. When two numeric answers were provided the higher number was consistently selected for entry. If a participant identified themselves with a particular religion in the past but indicated no current affiliation, the previous religious affiliation was recorded due to the potential impact on their socialization. In addition, if more than one religion was listed, the first religion was entered. When Chinese-Canadian participants listed “China” for any question on the demographic information form it was entered as Mainland China, as recommended by the culture brokers. For participants who did not list completion of a full level of education, their previous level of completed schooling was entered (e.g., if a participant listed grade 10 as their highest level of education, “junior high” was listed as their highest level of education). An exception was made for participants who had completed some but not all of their elementary school education; their highest level of education was entered as elementary school. Students who stated they were employed at the time of participation were listed as students under occupation.

Data Integrity

All data were examined to ensure the accuracy of data entry. When the data from Hong Kong were received in Canada, it was examined to ensure that all included participants met criteria. Requests for clarification and further data collection were made

on a couple of occasions when it appeared that some participants did not meet criteria (as below). Some further examination was conducted on the Hong Kong data but cross-referencing to the original hard copy data was not possible in Canada because it was kept on site in Hong Kong. Specifically, frequencies were conducted on the data from all three samples to determine if there were any unusual data points (e.g., numbers outside the scale for a particular variable) or inaccurately coded variables; missing data were cross-checked as missing with the hard copy data; and data for a percentage of participants (17% of Chinese-Canadian and 20% of Euro-Canadian data) was randomly selected to be spot-checked and cross-referenced with the hard copy data. All of the data that was cross-referenced with the original data was found to be 100% accurate. Minimal corrections (< 1%) were made to the Euro-Canadian and Chinese-Canadian data based on the search for unusual data points and inaccurately coded variables.

A missing values pattern analysis was conducted to determine the percentage of missing data in each sample. With regard to outcome data (not including data points that did not contribute to summary scores, such as the variable regarding the helpfulness of avoidance strategies on the CBAS), 0.4%, 0.3%, and < 0.1% was missing for the Chinese-Canadian, Euro-Canadian, and Hong Kong Chinese samples, respectively. With regard to demographic data, 17.7%, 9.8%, and 3.6% was missing for the Chinese-Canadian, Euro-Canadian, and Hong Kong Chinese samples, respectively (these percentages do not include data that were required to ensure that study criteria was met, as participants who did not provide this information were excluded from the analyses). Missing outcome data was imputed listwise with the group mean, separately for each

sample and condition, and was rounded to the nearest whole number. As such, summary scores were computed based on complete item-level data.

Data Analysis Strategy

Questionnaire data. All questionnaire data were analyzed with the statistical software package, PASW 18. Several assumptions guided the use of the statistical procedures that were conducted in the present research, according to Field (2009). First, an *a priori* .05 level of significance was adopted as the criterion for judgments with regard to statistical significance, unless otherwise specified, as in the case of controlling for the family-wise error rate. All chi-square analyses were conducted on independent data and contained expected frequencies greater than five, thereby meeting the assumptions of chi-square, unless otherwise reported. One-way and factorial between-subjects and mixed univariate and multivariate analyses of variance (ANOVA and MANOVA) and covariance (ANCOVA and MANCOVA) were all guided by the assumptions of parametric tests. First, it was assumed that all variables were normally distributed. Skew and kurtosis were examined for all dependent variables across samples, and small (less than 1 or less than 2) and inconsistent deviations from normality were observed. Significance tests of skew and kurtosis were not performed because with large sample sizes, as in the present two studies, they are likely to yield significant results when the data do not differ substantively from normality (Field, 2009). In addition, ANOVA and related procedures were considered to be robust to violations of this assumption, given equal group sizes (Field, 2009). Group sizes were approximately equal in the present research at the level of condition and more so at the level of sample. These statistical procedures were also guided by the assumption of homogeneity of

variance. Again, given the large and near equivalent group sizes of the present two studies, these procedures were assumed to be robust to violations of this assumption (Glass, Peckham, & Sanders, 1972). However, this assumption was tested statistically for each analysis with the Levene's test of equality of error variances. Unless otherwise reported, the Levene's test was found to be non-significant, thereby demonstrating that the assumption was met. Last, the data were independent and the dependent variables were considered to be measured at an interval level, thereby meeting the final assumptions of parametric tests such as ANOVA.

In addition to the above assumptions, MANOVA was guided by the homogeneity of covariance matrices assumption, which was tested statistically by Levene's test. Unless otherwise reported, Levene's tests were found to be non-significant, thereby demonstrating that the assumption was met. Box's test was not examined as a test of this assumption because it can demonstrate significance with large samples even if the covariance matrices are relatively similar, and because group sizes were relatively equal (Field, 2009). ANCOVA was additionally guided by the assumption of independence of the covariate and the treatment effect, and the assumption of homogeneity of regression slopes. Given that participants within each cultural sample were randomly assigned to culture prime condition, the first of these assumptions was not likely to be problematic when groups differed on the covariate. However, because participants could not be randomly assigned to cultural sample, and because the samples differed on the covariate in all of the analyses, these results should be interpreted with caution. The more important of the two additional assumptions of ANCOVA was the assumption of homogeneity of regression slopes. This assumption was tested statistically for all

analyses by specifying a model that included the interaction between the covariate and the independent variable. Unless otherwise reported, these interactions were found to be non-significant, thereby indicating that the assumption was met. MANCOVA was guided by the assumptions for ANOVA, MANOVA and ANCOVA as described above. Given that there were never more than two repeated-measures variables for any of the mixed factorial ANOVAs, it was not necessary to examine the assumption of sphericity via Mauchly's Test for these analyses.

The assumptions of ANOVA were also applicable to independent t tests. As such, the Levene's statistic was also computed for these tests and where it was found to be significant, the t test with unequal variances assumed was reported. As above, it was assumed that the assumption of normality was not problematic for either independent t tests or paired-samples t tests due to the large and equal sample sizes in the present research. One-tailed t tests were conducted and reported only in those instances where an *a priori* directional hypothesis was made about the outcome of a comparison. When not specified, two-tailed tests were conducted and reported. When applicable, the family-wise error rate for a series of t tests was controlled for through the application of a Bonferroni correction. In these instances, the .05 significance value was divided equally among the family of comparisons.

In the case of regression analyses, several statistics were examined to determine whether the model was generalizable to other samples and whether the model was influenced by a small number of cases (Field, 2009). Several assumptions underlie the generalizability of a regression model. Histograms, normal probability plots, residual plots (standardized residuals against predicted values), and partial regression plots were

carefully examined to determine if the regression models met the assumptions of normality, linearity, and homoscedasticity. The assumption of independence of errors was assessed by computing the Durbin-Watson statistic and comparing the result with Durbin and Watson's (1951) bounds of significance. Generally, values close to 2 indicated that the assumption of independence of errors was tenable for that model. Multicollinearity was assessed using collinearity statistics; models with tolerance levels above .2, variance inflation factor (VIF) values less than 10, average VIF values close to 1, and variance proportions distributed across different dimensions (i.e., eigenvalues), were deemed to meet the assumption of no multicollinearity (Field, 2009). Last, regression analyses were assumed to be conducted with predictor variables that were quantitative or categorical and had some variation in value and with an outcome variable that was quantitative, continuous, unbounded, and independent (Field, 2009). The assumption that no variables in the regression models were correlated with any external variables was not met for any of the analyses; it was recognized that other variables could also have predicted the outcome of each regression model.

To determine whether the regression models were influenced by specific cases, the data were first examined for outliers. Standardized residuals were computed and investigated to determine whether the regression model was a good fit for the data and whether there were any outliers; it was reported if substantially more than 5% of cases had absolute values greater than 2, substantially more than 1% of cases had absolute values greater than 2.5, and any cases had absolute values greater than 3. Casewise diagnostics were examined to investigate whether any cases exerted an undue influence on each model. For all cases with standardized residuals less than -2 or greater than 2,

Cook's Distance, Mahalanobis Distance, Centered Leverage, and DFBeta values were computed and examined. If any of these values fell outside of an acceptable range for a particular case, the case was reported as having an undue influence on the model.

Last, Pearson product-moment correlations and Cronbach's alpha coefficients were computed. In order for the Pearson's correlations to be an accurate measure of the linear relationship between variables, the data were measured at an interval level. In order to test the significance of these associations, the sample data were assumed to be normally distributed and the sample was large, protecting against potential violations of the normality assumption. In order to increase the accuracy of estimates of internal reliability, Cronbach's alpha was computed for the subscales of measures when the subscales represented distinct factors (e.g., Independent Self-Construal Subscale and Interdependent Self-Construal Subscale) and not for the measure as a whole. An exception was made for the Cognitive-Behavioural Avoidance Scale because the subscales of the CBAS were highly related and the measure as a whole represented an overall construct of avoidance. In addition, reverse-phrased items were reverse-scored (i.e., on the CESD) to avoid negative relationships between items that would reduce Cronbach's alpha inaccurately. Violations of any of the above assumptions and their respective corrective measures were outlined with their associated analyses.

Priming task data. Written answers to the Similarities and Differences with Family and Friends Task (Trafimow et al., 1991) were examined by use of a coding scheme (see Appendix M) that allowed for qualitative responses to be converted into quantitative data for analysis with PASW 18. The coding scheme was developed to answer three main questions, a) did participants complete the written task as instructed?

b) to what extent did participant responses reflect themes of independence and interdependence? c) how lengthy and thus involved were participant responses? These questions arose based on observation of participant task completion that suggested potential differences between samples in how the task was completed. Specifically, the Euro-Canadians were observed to consistently state that the allotted five minutes was insufficient to complete the written task, whereas the Chinese-Canadians consistently reported that the allotted five minutes was too lengthy, had completed the task well before the time limit was reached, and often had to be prompted to continue to think about their response for the remainder of the time. In addition, some of the Euro-Canadians stated they did not have anything in common with their family and friends when asked to describe similarities. The coding scheme was also developed to gain a better understanding of the priming results for Study 1. The items regarding degree of independence and interdependence reflected in the participants' responses were derived from a coding scheme developed by Trafimow et al. (1991) to analyze participant responses to a self-attitudes instrument post-prime. The coding scheme was developed in consultation with the culture brokers to ensure both cross-linguistic understanding and cross-cultural equivalence in interpretation. The coding scheme was adjusted after initial coder training, as issues with the scheme were flagged and corrected.

Six undergraduate student volunteers were recruited to complete the coding through undergraduate psychology courses and the weekly online psychology department memo. Two coders, blind to details of the method and purpose of the priming study, were each assigned to the Euro-Canadian and Hong Kong Chinese samples, and three coders were assigned to the Chinese-Canadian sample. Coders were trained by the

primary investigator on how to complete the coding scheme, using the written tasks of participants who were excluded from the study as practice. The Chinese-Canadian culture brokers assisted with training the coders who analyzed the Hong Kong Chinese priming tasks to ensure that the coders had sufficient knowledge of the language and culture to be able to complete the coding for responses written in Chinese. These coders in turn assisted with training those who completed coding of the Chinese-Canadian priming tasks. Inter-rater reliability was established for each sample on a randomly selected set of 15 tasks, with approximately equivalent representation from each priming condition. Discrepancies in ratings for these 15 tasks were discussed and adjustments were made to the ratings if the coders found their revised understanding of the coding scheme suggested the need for adjustments. Inter-rater reliability was calculated by Pearson's product-moment correlations, which can be found in Table 1. After inter-rater reliability was established with the first 15 tasks, the remaining tasks for each sample were randomly distributed to each coder in roughly equivalent numbers (e.g., 42 tasks for one coder and 43 for the other). Three coders were trained for the Chinese-Canadian sample due to coder availability and level of Chinese comprehension; a third of the tasks were written exclusively in English and were given to one coder and the remaining tasks were divided equally between the other two coders.

A mean score based on the ratings from each coder was entered for each item for the first 15 tasks from each sample. The remaining ratings were individual coder ratings. Skew and kurtosis were examined for the coding data and consistent and sizable (e.g., kurtosis greater than 27) deviations from normality were observed. In addition, Levene's tests revealed heterogeneity of variance for several of the dependent variables across

Table 1

Pearson correlations between raters, by sample, for coding of the culture prime task

Coding Item	Euro-Canadian	Hong Kong	Chinese-Canadian Chinese
Differences	.95	1.00	1.00 ^a ; 1.00 ^b ; 1.00 ^c
Similarities	.98	1.00	.99 ^a ; 1.00 ^b ; .99 ^c
Expectations for Self	.95	1.00	1.00 ^a ; 1.00 ^b ; 1.00 ^c
Expectations from Others	.95	1.00	1.00 ^a ; 1.00 ^b ; 1.00 ^c
Expectations in General	.81	1.00	1.00 ^a ; 1.00 ^b ; 1.00 ^c
Other Concepts	.94	1.00	1.00 ^a ; .88 ^b ; .88 ^c
Total Concepts	.89	1.00	1.00 ^a ; 1.00 ^b ; 1.00 ^c
Independence	.89	.92	.97 ^a ; .87 ^b ; .91 ^c
Interdependence	.91	.92	.91 ^a ; .94 ^b ; .94 ^c

Note. All correlations significant at $p < .001$; ^a = correlation between coders 1 and 2; ^b = correlation between coders 1 and 3; ^c = correlation between coders 2 and 3.

samples. As such, non-parametric procedures were considered given that they do not require that data meet the assumptions of normality and homogeneity of variance. Both parametric tests (paired samples t tests, independent t tests, one-way independent ANOVA's and follow-up independent samples t tests) and their equivalent non-parametric counter-parts (Wilcoxon signed rank, Mann-Whitney, and Kruskal-Wallis tests) were conducted. No differences were found between the parametric and non-parametric test results and thus for consistency, the results of the parametric tests are reported.

Study Participation

A total of 335 participants were recruited for the present research (117 Chinese-Canadians, 103 Euro-Canadians, and 115 Hong Kong Chinese). Data for 32 participants were excluded from the analyses, for a final sample of 303 participants (103 Chinese-Canadians, 100 Euro-Canadians, 100 Hong Kong Chinese). Within the Chinese-Canadian sample, 14 participants were excluded from the analyses. Specifically, nine participants were excluded because they did not meet inclusion criteria: two participants listed their first language as English, one participant indicated their mother was born in the Philippines, five participants indicated they were born in Mainland China, and one participant indicated they did not meet inclusion criteria at the start of the study session and therefore did not complete the questionnaires. Four participants were excluded because it was unclear which of the two Self-Construal Scales was completed first and without this information it would not have been possible to examine the priming effect (Study 1) or to examine the dependent variables in relation to baseline or post-prime self-construal scores (Study 2). Finally, one participant's data were excluded because the

participant had to leave the study early and therefore did not complete the majority of the questionnaires.

Within the Euro-Canadian sample, three participants were excluded because they did not meet inclusion criteria; one participant listed their heritage culture as Japanese and Ashkenazi Jew, one participant indicated they were born in England, and one participant listed their heritage culture as Dene. Fifteen participants were excluded from the Hong Kong Chinese sample; three participants were excluded because they did not provide the birth places of their parents and grandparents and thus their cultural origins were uncertain. Further, one participant listed their first language as English, one participant did not provide their heritage culture, one participant's city and country of birth were entered as "other", the places of birth for one participant's parents were listed as "other", one participant's first language was entered as "other", five participants did not complete the priming task properly, and two participants did not strictly follow the priming procedure. Previous studies found effects with the SDFP using sample sizes of approximately 30 participants per prime condition (see Oyserman & Lee, 2008) but considering the three by two study design and the number of outcome variables in the present research, approximately 50 participants were recruited per condition, per sample.

Preliminary Analyses

Comparability of samples and effectiveness of randomization. Table 2 provides demographic information for the final sample of 303 participants. Differences among samples and conditions on key variables were examined to ascertain the comparability of the samples and to determine the effectiveness of randomization to culture prime condition. The results of the comparisons between conditions on gender,

Table 2

Demographic characteristics by sample

Demographics	Chinese-Canadians	Hong Kong Chinese	Euro-Canadians
<i>N</i> by Sample	103	100	100
<i>N</i> by Condition	48 COL / 55 IND	50 COL / 50 IND	51 COL / 49 IND
Group v. Individual	74 v. 29	38 v. 46	80 v. 20
Study Language:			
Cantonese	44	100	0
English	34	0	100
Mixed	25	0	0
Gender	61F / 42M	69F / 31M	58F / 42M
Age	<i>M</i> = 38.54 (18-65)	<i>M</i> = 33.45 (19-65)	<i>M</i> = 36.07 (18-64)
Religion:			
Christian	61.17%	33%	59%
None	18.45%	41%	36%
Buddhist	5.83%	3%	0%
Other	0%	11% ¹	4% ²

Note. COL = collectivism condition, IND = individualism condition (*N* by Condition), GROUP = participated in a group setting, IND = participated individually (Group v. Individual), F = female, M = male, ¹ = details not provided by Hong Kong, ² = Wiccan, agnostic, and Taoist.

Table 2 (continued)

Demographic characteristics by sample

Demographics	Chinese-Canadians	Hong Kong Chinese	Euro-Canadians
Languages Spoken:			
1	2.9%	11%	71%
2	49.5%	28%	25%
3+	47.6%	61%	4%
First Language:			
Cantonese	74.8%	97%	0%
English	0%	0%	99%
“Chinese”	24.3%	0%	0%
Other	1% ³	3% ⁴	1% ⁵
Home Language:			
Cantonese	70.9%	100%	0%
English	3.9%	0%	98%
“Chinese”	19.4%	0%	0%
English/Other	5.8% ⁶	0%	2% ⁷

Note. “Chinese” = likely Cantonese but written Chinese by participants, ³ = Cantonese and English simultaneously, ⁴ = Putonghua, ⁵ = English and French simultaneously, ⁶ = “Chinese” or Cantonese and English, ⁷ = French or Gaelic and English, Advanced = advanced post-secondary such as Masters or PhD.

Table 2 (continued)

Demographic characteristics by sample

Demographics	Chinese-Canadians	Hong Kong Chinese	Euro-Canadians
Highest Education:			
< High School	10.6%	2%	0%
High School	41.7%	37%	23%
Post-secondary	35.9%	55%	70%
Advanced	7.8%	5%	7%
Father Education:			
< High School	36.6%	47%	15%
High School	31.1%	34%	23%
Post-secondary	18.5%	12%	40%
Advanced	2%	1%	19%
Mother Education:			
< High School	43.7%	50%	8%
High School	29.1%	32%	35%
Post-secondary	14.6%	11%	50%
Advanced	0%	1%	6%
Occupation:			
Undergraduate	29.1%	29%	23%
Employed	35.1%	62%	71%
Unemployed	34.8%	8%	6%

age, education, language, and depressive symptoms suggest that the randomization procedures used were effective within each sample because baseline differences on several key variables were not found. However, despite efforts to match the samples on certain demographic variables, baseline differences were found on age, education, and depressive symptoms. The effects of study administration were also examined to determine if completing the study in a group versus individually had an impact on the post-prime outcome variables. No significant differences were found for any of the samples, in either condition.

Gender, education, religion, and employment. Chi-square analysis determined that there was not a significant association between gender and sample, $\chi^2 (2) = 3.10, p = .21$, gender and condition, $\chi^2 (1) = .34, p = .56$, or education and condition, $\chi^2 (1) = .24, p = .63$. However, a significant association was found between education and sample, $\chi^2 (2) = 20.84, p < .001$; significantly more Chinese-Canadians had not obtained a post-secondary education (count = 54), significantly fewer Chinese-Canadians (count = 45) had obtained a post-secondary education, significantly fewer Euro-Canadians had not obtained a post-secondary education (count = 23), and significantly more Euro-Canadians had obtained a post-secondary education (count = 77). Each sample was split by level of education and independent *t* tests were conducted between the two levels for each dependent variable. Significant differences were found between the two levels of education on measures of avoidance and depressive symptoms, across samples, and in all instances those who did not have a post-secondary education scored higher than those with a post-secondary education. Differences among samples and conditions on religion were not analyzed statistically because some categories had zero participants, which

violated the assumptions of chi-square. The majority of participants across samples self-identified as either Christian (51%) or not religious (32%). Similarly, differences among samples and conditions on employment were not analyzed statistically because employment details were recorded differently across the samples. Overall, the majority of participants in the total sample (83%) were students and/or employed.

Study language. The Chinese-Canadian sample had the option to complete the study in Chinese (spoken in Cantonese, written in Traditional Chinese) or English. Some participants chose to complete the study in a combination of the two languages. For example, the participants read and answered the questionnaires in Traditional Chinese but the instructions were given verbally in English, or the instructions were given in Cantonese and the participants read the questionnaires in Traditional Chinese but provided written answers in English. In order to examine the effects of randomization within this sample, a chi-square analysis across conditions, by language was conducted. The chi-square test revealed that there was not a significant association between the language the study was conducted in (Cantonese, English, or mixed) and condition, $\chi^2(2) = 4.64, p = .10$.

Age. A three (sample) by two (condition) independent analysis of variance (ANOVA) was conducted with age as the dependent variable. A significant main effect of sample was found, $F(2, 290) = 3.41, p = .03$, but not for condition, $F(1, 290) = .71, p = .40$, nor the interaction, $F(1, 290) = .82, p = .44$. The Levene's test was found to be significant for the omnibus test, $F(5, 290) = 3.67, p < .001$, indicating that the assumption of homogeneity of variance was violated. Several transformations were performed on the data (natural log, square root, and reciprocal transformations) but none

resulted in equal variances across samples (Levene's test was not found to be significant for condition). Although the large and near equivalent group sizes suggested that the ANOVA was robust to heterogeneity of variance (Glass, Peckham, & Sanders, 1972), these results should be interpreted with caution. Follow-up independent t tests with a Bonferroni correction ($p = .05/3 = .02$) revealed a significant difference in age between the Chinese-Canadians and Hong Kong Chinese, $t(185.19) = 2.60, p = .01$ (unequal variances assumed), where the Chinese-Canadians ($M = 38.54$, range = 18-65) were found to be significantly older than the Hong Kong Chinese ($M = 33.45$, range = 19-65). Follow-up independent t tests did not reveal significant differences in age between the Chinese-Canadians and Euro-Canadians, $t(191.20) = 1.23, p = .22$ (unequal variances assumed), or between the Hong Kong Chinese and Euro-Canadians, $t(196) = -1.46, p = .15$. Pearson product-moment correlations (two-tailed) were conducted and across all of the dependent variables, age demonstrated significant correlations with depressive symptoms, $r = -.16, p < .01$; rumination, $r = -.14, p = .02$; post-prime independence, $r = .12, p = .03$; and avoidant coping, $r = -.17, p < .01$. Given the small size of the correlations and the fact that age correlated with relatively few dependent variables, age likely did not have an important influence on outcomes. In addition, while the difference in age was statistically significant, it was not conceptually significant given that the mean age range across samples was 33 to 38.

Depressive symptoms. A three (sample) by two (condition) independent analysis of variance (ANOVA) was conducted for self-reported dysphoria and a significant main effect of sample, $F(2,297) = 14.76, p < .001$, but not condition, $F(1,297) = 3.58, p = .059$, was found. The sample by condition interaction was not significant, $F(2, 297) = .97, p =$

.38. Follow-up independent t tests with a Bonferroni correction ($p = .05/3 = .0167$) revealed significant differences in depressive symptoms between the Chinese-Canadians and Hong Kong Chinese, $t(191.24) = -2.47, p = .01$ (unequal variances assumed), the Chinese-Canadians and Euro-Canadians, $t(201) = 2.82, p = .01$, and the Euro-Canadians and Hong Kong Chinese, $t(191.82) = 5.73, p < .001$ (unequal variances assumed), where the Hong Kong Chinese ($M = .94, SD = .38$) reported the highest levels of depressive symptoms, followed by the Chinese-Canadians ($M = .79, SD = .50$), and the Euro-Canadians ($M = .60, SD = .46$). These differences between samples were taken into account when examining differences in levels of rumination and avoidance. To put these findings into context, the total scores were also computed for each sample and it was found that all three samples scored above Radloff's (1977) original community samples ($M = 7.94 - 9.25, SD = 7.53 - 8.58$) and below Radloff's original patient sample ($M = 24.42, SD = 13.51$): Hong Kong Chinese ($M = 18.87, SD = 7.70$), Chinese-Canadians ($M = 15.79, SD = 9.99$), and Euro-Canadians ($M = 11.98, SD = 9.23$).

Sample description: acculturation. For purposes of sample description, a three (sample) by two (condition) by two (acculturation: heritage culture v. mainstream culture) mixed factorial ANOVA was conducted to examine differences in levels of acculturation among the samples. A significant interaction between acculturation and sample was found, $F(2,297) = 103.93, p < .001$, as well as main effects of acculturation, $F(1,297) = 75.35, p < .001$, and sample, $F(2,297) = 48.01, p < .001$. The remaining interactions and main effects were not significant: $F(2,297) = .64, p = .53$ (acculturation by sample, by condition), $F(1,297) = .08, p = .78$ (acculturation by condition), $F(2,297) = .46, p = .63$ (sample by condition), $F(1,297) = .28, p = .60$ (condition). In order to

follow-up the significant sample by acculturation interaction, follow-up one-way ANOVAs between samples on each of Mainstream Culture and Heritage Culture, with a Bonferroni correction ($p = .05/2 = .025$), revealed significant differences between samples on both acculturation constructs, $F(2,302) = 17.29, p < .001$ (Heritage Culture), Welch's $F(1,195.95) = 122.13, p < .001$ (Mainstream Culture). Welch's F was reported for Mainstream Culture due to a significant Levene's test for that construct, $F(2,300) = 4.39, p = .01$.

Further follow-up independent t tests with a Bonferroni correction ($p = .05/4 = .0125$) revealed significant differences between all three samples on Mainstream Culture, where the Euro-Canadians reported higher levels of Mainstream Culture than both the Chinese-Canadians, $t(201) = 10.79, p < .001$, and Hong Kong Chinese, $t(176.96) = 14.51, p < .001$ (unequal variances assumed), and the Chinese-Canadians reported higher levels of Mainstream Culture than the Hong Kong Chinese, $t(201) = 4.61, p < .001$. With regard to Heritage Culture, the Chinese-Canadians reported significantly higher levels than the Hong Kong Chinese, $t(201) = 5.36, p < .001$, and the Euro-Canadians, $t(195.42) = 5.01, p < .001$ (unequal variances assumed), but a significant difference was not found between the Euro-Canadians and Hong Kong Chinese, $t(198) = .31, p = .76$.

The main effect of acculturation from the omnibus mixed factorial ANOVA revealed that when collapsed across samples and conditions, participants reported higher levels of Heritage Culture ($M = 6.64, SD = 1.08$) than Mainstream Culture ($M = 5.97, SD = 1.17$). To follow-up the main effect of sample from the omnibus tests, independent samples t tests were conducted among the samples on levels of acculturation collapsed across Heritage Culture and Mainstream Culture, with a Bonferroni correction ($p = .05/3$

= .0167). Significant differences were found between all three samples, where the Euro-Canadians ($M = 6.86$, $SD = .90$) reported higher levels overall on the VIA than both the Chinese-Canadians ($M = 6.42$, $SD = .80$), $t(201) = -3.62$, $p < .001$, and the Hong Kong Chinese ($M = 5.63$, $SD = 1.00$), $t(198) = -9.16$, $p < .001$, and the Chinese-Canadians reported higher levels overall on the VIA than the Hong Kong Chinese, $t(201) = 6.33$, $p < .001$.

Last, because it was also of interest to describe within-sample levels of acculturation, a series of paired-samples t tests were conducted and revealed significant differences between Heritage and Mainstream Cultures for all three samples. Levels of Heritage Culture were greater than levels of Mainstream Culture for both the Chinese-Canadians, $t(102) = 10.33$, $p < .001$, and the Hong Kong Chinese, $t(99) = 9.83$, $p < .001$, whereas levels of Mainstream Culture were greater than levels of Heritage Culture for the Euro-Canadians, $t(99) = 8.67$, $p < .001$. Means and standard deviations for all measures, including Mainstream and Heritage Culture, are presented in Table 3.

Correlations and internal reliability. Pearson's product-moment correlations (two-tailed) among all dependent variables, by sample and condition, and by sample collapsed across condition, were computed. These correlation matrices are presented in Appendix N and are discussed throughout this document. Cronbach's alpha coefficients were computed for each scale and subscale to determine the internal reliability of the measures within each sample (see Table 4). According to Cicchetti's (1994) guidelines, the majority of the scales and subscales demonstrated fair to excellent internal reliability across samples (i.e., greater than .70). However, some scales and subscales fell below this guideline and could be considered inadequate. However, according to Kline (1999),

Table 3

Mean scores (standard deviations) for each measure, by sample and condition

	Chinese-Canadians			Hong Kong Chinese			Euro-Canadians		
	IND	COL	ALL	IND	COL	ALL	IND	COL	ALL
<i>N</i>	55	48	103	50	50	100	49	51	100
IndT1	4.84 (.57)	4.85 (.52)	4.84 (.55)	4.51 (.49)	4.43 (.66)	4.47 (.58)	4.95 (.56)	4.78 (.56)	4.86 (.56)
InteT1	4.91 (.45)	5.05 (.51)	4.98 (.48)	4.74 (.51)	4.92 (.61)	4.83 (.56)	4.78 (.56)	4.60 (.65)	4.69 (.61)
IndT2	4.85 (.49)	4.92 (.56)	4.88 (.52)	4.59 (.55)	4.49 (.65)	4.54 (.61)	4.96 (.66)	4.87 (.65)	4.91 (.65)
InteT2	4.86(.55)	5.06 (.53)	4.95 (.55)	4.72 (.54)	4.94 (.63)	4.83 (.59)	4.62 (.59)	4.47 (.63)	4.54(.61)
CBASBs	2.00 (.71)	1.93 (.87)	1.96 (.79)	1.67 (.62)	1.95 (.81)	1.81 (.73)	1.76 (.72)	1.92 (.89)	1.84 (.81)
CBASBn	2.41 (.74)	2.29 (.67)	2.35(.71)	2.07 (.65)	2.33 (.79)	2.20 (.73)	2.01 (.82)	2.06 (.78)	2.04 (.80)

Note. IND = individualism-prime condition; COL = collectivism-prime condition; IndT1 = Self-Construal Scale – Independence, Time 1; InteT1 = Self-Construal Scale – Interdependence, Time 1; IndT2 = Self-Construal Scale – Independence, Time 2; InteT2 = Self-Construal Scale – Interdependence, Time 2; CBASBs = Cognitive-Behavioural Avoidance Scale – Behavioural Social; CBASBn = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social.

Table 3 (continued)

Mean scores (standard deviations) for each measure, by sample and condition

	Chinese-Canadians			Hong Kong Chinese			Euro-Canadians		
	IND	COL	ALL	IND	COL	ALL	IND	COL	ALL
<i>N</i>	55	48	103	50	50	100	49	51	100
CBASCs	1.92 (.67)	1.94 (.74)	1.93 (.70)	1.61 (.52)	1.85 (.75)	1.73 (.65)	1.89 (.77)	1.99 (.85)	1.94 (.81)
CBASCn	1.84 (.67)	1.83(.73)	1.83 (.69)	1.62 (.50)	1.89 (.71)	1.76 (.62)	1.88 (.74)	1.81 (.74)	1.85 (.74)
CCCSEc	4.48 (.53)	4.48 (.55)	4.48 (.53)	4.53 (.66)	4.27 (.67)	4.40 (.67)	4.45 (.84)	4.35 (.57)	4.40 (.71)
CCCSCc	3.89 (.78)	3.98 (.83)	3.93 (.80)	3.90 (.68)	3.78 (.84)	3.84 (.76)	3.39 (.90)	3.25 (.73)	3.32 (.82)
CCCSAc	3.30 (.72)	3.34 (.63)	3.32 (.68)	3.36 (.63)	3.50 (.58)	3.43 (.61)	3.08 (.64)	3.14 (.75)	3.11 (.70)

Note. IND = individualism-prime condition; COL = collectivism-prime condition; CBASCs = Cognitive-Behavioural Avoidance Scale – Cognitive Social; CBASCn = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; CCCSEc = Cross-Cultural Coping Scale – Engagement Coping; CCCSCc = Cross-Cultural Coping Scale – Collective Coping; CCCSAc = Cross-Cultural Coping Scale – Avoidance Coping.

Table 3 (continued)

Mean scores (standard deviations) for each measure, by sample and condition

	Chinese-Canadians			Hong Kong Chinese			Euro-Canadians		
	IND	COL	ALL	IND	COL	ALL	IND	COL	ALL
<i>N</i>	55	48	103	50	50	100	49	51	100
RRS	1.91(.47)	2.12 (.51)	2.01 (.49)	1.86 (.44)	1.99 (.50)	1.93 (.47)	2.21 (.67)	2.09 (.59)	2.15 (.63)
CESD	.72 (.46)	.87 (.53)	.79 (.50)	.87 (.36)	1.02 (.40)	.94 (.38)	.60 (.46)	.60 (.47)	.60 (.46)
VIAHc	7.10 (1.06)	7.20 (.87)	7.15(.97)	6.33 (1.05)	6.39 (1.19)	6.36 (1.12)	6.37 (1.17)	6.45 (1.07)	6.41 (1.12)
VIAMc	5.57 (1.21)	5.86 (1.07)	5.71 (1.15)	4.94 (1.38)	4.84 (1.36)	4.89 (1.37)	7.36 (.91)	7.26 (1.00)	7.31 (.95)

Note. IND = individualism-prime condition; COL = collectivism-prime condition; RRS = Ruminative Responses Scale; CESD = Centre for Epidemiologic Studies – Depression Scale; VIAHc = Vancouver Index of Acculturation – Heritage Culture; VIAMc = Vancouver Index of Acculturation – Mainstream Culture.

Table 4

Internal reliability (Cronbach's alpha) for each scale and subscale, by sample

Scale	Euro-Canadians	Chinese-Canadians	Hong Kong Chinese
SCSIndT1	.65	.61	.66
SCSInteT1	.71	.61	.73
CESD	.90	.91	.84
VIAHc	.83	.85	.86
VIAMc	.86	.88	.91
CCCSEc	.77	.61	.79
CCCSCc	.67	.81	.76
CCCSAc	.70	.71	.64
CBAS	.95	.95	.94
CBASBs	.92	.88	.86
CBASBn	.83	.74	.77
CBASCs	.88	.84	.85
CBASCn	.90	.88	.85
RRS	.94	.92	.91
SCSIndT2	.75 ^b	.57 ^a ; .65 ^b	.67 ^b
SCSInteT2	.73 ^b	.73 ^a ; .73 ^b	.76 ^b

Note. SCSIndT1 = Self-Construal Scale – Independence, Time 1; SCSInteT1 = Self-Construal Scale – Interdependence, Time 1; CESD = Centre for Epidemiologic Studies – Depression Scale; VIAHc = Vancouver Index of Acculturation – Heritage Culture; VIAMc = Vancouver Index of Acculturation – Mainstream Culture; CCCSEc = Cross-Cultural Coping Scale – Engagement Coping; CCCSCc = Cross-Cultural Coping Scale – Collective Coping; CCCSAc = Cross-Cultural Coping Scale – Avoidance Coping; CBAS = Cognitive-Behavioural Avoidance Scale; CBASBs = Cognitive-Behavioural Avoidance Scale – Behavioural Social. CBASBn = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; CBASCs = Cognitive-Behavioural Avoidance Scale – Cognitive Social; CBASCn = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; RRS = Ruminative Responses Scale; SCSIndT2 = Self-Construal Scale – Independence, Time 2; SCSInteT2 = Self-Construal Scale – Interdependence, Time 2; ^a = original version of SCS subscale; ^b = aesthetically changed version of SCS subscale.

alpha values below .70 can be expected for psychological constructs, given their inherent diversity. As such, these measures were included in the analyses, but their associated findings were interpreted with caution.

Study 1: Priming Culture

Baseline self-construals. A three (sample) by two (condition) by two (self-construal) mixed factorial analysis of variance (ANOVA) was conducted with sample and condition as between-subjects factors and baseline self-construals as a within-subjects factor, to test the predictions about baseline differences in self-construals across samples and conditions. The three-way interaction among self-construals, sample, and condition was not significant, $F(2, 297) = .79, p = .46$, and the two-way interaction between self-construals and condition was not significant, $F(1, 297) = 1.93, p = .17$. However, the mixed ANOVA revealed a significant two-way interaction between self-construals and sample, $F(2, 297) = 11.31, p < .001$, and a significant two-way interaction between sample and condition, $F(2, 297) = 3.02, p = .050$. In terms of main effects, the mixed ANOVA revealed a significant main effect of sample, $F(2, 297) = 11.54, p < .001$ and a significant main effect of self-construals, $F(1, 297) = 5.38, p = .02$. The main effect of condition was not significant, $F(1, 297) = .14, p = .71$.

In order to further explore the significant two-way interaction between self-construals and sample, two follow-up one-way ANOVA's were conducted to test the simple effects of independence and interdependence across samples. Both ANOVA's were found to be significant, $F(2, 300) = 15.41, p < .001$ (independence), $F(2, 300) = 6.96, p = .001$ (interdependence). Follow-up independent samples *t* tests with a Bonferroni correction ($p = .05/4 = .0125$) were conducted between samples on each self-

construal to address the between-samples predictions. Significant differences were found between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 4.69, p < .001$, and between the Euro-Canadians and Hong Kong Chinese, $t(198) = -4.86, p < .001$ (one-tailed), on independent self-construals. The comparison between the Chinese- and Euro-Canadians was not significant, $t(201) = -.29, p = .77$. The Euro-Canadians ($M = 4.86, SD = .56$) and Chinese-Canadians ($M = 4.84, SD = .55$) scored highest on baseline independent self-construals followed by the Hong Kong Chinese ($M = 4.47, SD = .58$). Follow-up independent samples t tests on baseline interdependent self-construals, with a Bonferroni correction ($p = .05/4 = .0125$), revealed a significant difference between Chinese- and Euro-Canadians, $t(201) = 3.77, p < .001$ (one-tailed). The comparison between Chinese-Canadians and Hong Kong Chinese was not significant, $t(201) = 1.97, p = .05$, nor was the comparison between Hong Kong Chinese and Euro-Canadians, $t(198) = 1.75, p = .04$ (one-tailed). The Chinese-Canadians ($M = 4.98, SD = .48$) and Hong Kong Chinese ($M = 4.83, SD = .56$) scored highest on baseline interdependence, followed by the Euro-Canadians ($M = 4.69, SD = .61$).

Follow-up paired samples t tests, with a Bonferroni correction ($p = .05/3 = .0167$), were conducted between self-construals to address the within-samples predictions regarding baseline self-construals. A significant difference was found between baseline independent and interdependent self-construals for the Hong Kong Chinese, where interdependence ($M = 4.83, SD = .56$) was significantly greater $t(99) = -4.76, p < .001$ (one-tailed), than independence ($M = 4.47, SD = .58$). For the Chinese-Canadian sample, interdependence ($M = 4.98, SD = .48$) was not significantly greater than independence ($M = 4.84, SD = .55$), $t(102) = -2.01, p = .02$ (one-tailed). For the Euro-Canadian sample,

independence ($M = 4.86$, $SD = .56$) was not significantly greater than interdependence ($M = 4.69$, $SD = .61$), $t(99) = 1.86$, $p = .03$ (one-tailed).

In order to follow-up the significant two-way interaction between sample and condition, three independent t tests with a Bonferroni correction ($p = .05/3 = .0167$) were conducted between conditions within each sample. The difference between overall baseline self-construals (collapsed across independence and interdependence) was significant for the Euro-Canadians, $t(98) = -2.56$, $p = .012$, where overall self-construals were greater in the individualism-prime condition ($M = 4.86$, $SD = .34$) than in the collectivism-prime condition ($M = 4.69$, $SD = .32$). The comparisons between conditions for the Chinese-Canadians, $t(101) = .93$, $p = .36$, and Hong Kong Chinese, $t(98) = .58$, $p = .56$, were not significant. These results still suggest that randomization was effective in maintaining equivalent levels of self-construals among conditions because although the Euro-Canadians in the individualism-prime condition reported greater overall baseline self-construals than the Euro-Canadians in the collectivism-prime condition, neither condition within each sample reported higher levels of one self-construal over the other.

The main effect of self-construals revealed that the study sample as a whole rated interdependent self-construals ($M = 4.83$, $SD = .56$) higher than independent self-construals ($M = 4.73$, $SD = .56$). In order to further explore the main effect of sample, independent follow-up t tests with a Bonferroni correction ($p = .05/3 = .0167$) were conducted, and revealed significant differences between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 4.76$, $p < .001$, but not between the Chinese- and Euro-Canadians, $t(201) = 2.47$, $p = .04$, nor between the Hong Kong Chinese and Euro-Canadians, $t(198) = -2.28$, $p = .07$. The Chinese-Canadians ($M = 4.91$, $SD = .39$)

reported the highest levels of overall baseline self-construals, followed by the Euro-Canadians ($M = 4.78$, $SD = .39$), and the Hong Kong Chinese ($M = 4.65$, $SD = .39$).

Acculturation and self-construals. The relationship between acculturation and self-construals was examined for all three samples by computing Pearson correlations (see Appendix N). Small but significant positive associations between mainstream culture and baseline independent self-construals were found for the Chinese-Canadians and Hong Kong Chinese. Small to medium and significant positive associations were found between heritage culture and baseline interdependent self-construals for all three samples. Cohen's (1988) conventions were used to qualify the size of effects. The role of acculturation was examined in more detail for the Chinese-Canadian sample. In order to directly compare the association between self-construals and acculturation, two blocked linear regression analyses were conducted to determine the amount of variance accounted for in levels of self-construals by acculturation. In the first regression analysis, Mainstream Culture was entered in the first block, Heritage Culture was entered in the second block, and baseline independence was entered as the dependent variable. Mainstream Culture was found to be uniquely associated with independence, where Mainstream Culture accounted for 5.4% of the variance in baseline independence and Heritage Culture did not significantly contribute to this association (R^2 Change and the overall regression model were not significant). In the second regression analysis, Heritage Culture was entered in the first block, Mainstream Culture was entered in the second block, and baseline interdependence was entered as the dependent variable. Heritage Culture was found to be uniquely associated with interdependence, where Heritage Culture accounted for 7.5% of the variance in baseline interdependence (see

Table 5) and Mainstream Culture did not incrementally contribute to this association (R^2 Change was not significant but the overall regression model was significant). Both regression analyses largely met the assumptions outlined in the Data Analysis Strategy section above. However, both regression models evidenced small deviations from normality, suggesting that they may not be generalizable to other samples. While the second regression analysis contained a potential outlier (i.e., demonstrated a standardized residual greater than 3; Field, 2009), examination of the corresponding Cook's Distance statistic determined that it did not have a significant influence on the regression model and thus was not removed for re-analysis. The adjusted R^2 provides an estimate of how much variance in the outcome variable would have been accounted for by the predictor variable, had the model been derived from the population from which the sample was taken (Field, 2009). For both regression models, adjusted R^2 demonstrated moderate shrinkage in predictive power, suggesting that the models may not generalize well to the population. Similarly, the confidence intervals for both models were moderate, also suggesting low generalizability to the population.

The effect of the culture prime. Figures 1 and 2 provide a visual depiction of the differences among the three samples from pre- to post-prime. The effectiveness of the priming task was examined in three ways. The priming effect was first examined within each sample, by condition, from pre- to post-prime. A Bonferroni correction was applied to the set of comparisons within each sample ($p = .05/4 = .0125$). Paired samples t tests revealed non-significant differences for the Chinese-Canadians in the collectivism condition for both independent self-construals, $t(47) = -1.52, p = .13$, and interdependent self-construals, $t(47) = -.39, p = .35$ (one-tailed). Similarly, for the Chinese-Canadians in

Table 5

Blocked linear regression for acculturation and self-construals among Chinese-Canadians

	Independence				Interdependence			
<i>Variable</i>	<i>B</i>	<i>SE B</i>	<i>95% CI for B</i>	β	<i>B</i>	<i>SE B</i>	<i>95% CI for B</i>	β
Step 1								
VIA Mc	.11	.05	[.02 - .20]	.23*	-	-	-	-
VIA Hc	-	-	-	-	.14	.05	[.08 - .90]	.27**
Step 2								
VIA Mc	.11	.05	[.02 - .20]	.23*	-.04	.04	[-.12 - .04]	-.09
VIA Hc	.03	.06	[-.08 - .14]	.05	.14	.05	[.05 - .24]	.29**

Note. $N = 103$; $R^2 = .054^*$ for Step 1 Independence, $\Delta R^2 = .002$ for Step 2 Independence; $R^2 = .075^{**}$ for Step 1 Interdependence, $\Delta R^2 = .009$ for Step 2 Interdependence; VIA Mc = Vancouver Index of Acculturation – Mainstream Culture; VIA Hc = Vancouver Index of Acculturation – Heritage Culture.

* $p < .05$; ** $p < .01$.

Figure 1

Means for baseline and post-prime independent and interdependent self-construals in the individualism prime condition, by sample

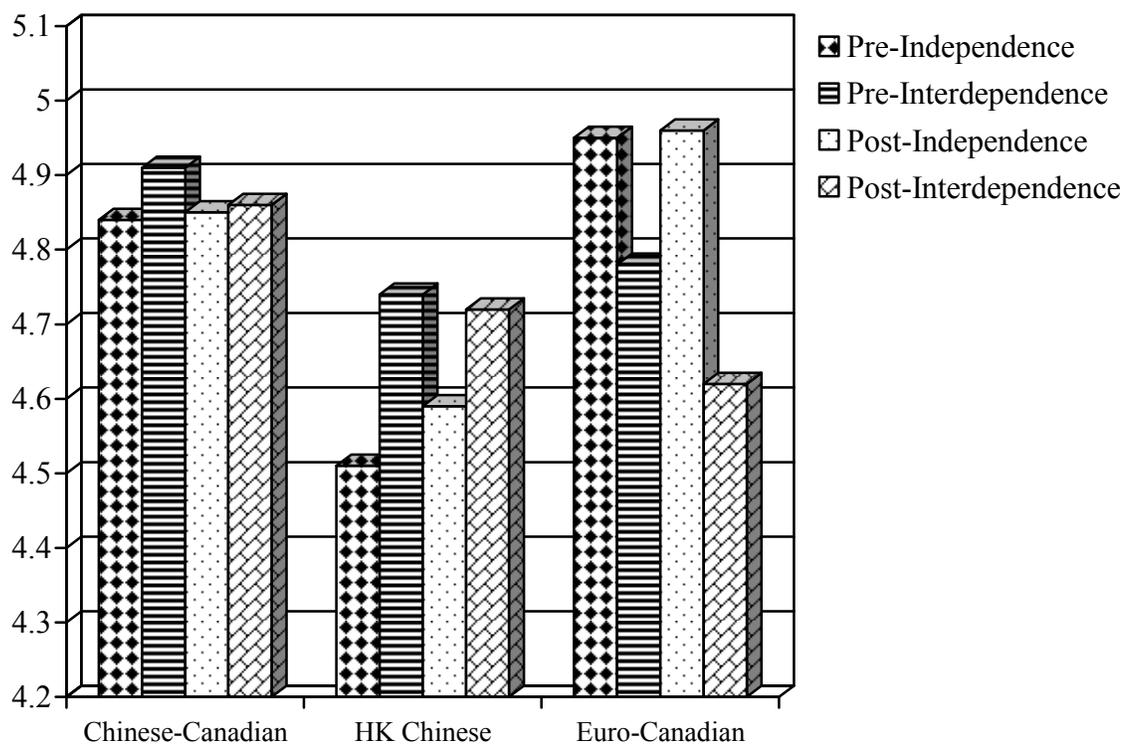
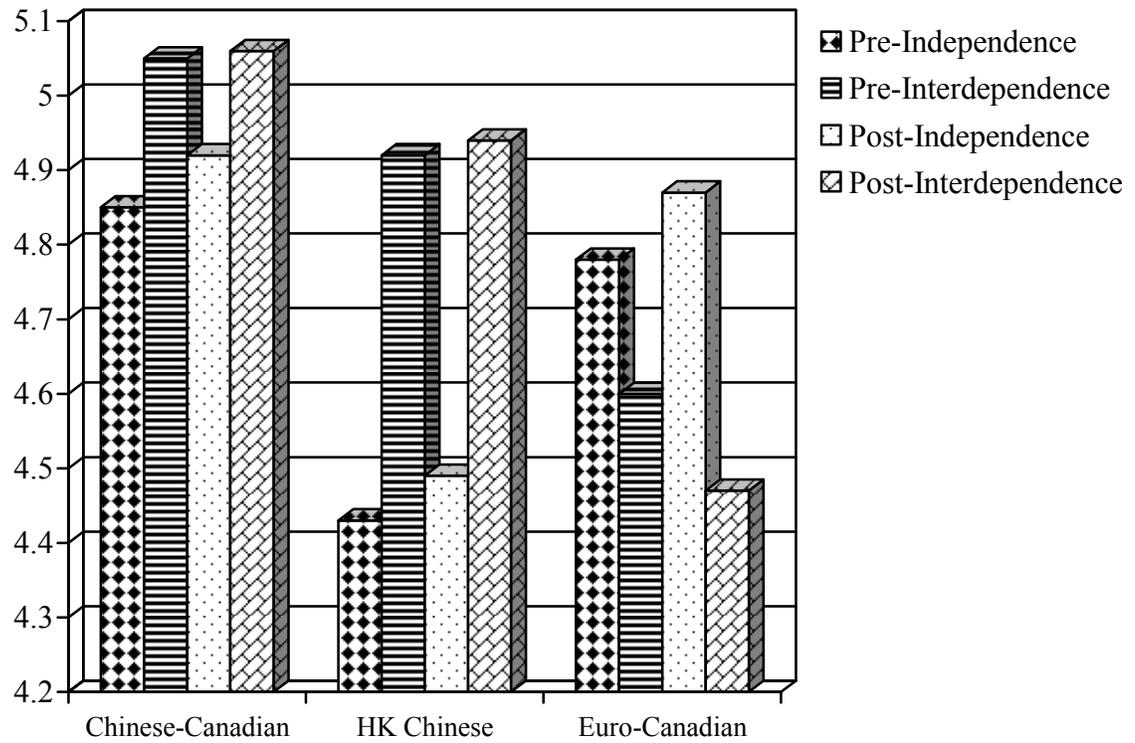


Figure 2

Means for baseline and post-prime independent and interdependent self-construals in the collectivism prime condition, by sample



the individualism condition, paired samples t tests revealed non-significant differences for both independent self-construals, $t(54) = -.30, p = .38$ (one-tailed), and interdependent self-construals, $t(54) = 1.16, p = .25$. Non-significant differences were also found for the Hong Kong Chinese participants in the collectivism and individualism conditions: $t(49) = -1.21, p = .23$ (collectivism condition, independent self-construals), $t(49) = -.24, p = .41$ (one-tailed: collectivism condition, interdependent self-construals), $t(49) = -1.58, p = .06$ (one-tailed: individualism condition, independent self-construals), and $t(49) = .46, p = .65$ (individualism condition, interdependent self-construals).

Paired samples t tests revealed non-significant differences for the Euro-Canadians in both the collectivism and individualism conditions for independent self-construals: $t(50) = -.54, p = .13$ (collectivism condition), and $t(48) = -.25, p = .41$ (one-tailed: individualism condition). On the other hand, significant differences were found for the Euro-Canadians in both conditions for interdependent self-construals: $t(50) = 2.99, p = .002$ (one-tailed: collectivism condition), and $t(48) = 3.57, p = .001$ (individualism condition). Specifically, the Euro-Canadians in both prime conditions reported lower levels of interdependent self-construals post- than pre-prime. Given that a directional hypothesis was made for the effect and the effect was contrary to prediction, it could be argued that the shift in scores for the collectivism condition should be assessed at $1 - p$ -value (.002), such that $p = 1.00$. In that instance, the shift in interdependent self-construals from pre- to post-prime for the Euro-Canadians in the collectivism condition would not be significant.

Second, a three (sample) by two (condition) by two (self-construals) mixed factorial ANOVA was conducted with sample and condition as between-subjects factors

and post-prime self-construals as a within-subjects factor, to examine post-prime differences in self-construals across samples and conditions. The three-way interaction between post-prime self-construals, sample, and condition was not found to be significant, $F(2, 297) = 1.20, p = .30$, nor was the two-way interaction between self-construals and condition, $F(1, 297) = 1.91, p = .17$. However, there was a significant two-way interaction between self-construals and sample, $F(2, 297) = 16.02, p < .001$. The two-way interaction between sample and condition approached significance, $F(2, 297) = 2.46, p = .09$. There was a significant main effect of sample, $F(2, 297) = 9.70, p < .001$, but the main effect of self-construals was not significant, $F(1, 297) = .00, p = 1.00$, nor was the main effect of condition, $F(1, 297) = .28, p = .60$.

Upon further examination of the significant two-way interaction between self-construals and sample, a follow-up one-way ANOVA on post-prime independence revealed a significant difference between the samples, Welch's $F(2, 197.43) = 12.10, p < .001$. Welch's F was reported due to a significant Levene's statistic, $F(2, 300) = 3.38, p = .04$. Independent samples t tests with a Bonferroni correction ($p = .05/4 = .0125$) revealed that post-prime independence was significantly greater for the Chinese-Canadians ($M = 4.88, SD = .52$) and Euro-Canadians ($M = 4.91, SD = .65$) than the Hong Kong Chinese ($M = 4.54, SD = .61$), $t(201) = 4.38, p < .001$, and $t(198) = -4.21, p < .001$, respectively. A significant difference was not found between the Chinese-Canadians and Euro-Canadians, $t(189.59) = -.33, p = .74$ (unequal variances assumed). This set of comparisons suggests that the pattern of pre-prime differences in independence between samples was maintained post-prime.

A follow-up one-way ANOVA on post-prime interdependence revealed a significant difference between samples, $F(2, 302) = 12.96, p < .001$. Independent samples t tests, with a Bonferroni correction ($p = .05/4 = .0125$), revealed that the Chinese-Canadians ($M = 4.95, SD = .55$) and Hong Kong Chinese ($M = 4.83, SD = .59$) rated interdependence significantly higher than the Euro-Canadians ($M = 4.54, SD = .61$), $t(201) = 5.01, p < .001$, and $t(198) = 3.32, p = .001$, respectively. There was not a significant difference between the Chinese-Canadians and Hong Kong Chinese on post-prime interdependence, $t(201) = 1.57, p = .12$. This set of comparisons revealed a shift in interdependence between samples from pre- to post-prime as the difference between the Hong Kong Chinese and Euro-Canadians became significant post-prime.

Follow-up comparisons, with a Bonferroni correction ($p = .05/3 = .0167$), within-groups, between post-prime self-construals were also conducted. Significant differences were found between post-prime self-construals for the Euro-Canadians, $t(99) = 3.62, p < .001$, and Hong Kong Chinese, $t(99) = -3.57, p = .001$. Interdependent self-construals ($M = 4.83, SD = .59$) were greater than independent self-construals ($M = 4.54, SD = .61$) for the Hong Kong Chinese and independent self-construals ($M = 4.91, SD = .65$) were greater than interdependent self-construals ($M = 4.54, SD = .61$) for the Euro-Canadians. Post-prime interdependent self-construals ($M = 4.95, SD = .55$) were not significantly greater than post-prime independent self-construals ($M = 4.88, SD = .52$) for the Chinese-Canadians, $t(102) = -1.08, p = .29$. This set of follow-up comparisons demonstrated a shift from pre- to post-prime as well, because the difference between self-construals for the Euro-Canadians became significant post-prime.

The main effect of sample from the omnibus test was followed-up with independent samples t tests with a Bonferroni correction ($p = .05/3 = .0167$). Significant differences were found between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 3.91, p < .001$, and between the Chinese-Canadians and Euro-Canadians, $t(201) = 3.37, p = .001$, on post-prime self-construals (collapsed across independence and interdependence). There was not a significant difference between the Hong Kong Chinese and Euro-Canadians on post-prime self-construals, $t(198) = -.79, p = .43$. Overall, the Chinese-Canadians had the highest post-prime self-construals ($M = 4.92, SD = .42$), followed by the Euro-Canadians ($M = 4.73, SD = .38$), and the Hong Kong Chinese ($M = 4.68, SD = .44$).

Third, a three (sample) by two (condition) by two (post-prime self-construals) univariate analysis of covariance (ANCOVA) was attempted to examine post-prime differences in self-construals, controlling for pre-prime self-construals (covariates). However, the model violated the important assumption of homogeneity of regression slopes; there were significant interactions between each covariate and the within-subjects factor (post-prime self-construals), $F(1, 295) = 461.49, p < .001$ (baseline interdependence covariate), and $F(1, 295) = 527.79, p < .001$ (baseline independence covariate). As such, two three (sample) by two (condition) ANCOVAs on each post-prime self-construal, controlling for the corresponding pre-prime self-construal, were conducted instead. For the ANCOVA on post-prime interdependence, the covariate was found to be significant, $F(1, 296) = 765.25, p < .001$ (pre-prime interdependence), and was evaluated at 4.83 in the model. While the sample by condition interaction, $F(2, 296) = .31, p = .73$, and the main effect of condition, $F(1, 296) = 1.91, p = .17$, were not

significant, the main effect of sample was significant, $F(2, 296) = 8.02, p < .001$. Follow-up independence t tests with a Bonferroni correction ($p = .05/3 = .0167$), controlling for pre-prime interdependence, revealed significant differences between the Chinese- and Euro-Canadians, $t(201) = 3.45, p = .001$, and between the Hong Kong Chinese and Euro-Canadians, $t(198) = 3.48, p = .001$, but not between the Chinese-Canadians and Hong Kong Chinese, $t(201) = -.02, p = .97$. The Chinese-Canadians ($M = 4.83, SD = .31$) and Hong Kong Chinese ($M = 4.83, SD = .31$) reported the highest levels of post-prime interdependence, controlling for pre-prime interdependence, followed by the Euro-Canadians ($M = 4.68, SD = .31$). The ANCOVA on post-prime independence violated the assumption of homogeneity of regression slopes due to a significant interaction between the sample and the covariate, $F(2, 291) = 3.71, p = .03$ and thus could not be further interpreted.

Coding analyses. Means, standard deviations and ranges for the coding data are presented in Table 6. To determine whether participants completed the priming task as instructed paired samples t tests were conducted on the coding data, within each condition, by sample. As such, a Bonferroni correction was applied to the set of t tests within each condition, for each sample ($p = .05/3 = .0167$). While formal predictions were not made, it was expected that participants would have completed the task as instructed and so one-tailed tests were conducted. Significant differences were found between differences and similarities, where similarities were greater than differences, for all participants in the collectivism condition: $t(47) = -6.63, p < .001$ (Chinese-Canadians), $t(49) = -11.41, p < .001$ (Hong Kong Chinese), $t(50) = -9.02, p < .001$ (Euro-Canadians). Significant differences were also found between differences and similarities, where

Table 6

Means (standard deviations) for coding data, by sample and condition

	Chinese-Canadians		Hong Kong Chinese		Euro-Canadians	
	COL	IND	COL	IND	COL	IND
Item	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
	Range	Range	Range	Range	Range	Range
Diff's	.17(.83)	1.53(2.49)	0(0)	3.50(3.16)	.19(.48)	5.55(4.27)
	0-5	0-12	0-0	0-16	0-2	0-19
Sim's	3.03(2.91)	.09(.35)	4.61(2.86)	.30(.93)	6.63(4.99)	.40(.87)
	0-13	0-2	0-13	0-5	0-18	0-4
Ex. Self	0(0)	1.35(2.48)	.42(1.14)	1.74(2.46)	0(0)	3.15(3.35)
	0-0	0-10	0-5	0-14	0-0	0-10
Ex. Other	1.19(2.21)	0(0)	1.50(2.01)	0(0)	3.17(3.39)	.08(.45)
	0-9	0-0	0-7	0-0	0-10	0-3
Ex. Gen.	1.38(1.95)	1.33(2.26)	.88(1.42)	.68(1.43)	1.17(2.69)	.36(1.15)
	0-7	0-9	0-5	0-8	0-12	0-5
Other	3.26(4.32)	4.19(4.05)	.94(1.74)	1.22(2.16)	2.30(4.02)	2.89(3.12)
	0-18	0-16	0-6	0-11	0-21	0-10

Note. COL = collectivism prime condition, IND = individualism prime condition, M = mean, SD = standard deviation, Diff's = differences, Sim's = Similarities, Ex. Self = expectations for self, Ex. Other = expectations from others, Ex. Gen. = expectations in general, Other = other concepts. Chinese-Canadians COL: $N = 48$, Chinese-Canadians IND: $N = 55$, Hong Kong Chinese COL: $N = 49$, Hong Kong Chinese IND: $N = 51$, Euro-Canadians COL: $N = 51$, Euro-Canadians IND: $N = 49$.

Table 6 (continued)

Means (standard deviations) for coding data, by sample and condition

	Chinese-Canadians		Hong Kong Chinese		Euro-Canadians	
	COL	IND	COL	IND	COL	IND
Item	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
	Range	Range	Range	Range	Range	Range
Total	8.95(4.02)	8.48(4.26)	8.35(3.44)	7.44(4.19)	13.45(5.25)	12.42(5.28)
	2-20	2-22	2-17	1-24	4-27	4-35
Indep.	4.55(1.76)	4.55(1.74)	3.95(1.54)	4.64(1.65)	4.75(1.82)	5.67(1.44)
	1-7	1-7	1-7	1-7	1.50-7	2-7
Interdep.	3.25(1.40)	2.92(1.23)	4.18(1.59)	3.55(1.66)	4.55(1.58)	3.61(1.71)
	1-6	1-7	1-7	1-7	2-7	1-7

Note. COL = collectivism prime condition, IND = individualism prime condition, M = mean, SD = standard deviation, Total = total number of concepts, Indep. = independence, Interdep. = interdependence, Chinese-Canadians COL: $N = 48$, Chinese-Canadians IND: $N = 55$, Hong Kong Chinese COL: $N = 50$, Hong Kong Chinese IND: $N = 50$, Euro-Canadians COL: $N = 51$, Euro-Canadians IND: $N = 49$.

differences were greater than similarities, for all participants in the individualism condition: $t(54) = 4.25, p < .001$ (Chinese-Canadians), $t(49) = 6.35, p < .001$ (Hong Kong Chinese), $t(48) = 8.30, p < .001$ (Euro-Canadians). With regard to expectations, significant differences were found for all participants in the collectivism condition, where expectations from others were greater than expectations for the self: $t(47) = -3.73, p < .001$ (Chinese-Canadians), $t(49) = -2.98, p = .002$ (Hong Kong Chinese), $t(50) = -6.68, p < .001$ (Euro-Canadians). Similarly, significant differences were found for all participants in the individualism condition, where expectations for the self were greater than expectations from others: $t(54) = 4.04, p < .001$ (Chinese-Canadians), $t(49) = 4.99, p < .001$ (Hong Kong Chinese), $t(48) = 6.22, p < .001$ (Euro-Canadians). The difference between independence and interdependence in the collectivism condition was only significant for the Chinese-Canadians, $t(47) = 3.15, p = .002$, where independence was greater than interdependence. Once again, given that a directional hypothesis would have been made for this effect, and the effect was contrary to expectation, it could be argued that the difference between independence and interdependence for the Chinese-Canadians in the collectivism condition should be assessed at $1 - p$ -value (.002), so that $p = 1.00$. In that instance, the difference would not be significant. Significant differences were not found between independence and interdependence for the Hong Kong Chinese, $t(49) = -.56, p = .29$, nor the Euro-Canadians, $t(50) = .46, p = .33$. However, the difference between independence and interdependence was significant for all participants in the individualism condition, where independence was greater than interdependence: $t(54) = 5.03, p < .001$ (Chinese-Canadians), $t(49) = 2.37, p = .011$ (Hong Kong Chinese), $t(48) = 5.08, p < .001$ (Euro-Canadians).

In order to further investigate whether participants completed the priming task as instructed independent samples t tests (one-tailed) were conducted between conditions within each sample, and a Bonferroni correction was applied to each set of t tests ($p = .05/6 = .0083$). Significant differences were found between conditions for all samples, where the number of differences discussed in the priming task were greater for those in the individualism-prime than the collectivism-prime condition: $t(67.53) = -3.82, p < .001$ (unequal variances assumed; Chinese-Canadians), $t(49) = -7.84, p < .001$ (unequal variances assumed; Hong Kong Chinese), $t(49.16) = -8.75, p < .001$ (unequal variances assumed; Euro-Canadians). Significant differences were also found between conditions for all samples on similarities, where those in the collectivism-prime condition reported more similarities than those in the individualism-prime condition: $t(48.18) = 6.97, p < .001$ (unequal variances assumed; Chinese-Canadians), $t(59.31) = 10.15, p < .001$ (unequal variances assumed; Hong Kong Chinese), $t(53.17) = 8.77, p < .001$ (unequal variances assumed; Euro-Canadians). With regard to expectations, significant differences were found between the conditions for all the samples as well. First, expectations for self were found to be more numerous in those tasks completed by participants in the individualism condition than those in the collectivism condition: $t(54) = -4.04, p < .001$ (unequal variances assumed; Chinese-Canadians), $t(69.19) = -3.44, p < .001$ (unequal variances assumed; Hong Kong Chinese), $t(48) = -6.58, p < .001$ (unequal variances assumed; Euro-Canadians). Second, expectations from others were found to be more numerous in those tasks completed by participants in the collectivism condition than those in the individualism condition: $t(47) = 3.73, p < .001$ (unequal variances assumed; Chinese-Canadians), $t(49) = 5.27, p < .001$ (unequal variances assumed; Hong

Kong Chinese), $t(51.83) = 6.45, p < .001$ (unequal variances assumed; Euro-Canadians).

With regard to independence and interdependence, significant differences were only found between conditions for the Euro-Canadians, where independence was greater in the individualism condition, $t(94.55) = -2.83, p = .003$ (unequal variances assumed), and interdependence was greater in the collectivism condition, $t(98) = 2.85, p = .003$. All other comparisons were not significant for independence, $t(101) = -.01, p = .50$ (Chinese-Canadians), $t(98) = -2.16, p = .02$ (Hong Kong Chinese), nor interdependence, $t(101) = 1.29, p = .10$ (Chinese-Canadians), $t(98) = 1.93, p = .03$ (Hong Kong Chinese).

Last, one-way ANOVAs and follow-up tests were conducted between samples on several coding concepts to determine if there were differences among the samples in how the tasks were completed. Significant differences were found among the samples on total number of concepts, $F(2, 300) = 37.21, p < .001$, independence, $F(2, 300) = 7.61, p = .001$, and interdependence, Welch's $F(2, 196.01) = 13.59, p < .001$. Welch's F was reported for interdependence due to a significant Levene's statistic, $F(2, 300) = 9.57, p < .001$. Follow-up independent samples t tests (two-tailed) were conducted among the samples for each concept, with a Bonferroni correction ($p = .05/3 = .0167$). With regard to total number of concepts, the Euro-Canadians ($M = 12.95, SD = 5.26$) completed lengthier tasks than both the Chinese-Canadians ($M = 8.70, SD = 4.14$), $t(201) = -6.40, p < .001$, and the Hong Kong Chinese ($M = 7.90, SD = 3.84$), $t(181.22) = -7.75, p < .001$ (unequal variances assumed). A significant difference was not found on total concepts between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 1.44, p = .15$. The Euro-Canadians ($M = 5.20, SD = 1.70$) were also found to discuss more concepts related to independence in their tasks than the Chinese-Canadians ($M = 4.55, SD = 1.74$), $t(201)$

= -2.69, $p = .008$, and the Hong Kong Chinese ($M = 4.30$, $SD = 1.63$), $t(198) = -3.84$, $p < .001$. Again, a significant difference was not found between the Chinese-Canadians and the Hong Kong Chinese on independence, $t(201) = 1.08$, $p = .28$. Last, both the Euro-Canadians ($M = 4.09$, $SD = 1.70$), $t(186.38) = -4.76$ (unequal variances assumed), and the Hong Kong Chinese ($M = 3.87$, $SD = 1.65$), $t(189.09) = -3.78$, $p < .001$, discussed significantly more concepts of interdependence in their tasks than the Chinese-Canadians ($M = 3.07$, $SD = 1.32$). A significant difference was not found between the Euro-Canadians and the Hong Kong Chinese on interdependence, $t(198) = -.95$, $p = .34$.

Language as a culture prime. Given that the Chinese-Canadians varied in what language they chose to complete the study in, and given that language itself has been used as a culture prime (Cross, Hardin, & Gercek-Swing, 2011; Oyserman & Lee, 2008), study language was examined to determine if it played a role in priming for this sample, although no hypotheses were made in this regard. First, a three (study language) by two (condition) by two (pre-prime self-construals) mixed factorial ANOVA was conducted, with study language and condition as between-subjects factors and pre-prime self-construals as within-subjects factors, to determine if pre-prime differences in self-construals existed. The three-way interaction between pre-prime self-construals, condition, and study language was not significant, $F(2, 97) = .68$, $p = .51$, the two-way interaction between pre-prime self-construals and condition, $F(1, 97) = .06$, $p = .81$ was not significant, and the two-way interaction between condition and study language was not significant, $F(2, 97) = .20$, $p = .82$, but the two-way interaction between pre-prime self-construals and study language was significant, $F(2, 97) = 8.27$, $p < .001$. In addition, the main effects of pre-prime self-construals, $F(1, 97) = 1.69$, $p = .20$, and condition, $F(1,$

97) = .74, $p = .39$ were not significant, in contrast to the main effect of study language, $F(2, 97) = 3.82, p = .03$.

In order to follow-up the significant two-way interaction between pre-prime self-construals and study language, two one-way ANOVAs were conducted between study languages for each self-construal. The ANOVA on pre-prime interdependence was not significant, $F(2, 100) = 1.90, p = .16$, but the ANOVA on pre-prime independence was significant, $F(2, 100) = 9.56, p < .001$. Independent samples t tests with a Bonferroni correction ($p = .05/4 = .0125$) revealed significant differences in pre-prime independence between those who completed the study in Cantonese or a combination of languages, $t(67) = -4.35, p < .001$, but not between those who completed the study in English or a combination of languages, $t(57) = -2.46, p = .017$, and not between those who completed the study in Cantonese or English, $t(76) = -1.98, p = .05$. Those who completed the study in a combination of languages ($M = 5.18, SD = .48$) or English ($M = 4.86, SD = .50$) reported the highest levels of pre-prime independence, followed by those who completed the study in Cantonese ($M = 4.63, SD = .52$). To follow-up the main effect of study language, three independent samples t tests were conducted on the combined pre-prime self-construals, with a Bonferroni correction ($p = .05/3 = .0167$). A significant difference was found between those who completed the study in Cantonese and those who completed the study in a combination of languages, $t(67) = -2.53, p = .014$, but not between those who completed the study in Cantonese and those who completed the study in English, $t(76) = -.012, p = .90$, nor between those who completed the study in English and those who completed the study in a combination of languages, $t(57) = -2.38, p = .021$. Those who completed the study in a combination of languages ($M = 5.09, SD =$

.37) and those who completed the study in English ($M = 4.86, SD = .37$) reported the highest levels of baseline self-construals, followed by those who completed the study in Cantonese ($M = 4.85, SD = .39$).

Given the pre-prime differences in self-construals, a three (study language) by two (condition) by two (post-prime self-construals) ANOVA was conducted to examine differences between study languages on post-prime self-construals. Similar to the analysis of pre-prime self-construals by study language, a significant two-way interaction between post-prime self-construals and study language was found, $F(2, 97) = 3.51, p = .03$, as well as a significant main effect of study language, $F(2, 97) = 3.57, p = .03$. No other interactions or effects were found to be significant, including the interaction between self-construals, condition, and study language ($2, 97) = .65, p = .53$, the interaction between self-construals and condition, $F(1, 97) = .31, p = .58$, the interaction between condition and study language, $F(2, 97) = .21, p = .81$, the main effect of self-construals, $F(1, 97) = .36, p = .55$, and the main effect of condition, $F(1, 97) = 2.10, p = .15$. Follow-up one-way ANOVA's between study languages for each post-prime self-construal were conducted. Once again, a significant effect of study language was found for post-prime independence, $F(2, 102) = 6.05, p < .01$, but not interdependence, $F(2, 102) = 1.98, p = .14$. Follow-up independent t tests with a Bonferroni correction ($p = .05/4 = .0125$) revealed significant differences between those who completed the study in Cantonese and those who completed the study in a combination of languages, $t(67) = -3.27, p = .002$, and between those who completed the study in English and those who completed the study in a combination of languages, $t(57) = -2.93, p = .005$, but not between those who completed the study in Cantonese and those who completed the study

in English, $t(76) = -.38, p = .71$. Participants who completed the study in a combination of languages had the highest post-prime independent self-construals ($M = 5.18, SD = .48$), followed by those who completed the study in English ($M = 4.81, SD = .48$) and in Cantonese ($M = 4.77, SD = .52$). In other words, the pattern in post-prime self-construals between study languages was the same as for pre-prime self-construals. However, the difference between those who completed the study in a combination of languages and those who completed the study in English became significant post-prime. To follow-up the main effect of study language, three independent samples t tests with a Bonferroni correction ($p = .05/3 = .0167$) were conducted on the combined post-prime self-construals. A significant difference was found between those who completed the study in English and those who completed the study in a combination of languages, $t(57) = -2.53, p = .014$, but not between those who completed the study in Cantonese and those who completed the study in a combination of languages, $t(67) = -1.97, p = .05$, nor between those who completed the study in Cantonese and those who completed the study in English, $t(76) = 1.04, p = .30$. Those who completed the study in a combination of languages ($M = 5.10, SD = .48$) reported the highest levels of overall post-prime self-construals, followed by those who completed the study in Cantonese ($M = 4.90, SD = .37$) and those who completed the study in English ($M = 4.81, SD = .41$).

In order to better understand the small differences between pre- and post-prime self-construals among study languages, an investigation of post-prime self-construals controlling for pre-prime self-construals, was conducted. A three (study language) by two (condition) by two (post-prime self-construals) mixed factorial ANCOVA controlling for pre-prime self-construals was attempted, but the model violated the

assumption of homogeneity of regression slopes due to significant interactions between the within-subjects factor (post-prime self-construals) and each covariate, $F(1, 85) = 81.62, p < .001$ (pre-prime interdependence covariate), $F(1, 85) = 68.93, p < .001$ (pre-prime independence covariate). As such, two three (study language) by two (condition) ANCOVAs were conducted, one for each post-prime self-construal, controlling for the respective pre-prime self-construal. While the covariate was significant for both ANCOVAs, $F(1, 96) = 120.51, p < .001$ (controlling for pre-prime independence), $F(1, 96) = 200.34, p < .001$ (controlling for pre-prime interdependence), none of the interactions or main effects were significant for either ANCOVA. Post-prime independence: study language by condition, $F(2, 96) = .39, p = .68$, main effect of condition, $F(1, 96) = .51, p = .48$, or main effect of study language, $F(2, 96) = 1.57, p = .21$. Post-prime interdependence: study language by condition, $F(2, 96) = .21, p = .81$, main effect of condition, $F(1, 96) = 1.67, p = .20$, or main effect of study language, $F(2, 96) = .46, p = .63$.

These results suggested that the post-prime differences in self-construals between study languages could likely be attributed to the pre-prime differences in self-construals and not to a priming effect. However, paired samples t tests with a Bonferroni correction ($p = .05/2 = .025$) were conducted pre- to post-prime for each self-construal by study language, to further examine this suggestion. The only significant difference pre- to post-prime was found for those who completed the study in Cantonese, on independent self-construals, $t(43) = -2.31, p = .025$. Individuals who completed the study in Cantonese reported higher levels of independence post-prime ($M = 4.77, SD = .52$) than pre-prime ($M = 4.63, SD = .52$). The rest of the comparisons were not found to be significant, $t(43)$

= .68, $p = .50$ (Cantonese: interdependence), $t(33) = 1.16$, $p = .25$ (English: interdependence), $t(33) = 1.32$, $p = .20$ (English: independence), $t(24) = -.39$, $p = .70$ (mixed language: interdependence), $t(24) = -.03$, $p = .98$ (mixed language: independence). The effects of study language on levels of rumination and avoidance were examined by conducting univariate ANOVA's. No differences were found among languages on levels of rumination, $F(2, 100) = 2.01$, $p = .14$, total avoidance, $F(2, 100) = .56$, $p = .57$, or avoidant coping, $F(2, 100) = 1.67$, $p = .19$.

Taken together, these results suggest that while those who completed the study in Cantonese reported somewhat higher levels of independence post-prime than pre-prime, study language did not appear to have a strong, predictable, or uniform priming effect. In addition, this priming effect was not evident on levels of rumination or avoidance. The results also suggest that those who chose to complete the study in a combination of languages had pre-existing higher levels of independence than those who chose to complete the study in Cantonese. A graphic depiction of these results is presented in Figures 3 and 4.

Study 2: Cognitive Vulnerability to Depression across Cultures

Rumination. A three (sample) by two (condition) between-subjects ANOVA was conducted to examine the predictions with regard to rumination. A significant main effect of sample, $F(2, 297) = 4.48$, $p = .01$, was found, and the two-way interaction between sample and condition, $F(2, 297) = 2.70$, $p = .07$, was nearly significant. No significant main effect of condition was found, $F(1, 297) = 1.28$, $p = .26$. Levene's test was significant for this analysis, $F(5, 297) = 3.86$, $p = .002$, indicating that the assumption of homogeneity of variance was violated. Several transformations were

Figure 3

Mean pre- to post-prime independent self-construals for Chinese-Canadians, by language in which the study was completed

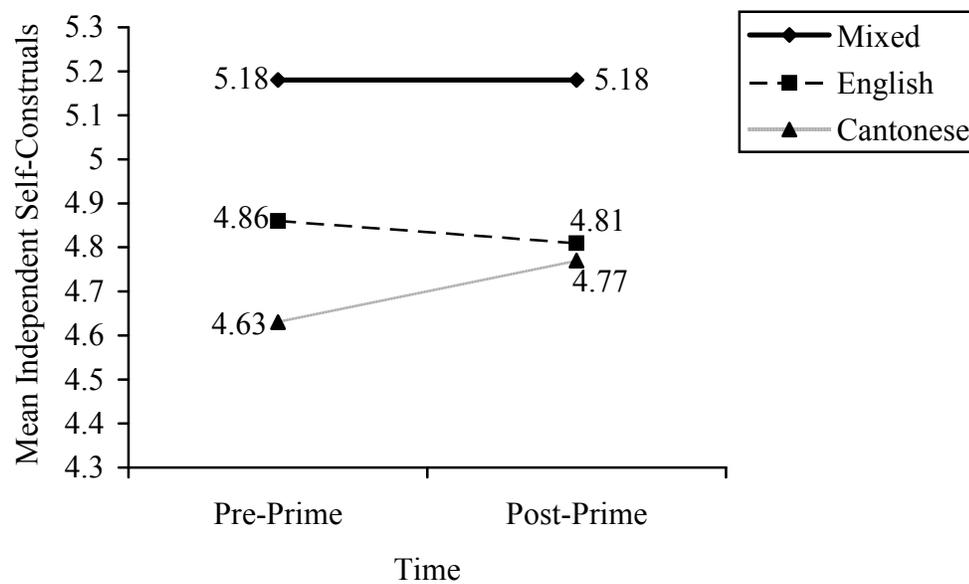
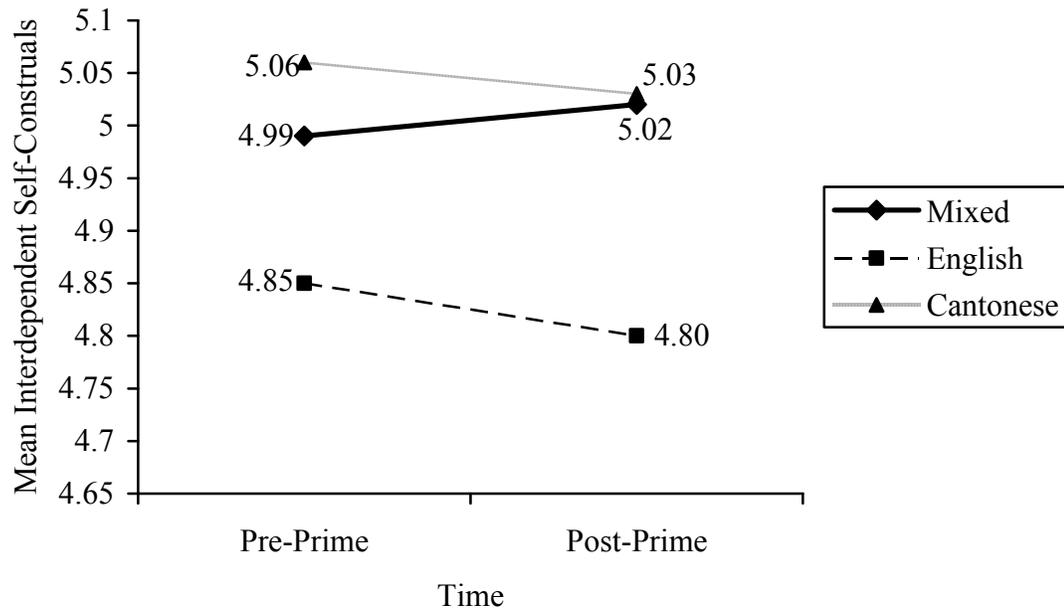


Figure 4

Pre- to post-prime interdependent self-construals for Chinese-Canadians, by language in which the study was completed



performed on the data (log, square root, and reciprocal transformations) but none resulted in equal variances across groups for sample. Although the large and near equivalent group sizes suggest that the ANOVA is robust to heterogeneity of variance (Glass, Peckham, & Sanders, 1972), these results were interpreted with caution. The significant main effect of sample was followed up with independent samples *t* tests with a Bonferroni correction ($p = .05/3 = .0167$). A significant difference was found between the Hong Kong Chinese and Euro-Canadians, $t(183.13) = -2.83, p = .01$ (equal variances not assumed), but not between the Chinese-Canadians and Euro-Canadians, $t(187.44) = -1.75, p = .08$ (equal variances not assumed), nor between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 1.23, p = .22$. The Euro-Canadians ($M = 2.15, SD = .63$) and Chinese-Canadians ($M = 2.01, SD = .49$) reported the highest levels of rumination, followed by the Hong Kong Chinese ($M = 1.93, SD = .47$).

Given the established relationship between depressive symptoms and rumination, as well as significant, moderate to large, positive correlations between depressive symptoms and levels of rumination in the present study (see Appendix N), a three (sample) by two (condition) ANCOVA was performed to determine whether the main effect of sample was significant for levels of rumination when depressive symptoms were entered as a covariate. The covariate, depressive symptoms, was significantly related to levels of rumination, $F(1, 296) = 119.78, p < .001$. The significant main effect of sample on levels of rumination remained and in fact increased after controlling for the effect of depressive symptoms, $F(2, 296) = 22.22, p < .001$. The two-way interaction between sample and condition, $F(2, 296) = 1.75, p = .18$, and the main effect of condition, $F(1, 296) = .02, p = .89$, both remained non-significant. Follow-up independent *t* tests

controlling for depressive symptoms, with a Bonferroni correction ($p = .05/3 = .0167$), revealed significant differences between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 2.89, p = .004$, between the Chinese-Canadians and Euro-Canadians, $t(201) = -4.05, p < .001$, and between the Hong Kong Chinese and Euro-Canadians, $t(198) = -6.63, p < .001$. The pattern of results therefore remained the same as prior to controlling for depressive symptoms, but all differences between groups became significant; the Euro-Canadians reported the highest levels of rumination ($M = 2.26, SD = .46$), followed by the Chinese-Canadians ($M = 2.01, SD = .46$), and the Hong Kong Chinese ($M = 1.82, SD = .46$). These results were interpreted with caution as the assumption of independence between the covariate and the independent variable was not met, and the Levene's test for the omnibus ANCOVA was also significant, $F(5, 297) = 3.52, p < .01$. However, as above, the large and near equivalent group sizes suggested that the ANCOVA was robust to heterogeneity of variance (Glass, Peckham, & Sanders, 1972).

Avoidance. In order to examine the predictions with regard to avoidance, data from the CBAS and the CCCS avoidance coping subscale were analyzed. A three (sample) by two (condition) between-subjects multivariate analysis of variance (MANOVA) on the data from the CBAS subscales revealed one significant main effect for sample, on the behavioural-nonsocial subscale, $F(2, 297) = 4.52, p = .01$. The MANOVA also revealed a trend toward significance for a main effect of sample on the cognitive social subscale, $F(2, 297) = 2.75, p = .07$. Table 7 provides a summary of the results of the omnibus MANOVA. Follow-up independent samples t tests with a Bonferroni correction ($p = .05/3 = .0167$) revealed a significant difference between the Chinese- and Euro-Canadians, $t(201) = 3.00, p < .01$ on behavioural-nonsocial

Table 7

Results of the omnibus MANOVA and MANCOVA for the CBAS avoidance subscales

		MANOVA			MANCOVA		
Dependent							
	Variable	<i>df</i>	<i>F</i>	<i>p</i>	<i>df</i>	<i>F</i>	<i>p</i>
CESD	CBASBs	-	-	-	1, 296	43.96	< .001
	CBASBn	-	-	-	1, 296	44.56	< .001
	CBASCs	-	-	-	1, 296	58.23	< .001
	CBASCn	-	-	-	1, 296	63.74	< .001
Sample	CBASBs	2, 297	1.12	.33	-	-	-
	CBASBn	2, 297	4.52	.01	1, 296	3.37	.04
	CBASCs	2, 297	2.75	.07	1, 296	10.45	< .001
	CBASCn	2, 297	.50	.61	1, 296	5.70	< .01
Condition	CBASBs	1, 297	1.96	.16	-	-	-
	CBASBn	1, 297	.55	.46	1, 296	.00	.95
	CBASCs	1, 297	2.12	.15	1, 296	.56	.46
	CBASCn	1, 297	.60	.44	1, 296	.00	.98

Note. MANOVA = multivariate analysis of variance; MANCOVA = multivariate analysis of covariance; CBASBs = Cognitive-Behavioural Avoidance Scale – Behavioural Social; CBASBn = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; CBASCs = Cognitive-Behavioural Avoidance Scale – Cognitive Social; CBASCn = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social.

Table 7 (continued)

Results of the omnibus MANOVA and MANCOVA for the CBAS avoidance subscales

		MANOVA			MANCOVA		
Dependent							
Variable		<i>df</i>	<i>F</i>	<i>p</i>	<i>df</i>	<i>F</i>	<i>p</i>
Sample*Condition	CBASBs	2, 297	1.26	.28	-	-	-
	CBASBn	2, 297	1.58	.21	1, 296	1.96	.14
	CBASCs	2, 297	.62	.54	1, 296	.87	.42
	CBASCn	2, 297	1.75	.18	1, 296	1.54	.23

Note. MANOVA = multivariate analysis of variance; MANCOVA = multivariate analysis of covariance; CBASBs = Cognitive-Behavioural Avoidance Scale – Behavioural Social; CBASBn = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; CBASCs = Cognitive-Behavioural Avoidance Scale – Cognitive Social; CBASCn = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social.

avoidance. The differences between the Hong Kong Chinese and Euro-Canadians, $t(198) = 1.55, p = .12$, and between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 1.50, p = .39$, were not significant. The Chinese-Canadians ($M = 2.35, SD = .71$) reported the highest levels of behavioural-nonsocial avoidance, followed by the Hong Kong Chinese ($M = 2.20, SD = .73$) and Euro-Canadians ($M = 2.04, SD = .80$). Table 8 provides a summary of the means and standard deviations for each subscale by sample, and notation of the significant differences among the samples on each subscale. A three (sample) by two (condition) between-subjects ANOVA was also conducted for the CBAS total mean score across subscales, which did not reveal any significant interactions or main effects: $F(2, 297) = 1.52, p = .22$ (interaction between sample and condition), $F(1, 297) = 1.66, p = .20$ (main effect of condition), $F(2, 297) = 1.43, p = .24$ (main effect of sample).

Given the established relationship between depressive symptoms and avoidance, as well as significant, small to large, positive correlations between depressive symptoms and avoidance in the present study (see Appendix N), a three (sample) by two (condition) MANCOVA was performed, to determine whether the main effect of sample for the CBAS avoidance subscales would be significant when depressive symptoms were entered as a covariate. The behavioural-social avoidance subscale violated the assumption of homogeneity of regression slopes and was therefore not interpreted further. Depressive symptoms were significantly related to the other subscales of the CBAS, and the effect of sample became significant for all of these subscales after controlling for the effects of depressive symptoms. Table 7 provides a summary of the omnibus MANCOVA results. Follow-up independent t tests controlling for depressive symptoms, with a Bonferroni

Table 8

Means (standard deviations) and significant differences between samples on avoidance scales

	Chinese-Canadians		Hong Kong Chinese		Euro-Canadians	
	No Covariate	Covariate	No Covariate	Covariate	No Covariate	Covariate
CBASBS	1.96 (.79)	-	1.81 (.73)	-	1.84 (.81)	-
CBASBN	2.35 (.71) ^a	2.34 (.70) ^b	2.20 (.73)	2.10 (.71) ^b	2.04 (.80) ^a	2.14 (.71)
CBASCS	1.93 (.70)	1.92 (.67) ^a	1.73 (.65)	1.62 (.68) ^{ab}	1.94 (.81)	2.06 (.68) ^b
CBASCN	1.83 (.69)	1.82 (.62)	1.76 (.62)	1.65 (.64) ^a	1.85 (.74)	1.96 (.64) ^a
CBASTot	2.02 (.63)	2.01 (.56) ^a	1.87 (.89)	1.77 (.57) ^{ab}	1.92 (.65)	2.03 (.57) ^b
CCCSAc	3.32 (.68)	-	3.43 (.61) ^a	-	3.11 (.70) ^a	-

Note. The letters in superscript indicate where the significant differences between samples lie for each construct.

correction ($p = .05/3 = .0167$), revealed a significant difference on the behavioural non-social subscale between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 2.38, p = .017$, but not between the Chinese-Canadians and Euro-Canadians, $t(201) = 1.99, p = .05$, nor between the Hong Kong Chinese and Euro-Canadians, $t(198) = -.38, p = .70$. Significant differences were found on cognitive-social avoidance between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 3.18, p = .002$, and between the Hong Kong Chinese and Euro-Canadians, $t(198) = -4.47, p < .001$, but not between the Chinese-Canadians and Euro-Canadians, $t(201) = -1.47, p = .14$. A significant difference was also found between the Hong Kong Chinese and Euro-Canadians on cognitive non-social avoidance, $t(198) = -3.37, p = .001$, but not between the Chinese-Canadians and Hong Kong Chinese, $t(201) = 1.93, p = .06$, nor between the Chinese- and Euro-Canadians, $t(201) = -1.57, p = .12$. Table 8 provides a summary of the means and standard deviations for each subscale by sample, and notation of the significant differences among samples on each subscale.

A three (sample) by two (condition) ANCOVA was also conducted to determine whether any significant effects would be found for the CBAS total avoidance score after controlling for depressive symptoms. Depressive symptoms were significantly related to the total avoidance score, $F(1, 296) = 75.62, p < .001$, and the main effect of sample became significant after controlling for depressive symptoms, $F(2, 296) = 6.15, p = .002$, but the two-way interaction between sample and condition, $F(2, 296) = 2.00, p = .14$ and the main effect of condition, $F(1, 296) = .23, p = .63$ remained non-significant. Follow-up independent t tests controlling for depressive symptoms and with a Bonferroni correction ($p = .05/3 = .0167$) revealed significant differences between the Chinese-

Canadians and Hong Kong Chinese, $t(201) = 2.48, p = .014$, and between the Hong Kong Chinese and Euro-Canadians, $t(198) = -3.11, p = .002$, but not between the Chinese-Canadians and Euro-Canadians, $t(201) = -.74, p = .46$. The Euro- and Chinese-Canadians reported the highest levels of total avoidance, followed by Hong Kong Chinese.

A three (sample) by two (condition) between-subjects ANOVA was conducted to examine the data from the avoidance subscale of the CCCS. This analysis revealed a significant main effect of sample, $F(2, 297) = 6.17, p < .01$, but neither for the main effect of condition, $F(1, 297) = 1.06, p = .30$, nor the sample by condition interaction, $F(2, 297) = .17, p = .84$. Follow-up independent samples t tests with a Bonferroni correction ($p = .05/3 = .0167$) revealed a significant difference between the Hong Kong Chinese and Euro-Canadians, $t(198) = 3.51, p < .01$, but not between the Chinese-Canadians and Hong Kong Chinese, $t(201) = -1.28, p = .20$, nor between the Chinese-Canadians and Euro-Canadians, $t(201) = 2.16, p = .03$. The pattern of results demonstrated that the Hong Kong Chinese participants reported the highest levels of avoidance, followed by the Chinese- and Euro-Canadians. A three (sample) by two (condition) ANCOVA was performed to determine whether the main effect of sample for avoidant coping was significant when depressive symptoms were entered as a covariate, given significant, moderate and positive correlations between depressive symptoms and avoidance as assessed by the CCCS for the Chinese- and Euro-Canadians. However, both the main effect of sample and the sample by condition interaction violated the assumption of homogeneity of regression slopes and thus were not interpreted further. Depressive symptoms were significantly related to avoidant coping, $F(1, 296) = 27.56, p$

< .001. However, the main effect of condition, $F(1, 296) = .25, p = .62$, remained non-significant.

The relationships between self-construals and cognition. In order to test the predictions about the relationships among self-construals, rumination and avoidance, Pearson correlations were first examined between the self-construals and cognitive processes (see Appendix 2). Baseline self-construals were utilized in these analyzes rather than post-prime self-construals, due to the inconsistent priming effects across samples. Contrary to prediction, no significant associations were found between pre-prime independence and levels of rumination, for any of the samples. While pre-prime interdependence was not significantly associated with avoidance for the Chinese-Canadian and Hong Kong Chinese samples, significant small to moderate and positive associations were found between pre-prime interdependence and avoidance (for both the CBAS and CCCS) for the Euro-Canadian sample. In addition, significant small to moderate and negative associations were found between pre-prime independence and avoidance (for all CBAS subscales) for the Euro-Canadian sample. Significant small and negative associations were found between behavioural non-social avoidance and pre-prime independence for both the Chinese-Canadian and Hong Kong Chinese samples.

In order to further explore the association between avoidance and pre-prime self-construals for Euro-Canadians, blocked linear regression was performed with pre-prime interdependence entered as a predictor in the first block, pre-prime independence entered as a predictor in the second block, and the CBAS total avoidance score entered as the dependent variable. Both steps of the model were significant, $F(1, 98) = 9.63, p = .003$, $F(1, 97) = 7.72, p = .001$, and R^2 change was also significant, $F(1, 97) = 5.38, p = .02$.

The first model demonstrated that interdependence accounted for 8.9% of the variance in avoidance and the second model demonstrated that independence contributed an additional 4.8% of variance to the model. All relevant statistics for both models are presented in Table 9. However, the second model was unreliable and therefore not generalizable beyond the present sample due to violating the assumption of homoscedasticity, as observed by funnelling in the residual scatterplots and the partial regression plots. In addition, despite the fact that the tolerance and VIF values were within acceptable limits, the variance proportions suggested collinearity within the data. Last, some small deviations from normality were observed.

Although interdependence and independence largely did not correlate with levels of avoidance and rumination among Chinese-Canadians, acculturation did; significant small and positive correlations were found between rumination and Mainstream Culture, between avoidant coping and Heritage Culture, and between Heritage Culture and behavioural non-social avoidance. Significant associations were not found between levels of rumination/avoidant coping and acculturation for the Hong Kong Chinese, but several associations were found for avoidance (CBAS); small to moderate significant negative associations were found between the CBAS subscales and total score and Mainstream Culture, and a significant negative association was found between Heritage Culture and cognitive non-social avoidance.

Ancillary Analyses

Cross-Cultural Coping Scale. No *a priori* hypotheses were generated for the following analyses. Three (sample) by two (condition) between-subjects ANOVAs were conducted to examine the data from each of the other two subscales of the Cross-Cultural

Table 9

Linear regression for pre-prime self-construals predicting avoidance for Euro-Canadians

	Adjusted R^2	B	$SE B$	95% CI for B	β
Step 1	.08				
Interdependence		.32	.10	[.12 - .53]	.30**
Step 2	.12				
Interdependence		.24	.11	[.03 - .46]	.22*
Independence		-.27	.12	[-.50 - -.04]	-.23*

Note. $R^2 = .089$ for Step 1, $\Delta R^2 = .048$ for Step 2 ($p < .05$). * $p < .05$, ** $p < .01$

Coping Scale (CCCS): Collective Coping and Engagement Coping. A significant main effect of sample was found for Collective Coping, $F(2, 297) = 17.40, p < .001$, but neither for the main effect of condition, $F(1, 297) = .37, p = .55$, nor the sample by condition interaction, $F(2, 297) = .62, p = .54$. Follow-up independent t tests with a Bonferroni correction ($p = .05/3 = .0167$) revealed that the Chinese-Canadians ($M = 3.93, SD = .80$) and Hong Kong Chinese ($M = 3.84, SD = .76$) endorsed significantly higher levels of Collective Coping than the Euro-Canadians ($M = 3.32, SD = .82$), $t(201) = 5.41, p < .001$, $t(198) = 4.64, p < .001$, respectively. The comparison between the Chinese-Canadians and Hong Kong Chinese was not significant, $t(201) = .88, p = .38$. With regard to Engagement Coping, no significant interaction, $F(2, 297) = 1.09, p = .34$, or main effects, $F(2, 297) = .54, p = .58$ (sample), $F(1, 297) = 2.42, p = .12$ (condition), were found. The Levene's statistic however was significant, $F(5, 297) = 3.61, p < .01$. As such, several transformations were performed on the data (natural log, square root, and reciprocal transformations) but none resulted in equal variances across groups for sample. Although the large and near equivalent group sizes suggest that the ANOVA is robust to heterogeneity of variance (Glass, et al., 1972), these results were interpreted with caution.

The relationships between cognition and depressive symptoms across cultures. Although the links between rumination and depression, and avoidance and depression are established in Western samples, the limited literature on rumination and avoidance in non-Western samples is mixed. The present research found significant positive associations between these cognitive styles and depressive symptoms in all three samples. Specifically, small to medium significant positive associations were found

between depressive symptoms and avoidance (CBAS and CCCS) for the Chinese-Canadian sample, whereas medium to large significant positive associations were found between depressive symptoms and avoidance (CBAS and CCCS) for the Euro-Canadian sample. Small to medium and significant positive associations were also found between depressive symptoms and avoidance for the Hong Kong Chinese sample, but only as assessed by the CBAS. Large significant positive associations were found between depressive symptoms and levels of rumination for all three samples. In order to further investigate the relationships between these constructs across samples, the predictive ability of levels of rumination and avoidance with regard to depressive symptoms was examined through a series of multiple regression analyses. The RRS total score (rumination) and the CBAS total score (avoidance) were forced into the regression model simultaneously as predictors of depressive symptoms (CESD), for each sample separately. In addition, the RRS total score and the CCCS avoidant coping score were forced into the model simultaneously as predictors of depressive symptoms, for each sample separately. While rumination has more frequently been associated with depression than avoidance in the literature, the relative contribution of each when directly compared is unclear, particularly among Chinese. Without a theoretical rationale to support a particular order of entry with hierarchical regression, a forced entry regression method was used. Both models were found to account for a significant amount of variance in depressive symptoms in each sample, ranging from 29% to 40%, as denoted by R^2 in Table 10. The β -values in Table 10 indicate the degree to which each predictor affected the outcome, while holding the contribution of the other constant. Levels of rumination positively and significantly contributed to each model, and contributed

Table 10

Linear regression for avoidance and rumination predicting dysphoria, by sample

Sample	Variable	R^2	Adjusted R^2	B	$SE B$	95% CI for B	β
Chinese-Canadians	RRS	.39***	.38	.49	.09	[.32 - .66]	.48***
	CBASTot			.20	.07	[.07 - .33]	.25**
	RRS	.40***	.39	.50	.08	[.34 - .66]	.50***
	CCCSAc			.20	.06	[.08 - .32]	.27**
Hong Kong-Chinese	RRS	.39***	.37	.46	.07	[.33 - .59]	.56***
	CBASTot			.11	.05	[.00 - .22]	.17*
	RRS	.38***	.36	.50	.07	[.37 - .63]	.61***
	CCCSAc			.08	.05	[-.02 - .18]	.13
Euro-Canadians	RRS	.39***	.38	.18	.07	[.04 - .31]	.24*
	CBASTot			.33	.07	[.19 - .46]	.46***
	RRS	.29***	.28	.32	.06	[.20 - .45]	.44***
	CCCSAc			.15	.06	[.03 - .26]	.22*

Note. Chinese-Canadians ($N = 103$); Hong Kong Chinese ($N = 100$); Euro-Canadians ($N = 100$); RRS = Ruminative Responses Subscale; CBASTot = Cognitive-Behavioural Avoidance Scale Total Score; CCCSAc = Cross-Cultural Coping Scale – Avoidance Coping.

* = $p < .05$; ** = $p < .01$; *** = $p < .001$.

relatively more than avoidance across samples, with the exception of when entered with the CBAS for Euro-Canadians.

In large part, the regression analyses met the assumptions outlined in the Data Analysis Strategy section above. However, the data across regression models demonstrated small deviations from normality. As a result, the regression models may not be generalizable to other samples. Measures of cross-validation (i.e., the adjusted R^2 and confidence intervals) for each model, however, suggested that the generalizability of the models to the population is reasonable. Specifically, the adjusted R^2 indicates how much variance in the outcome would be accounted for had the data been drawn from the population associated with the sample (Field, 2009). The shift in values from R^2 to adjusted R^2 denoted in Table 10, demonstrated minimal shrinkage in the predictive power of each regression model between the sample and the population, suggesting reasonable generalizability of the model to the population. In addition, the confidence intervals of the unstandardized coefficients (B) for each regression model were relatively small and did not cross zero, indicating that the unstandardized coefficients in the model were close to what they would be in the population. For the Chinese-Canadian sample, a potential outlier was identified in both models (i.e., demonstrated a standardized residual greater than 3; Field, 2009) but was not determined to have a significant influence on the regression model upon examination of the corresponding Cook's Distance statistic, which was less than 1. As such, there was insufficient justification to remove the case and re-run the regression model.

Discussion

The broad purpose of the present research was to address the question, “does culture influence cognitive vulnerability to depression?” Two studies were performed, which utilized the same three samples of 100 Euro-Canadian, 103 Chinese-Canadian, and 100 Hong Kong Chinese adult participants, recruited primarily from the community. The first study examined self-construals, a proxy for culture as internalized by the individual, and tested a culture priming method to make direct and causal statements about the linkages between culture and cognitive vulnerability to depression. The primary purpose of the second study was to investigate the potential associations between culture and cognition related to depression. A brief overview of the findings for each study is provided below, followed by a detailed discussion of the findings for each study separately, in light of the literature. The strengths and limitations of each study are discussed within these sections, along with questions that arose from the findings and future directions for research. A final broad discussion with strengths, limitations, and conclusions is included last.

Study 1 provided partial support for the predictions regarding baseline self-construals. The Euro-Canadians and the Chinese-Canadians both reported greater independent self-construals than the Hong Kong Chinese, and the Chinese-Canadians reported higher levels of interdependence than the Euro-Canadians. In addition, the Hong Kong Chinese reported greater baseline interdependence than independence. The specific predictions for the Chinese-Canadians regarding associations between acculturation and baseline self-construals were largely supported, as Heritage Culture

was found to uniquely predict baseline interdependence and Mainstream Culture was found to uniquely predict baseline independence.

In general, the predicted effects of the culture prime procedure were not observed. The only shift in self-construals that occurred was for the Euro-Canadian sample, as this sample reported lower levels of interdependence post-prime than pre-prime, in both conditions. The pattern of baseline differences in self-construals among samples was thus largely maintained post-prime, except the Hong Kong Chinese sample reported greater levels of post-prime interdependence than the Euro-Canadian sample. No priming effects were observed on levels of rumination or avoidance; there were no between-condition differences across samples.

In an effort to explain the lack of priming effects, the written material for the culture prime was coded and analyzed. These findings revealed that participants followed the instructions for each condition, across samples. However, while participants in the individualism condition discussed concepts related to independence to a greater extent than concepts related to interdependence, the opposite was not true for the collectivism condition. In addition, only the Euro-Canadians discussed more concepts related to independence in the individualism condition than the collectivism condition, and more concepts related to interdependence in the collectivism condition than the individualism condition. In other words, the task instructions and the generation of concepts specifically related to independence and interdependence were disconnected. In addition, the Euro-Canadians discussed more concepts overall than the Chinese samples, as well as more concepts related to independence. Both the Euro-Canadians and the Hong Kong Chinese discussed more concepts related to interdependence than the

Chinese-Canadians. Predictions were not made with regard to study language as a culture prime for the Chinese-Canadians, but the potential effects were investigated. Study language was not found to have a predictable or uniform priming effect on self-construals and no differences were found on levels of rumination or avoidance by study language. However, those who completed the study in Cantonese reported an increase in independent self-construals from pre- to post-prime.

Given that the culture prime procedure did not result in the predicted effects, baseline self-construals were used as a gauge of culture as internalized by the individual for the remainder of the analyses. The primary predictions for Study 2 were that a greater endorsement of interdependent self-construals would be associated with a greater endorsement of avoidance, and conversely that a greater endorsement of independent self-construals would be associated with a greater endorsement of rumination, across samples. These predictions were partially supported, but for the Euro-Canadian sample only. Within that sample, greater interdependence was associated with greater avoidance, and greater independence was associated with less avoidance. The only suggestion of an association between levels of rumination or avoidance and self-construals for the Chinese samples was a significant negative association between behavioural-nonsocial avoidance and baseline independence for both groups.

Although little support was found for a direct association between self-construals and depression-related cognitive processes, several cross-cultural differences in cognition were found that were not predicted. For the Chinese-Canadians, greater Mainstream Cultural Identification was associated with greater rumination, and greater Heritage Cultural Identification was associated with greater endorsement of some types of

cognitive-behavioural avoidance. In terms of cross-cultural comparisons, the Euro-Canadians were found to report higher levels of rumination than the Hong Kong Chinese but differences were not found between the Euro-Canadians and the Chinese-Canadians, or between the Chinese-Canadians and the Hong Kong Chinese. When controlling for the differences in depressive symptoms among samples, differences in levels of rumination were found among all three samples; the Euro-Canadians endorsed the highest levels of rumination, followed by the Chinese-Canadians, and then the Hong Kong Chinese. In sum, the Euro-Canadians demonstrated higher levels of rumination than the Hong Kong Chinese whether or not depressive symptoms were controlled for.

Avoidance was examined as a multidimensional construct in the present study, which contributed to a complex set of findings. Differences were found among samples with regard to behavioural non-social avoidance, where the Chinese-Canadians reported greater behavioural non-social avoidance than the Euro-Canadians. However, no differences were found between the samples on behavioural social avoidance, cognitive non-social avoidance, cognitive social avoidance, nor on a composite of these avoidance subtypes. Differences were found between the samples on avoidant coping, where the Hong Kong Chinese reported higher levels of avoidant coping than the Euro-Canadians.

When the differences in levels of depressive symptoms among samples were controlled statistically, more differences emerged among the samples and the nature of the prior differences changed. First, there was a trend toward significance for behavioural non-social avoidance, where the Chinese-Canadians reported higher levels than the Hong Kong Chinese, instead of higher levels than the Euro-Canadians. In addition, the Euro-Canadians and Chinese-Canadians were found to endorse both higher

levels of cognitive social avoidance and higher levels of composite avoidance than the Hong Kong Chinese. Last, the Euro-Canadians were found to endorse higher levels of cognitive non-social avoidance than the Hong Kong Chinese. It was not possible to interpret the results for avoidant coping when controlling for depressive symptoms as the analysis violated an important statistical assumption. In sum, when not controlling for depressive symptoms, the samples were mostly equivalent on levels of avoidance though some aspects of avoidance were greater among the Chinese-Canadians and the Hong Kong Chinese. When controlling for depressive symptoms, the Euro-Canadians and Chinese-Canadians demonstrated higher levels of most types of cognitive-behavioural avoidance than the Hong Kong Chinese. Avoidant coping demonstrated a different pattern of cultural variation, suggesting that it may operate differently across samples.

In order to better understand the function of these cognitive processes across cultures, levels of avoidance and rumination were investigated as predictors of depressive symptoms within each sample, and no specific predictions were made. When compared with avoidant coping, levels of rumination were found to be a significant predictor of depressive symptoms and predicted depressive symptoms to a greater extent than avoidant coping across samples. In fact, for the Hong Kong Chinese sample, levels of rumination were found to be a unique predictor when entered with avoidant coping. Levels of rumination were also found to be significant predictor of depressive symptoms when compared with total cognitive-behavioural avoidance, and predicted depressive symptoms to a greater extent than total avoidance, but only for the Chinese-Canadians and Hong Kong Chinese. Conversely, levels of avoidance were found to predict depressive symptoms to a greater extent than levels of rumination for the Euro-

Canadians. In other words, while the Chinese samples reported less ruminative tendencies than the Euro-Canadians, ruminating was a relatively more maladaptive strategy for them than avoidance. While not a part of the hypotheses for the present study, the other two subscales of the Cross-Cultural Coping scale were also investigated across cultures and conditions. No differences were found by condition on either subscale, or by sample on the Engagement Coping subscale, but both the Hong Kong Chinese and the Chinese-Canadians endorsed greater levels of Collective Coping than the Euro-Canadians.

Study 1: Priming Culture

Baseline self-construals. Reviews of the self-construals literature have found inconsistencies across studies that present challenges to self-construals theory or to the measurement of self-construals (Levine et al., 2003; Matsumoto, 1999; Oyserman et al., 2002). In many instances, a simple lack of significant differences in self-construals have been found between East Asian and North American samples. Other studies have found differences seemingly incongruent with self-construals theory, such as equivalent levels of interdependence between Japanese and European American samples (Oyserman et al., 2002). In fact, some studies have found highly anomalous results; Kitayama et al. (2009) found that among samples of Germans, British, Americans, and Japanese, the Americans were the most interdependent and the Japanese were the least. In addition, they found that the Germans were the most independent, and the British were the least. Oyserman et al. commented that the generalizations they made about Americans being more independent and less interdependent than other cultures cannot be applied in all instances given the substantive number of exceptions to this pattern in the corpus of literature.

However, the findings from the present study largely followed predictions and supported self-construals theory.

As predicted, the Euro- and Chinese-Canadians both reported greater independence than the Hong Kong Chinese. However, a significant difference was not found between the Euro- and Chinese-Canadians suggesting roughly equivalent levels of independence among the two samples. The fact that the Chinese-Canadians exhibited equivalent levels of independence with the Euro-Canadians and greater independence relative to the Hong Kong Chinese may suggest the role of acculturation, which is to a certain extent supported by the current findings. Greater Mainstream Culture was associated with greater endorsement of independence, whereas no association was found between Heritage Culture and independence for the Chinese-Canadians. However, they endorsed Heritage Culture to a greater extent than they endorsed Mainstream Culture and they reported less Mainstream Culture than the Euro-Canadian sample. Thus, the Chinese-Canadians do not appear to have been a highly acculturated sample. In addition, the amount of variance accounted for in independence by Mainstream Culture was only 5.4%, which further suggests the role of other factors in self-construals for this group.

The present Chinese-Canadian sample may have differed from their counterparts in Hong Kong in ways that may have influenced their endorsement of independence. Many Chinese-Canadians immigrate to Canada in general and Calgary in particular, in order to provide their children with a Western education. The reasons for this decision are often two-fold: many believe that a Western education will increase critical and creative thinking (largely not perceived by this sample to be prioritized in the Hong Kong education system) and result in better job opportunities. In addition, although the present

sample did not appear to be highly acculturated, many immigrated to Calgary specifically (instead of Vancouver or Toronto for example) to increase their chances of integration into the broader community, due to the relatively smaller Chinese population here. In other words, the choice to immigrate and the reasons for this may indirectly reflect underlying support for independent self-construals among the Chinese-Canadians in the present study. In a similar vein, Kitayama et al. (2009) argued that North Americans differ from their Western European counterparts because the history of voluntary settlement in North America is associated with tasks that reflect independence such as self-preservation, self-promotion, personal initiative, creativity, and risk taking. In support of this contention, they found that North Americans endorsed independence to a greater extent than Western Europeans, exemplified through the measurement of implicit psychological tendencies. On the other hand, it is also possible that the Hong Kong Chinese in the present study valued the same aspects of Western society as the Chinese-Canadians, but did not have the financial means to immigrate to Canada; the Chinese-Canadians required a certain level of financial wealth in order to immigrate, particularly in light of the fact that in many cases they were simultaneously supporting a household in Canada and a household in Hong Kong. Of course, finances, reasons for immigration, and reasons for seeking a Western education were not assessed in the present study and so these potential explanations are speculative.

With regard to interdependence, the present results followed predictions and self-construals theory less closely. The Chinese-Canadians reported greater interdependence than the Euro-Canadians, as predicted. Although it was predicted that the Hong Kong Chinese would report greater interdependence than the Chinese-Canadians, the fact that

they reported equivalent levels of interdependence is not contrary to self-construals theory. However, the fact that the Hong Kong Chinese and Euro-Canadians reported equivalent levels of interdependence is counter-intuitive. Levine et al. (2003) suggested that substantive heterogeneity in the data across studies of self-construals, including anomalous results such as this, are indicative of the presence of confounding or moderating variables. They presented evidence of one such confound, namely “Western bias” that may be at least partially applicable to the present results. Specifically, they found that independent self-construals appear to follow theory more closely than interdependent self-construals, which is arguably the case in the present study. However, in support of “Western Bias” they also found that the two types of self-construals were more differentiated in Western samples than in Asian samples. In contrast, the present study found an opposite pattern of results; as predicted, the Hong Kong Chinese reported greater interdependence than independence but the Euro-Canadians reported roughly equivalent levels of both.

Brewer and Chen (2007) argued, based on research conducted by Schimmack, Oishi, and Diener (2005), that while the construct of individualism appears to be valid, the construct of collectivism is questionable. In fact, Brewer and Chen (2007) contended that an overarching conceptualization of collectivism is a misnomer and subsequently provided evidence for a theoretical distinction between relational collectivism and group collectivism. Several other authors have made similar statements (see Levine et al., 2003 for a summary). Brewer and Chen claimed that East Asians are more collectivistic than Westerners because they exhibit more relational collectivism, and the majority of items on individualism-collectivism scales refer to relational collectivism. However, they

contended that Americans (in particular) demonstrate more group collectivism than East Asians and are thus no less collectivistic, but rather are collectivistic in a different manner. Thus, they attributed anomalies in the extant research on collectivism to the lack of distinction in the conceptualization and measurement of sub-types of collectivism. Brewer and Chen distinguished self-construals as one definition of individualism-collectivism and indicated that the Self-Construals Scale (Singelis, 1994) comprises a balance of items tapping into relational collectivism (relational interdependence) and group collectivism (group interdependence). As such, the approximately equivalent levels of interdependence among the Hong Kong Chinese and Euro-Canadians in the present study may have been attributable to differential endorsement of items reflecting each of these constructs of interdependence between the two groups. In other words, the Euro-Canadians may have endorsed items reflecting group interdependence, whereas the Hong Kong Chinese may have endorsed items reflecting relational interdependence, leading to a seemingly equivalent amount of interdependence between the two groups. Due to an insufficiently large sample size, the present study did not employ factor analysis to confirm the factor structure of the SCS among samples and thus a division of interdependent self-construals between relational and group interdependence could not be investigated. Such an investigation could be a focus of future research.

It is also possible that the reference-group effect played a role in the current pattern of findings with regard to baseline self-construals. Reference-group effects “occur when responses to self-report items are based not on respondents’ absolute level of a construct but rather on their level relative to a salient comparison group” (Credé, Bashshur, & Niehorster, 2010). As such, responses on questionnaires may reflect how

we view ourselves in comparison to a relevant reference group. In the present study, each of the samples conceivably had a different reference group upon which to base their ratings of self-construals; the Hong Kong Chinese would likely have compared themselves with other Hong Kong Chinese, and the Euro-Canadians would likely have compared themselves with other Euro-Canadians. If the Hong Kong Chinese and Euro-Canadians did truly differ on interdependence, then this difference may have been masked by their use of different norms for interdependence based on comparison with separate reference groups. Heine, Lehman, Peng, and Greenholtz (2002) found similar results when the reference group effect was not controlled for in their studies. Conversely, the reference-group effect may have resulted in accurate comparative data with regard to the Chinese-Canadians because the reference groups of bicultural individuals tend to include members of both groups to whom they have had exposure (Heine et al.). In addition, all samples were aware that the study was being conducted in Canada and Hong Kong and thus some participants may have responded with a comparison between the two in mind. Thus, the results of the present study may accurately reflect the fact that the Chinese-Canadians were more independent than the Hong Kong Chinese and more interdependent than the Euro-Canadians. It is of note that social comparison is not the only process at play when a subjective Likert scale is completed (Heine et al.). If it were so, the cross-cultural differences found in the present study may have all been concealed.

The fact that the Chinese-Canadians reported the highest levels of self-construals overall and significantly more so than the Hong Kong Chinese, may have been due to the fact that they were influenced by both the greater salience of independence in Canada and

the greater salience of interdependence in Hong Kong. The lack of difference between independence and interdependence for the Chinese-Canadians may also be due to this dual influence; they rated both constructs to a similarly high extent. The lack of significant difference between interdependent and independent self-construals for the Euro-Canadian sample may have been partially due to the gender distribution. While only a slim majority of the Euro-Canadian sample were women (60%), Western women tend to report greater interdependence than Western men (e.g., Cross & Madson, 1997; Cross, Bacon, & Morris, 2000, as cited in Cross, Hardin, & Gercek-Swing, 2010). The greater levels of interdependence than independence for the study sample as a whole could have been expected given that two thirds of the sample demonstrated greater levels of interdependence than the other third, in one case significantly more so. The fact that the Euro-Canadians in the individualism-prime condition reported greater overall levels of self-construals compared with the Euro-Canadians in the collectivism-prime condition was difficult to interpret. There is little reason to believe that the greater overall endorsement of self-construals in this group had an impact on any of the outcome variables, particularly given no significant differences by condition on any of the other variables.

In sum, the results for baseline self-construals largely followed theory and prediction. The exceptions to this assertion were largely not counter-theoretical and may be explained by the bicultural nature of the Chinese-Canadian sample. The one finding that was counter-theoretical may have been due to the reference-group effect and as discussed below was rectified through priming.

The effect of the culture prime. Although research reported by Hong and colleagues (Hong, 2009; Hong et al., 2000; Hong et al., 2007) and Oyserman and colleagues (Oyserman, 2011; Oyserman & Lee, 2008; Oyserman et al., 2009) found support for the effectiveness of culture priming, not all studies with all populations, tasks, and outcome measures have produced similar effects. In fact, Oyserman and Lee (2008) noted the heterogeneity of results across the studies they reviewed. Of particular relevance, the majority of the studies reviewed in Oyserman and Lee's meta-analysis were conducted in the United States and in English. Thus, the evidence base for studies conducted in Chinese, and in China is minimal. Furthermore, they argued that self-construals are more difficult to prime among Asians than Westerners, particularly interdependent self-construals (Oyserman & Lee, 2008), though they did not define the source of this difficulty.

One of the culture priming tasks that has yielded the most consistent and robust effects (SDFP: Oyserman & Lee, 2008) was selected for the present study. It was modified for feasibility of administration within the present study design, as described in the method section above. Although deviations from the original task procedure are not uncommon (e.g., Chiao et al., 2009) and should have increased the potential for detecting effects, the impact of these specific modifications is unknown and may have contributed to the fact that only minimal priming effects were found. According to the situated cognition model of culture, culture may be primed in the moment by various contextual cues (Oyserman, 2011) and so differences across task administrations in the present study were a more likely culprit. For example, the fact that the study was conducted in varying sizes of small groups or with individual participants may have had an impact on the

findings. Theoretically, the contextual cue of completing the task in a small group would have been more likely to prime interdependence as compared to completing it individually, which would in turn have been more likely to prime independence. An examination of differences between administration formats (group versus individual) within each sample by condition, on each measure of post-prime self-construals, did not however yield evidence of such an effect.

Language was investigated for the Chinese-Canadian sample as a potential moderating factor in the priming results. Counter-intuitively, it was found that those who chose to complete the study in Cantonese reported greater independent self-construals post- than pre-prime. In addition, those who completed the study in a combination of languages had pre-existing higher levels of independence than those who chose to complete the study in Cantonese. No association was found between study language and condition and thus these effects were relatively evenly distributed between conditions. It is difficult to know the exact impact of these language effects on the overall priming results, but if they had played a significant role, an increase in independent self-construals could have been expected in both conditions, which was not observed. Assuming that self-construals are in fact orthogonal as proposed in the literature and that priming can have a separate impact on each, then there is no reason to believe that greater levels of independence or an increase in independence would have had an impact on ratings of interdependence. Other aspects of study administration (e.g., location) inevitably varied among samples given some of the practicalities of cross-cultural research. However, several steps were taken to standardize the procedure across samples and individual study administrations to the greatest extent possible.

Some concerns with the measurement of self-construals were also considered as potential contributing factors to the minimal priming effects observed. Despite its wide use, the Self-Construal Scale (SCS; Singelis, 1994) has been criticized in the literature. One of the identified problems with the SCS is that it has often only demonstrated adequate to low reliability (Cross, et al., 2010), as in the present study. Low scale reliability increases the possibility of measurement error, which could attenuate the detection of differences from pre- to post-prime. However, low scale reliability could also have attenuated the detection of differences among baseline self-construals, which does not appear to have been the case given results that largely followed predictions. A lack of consistency among the items within each subscale could also conceivably be due to the proposed multidimensional nature of the scale (Cross et al., 2010), such as the potential dual-factor nature of the interdependent subscale as discussed above.

Another potential difficulty with the SCS related to the study design. Participants completed the SCS both before and after the culture prime and thus if they purposefully attempted to respond in a similar fashion on the second administration, potential priming effects may have been masked. Several steps were taken to prevent this possibility. In an effort to create as much of a time lag as possible between the first and second administrations of the SCS, it was the first questionnaire administered in the protocol, followed by several other questionnaires prior to the culture prime, and then it was randomly administered among three other questionnaires post-prime. Also, study administrators were instructed to prompt participants to select the first response that came to mind and to provide responses as they applied in the moment, if questioned about the familiarity of the questions. Last, the format and aesthetics of the SCS were changed

between the first and second administration so that the presentation of the questionnaire would provide less of a cue to participants that they were answering the same set of questions a second time. Nonetheless, these efforts may not have been sufficient to prevent participants from attempting to answer as they had in the first instance, as opposed to answering as they would have genuinely in the moment. One way to avoid the need for a pre- to post-test measure to determine the effect of priming is to include a control group for comparison with the experimental groups. However, the use of control groups in culture research is contested due to the difficulty in establishing a true control group uninfluenced by one cultural frame or another (Oyserman & Lee, 2008).

Oyserman and Lee (2007) argued that the effect of the prime may be particularly clear if the prime evokes content similar to what is requested by the operationalization of self-concept (i.e., Self-Construal Scale). Oyserman and Lee (2008) stated that the SDFP primes relational collectivism, and as mentioned above, the SCS contains a balance of items that reflect both relational and group collectivism. Therefore, the detection of potential collectivism priming effects may have been attenuated due to the inclusion of items that were less relevant to the prime task. It is also possible that priming effects may have been observed if both relational and group collectivism had been primed, as in tasks such as the Sumerian Warrior Story (Trafimow et al., 1991), given that Oyserman and Lee (2008) found larger effects when both levels of collectivism were primed. However, these explanations do not assist in understanding the greater lack of priming effects for the individualism condition. In addition, as noted above it was not possible to conduct a factor analysis to confirm the multidimensional nature of the Self-Construal Scale with the present samples and thus such explanations are but speculative. Alternatively, based

on a series of unsuccessful priming studies, Levine et al. (2003) concluded that priming effects are not observed on self-construal scales because self-construal scales measure stable, trait-like constructs (in Western cultures at least). It should be noted, however, that the fact that many other studies have found priming effects on self-construal scales detracts from the strength of this assertion (Oyserman & Lee, 2008).

According to Oyserman and Lee (2007) it is necessary to demonstrate the impact of priming on conceptual knowledge (e.g., self-construals) before examining the impact of priming on procedural knowledge such as cognitive processes (e.g., rumination and avoidance). This assertion is relevant to the current research, given the proposed connection between self-construals and rumination/avoidance. However, others have argued that there is a disconnection between self-construals measured by self-construal scales and other psychological processes (Kitayama et al., 2009). In fact, Kitayama et al. (2009) argued that psychological processes, such as attention, are implicit indicators of cultural differences that follow predictions based on individualism and collectivism theories. As such, it was deemed possible that despite the lack of priming effects on self-construals, priming may have affected levels of rumination and avoidance, and so these potential effects were examined by comparing conditions. No such effects were detected; no differences were found on levels of rumination or avoidance by condition, across all of the samples. This finding suggests that Oyserman and Lee's (2007) assertion was accurate.

The variations in study administration described above may also have had an impact on the potential of finding priming effects on levels of rumination and avoidance. An examination of differences between administration formats (group versus individual)

within each sample by condition, on levels of avoidance, rumination, and avoidant coping, again did not yield strong evidence of such an effect. The effect of study language was also examined for the Chinese-Canadians on levels of avoidance, rumination, and avoidant coping, but no differences were found among the samples on any of these constructs. In sum, as with self-construals there is no evidence that situational or contextual variations in study administration had an impact on the potential for finding priming effects on levels of avoidance, rumination, and avoidant coping.

Given that the measures of rumination and cognitive-behavioural avoidance in the present study assessed trait dispositions, Levine et al.'s (2003) argument explained above may apply; these measures may not have been sufficiently sensitive to the potential state changes evoked by the culture prime. Alternatively, priming effects may not have been observed on levels of avoidance and rumination due to a lack of applicability between the cultural theories potentially evoked by the prime and these constructs. Research by Hong and colleagues (Hong, Benet-Martinez, Chiu, & Morris, 2003; Wong & Hong, 2002) has examined the boundary conditions of cultural influence and demonstrated that not only must the cultural construct (in this instance self-construals) be accessible, but it must be applicable in the context in order to impact cognition. In other words, in order to observe an impact on cognition there must have been congruence between the self-construals and these cognitive factors. Of course, that is an empirical question which Study 2 investigated, and thus this issue is discussed further below. It is noteworthy to mention that it is not possible to firmly conclude that priming did not have an effect on levels of rumination and avoidance in the present study, given that the study design did not include a prime control group, or pre- to post-prime measures of rumination and avoidance.

Multicultural populations can have different responses to culture primes than single culture populations. It has been found that some bicultural populations demonstrate a contrast response to the cued culture as opposed to the desired assimilation response, depending on how the cultures in question are cognitively represented (Hong et al., 2007). An assimilation response is congruent with the cued culture, whereas an incongruent response to the cue would represent a contrast response. Benet-Martínez, Leu, Lee, and Morris (2002) proposed that switching between different cultural frames (i.e., cultural frame-switching) in response to priming, is moderated by the perceived compatibility between the cultures. In a series of studies on Chinese Americans, Benet-Martínez et al. found that biculturals who perceived their cultural identities as compatible demonstrated assimilation responses to the culture prime, whereas, bicultural individuals who perceived their cultural identities as incompatible demonstrated contrast responses to the prime. Thus, individual differences in bicultural identity moderate the use of cultural knowledge in a priming paradigm. Further, Friedman, Liu, Chi, Hong, and Sung (2012) argued that priming is only effective among those who are high in bicultural identity integration. These arguments are similar to Oyserman's (2011) theory that sufficient exposure to both individualistic and collectivistic cultural frames is necessary for priming to work in any given sample. Thus, it is possible that priming effects were not observed in the present study due to a mix of contrast and assimilation responses to the prime that cancelled out effects, or because the participants across samples were not sufficiently high in bicultural identity integration. However, these explanations do not account for the fact that the Euro-Canadians demonstrated some priming effects.

Research by Chiao et al. (2009) using both the Sumerian Warrior Story and the SDFP has found cultural priming effects on neural activation by functional magnetic resonance imaging, despite the lack of post-prime differences between cultural priming groups on behavioural indicators. In other words, priming may occur at the neurological level even if it is not observed through behavioural measurements. Chiao et al (2009) argued that the lack of correspondence in their findings may have been due to reluctance on the part of the participants to disclose personal information or because participants may not have had access to knowledge about their self-construals and thus could not provide this information directly. If the lack of observed priming effects in the present study were due to a reporting bias (i.e., unwillingness to disclose personal information) or a lack of access to knowledge, a lack of effects may have been observed across analyses.

The coding and analysis of participants' written responses to the culture-prime may offer the most parsimonious explanation of the priming results. Both anecdotally and as reflected in the results of the coding analysis, the Euro-Canadians were more invested in the task; their responses were significantly more elaborated than the responses from the Hong Kong Chinese and the Chinese-Canadians. The act of spending time reflecting on oneself is arguably encouraged and valued in Canadian society. Interpreted from this perspective, whether the task required participants to write about their similarities or their differences with close others, the process of reflection still revolved around the self and thus may be an inherently individualistic task. Further to this point, the culture-priming task was more successful in eliciting independent concepts overall, given that in neither condition, across samples, did the participants discuss interdependent concepts to a greater extent than independent concepts. The reduction in

interdependence for the Euro-Canadians in both conditions may thus have been due to the self-focused nature of the task. In addition, interdependence is generally perceived to be the more flexible and malleable of the two constructs (Markus & Kitayama, 1991) and thus may have been more amenable to the situational priming in this instance. In concert with their less elaborated responses evidenced by the coding analyses, the Chinese-Canadians anecdotally expressed discomfort with the task, which may have been due to its self-focused nature (though this explanation is speculative). In other words, the self-focused nature of the task may have precluded significant involvement, and thereby diminished the potential for obtaining priming effects in the Chinese samples. The longer duration of the task than in previous administrations (i.e., 5 minutes versus 2 minutes) and the requirement to write versus think about the questions, may have further exacerbated these issues in the present study. Of note, at least one other study that required a written component with the SDFP did not observe priming effects on behavioural measures (Chiao et al., 2009).

The only suggestion of a potential priming effect across samples was found in the patterns of associations among constructs. Not only was there a shift in the pattern of associations for pre-priming versus post-priming self-construals in each sample, but the pattern of associations was also different between the conditions for each sample. With regard to the former shift, no obvious patterns were discernable. With regard to the latter, in some instances, the difference in patterns of associations seemed logical and potentially interpretable. For example, mirroring the differences that were found among the samples; negative associations were found between avoidance and independence (pre and post) for the Chinese-Canadians in the individualism-priming condition only, similar to

what was found for the Euro-Canadians as a whole. In other instances, the differences reflected aspects of the study predictions; for the Euro-Canadians, interdependence was associated with avoidance in the collectivism-prime condition only.

Some of the other associations may be explained by the culture-clash hypothesis (Caldwell-Harris & Ayçiçeği, 2006), which states that “a poor fit between personality and cultural demands is a risk factor for poor psychological health” (p. 355-356). For example, the positive association between depressive symptoms and heritage culture and between depressive symptoms and collective coping in the individualism-condition only, suggest that when independent as opposed to interdependent self-construals were made salient among Chinese-Canadians, heritage culture and collective coping (both more highly endorsed in this sample) became maladaptive. Similarly, a negative association was found between independence and depressive symptoms for the Euro-Canadians in the individualism-prime condition only. However, many of the differences in the patterns of associations between conditions were less logical. For example, independence was negatively associated with levels of rumination in the individualism-condition only for the Hong Kong Chinese. In addition, Heritage Culture was associated with Collective Coping and interdependence in the individualism-prime condition, but only for the Euro-Canadians. The differences in these patterns of associations suggest the possibility that the culture prime had an impact, although the nature of the impact is neither clear nor consistent. Although the lack of differences found between conditions on the demographic and descriptive variables suggests differences between conditions among samples may not have been pre-existing, it is also not possible to make a strong argument

for a priming effect without a full complement of pre- and post-prime measures for comparison.

In sum, the only priming effects observed were on measures of interdependent self-construals for the Euro-Canadians, and not as predicted. There are many potential reasons as to why clear priming effects were not observed, but the most parsimonious explanation results from the coding analyses. The Chinese samples may not have been sufficiently engaged in the task, perhaps due to its inherently self-focused nature, for the priming task to operate as theorized. Conversely, the Euro-Canadians' responses were sufficiently elaborated and priming effects were observed, though not as predicted, again perhaps due to the self-focused nature of the task. The purpose of conducting the priming manipulation was to increase the salience of self-construals in order to be able to make more causal attributions with regard to potential cultural variations in cognitive vulnerability to depression. In the absence of a clear priming effect, the baseline self-construals were used to examine the link between self-construals and cognitive vulnerability. It should however be noted that the pattern of self-construals, particularly considering the priming effect for the Euro-Canadians, followed predictions very closely and while the pattern did not entirely follow theory, it was also not counter-theoretical. In sum, independence was found to be approximately equivalent between the Euro- and Chinese-Canadians and both groups reported greater independence than the Hong Kong Chinese. Interdependence was found to be approximately equivalent between the Chinese-Canadians and Hong Kong Chinese, and both groups reported greater interdependence than the Euro-Canadians. The Hong Kong Chinese reported greater

interdependence than independence, the Euro-Canadians reported greater independence than interdependence, and the Chinese-Canadians reported equivalent levels of both.

Strengths and limitations. According to a comprehensive review by Oyserman and Lee (2008), few priming studies have explicitly compared priming effects across cultures. Thus, the present study exemplifies an advance in the corpus of priming literature with the inclusion not only of an international comparison but comparison with a minority sample. In addition, the large majority of studies to date have used undergraduate students, whereas the majority of participants in the present study were from the community. The vast majority of previous priming studies were also conducted in English, whereas the present study was conducted in both English and Chinese. Finally, the current samples were quite large which should have permitted the discovery of effects, if they were there to be observed.

In addition to the relative strengths of the current study with respect to the samples that were employed, several efforts were made to ensure the standardization of study administration across the different locations and samples. These efforts included frequent contact with the collaborators in Hong Kong and travel to Hong Kong to provide materials and discuss standardization of the procedures. These efforts toward standardization represent a significant strength of the study. Last, the priming task and the measure of self-construals were carefully selected and represent the most commonly used instruments in their respective fields. In addition, the SDFF has demonstrated moderate effects on the Self-Construals Scale (Singelis, 1994) in previous research and the effect of priming on newer measures has not yet been established.

Despite the strengths of the research, several limitations of the present study warrant consideration. Although the sample sizes of the present study were quite large, they were not large enough to conduct measurement equivalence analyses to ensure the generalizability of the measures to the Chinese samples. The SCS has been widely used and validated across the globe and so there is less of a concern about its applicability with the present samples, barring the issue discussed above about internal reliability. There is also less of a concern with the generalizability of the CCCS, VIA and CESD because the first of these measures was developed specifically for use with Asian samples, the second was validated on an Asian sample, and the latter has been widely used and validated among Chinese samples. However, the comparability of the VIA across samples was questionable considering the lower applicability to the Hong Kong Chinese and Euro-Canadian samples. In contrast, although the internal consistencies for the CBAS total scale and subscales were fair to excellent across samples, the generalizability of the original factor structure was not assessed for the Chinese-Canadian and Hong Kong Chinese samples which represents a limitation of the current research. The sample size for either group, while sufficient for cross-group analyses, precluded within-group factor analysis. Similarly, although the internal consistencies were excellent across samples for the RRS, the measurement equivalence for the RRS was not determined due to insufficiently large sample sizes. Without ensuring cross-cultural measurement equivalence, only tentative interpretations can be made of the cross-cultural data.

While significant efforts were made to ensure standardization, variability in study administration was allowed for in the protocol in order to maximize the feasibility of administration and subsequently participation. There is some suggestion in the results

that a reduction in this variability (i.e., more guidelines around choice of study language) may have increased the chances of finding priming effects. With regard to the coding scheme, inter-rater reliabilities were very high for most of the concepts, among the coders who analyzed the Hong Kong Chinese and Chinese-Canadian priming tasks, with the exception of the ratings for independent and interdependent concepts. The reliabilities for the two coders who rated the Euro-Canadian tasks were also somewhat lower across concepts. Therefore, although considerable confidence can be had in the ratings, there may have been some variability across raters.

Future directions. Several authors have suggested the need for the development of a more refined measure of self-construals (e.g., Harb & Smith, 2008). While attempts have been made to develop new measures (e.g., Harb & Smith, 2008), these have as yet failed to gain widespread use and the effects of culture priming on these measures have not yet been explored. Future research should compare and contrast the utility of newer measures with older and well-used measures such as the Self-Construals Scale in order to bridge the gap in the use and theoretical applications of these new measures. It is difficult to state concretely if the results of the present study are due to problems with the theory of priming, the SDF task itself, the modifications to the task for the purposes of the present study, the variability in study administration, the nature of the manipulation check, the applicability of the task and of self-construals to rumination and avoidance, or some combination of the above. Future research could therefore include a control group, a baseline measure of self-construals and a different measure for the manipulation check in an attempt to better elucidate the cause of any observed priming effects or lack thereof. Future research examining the effects of priming on cognitive vulnerability could

examine the relative endorsement of rumination versus avoidance within condition, as well as looking at the differential endorsement of each across conditions. In addition, empirical consideration could be given to the postulation herein that the self-reflective process of the SDFF is counter-productive for Chinese populations. For example, administration of the original SDFF could be compared with administration of the modified version used in the present study. In addition, administration of a less self-focused task such as the Sumerian Warrior Story (Trafimow et al., 1991) could be compared with the SDFF.

Study 2: Cognitive Vulnerability to Depression across Cultures

In the second study, potential associations between culture and cognitive vulnerability to depression were examined. Although there was some suggestion of a negative association between aspects of avoidance and independence for the Chinese samples, the lack of a consistent and clear pattern of significant correlations between self-construals and levels of rumination and avoidance suggests that self-construals may not be directly linked with cognitive vulnerability among Chinese. It is unknown whether there would have been a pattern had the culture prime clearly demonstrated an increased salience of self-construals across samples. However, some of the other findings point to the influence of culture on the endorsement of rumination and avoidance. To start, the Euro-Canadian sample demonstrated associations between greater interdependence and greater avoidance, and between greater independence and less avoidance. It therefore seems that the findings for the present study exemplify what can happen when a theory developed in the West is applied cross-culturally. In this instance, evidence for the theory was primarily found within the Western sample. As such, the results provide

incremental evidence of the need to investigate theories developed in the West with other cultures, and the need to consider non-Western theories in developing models of depression that are cross-culturally applicable.

Given that Canada is generally considered to be an individualistic society, it appears that greater endorsement of the less prevalent or incongruent self-construal (interdependence) is associated with greater use of a maladaptive coping strategy and the opposite is true for a greater endorsement of the congruent self-construal. In a similar vein, Caldwell-Harris and Ayçiçeği (2006) found that individuals who endorsed greater idiocentrism (a similar conceptualization to independence) reported fewer symptoms of psychiatric disorders but only in the United States, also an individualistic society. Based on these and other similar results, they proposed the personality-culture clash hypothesis. Although the present results did not demonstrate an association between interdependence and depressive symptoms they demonstrated an association between greater independence and less depressive symptoms. Correlational results such as these do not however imply causality and thus it is not possible to claim that interdependence confers a risk for avoidance or that independence is a protective factor against avoidance among Euro-Canadians. In a similar vein, Jose and Schurer (2010) found that idiocentrism exacerbated the relationship between maladaptive coping strategies, such as rumination, and maladjustment for New Zealand youth from a collectivist background (i.e., Maori). They cited Triandis' (1989, 1994, 1995) theory that behaviour inconsistent with the general interpersonal orientation of the larger group results in poor mental health outcomes (Jose & Schurer, 2010).

Some of the other findings from the present study suggest that an association exists between culture and cognitive vulnerability, beyond or unrelated to self-construals. For the Chinese-Canadian sample, there was a small association between a greater endorsement of Mainstream Cultural Identification and greater levels of rumination. Conversely, there were small associations between both avoidant coping and behavioural non-social avoidance and Heritage Cultural Identification. On the Vancouver Index of Acculturation (Ryder et al., 2000), Mainstream Cultural Identification was broadly termed “North American” and Heritage Culture was identified by the participants as “Chinese” or a close derivative thereof (e.g., Hong Kong). Thus, for the Chinese-Canadians a greater affiliation with North American culture was associated with greater levels of rumination and a greater affiliation with Chinese culture was associated with greater levels of avoidance. The findings with regard to acculturation and cognitive vulnerability were mixed for the Hong Kong Chinese and Euro-Canadian samples. It was difficult to interpret the pattern of associations for these samples because they represented the majority population in their respective countries and neither were recent immigrant samples, and so acculturation was not a relevant concept for them. Thus, their frame of reference to respond to the Vancouver Index of Acculturation was difficult to understand.

Rumination. The results of the comparisons among samples on levels of rumination also suggest that culture played a role. When controlling for depressive symptoms, the Euro-Canadians were found to report the highest levels of rumination, followed by the Chinese-Canadians and Hong Kong Chinese. Despite the lack of an explicit correlation between self-construals and levels of rumination, the pattern of baseline independent self-construals roughly mirrored the rumination findings. Thus,

there was an indirect association between greater independence and greater rumination. The present findings were however contrary to a small number of recent studies in this burgeoning area of investigation. Chang, Tsai, and Sanna (2010) contended that interdependent Asian Americans are motivated to engage in self-critical processes such as rumination, whereas independent European Americans are motivated to engage in self-enhancement processes incongruent with rumination. As they predicted, they found that a mixed sample of undergraduate Asian Americans reported greater rumination compared with their Euro-American counterparts, but they also reported greater depressive symptoms which were not controlled for in the analyses. Tsai, Chang, Sanna, and Herringshaw (2011) also found greater levels of both rumination and depressive symptoms among Asian American undergraduates as compared with Euro-American undergraduates, and did not control for depressive symptoms in their analyses. They predicted these differences based on the same theory as Chang et al. (2010), predicated on underlying (but not directly assessed) differences in self-construals between the two samples. However in both studies it is reasonable to expect that rumination would have been greater among participants with more depressive symptoms (i.e., the Asian Americans), based on the literature associating rumination with depression, and particularly considering the positive and medium to large associations between rumination and depressive symptoms reported in Chang et al. (2010). Another study that compared Euro-Canadian undergraduate students with a mixed sample of Asian-Canadian students found no differences between the samples on rumination, and neither were differences found between the samples on depressive symptoms (Prentice et al., 2013). In the present study, depressive symptoms were greater among the Chinese

participants than the Euro-Canadian participants. When this difference was not controlled for, equivalent levels of rumination were found between the Euro-Canadians and Chinese-Canadians, but the Euro-Canadians still reported greater levels of rumination than the Hong Kong Chinese, who had reported the highest levels of depressive symptoms. This finding suggests that perhaps rumination is present to a greater extent among Euro-Canadians compared with Hong Kong Chinese regardless of mood, or that it is uncommon among Hong Kong Chinese regardless of mood.

The comparison of an immigrant sample with a sample in its country of origin, as in the present study, provides the unique opportunity to examine the role of culture in gradients. When depressive symptoms were controlled for, the Chinese-Canadian sample reported lower levels of rumination than the Euro-Canadian sample and higher levels of rumination than the Hong Kong Chinese sample. Arguably, the Chinese-Canadian sample was more exposed and potentially more influenced by Western culture than the Hong Kong Chinese sample, and thus their intermediary position in terms of levels of rumination may reflect their intermediary position in terms of exposure to Western culture. In other words, this direct comparison provides some evidence for the influence of culture on levels of rumination. The findings from Prentice et al. (2013) further support the notion that culture influences rumination. The Asian-Canadian sample in Prentice et al. was more acculturated than the Chinese-Canadian sample in the present study; no differences were found between Asian- and Euro-Canadians on mainstream or heritage culture and the Asian-Canadians reported greater mainstream than heritage culture in Prentice et al.

Individuals who are highly acculturated to North American culture likely demonstrate similarities with the majority culture, possibly including the use of cognitive vulnerability strategies, if these are culturally determined. This postulation is similar to one proposed by Noh and Kaspar (2003) who theorized that more highly acculturated Korean immigrants in Canada may have adopted the normative coping characteristics of mainstream society, though the context of their research and the specific coping strategies they referenced were not the same as in the present study. Thus, the lack of difference in rumination between the Euro-Canadians and Asian-Canadians in Prentice et al. may have been due to high levels of cultural similarity between the two samples. In contrast, the fact that in the present study the Chinese-Canadian sample reported lower levels of rumination (when depressive symptoms were accounted for) than the Euro-Canadians and were less acculturated than the immigrant sample in Prentice et al. further suggests the influence of culture on the experience of rumination. Chang et al. (2010) and Tsai et al. (2011) did not report levels of acculturation or control for depressive symptoms in their analyses and thus it is not possible to compare their findings with this theory. It is notable that the present study utilized a Chinese-Canadian sample with roots in Hong Kong, and a Hong Kong Chinese sample. All three of the other studies utilized heterogeneous Asian immigrant samples. Therefore, it is also possible that inter-Asian differences exist in the endorsement of rumination; comparatively lower levels of rumination may be specifically characteristic of Chinese from Hong Kong. Similarly, higher levels of rumination may be specifically characteristic of Euro-Canadians compared with the Euro-Americans in the Chang et al. and Tsai et al. studies.

Jose and Schurer (2010) conducted research with adolescents aged 10 to 18 in New Zealand. They reported no differences among New Zealanders who self-identified as Maori, Asian or European on a general measure of maladjustment (i.e., depression, anxiety, psychosomatic symptoms, and self-esteem). They did not report results with regard to depressive symptoms specifically, nor did they covary maladjustment with rumination. However, they reported that both Maori and Asian adolescents reported greater levels of rumination than European New Zealanders. Interestingly, they also reported that both the Maori and Asian adolescents reported greater problem solving than the European adolescents. Given that rumination has been shown to hinder effective problem solving (Nolen-Hoeksema, et al., 2008; Lyubomirsky & Nolen-Hoeksema, 1995), finding both greater rumination and greater problem solving within the same samples seems contradictory. It is possible that the function of rumination or the method of rumination was different among these youth. There are several possible reasons why this study found discrepant results with the present study, including the lack of comparability of the samples in terms of age, ethnic composition (the Asian sample was again a mixed immigrant sample), level of acculturation (they reported that the Asian sample was highly acculturated), and country of origin (New Zealand versus Canada).

Although with a very different cultural sample, Grossmann and Kross (2010) made similar predictions as Chang et al. (2010) and Tsai et al. (2011). They compared an undergraduate student sample from the University of Michigan with an undergraduate student sample from Moscow State Regional University, and found support for their predictions that a Russian sample would report higher levels of rumination than an American sample. They explained this discrepancy by stating that Russians value

focusing on negative self-referent cognitions, unlike Westerners, and are therefore likely to ruminate more than Americans. Chang et al. (2010) and Tsai et al. (2011) both made similar statements about Asians as a means to explain higher levels of rumination among Asian-Americans. Grossmann and Kross (2010) did not covary levels of depressive symptoms with levels of rumination and so again it is not possible to know if an association between depressive symptoms and rumination was driving the cultural differences.

The relevance of the Grossmann and Kross (2010) study to the present study is that they described Russians as more interdependent and less independent than Westerners. They postulated that members of interdependent cultures engage in self-reflection (e.g., rumination) by taking an “outsider” or self-distanced perspective in order to be sensitive to contextual information that is important for maintaining interpersonal harmony. In contrast, they theorized that members of independent cultures tend to self-immense when reflecting on the self because of a drive for personal agency that is congruent with individualistic ideals. Due to taking a more self-distanced perspective when ruminating, Grossmann and Kross (2010) proposed that rumination would not be as strongly associated with depressive symptoms for the Russians as for the Americans. Indeed, they found that rumination was more strongly associated with depressive symptoms for the Americans than for the Russians. Chang et al. (2010) found the same results with regard to Asian-Americans in comparison with Euro-Americans. However, they cited research which has demonstrated that self-criticism is a constructive and adaptive process among Easterners to explain their findings and did not postulate the mechanism by which self-criticism (i.e., rumination) is adaptive.

Predictions were not made for the present study with regard to the association between rumination and depressive symptoms; however examination of the correlation tables revealed discrepant results with the above studies. Significant, positive and large associations were found between levels of rumination and depressive symptoms for all three samples, and in fact the associations were somewhat stronger for both the Chinese-Canadians ($r = .58$) and the Hong Kong Chinese ($r = .60$) compared with the Euro-Canadians ($r = .49$). In addition, levels of rumination were found to be a significant predictor of depressive symptoms for all three samples, and a greater predictor of depressive symptoms than avoidance for the Chinese-Canadian and Hong Kong Chinese samples. Other cross-cultural comparative studies were not found in the literature; however several studies in China have demonstrated a clear association between rumination and depressive symptoms for various Chinese samples. Ng and Bhugra (2008) found a very large and positive association between depressive symptoms and rumination in a large sample of adult outpatients in Hong Kong newly diagnosed with a depressive disorder. Lo, Ho, and Hollon (2008) found a moderate and positive association between brooding (the proposed maladaptive component of rumination) and depressive symptoms and conversely found a small and negative association between reflection (the proposed adaptive component of rumination) and depressive symptoms, in an undergraduate student sample at the University of Hong Kong. They also found a moderate and positive association between brooding and depressive symptoms in a sample of outpatients in Hong Kong diagnosed with major depressive disorder or dysthymia, but no association between depression and reflection. Hong et al. (2010) also found that rumination was associated with both the likelihood of experiencing past and

present episodes of depression and with greater severity and duration of past and present episodes in adolescents from Beijing. The variability in the strength of association between rumination and depressive symptoms across the various studies could be attributed to a number of factors including, ethnic origins, nature of the sample (undergraduates, community members, or outpatients), heterogeneity of the sample, level of depressive symptoms, or the specific measures used to examine the constructs. Therefore, it is not possible to determine if this variability is related to some aspect of culture.

In sum, some compelling evidence of cross-cultural variability in the form and function of rumination exists within the limited cross-cultural literature on rumination. Given the lack of direct association between self-construals and levels of rumination in the present study (and the lack of measurement of cultural constructs in the other cited studies), it is possible that some other aspect of Chinese culture underpins rumination, thereby explaining both the intra-cultural and cross-cultural differences in levels of rumination across studies. These hypotheses lend to empirical questions that need to be examined through more nuanced studies investigating the differential form and function of rumination cross-culturally. In any case, the present findings challenge the small body of literature that suggests Asians ruminate more than Westerners and that rumination is associated with less maladaptive outcomes in these populations.

Grossmann and Kross (2010) proposed that culture-specific forms of rumination have opposing functions in their relationship with depressive symptoms. They explained that self-distancing is a way of stepping back from the memory of the negative experience, observing it as an outsider, and reconstruing it in such a way as to promote

insight and closure. In contrast, they described self-immersing as, “visualizing past experiences through their own eyes” (p. 1151) which lends to a focus on the emotional aspects of the experience. This theory is similar to that of Cohen, Hoshino-Browne, and Leung (2007) who contended that European-Americans more frequently employ an “insider” perspective and Asian-Americans more frequently employ an “outsider” perspective to understand themselves and the world. The concept of self-distancing is reminiscent of the act of observing one’s thoughts as an objective observer, as in mindfulness (Segal, Williams, & Teasdale, 2002), whereas self-immersion is more in line with typical conceptualizations of rumination. Mindfulness has been found to be an adaptive form of self-reflection in the context of depression with Western samples (Watkins, 2008). In contrast, Watkins (2008) provided evidence that it is the abstract, evaluative and negatively valenced aspects of rumination that contribute to its maladaptive function. Therefore, the above cited studies arguing for both greater rumination and a smaller association with depressive symptoms among Asian samples may be referring to a different type of repetitive negative thinking than in the present study. Rumination as conceptualized here refers to the passive act of focusing on one’s symptoms of depression, one’s self, and the causes and consequences of one’s depressed mood (Nolen-Hoeksema, 1987).

Other attempts have been made to parse rumination into adaptive and maladaptive components. Treynor, Gonzalez, and Nolen-Hoeksema (2003) defined pondering as, “the purposeful turning inward to engage in cognitive problem solving to alleviate one’s depressive symptoms” whereas they defined brooding as, “a passive comparison of one’s current situation with some unachieved standard” (p. 256). At least one study has found

support for the existence of these two distinct concepts of rumination and their differential relationship to depression in a Hong Kong Chinese sample (Lo et al., 2008). However, separating out these two constructs from the broader construct of rumination has been debated in the literature and the findings have been mixed for the adaptiveness of pondering (Nolen-Hoeksema, et al., 2008). It is also possible that there exist culture-specific forms of self-reflection, which have yet to be identified.

Avoidance. The between-group findings with regard to avoidance were mixed in the present study. The fact that the Chinese-Canadians endorsed greater levels of behavioural non-social avoidance than the Euro-Canadians mirrors what Ottenbreit and Dobson (2004) found between Asian and Caucasian undergraduate students. However, Ottenbreit and Dobson (2004) also found that the Asian students reported greater use of behavioural social avoidance and of total avoidance than the Caucasian students, whereas the present study did not. Ottenbreit and Dobson (2004) did not report levels of depressive symptoms for their Asian sub-sample, nor did they covary depressive symptoms in their analyses of avoidance, despite significant associations between avoidance and depressive symptoms. As such, it is once again not possible to know if the results they reported can be attributed to differences in depressive symptoms within their overall sample, or to some aspect of culture.

In a similar vein, Gross and John (2003) found greater levels of expressive suppression among a mixed sample of ethnic minorities (including Asian Americans) than among Caucasian Americans, but did not assess or control for depressive symptoms. As reported above, the pattern of findings for the present study was different when depressive symptoms were controlled for in the analyses, demonstrating roughly

equivalent levels of avoidance between the Chinese- and Euro-Canadians and greater avoidance among these two groups compared with the Hong Kong Chinese. It is also noteworthy that the difference between the Euro-Canadians and Hong Kong Chinese was primarily in the cognitive realm of avoidance. Prentice et al. (2013) also found roughly equivalent levels of avoidance, as assessed by the CBAS, between their Asian-Canadian and Euro-Canadian samples (undergraduate students), as well as roughly equivalent levels of depressive symptoms. An evaluation of the potential differences between samples on behavioural social avoidance, when controlling for depressive symptoms, was not possible in the present study due to the violation of an important assumption in the analyses. However, no differences were found among the samples when not controlling for depressive symptoms. No other cross-cultural studies were found comparing Western and Asian samples on cognitive-behavioural avoidance. The results from the present study were however similar to those of Jose and Huntsinger (2005) who found that their European American youth reported greater use of avoidant coping than their Chinese American youth, despite both higher levels of stress and depressive symptoms among the latter group.

It was also impossible in the current study to evaluate between-group differences on avoidant coping, while controlling for depressive symptoms, due to a violation of the same assumption. However, the Hong Kong Chinese were found to endorse avoidant coping to a greater extent than the Euro-Canadians when not controlling for depressive symptoms. While the Euro-Canadians demonstrated a moderate positive association between avoidant coping and depressive symptoms, no association was found between these constructs for the Hong Kong Chinese, suggesting the presence of avoidant coping

regardless of mood. In addition, the difference between the Chinese-Canadians and Euro-Canadians approached significance, where the Chinese-Canadians also reported greater use of avoidant coping than the Euro-Canadians. Prentice et al. (2013) found that the Asian-Canadian students in their study reported greater use of avoidant coping than the Euro-Canadian students, and again did not differ on depressive symptoms. Several other studies have found similar results. Björck, Cuthbertson, Thurman, and Lee (2001) examined the relationships between coping, ethnicity, appraisal and depressive symptoms among young adult Korean, Filipino, and Caucasian Protestant church attendees in the United States. They investigated escape-avoidance using the Ways of Coping Questionnaire (Folkman & Lazarus, 1996) and depressive symptoms using the Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1979), among other measures. They found that both Korean and Filipino Americans reported greater use of escape-avoidance than Caucasian Americans. They did not find any differences among ethnicities on depressive symptoms. Similarly, Chang (1996) reported that between Asian American and Caucasian American undergraduate students, the Asian Americans reported greater use of problem avoidance and social withdrawal on the Coping Strategies Inventory (Tobin, Holroyd, Reynolds, & Wigal, 1989). However, again no difference was found between the samples in terms of depressive symptoms on the BDI (Beck et al., 1996). Thus, the results of the present study, in concert with the broader literature, suggest that Chinese samples may use avoidant coping to a greater extent than Euro-Canadian samples.

The studies described above contributed to Kuo's (2011) conclusion that avoidance coping methods are common among Asian populations. Thus, the question

remains as to why largely opposite results were obtained in the present study with regard to cross-cultural differences in cognitive-behavioural avoidance. One potential explanation lies in the instructions for each of the avoidance measures. The Cross-Cultural Coping Scale (Kuo et al., 2006) requests that participants rate the extent to which a series of statements exemplifying avoidant coping are accurate in describing how they would normally cope when confronted with a difficult interpersonal situation. For the purposes of the present study, participants were asked to generate this situation themselves as opposed to reading a vignette as in the original version of the measure. In contrast, while half of the items on the Cognitive-Behavioural Avoidance Scale (Ottenbreit & Dobson, 2004) relate to coping in interpersonal situations, the other half relate to situations at work, school, or daily activities. In addition, the measure does not provide a specific stressful situation upon which participants may base their ratings. Rather, the CBAS is intended as a dispositional measure of avoidance, primarily intended for use in the context of depressive symptoms. Kuo (2011) concluded that emotion-focused coping (e.g. avoidant coping) is used to a greater extent among Asians when a stressor is not perceived to be controllable or if the stressor is highly interpersonal. As such, it is possible that the exclusive focus on coping with interpersonal stress, in concert with the explicit cue to respond based on a self-relevant interpersonal stressor, resulted in higher scores compared with the Euro-Canadians on this measure and not on the CBAS. In other words, different situations may give rise to different types of coping strategies across cultures. In addition, avoidant coping may primarily be utilized in reaction to situational interpersonal stress among Chinese, and may not be as prevalent as a trait-like characteristic. It is also important to note that the CCCS was developed explicitly to

reflect coping among diverse Asian groups and the present results may thus evidence the measure's sensitivity to coping among Asians. By the same token, higher scores on the CBAS among Euro-Canadians may also reflect its development according to Western models of avoidance. In sum, the two measures may tap into different forms of avoidance that are differentially prevalent among Chinese and Euro-Canadians.

As with rumination, perhaps even more interesting than the cross-cultural differences in levels of avoidance was the variable function of avoidance across cultures. The present study found small to moderate associations between cognitive-behavioural avoidance and depressive symptoms for the Hong Kong Chinese, moderate associations for the Chinese-Canadian sample, and moderate to large associations for the Euro-Canadians. These results suggest that cognitive-behavioural avoidance may be somewhat less maladaptive for Chinese populations, particularly non-immigrant populations, than for Euro-Canadians. This pattern of results also suggests the role of culture in the function of avoidance given that the Chinese-Canadians were again in an intermediary position between the Hong Kong Chinese and Euro-Canadians. Ottenbreit and Dobson (2004) reported moderate to large associations between cognitive-behavioural avoidance for both their Caucasian and Asian samples, though the pattern of associations across subscales was different between the two with greater variation for the Asian sub-sample. Similar to Ottenbreit and Dobson (2004), both the Chinese-Canadian and Hong Kong Chinese samples in the present study demonstrated greater associations between cognitive non-social avoidance and depressive symptoms than for the other types of avoidance, including total avoidance. In contrast, Prentice et al. (2013) found a large positive association between total avoidance and depressive symptoms for their Asian-

Canadian sample, and no association between total avoidance and depressive symptoms for their Euro-Canadian sample. The latter result is surprising given a substantial body of literature evidencing the role of avoidance in depression for Western samples. While the present findings suggested that avoidance may not be as maladaptive for Chinese populations as for Euro-Canadians, an association was found between the two constructs nonetheless. Results from Chan et al. (2012) further support an association between avoidance and depressive symptoms among Hong Kong Chinese. They found a moderate association between depressive symptoms and total avoidance, controlling for anxiety, in their adult clinical sample.

Once again, the results for avoidant coping were somewhat different than for cognitive-behavioural avoidance in the present study, further suggesting the possibility that the two measures tap into separate constructs of avoidance. As mentioned above, no association was found between avoidant coping and depressive symptoms for the Hong Kong Chinese. In contrast, moderate associations were found between avoidant coping and depressive symptoms for the Chinese- and Euro-Canadian samples, with a somewhat smaller association for the Euro-Canadians. Kuo (2011) noted that in the stress and coping literature avoidant coping has been shown to be adaptive for some Asian groups but there is insufficient evidence to draw strong conclusions and further research is needed. Prentice et al. (2013) found a stronger association between avoidant coping and depressive symptoms for an Asian immigrant sample than for a Euro-Canadian sample. Bjorck et al. (2001) reported a large positive association between escape-avoidance and depressive symptoms for the Korean-Americans, a moderate positive association between the two for Caucasian-Americans, and no association between the two for the Filipino

Americans. In other words, differences among individuals of different Asian backgrounds are also likely. Iwamoto, Liao, and Liu (2010) found a moderate positive association between avoidant coping and depressive symptoms, and they reported that avoidant coping was a significant predictor of depressive symptoms, among their mixed sample of Asian undergraduate students in the US. Although not the focus of their study, Wester, Kuo and Vogel (2006) found a small positive association between avoidant coping (as measured by the CCCS) and psychological distress, in their sample of Chinese-Canadian adolescents aged 13-19. More relevant to the purpose of their study, they found that avoidant coping partially mediated the relationship between male gender role conflict and psychological distress. Conversely, Jose and Huntsinger (2005) found that avoidant coping had a buffering effect for Chinese American youth, where greater use of avoidant coping during high stress resulted in lower negative adjustment. However, Jose and Huntsinger (2005) also reported that avoidant coping did not contribute to negative adjustment for their European American sample. Chang (1996) reported no association between problem avoidance coping and depressive symptoms, and no association between social withdrawal and depressive symptoms among their mixed sample of Asian American undergraduate students. They found a small positive association between depressive symptoms and social withdrawal for their Caucasian American students and no association between depressive symptoms and problem avoidance coping (Chang, 1996).

In a related area of research, Butler, Lee, and Gross (2007) found that women from a mixed cultural sample of University students who primarily endorsed European values reported greater negative emotion at higher levels of habitual suppression (i.e.,

inhibiting the expression of emotions) whereas women who endorsed both European and Asian values reported somewhat less negative emotion at higher levels of habitual suppression. Similar to the research on emotional suppression, it has been suggested that forbearance coping serves an adaptive function among Asian populations. Moore and Constantine (2005) defined forbearance as “the tendency to minimize or conceal problems or concerns so as not to trouble or burden others” (p. 331) and described it as common among individuals high on interdependence (e.g., Africans, Asians, and Latin Americans). The concept of forbearance resembles elements of avoidant coping and also expressive suppression. Moore and Constantine (2005) found a small positive association between forbearance and avoidant coping as assessed by the Coping Strategies Inventory (Tobin et al., 1989). Wei et al. (2012) stated that forbearance is a common Chinese coping strategy and has been variably associated with depressive symptoms. They explained that forbearance may be adaptive in some situations and maladaptive in others. They found that forbearance coping was associated with increases in psychological distress when their sample of Chinese international undergraduate students (in the US) reported lower adherence to their heritage culture and high levels of acculturative distress. However, when acculturative stress was low, the association was no longer significant. Similarly, Noh and Kaspar (2003) found that when their Korean immigrant sample reported a strong connection with their cultural community, no association among forbearance coping, high levels of perceived discrimination and depressive symptoms was found. Given a weaker connection with their community, this association was significant.

In sum, although findings for the association between avoidant coping and depressive symptoms have been mixed, there is some support for the contention that avoidant coping is less maladaptive among Asian populations. The literature suggests that the extent to which avoidant coping is adaptive or maladaptive may depend upon the interaction of other factors, particularly level of acculturation, acculturative stress, and connection with the community. Similar to forbearance coping, avoidant coping may be adaptive in some instances for Asian populations because it entails not disclosing nor burdening others with one's problems, and thereby assists with interpersonal harmony.

Overall, the Euro-Canadians reported greater use of cognitive-behavioural avoidance and demonstrated a stronger association between the latter and depressive symptoms, than the Hong Kong Chinese. In contrast, the Hong Kong Chinese reported greater use of avoidant coping than the Euro-Canadians. In addition, the Hong Kong Chinese demonstrated no association between avoidant coping and depressive symptoms, when the Euro-Canadians demonstrated a moderate association. Taken together, these results suggest that the Hong Kong Chinese may demonstrate less dispositional cognitive-behavioural avoidance and it may be less maladaptive for them in any case. However, they may employ avoidant coping strategies in stressful interpersonal situations more frequently, and it may not serve a maladaptive function suggesting that avoidant coping may be a normative strategy for this population. The potential adaptive properties of avoidant coping among Hong Kong Chinese are worthy of empirical investigation. In contrast, Euro-Canadians may demonstrate more maladaptive dispositional cognitive-behavioural avoidance but may not employ avoidant coping strategies as frequently in stressful interpersonal situations. However, these strategies may be moderately

maladaptive. For the most part, the Chinese-Canadians were found to be in an intermediate position with respect to use of cognitive-behavioural avoidance and avoidant coping, and with respect to the function of both constructs in association with depressive symptoms. As such, it is possible that some aspect of culture may influence the use of avoidance, the use of avoidance in its different forms, and the function of avoidance.

Rumination and Avoidance. Although conceived of as ancillary analyses, the findings with regard to the predictive ability of rumination and avoidance demonstrated some interesting cross-cultural differences and are thus best explored within the context of Study 2. Specifically, cognitive-behavioural avoidance was found to predict greater variance in depressive symptoms than levels of rumination for the Euro-Canadian sample, whereas the opposite was found for both of the Chinese samples. In two different studies, Moulds and colleagues reported similar results. They found that both experiential avoidance (Cribb, Moulds, & Carter, 2006) and cognitive and behavioural avoidance (Moulds et al., 2007) predicted unique variance in depression scores (BDI II) over and above anxiety and rumination. Both studies employed undergraduate student samples from the University of New South Wales in Australia. While the ethnic or cultural composition of the sample was not delineated in Moulds et al. (2007), 48% of the sample in Cribb et al. (2006) was Asian and 41% of the sample was Australian/Caucasian. While the authors did not analyze the data separately by ethnic group, they highlighted the difficulty in generalizing their findings to other cultural groups as a result of the mixed ethnicity of their sample, and reinforced the need to conduct similar research cross-culturally. The present findings provided some evidence

that avoidance may be a stronger predictor of depression than levels of rumination among Western populations, but not in Chinese populations.

The suggestion of potential cross-cultural variability in the relationships between avoidance and depression and rumination and depression has implications for the new and flourishing line of research premised on the theory that rumination is a form of avoidance. Investigations of this conceptualization have increased in concert with a growing interest in the Behavioural Activation (BA) model of treatment (Jacobson et al., 2001; Martell et al., 2001). According to BA theory (Martell et al., 2001), the passive and past focused nature of rumination prevents active engagement with one's environment along with active problem solving strategies. Disengagement from or avoidance of the environment prevents the individual from experiencing positively reinforcing situations and events that may alleviate a depressive episode. Rumination has also been compared to worry. Influential research by Borkovec and colleagues (Borkovec, Ray, & Stober, 1998; Stober & Borkovec, 2002; as cited in Cribb et al., 2006) has demonstrated how worry is maintained by avoidance. The basic premise of this work is that because worry is a primarily verbal, abstract and less concrete and specific process, it is unlikely to trigger distressing images which could lead to unpleasant somatic and physiological arousal. As such, a negative reinforcement loop is perpetuated. Watkins and Moulds (2007) demonstrated that rumination is also associated with reduced concreteness and thereby proposed that the abstract nature of rumination similarly acts to avoid aversive imagery and the associated emotional and somatic responses to such imagery. A series of studies which further investigated the association between rumination and avoidance have since been published (e.g., Bjornsson et al.,

2010; Dickson et al., 2012; Giorgio et al., 2010; McEvoy et al., 2013). In fact, Nolen-Hoeksema and colleagues (2008) recently described rumination as an attempt to suppress negative feelings and thoughts. It was within the context of this line of research that Cribb et al. (2006) called for cross-cultural research; to further inform theory development given the potential for differential associations between rumination and avoidance cross-culturally.

The purpose of the present study was not specifically to test the theory that rumination is a form of avoidance but rather to examine the relationships among culture, rumination, avoidance, and depression. However as noted above, the present results provided some preliminary evidence that there may be cross-cultural differences in these relationships that could have implications for the rumination as avoidance theory. In addition to the differences across samples in terms of the predictive ability of rumination and avoidance with regard to depressive symptoms, some differences were found in the magnitude of correlations between rumination and avoidance among the three samples. Specifically, small ($r = .23$) to moderate ($r = .31$) positive associations were found between levels of rumination and cognitive-behavioural avoidance, and no association was found between levels of rumination and avoidant coping for the Hong Kong Chinese sample. Slightly larger ($r = .28$ to $r = .39$) positive associations were found between levels of rumination and cognitive-behavioural avoidance, as well as between levels of rumination and avoidant coping for the Chinese-Canadian sample. Even larger positive associations ($r = .40$ to $r = .54$) were found between levels of rumination and cognitive-behavioural avoidance for the Euro-Canadian sample, whereas the association between levels of rumination and avoidant coping was small ($r = .22$). The correlations between

levels of rumination and cognitive-behavioural avoidance for the Euro-Canadian sample were close in magnitude to those reported by Cribb et al. (2006; $r = .42$ to $r = .53$) prior to controlling for anxiety. The correlations were also close in magnitude to those reported by Moulds et al. (2007) for behavioural avoidance, but Moulds et al. found small or non-significant correlations between rumination and cognitive avoidance. These findings suggest that while avoidance may be an aspect of rumination, its association with rumination among Chinese samples is somewhat less important than among Euro-Canadians. In addition, as evidenced by the regression results, the function of avoidance and rumination in depression may differ cross-culturally. However, as with both Cribb et al. (2006) and Moulds et al. (2007), the present findings are limited by their cross-sectional and correlational nature, which precluded causal inference.

Summary: Rumination and Avoidance. Overall, when considering the findings for both rumination and cognitive-behavioural avoidance, controlling for depressive symptoms, the Euro-Canadians reported primarily higher levels of both processes associated with depression than the Hong Kong Chinese. The Chinese-Canadians reported equivalent levels of avoidance with the Euro-Canadians, and primarily greater levels of avoidance than the Hong Kong Chinese. They were also in an intermediary position with regard to rumination, where they reported lower levels of rumination than the Euro-Canadians and higher levels of rumination than the Hong Kong Chinese. These findings may be best explained by recent research by Ryder et al. (2008) that has demonstrated greater psychologization of depressive symptoms among Western than Chinese samples. Ryder et al. (2008) also found that Chinese participants demonstrated a tendency toward more externally oriented thinking which was in turn related to the

reporting of somatic symptoms (versus psychological symptoms). Externally oriented thinking refers to the tendency not to focus on or prioritize inner emotional experience. Dere, Falk, and Ryder (2012) replicated the finding of greater externally oriented thinking among Chinese, in their sample of Chinese-Canadians compared with Euro-Canadians. In addition, they found that higher levels of both Modernization and Euro-American values predicted lower levels of externally oriented thinking in both groups. If rumination is considered to be a psychological process that involves a focus on inner emotional experience, the present results parallel the findings by Ryder and colleagues (2008; Dere et al., 2012). While on the surface avoidance may appear to be the opposite of rumination, recent research has highlighted the intimate association of the two constructs. The present study provides further support for this association, particularly among the Euro-Canadians. Therefore, it is not surprising that the present results for avoidance also parallel the findings by Ryder and colleagues. The seemingly different form and function of avoidant coping suggests why the pattern of findings in the present study do not follow this explanation of cultural variation in cognitive vulnerability to depression.

Collective and engagement coping. While not part of the primary hypotheses for the present study, the other two subscales of the Cross-Cultural Coping scale were investigated across cultures and conditions. No differences were found by condition on either subscale, or by sample on the Engagement Coping subscale. However, both the Hong Kong Chinese and the Chinese-Canadians were found to endorse greater levels of Collective Coping than the Euro-Canadians. Engagement Coping was proposed as an individualistic coping style by Kuo et al. (2006), but their findings were mixed

suggesting that in some instances Engagement Coping was associated with less acculturation to North American society, contrary to their predictions. They explained these findings stating that individualism is a more universal construct than collectivism, thus individualist coping strategies may also be more universal, whereas collectivist coping strategies may demonstrate more cultural variation. In fact, they argued for the cultural specificity of Collective Coping among Asians. The present findings may provide further evidence for this explanation given the lack of differences between samples on Engagement Coping and greater endorsement of Collective Coping among the Chinese samples over the Euro-Canadian sample. Although the associations between Engagement Coping and independence, and between Collective Coping and interdependence were not consistent across samples in the present study (associations in the predicted direction were found for the Chinese- and Euro-Canadian samples but not for the Hong Kong Chinese sample), the baseline self-construals for the samples provide support for the pattern of findings according to this explanation. Thus, the present study demonstrated cultural variation across coping constructs and cognitive vulnerability.

Strengths and Limitations. While the literature on cultural variations in coping has demonstrated considerable growth over the past two decades (Kuo, 2011), the literature on cognitive vulnerability to depression is only just beginning to examine the nuances of cultural variation. The present study thus addressed a significant gap in the literature and contributed to the existing corpus of literature on cultural variations in depression and cognition, by specifically linking the two. The present study demonstrated a more conceptually nuanced examination of rumination and avoidance than in previous studies, due to accounting for the association between depressive

symptoms and cognitive vulnerability. In addition, most studies make assumptions about interdependence and independence in the cultures they study without actually measuring these constructs. Therefore, previous studies that attributed cross-cultural differences to self-construals may have been erroneous in their conclusions but it is not possible to determine the source of the cultural differences or refute the self-construals hypothesis without a measure of operationalized culture. Thus, a significant strength of the present study was the direct measurement of self-construals and the analysis of their association with constructs of cognitive vulnerability.

Despite the many strengths of the current study, several limitations should be addressed. Some research on depression includes a measure of anxiety because of the high comorbidity of anxiety and depressive disorders. The present study did not include such a measure and thus arguably, some of the findings could be due to the influence of comorbid anxiety symptoms. Given that the present samples were not clinical in nature, this issue is considered to be of less concern. However, the fact that the present samples were community samples and not clinical samples presents another limitation to the interpretation of the present results. Although it has been argued that the experience of a diagnosable depressive disorder differs only in quantity and not in quality from the every day experience of depressive symptoms, the findings from the present study should not be extrapolated to the experience of clinical depression without replication in a clinical sample. In addition, the fact that some of the data were not normally distributed and demonstrated heterogeneity of variance, and that some of the analyses demonstrated a lack of generalizability suggests the need for replication in order to determine the generalizability of the findings. Last, the cross-sectional and partially correlational

design of the study also precluded causal inference. Last, the fact that there was little comparable research upon which to base interpretations of the present data, in concert with the variability of findings in what was found suggests a need for replication and extension of the present findings to build upon the literature base.

Future directions. Overall, the results of Study 2 suggested that there are both cross-cultural differences in the endorsement of cognitive processes associated with depression, and that these processes are differentially maladaptive across cultures. Study 2 also demonstrated that these cross-cultural differences may not be attributed to self-construals. It is possible that either other aspects of culture contributed to the findings, or that self-construals played a more distal role in their association with levels of rumination and avoidance. Other potential moderating variable(s) are thus in need of empirical investigation, both cultural variables and other underlying cognitive constructs. Some research (e.g., Iwamoto et al., 2010; Dere et al., 2012) has used the Asian Values Scale – Revised (Kim & Hong, 2004) to investigate other aspects of culture that may be driving cultural differences. Hofstede’s (1980) other dimensions, such as Uncertainty Avoidance, Long- and Short-Term Orientation, or Affective Autonomy have also been examined in relation to emotional experience (Matsumoto et al., 2008) and could shed further light on the relationships between culture, rumination, avoidance, and depression.

In order to investigate whether self-construals play a role in cognitive vulnerability to depression, but a more distal one, other culturally influenced factors need to be examined as intermediary contributors to the model. Externally oriented thinking demonstrated cross-cultural variability associated with values (Ryder et al., 2008; Dere et al., 2012). Therefore, research explicitly examining the interaction of self-construals,

externally oriented thinking, cognitive vulnerability, and depression may be warranted. In the context of understanding the association between rumination and avoidance, Cribb et al. (2006) suggested that future cross-cultural research should examine the relationships between rumination, avoidance, depression, and cognitive concreteness. They proposed that a lack of cognitive concreteness underlies and contributes to both rumination and avoidance and may vary cross-culturally. Given the seemingly multivariate nature of cultural influences on various aspects of experience, multivariate statistics such as structural equation modeling, mediation, and moderation analyses would seem appropriate to the cross-cultural investigation of cognitive vulnerability to depression. With these statistical tools, factoring in several variables such as acculturation, and acculturative stress into the model would be feasible and would provide a more nuanced analysis of cultural variability.

The present study also revealed the potential for differences in the form and function of both rumination and avoidance. Some of the cross-cultural differences in the literature with regard to rumination suggest that rumination may have been defined differently across studies, which may have contributed to the differences in findings. Some definitions of rumination have included taking an “outsider” perspective when ruminating, thereby observing one’s thoughts more objectively and engaging in problem solving. This definition of rumination does not coincide with the classic definition of rumination as passive, internally and emotionally focused. However, because studies that have conceptualized rumination in this way have found greater rumination among Asian samples, it is possible that some Asian populations may in fact engage in a more distanced approach to depressive thinking. The inclusion of measures of acceptance and

mindfulness along with rumination in future studies may clarify the nature of depressive thinking among Asian samples. Similarly, along with the varied definitions of avoidance and associated findings in the literature, the present study found distinct patterns of results for cognitive-behavioural avoidance and avoidant coping. These patterns of results highlight the fact that there may be cross-cultural variation in the endorsement of trait versus state avoidance and in the specific types of situations that may trigger state avoidance. Future research is needed to verify the possible differentiation of these constructs of avoidance and to further clarify the function of each cross-culturally.

General Discussion

The prevalence rates of depression have been found to be lower in Chinese than in Western cultures (Ryder & Chentsova-Dutton, 2012). Early studies (e.g., Kleinman, 1982) attributed this discrepancy to the presence of the similar, but distinct and culturally shaped syndromes of neurasthenia in Chinese cultures and depression in Western cultures (Ryder & Chentsova-Dutton, 2012). However, more recent studies have determined that these observed differences in symptom presentation are differences of emphasis on the constellation of depressive symptoms, rather than the presence of distinct syndromes (Parker et al., 2001; Ryder et al., 2008). Specifically, individuals from Chinese cultures tend to present with more somatic or physical symptoms of depression (e.g., difficulties with sleep, loss of energy), whereas individuals from Western cultures tend to present with more psychological symptoms (e.g., low mood, anhedonia). In addition, Western “psychologization” of depressive symptoms has been found to be stronger than Chinese “somatisation” (Parker et al., 2001; Ryder et al., 2008).

Considering these differences in symptom presentation, along with differences in cognition between Western and Asian cultures (c.f. Nisbett, 2003, Norenzayan, Choi, & Peng, 2007), the present research investigated whether models developed to explain the experience and expression of depression also vary across cultures. Specifically, the present research examined the two related cognitive factors of rumination and avoidance, which have been associated with depression in the West. The overarching research question was, “does culture influence cognitive vulnerability to depression?” This question was addressed via two studies that utilized data collected from the same three samples of Euro-Canadians, Chinese-Canadians, and Hong Kong Chinese. In the first study, self-construals were measured as a means of operationalizing culture at the individual level and a culture priming method was tested in an effort to make more causal statements about the role of culture in rumination and avoidance, which were investigated in the second study.

Summary of findings and interpretation. The Similarities and Differences with Family and Friends Task (SDFF; Trafimow, Triandis, & Goto, 1991) culture priming method did not demonstrate the predicted effects. Only the Euro-Canadians demonstrated shifts in self-construals from pre- to post-prime, as they reported less interdependence post-prime in both priming conditions. No differences were found between conditions for levels of rumination and avoidance across samples which suggests that the culture prime did not have an effect on either of these constructs, either due to the minimal prime effects on self-construals, or due to the lack of an independent prime effect on levels of rumination and avoidance. Several explanations were considered for the prime effects on self-construals, but the most parsimonious

explanation resulted from an examination of participant responses to the prime task. The Euro-Canadians provided significantly longer responses compared with the Chinese-Canadians and Hong Kong Chinese, which suggests a greater engagement with the task and thus a greater possibility to obtain a prime effect. The self-reflective nature of the task, with regard to both descriptions of differences and similarities, may have contributed to the decrease in interdependence for the Euro-Canadians in both conditions. In addition, because self-reflection is accepted and encouraged in many Western cultures, the self-reflective nature of the task may also have contributed to the more elaborated responses among Euro-Canadians. In contrast, the self-reflective nature of the task may have contributed to lower task engagement among the Chinese-Canadians and Hong Kong Chinese. The modifications to the original task instructions for the present research (i.e., longer reflection time and written format versus thinking about responses) may have exacerbated these unpredicted effects.

Although the predicted prime effects were not observed, the pattern of self-construals largely followed prediction, particularly in consideration of the prime effects for the Euro-Canadians. The Euro-Canadians and Chinese-Canadians reported greater independence than the Hong Kong Chinese, whereas the Chinese-Canadians and Hong Kong Chinese reported greater interdependence than the Euro-Canadians. The Hong Kong Chinese reported greater interdependence than independence, the Euro-Canadians reported greater independence than interdependence, and the Chinese-Canadians reported equivalent levels of both. The primary difference between these findings and predictions was that the Chinese-Canadians did not report an intermediary level of independence and interdependence between the Euro-Canadians and Hong Kong Chinese. Factors such as

acculturation, their reasons for immigration, and an interaction between their bicultural identity and the reference group effect may have influenced self-construals among the Chinese-Canadians, and thus contributed to the current results. Overall, the observed differences in self-construals confirmed cultural differences, measured at the individual level, among the three samples. In addition, although it was not possible to make causal statements about self-construals due to the lack of consistent or clear priming effects, the measurement of self-construals allowed for a discussion of the association between self-construals, rumination and avoidance, within and across the cultural samples.

Many of the predicted and unpredicted findings with regard to levels of rumination and avoidance suggested the influence of culture in the present research. Associations were found between self-construals and both cognitive-behavioural avoidance and avoidant coping for the Euro-Canadian sample. Associations were only found between some aspects of cognitive-behavioural avoidance and self-construals for both of the Chinese samples. No associations were found between self-construals and levels of rumination for any of the samples. Thus, self-construals had an inconsistent association with cognitive vulnerability to depression. Associations were also found between Mainstream and Heritage Cultural Identification and cognitive vulnerability to depression for the Chinese-Canadian sample.

Substantial support was found for the role of culture in the examination of levels of rumination and avoidance across cultural groups. The present research provided the unique opportunity to examine the role of culture in gradients due to the comparison of an immigrant sample with two international samples. Considering the differences among samples in terms of depressive symptoms and the associations between depressive

symptoms and cognitive vulnerability, the analyses were conducted controlling for depressive symptoms. The Euro-Canadians reported higher levels of rumination, cognitive avoidance, and total cognitive-behavioural avoidance than the Hong Kong Chinese. The Chinese-Canadians reported equivalent levels of cognitive-behavioural avoidance with the Euro-Canadians, and primarily greater levels of cognitive-behavioural avoidance than the Hong Kong Chinese. The Chinese-Canadians were also in an intermediary position with regard to levels of rumination; they reported less ruminative tendencies than the Euro-Canadians and greater ruminative tendencies than the Hong Kong Chinese.

In contrast to the above results, the findings for avoidant coping demonstrated a different pattern across samples. The Hong Kong Chinese reported greater avoidant coping than the Euro-Canadians, whereas the Chinese-Canadians reported an intermediary level of avoidant coping that was not significantly different from the Hong Kong Chinese or Euro-Canadians. Avoidant coping was not examined while controlling for depressive symptoms due to the violation of a data analytic assumption, but avoidant coping was also not consistently associated with depressive symptoms across samples. This divergent pattern of findings for avoidant coping relative to cognitive-behavioural avoidance suggests that the associated questionnaires may have actually measured different forms of avoidance, which are themselves differentially prevalent among Chinese and Euro-Canadians. Specifically, avoidance among Chinese may be more prevalent as a state rather than a trait characteristic utilized in reaction to situational interpersonal stress.

The present research also suggests cultural variation in the function of rumination and avoidance. Specifically, levels of rumination and avoidance were associated with depressive symptoms to differing degrees across the cultural samples. Stronger associations were found between levels of rumination and depressive symptoms for both Chinese samples relative to the Euro-Canadian sample. Cognitive-behavioural avoidance demonstrated a graded pattern of associations with depressive symptoms across samples, with the strongest association for the Euro-Canadians and the weakest for the Hong Kong Chinese. In contrast, no association was found between avoidant coping and depressive symptoms for the Hong Kong Chinese and moderate associations were found for the Chinese- and Euro-Canadians. Levels of rumination were a greater predictor of depressive symptoms than cognitive-behavioural avoidance and avoidant coping for both Chinese samples. Although levels of rumination were a better predictor of depressive symptoms than avoidant coping for the Euro-Canadians, cognitive-behavioural avoidance was a better predictor of depressive symptoms than levels of rumination. These results suggest that cognitive-behavioural avoidance may be somewhat less maladaptive for Chinese populations, particularly non-immigrant populations, than for Euro-Canadians. In contrast, avoidant coping may be more or less maladaptive depending on the context for Chinese (i.e., as an immigrant or in one's home country). The results also further support the contention that the two measures of avoidance assessed distinct aspects of avoidance. Last, the results evidenced the maladaptive nature of ruminative tendencies across cultures and suggest that rumination may be even more maladaptive among Chinese, even though they may ruminate less than Euro-Canadians. The graded nature of the associations between levels of cognitive-behavioural avoidance and rumination across

samples further suggests that rumination and avoidance may differ functionally across cultures; the smallest associations were found for the Hong Kong Chinese, followed by the Chinese-Canadians and then the Euro-Canadians. These results cohere with the rumination as avoidance theory (Martell et al., 2001), at least for the Euro-Canadians, but suggest that rumination may function less as a form of avoidance for the Chinese samples.

The present cross-cultural findings with regard to both levels of rumination and the function of rumination challenge recent research (Chang et al., 2010; Tsai et al., 2011) which argues for both greater rumination and a smaller association with depressive symptoms among Asian samples. These studies may have referred to a different form of repetitive negative thinking than in the present study, considering their argument that Asians adopt an outsider or “self-distanced” perspective when they ruminate (Grossmann & Kross, 2010). On the other hand, the results parallel findings that Westerners tend to report more psychological symptoms of depression than Chinese (Ryder et al., 2008; Parker et al., 2001). Therefore, the results may also potentially be explained by cultural variations in externally oriented thinking. Ryder and colleagues (2008; Dere, Falk, & Ryder, 2012) found that Chinese participants demonstrated greater externally oriented thinking than Euro-Canadian participants. In addition, they found that externally oriented thinking was related to the reporting of somatic symptoms, and postulated that those who focus less on their internal emotional experiences report somatic symptoms to a greater extent (Ryder et al., 2008). Dere, Falk, and Ryder (2012) further found that greater Modernization and Euro-American values predicted lower levels of externally oriented thinking in both Chinese- and Euro-Canadians. Externally oriented thinking, or the

tendency not to focus on or prioritize inner emotional experience, may be conceptualized as the opposite of rumination. Considering the association between levels of rumination and cognitive-behavioural avoidance, avoidance may not be the opposite of rumination, at least for the Euro-Canadians, and may also be related to externally oriented thinking. However, given the weaker association between levels of cognitive-behavioural avoidance and for the Chinese samples, the rumination as avoidance theory is questionable and the potential association between externally oriented thinking and avoidance remains unclear and in need of further evaluation.

The culturally graded nature of the samples, in concert with the fact that the differences in levels of rumination and avoidance among the samples also largely followed a graded pattern, suggests that the present findings are attributable to some aspect of culture. The small and inconsistent associations found between self-construals and cognitive vulnerability to depression suggests that self-construals may have had a minimal direct or proximal influence on levels of rumination and avoidance, contrary to prediction. However, considering the distinct and graded pattern of self-construals across samples, perhaps self-construals played a role, but a more distal one than predicted. For example, self-construals may moderate the tendency toward externally oriented thinking which may in turn moderate the tendency to ruminate or not. Further research is needed to explore these potential relationships.

General strengths and limitations. Strengths and limitations specific to each study were discussed in the respective discussion sections above. Several general strengths and limitations applicable to the present research as a whole are discussed here. Given the evidence of intra-cultural variations on the constructs examined in the present

study, coupled with difficulties comparing studies comprised of mixed samples, a clear strength of the present research was to define and select for relatively homogeneous cultural samples. In addition, the use of self-identified Heritage Culture as a primary means to define the samples allowed for more emphasis to be placed on culture as an explanatory variable, as opposed to ethnicity. In this same vein, the comparison of an immigrant sample with an international sample allowed for a more nuanced examination of culture. Despite wide criticism, the majority of research to date has demonstrated cross-national or cross-ethnic differences across a range of constructs including cognition, motivation, and emotion, and has attributed these differences to culture, without the direct measurement of culture. Not only did the present study measure two dimensions of culture directly (i.e., self-construals and adherence to Mainstream and Heritage Culture), but an attempt was made to make one of these dimensions more salient in the moment for the purposes of examining more causal effects.

Several aspects of the methodology were also strengths of the current research. The translation process was conducted in a detailed manner following the World Health Organization (WHO) Guidelines for the Process of Translation and Adaptation of Instruments (WHO, 2007). This process included a strong emphasis on ensuring the accurate translation of meaning and significant consultation and collaboration with individuals with language expertise. Standardization was also emphasized in the research design, with frequent communication with the collaborators in Hong Kong, an in-person visit to Hong Kong, thorough training of research assistants and frequent communication with the research assistants. The minor differences in method among the samples thus

reflect an effort to balance standardization with appropriate cultural sensitivity in the research design.

Limitations applicable to both studies also need to be addressed. Although inclusion and exclusion criteria for participation were carefully selected and adhered to, data from three participants in the Hong Kong sample were retained although they identified their first language as Putonghua (i.e., Mandarin) and the inclusion criteria for the research stipulated that participants were to identify their first language as Cantonese. Those participants otherwise met inclusion criteria for participation and participated according to the standardized protocol. The method to report education and employment was also a limitation that precluded further analysis of the variables. Participants were asked to report the highest level of education they had completed, which required a categorical analysis and was thus only used to descriptively examine differences among samples. Future research may benefit from a request for participants to indicate the number of completed years of school. Such data could be analysed as a continuous variable and could, for example, be used as a covariate in other analyses. A related limitation was the fact that the Chinese- and Euro-Canadians differed on level of education, despite efforts to match the samples demographically. Similarly, it was a limitation that the samples differed on age despite these efforts. Also, participants were provided with a free format to report their current employment which resulted in such a wide range of responses that meaningful categorization was difficult and was conducted differently in Canada and Hong Kong. Therefore, analysis of employment was not possible across samples. Alternatively, mean family income could have been requested instead, which may have resulted in more useful data, though such a question may have

also resulted in missing data due to potential participant discomfort with such disclosure. The limitations to the research narrowed the focus of the analyses and reduced the generalizability of the findings. To some extent these differences may reflect the challenges associated with cross-cultural research, and in particular the challenges associated with the collection of information from individuals with different linguistic, cultural and national backgrounds. Replications and extensions of the research are needed to confirm and to further understand the influence of culture on cognitive vulnerability to depression.

Implications of the present research. A substantive amount of research has investigated the separate relationships between culture and cognition, and culture and emotion. However, there is both a paucity of research examining the role of culture in psychopathological states and their subclinical counterparts (e.g., depression and depressive symptoms), and examining the role of culture in cognitive processes related to these states. The present research thus advanced the field by examining the role of culture in the cognitive processes associated with depressive symptoms. The findings suggest cross-cultural variability in the extent to which rumination, cognitive-behavioural avoidance, and avoidant coping are used and in the function of these constructs in their association with depression and each other. The findings also provide evidence that culture moderates cognitive vulnerability to depression, given the graded nature of the samples and results. Due to both the minimal and unpredicted culture prime effects, and the minimal and inconsistent direct associations between self-construals and the cognitive vulnerability constructs, specific and causal statements could not be made about the association between culture and cognitive vulnerability to depression. However, the

findings suggest several questions for future research, to further disentangle the role of culture in cognitive vulnerability to depression. Overall, the present research provides an important advance in our understanding of cultural variation in models of depression.

Considering psychological models of depression inform psychological treatments of depression, if models of depression are not equally applicable across cultures, then treatments based on these models of depression may not be equally applicable either. For example, Behavioural Activation therapy (BA; Jacobson, Martell, & Dimidjian, 2001; Martell et al., 2001) targets change with regard to avoidance, based on the premise that depression is characterized and maintained by dysfunctional patterns of avoidance. According to BA therapy, rumination is also a form of avoidance as it functions to avoid active problem solving and active engagement with the environment (Martell et al., 2001). The present research provides some support for the applicability of this model of treatment for Euro-Canadians given that associations were found between both levels of avoidance and depression, and between levels of avoidance and rumination for the Euro-Canadians. However, the various forms of avoidance were not found to be uniformly maladaptive for the Chinese samples. In fact, avoidant coping was not associated with depressive symptoms for the Hong Kong Chinese. In addition, the function of rumination may be different for Chinese considering the present research found weaker associations between levels of rumination and avoidance for the Chinese samples. This pattern of results suggests that the applicability of BA therapy (and other therapies) may vary depending on whether the recipient client was an immigrant or not, considering the relatively stronger associations between both avoidance and depressive symptoms and

avoidance and levels of rumination for the Chinese-Canadians relative to the Hong Kong Chinese.

Conclusions. The present research provides preliminary evidence that culture influences the use and function of rumination and avoidance in association with depressive symptoms. In addition, the present research presents further empirical questions about the specific nature of the association between culture and cognitive vulnerability to depression. Further research is needed to replicate these findings, and to further explore the specific nature (i.e., distal versus proximal and if distal what other variables may play a role) of the relationship between culture and cognitive vulnerability to depression.

References

- Aldao, A., & Nolen-Hoeksema, S. (2010). Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behaviour Research and Therapy, 48*, 974-983. doi:10.1016/j.brat.2010.06.002
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*, 217-237. doi:10.1016/j.cpr.2009.11.004
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.-Text revision). Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Asvat, Y., & Malcarne, V. L. (2008). Acculturation and depressive symptoms in Muslim University students: Personal-family acculturation match. *International Journal of Psychology, 43*, 114-124. doi:10.1080/00207590601126668
- Bagby, R. M., Rector, N. A., Bacchocchi, J. R., & McBride, C. (2004). The stability of the response styles questionnaire rumination scale in a sample of patients with major depression. *Cognitive Therapy and Research, 28*, 527-538. doi:10.1023/B:COTR.0000045562.17228.29
- Benet-Martínez, V., Leu, J., Lee, F., & Morris, M. W. (2002). Negotiating biculturalism: Cultural frame switching in biculturals with oppositional versus compatible cultural identities. *Journal of Cross-Cultural Psychology, 33*, 492-516. doi:10.1177/0022022102033005005

- Berry, J. W. (1980). Acculturation as varieties of adaptation. In A. M. Padilla (Ed.), *Acculturation: Theory, models and some new findings* (pp. 9-25). Boulder, CO: Westview Press.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory*, (2nd ed.). San Antonio, TX: The Psychological Corporation.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review*, *46*, 5-34. doi:10.1111/j.1464-0597.1997.tb01087.x
- Berry, J. W., Kim, U., Power, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied Psychology: An International Review*, *38*, 185-206. doi:10.1111/j.1464-0597.1989.tb01208.x
- Björck, J. P., Cuthbertson, W., Thurman, J. W., & Lee, Y. S. (2001). Ethnicity, coping, and distress among Korean Americans, Filipino Americans, and Caucasian Americans. *The Journal of Social Psychology*, *141*, 421-442. doi:10.1080/00224540109600563
- Bjornsson, A., Carey, G., Hauser, M., Karris, A., Kaufmann, V., & Sheets, E. (2010). The effects of experiential avoidance and rumination on depression among college students. *International Journal of Cognitive Therapy*, *3*, 389-401. doi:10.1521/ijct.2010.3.4.389
- Blalock, J.A., & Joiner, T. E., Jr. (2000). Interaction of cognitive avoidance coping and stress in predicting depression/anxiety. *Cognitive Therapy and Research*, *24*, 47-65. doi:10.1023/A:1005450908245
- Bonnano, G. A., Papa, A., Lalande, K., Zhang, N., & Noll, J. G. (2005). Grief processing and deliberate grief avoidance: A prospective comparison of bereaved spouses

- and parents in the United States and the People's Republic of China. *Journal of Consulting and Clinical Psychology*, 73, 86-98. doi:10.1037/0022-006X.73.1.86
- Bond, M. H. (2002). Reclaiming the individual from Hofstede's ecological analysis – a 20-year odyssey: Comment on Osyerman et al. (2002). *Psychological Bulletin*, 128, 73-77. doi:10.1037//0033-2909.128.1.73
- Borkovec, T. D., Ray, W. J., & Stober, J. (1998). Worry: A cognitive phenomenon intimately linked to affective, physiological, and interpersonal behavioural processes. *Cognitive Therapy and Research*, 22, 561-576.
- Brewer, M. B., & Chen, Y.-R. (2007). Where (who) are the collectives in collectivism? Toward conceptual clarification of individualism and collectivism. *Psychological Review*, 1, 133-151. doi:10.1037/0033-295X.114.1.133
- Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: Are the social consequences of emotion suppression culture-specific? *Emotion*, 1, 30-48. doi:10.1037/1528-3542.7.1.30
- Caldwell-Harris, C. L., & Ayçiçeği, A. (2006). When personality and culture clash: The psychological distress of allocentrics in an individualist culture and idiocentrics in a collectivist culture. *Transcultural Psychiatry*, 43, 331-361. doi:10.1177/1363461506066982
- Carter, R. T. (2005). A cultural-historical model for understanding racial-cultural competence and confronting dynamic cultural conflicts: An introduction. In R. T. Carter (Ed.), *Handbook of racial-cultural psychology and counseling: Training and practice* (Vol. 2, pp. ix-xxvi). Hoboken, New Jersey: John Wiley & Sons Inc.

- Chan, M. W. Y., Ho, S. M. Y., Epp, A., & Dobson, K. (2012). *The role of attentional bias and avoidance in depression among Chinese clinical patients*. Manuscript submitted for publication.
- Chang, E. C. (1996). Cultural differences in optimism, pessimism, and coping: Predictors of subsequent adjustment in Asian American and Caucasian American college students. *Journal of Counseling Psychology, 43*, 113-123. doi:10.1037/0022-0167.43.1.113
- Chang, E. C., Tsai, W., Sanna, L. J. (2010). Examining the relations between rumination and adjustment: Do ethnic differences exist between Asian and European Americans? *Asian American Journal of Psychology, 1*, 46-56.
doi:10.1037/a0018821
- Cheung, C.-K., & Bagley, C. (1998). Validating an American scale in Hong Kong: The center for epidemiological studies depression scale (CES-D). *The Journal of Psychology, 132*, 169-186. doi:10.1080/00223989809599157
- Chiao, J. Y., Harada, T., Komeda, H., Li, Z., Mano, Y., Saito, D.,...Iidaka, T. (2009). Dynamic cultural influences on neural representations of the self. *Journal of Cognitive Neuroscience, 22*, 1-11. doi:10.1162/jocn.2009.21192
- Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284-290. doi:10.1037/1040-3590.6.4.284
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). New York, NY: Routledge Academic.

- Cohen, D., Hoshino-Browne, E., & Leung, A. K.-y. (2007). Culture and the structure of personal experience: Insider and outsider phenomenologies of the self and social world. *Advances in Experimental Social Psychology*, *39*, 1-67. doi: 10.1016/S0065-2601(06)39001-6
- Credé, M., Bashshur, M., & Niehorster, S. (2010). Reference group effects in the measurement of personality and attitudes. *Journal of Personality Assessment*, *92*, 390-399. doi:10.1080/00223891.2010.497393
- Cribb, G., Moulds, M. L., & Carter, S. (2006). Rumination and experiential avoidance in depression. *Behaviour Change*, *23*, 165-176. doi:10.1375/behc.23.3.165
- Cross, S. E., Bacon, P. L., Morris, M. L. (2000). The relational-interdependent self-construal and relationships. *Journal of Personality and Social Psychology*, *78*, 791-808. doi:10.1037/0022-3514.78.4.791
- Cross, S. E., Hardin, E. E., & Gercek-Swing, B. (2011). The what, why, and where of self-construal. *Personality and Social Psychology Review*, *15*, 142-179. doi:10.1177/1088868310373752
- Cross, S. E., & Mason, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, *122*, 5-37. doi:10.1037/0033-2909.122.1.5
- Dere, J., Falk, C. F., & Ryder, A. G. (2012). Unpacking cultural differences in alexithymia: The role of cultural values among Euro-Canadian and Chinese-Canadian students. *Journal of Cross-Cultural Psychology*, *43*, 1297-1312. doi:10.1177/0022022111430254

- Dickson, K. S., Ciesla, J. A., & Reilly, L. C. (2012). Rumination, worry, cognitive avoidance, and behavioral avoidance: Examination of temporal effects. *Behaviour Therapy, 43*, 629-640. doi:10.1016/j.beth.2011.11.002
- Dozois, D. J. A., & Dobson, K. S. (2001). Information processing and cognitive organization in unipolar depression: Specificity and comorbidity issues. *Journal of Abnormal Psychology, 110*, 236-246. doi:10.1037/0021-843X.110.2.236
- Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression II. *Biometrika, 38*, 159-177. doi:10.1093/biomet/38.1-2.159
- Epp, A. M., Dobson, K. S., Fata, L., & Hernandez-Guzman, L. (2005, September). *A Cross-Cultural Comparison of the Gender Difference in Depression*. Paper presented at the 35th Annual Congress of the European Association for Behavioural and Cognitive Therapies, Thessaloniki, Greece.
- Eshun, S., Chang, E. C., & Owusu, V. (1998). Cultural and gender differences in responses to depressive mood: A study of college students in Ghana and the U.S.A. *Personality and Individual Differences, 24*, 581-583. doi:10.1016/S0191-8869(97)00203-1
- Eshun, S. (2000). Role of gender and rumination in suicide ideation: A comparison of college samples from Ghana and the United States. *Cross-Cultural Research, 34*, 250-263. doi:10.1177/106939710003400303
- Ferster, C. B. (1973). A functional analysis of depression. *American Psychologist, 28*, 857-870. doi:10.1037/h0035605
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London, England: SAGE Publications Ltd.

- Fiske, A. P. (2002). Using individualism and collectivism to compare cultures – a critique of the validity and measurement of the constructs: Comment on Oyserman et al. (2002). *Psychological Bulletin*, *128*, 78-88. doi:10.1037//0033-2909.128.1.78
- Folkman, S., & Lazarus, R. S. (1988). *Manual for the ways of coping questionnaire*. Palo Alto, CA: Consulting Psychologists Press.
- Friedman, R., Liu, W., Chi, S.-C. S., Hong, Y.-Y., & Sung, L.-K. (2012). Cross-cultural management and bicultural identity integration: When does experience abroad lead to appropriate cultural switching? *International Journal of Intercultural Relations*, *36*, 130-139. doi:10.1016/j.ijintrel.2011.03.002
- Gardner, W. L., Gabriel, S., & Hochschild, L. (2002). When you and I are “we,” you are not threatening: The role of self-expansion in social comparison. *Journal of Personality and Social Psychology*, *82*, 239-251.
- Gardner, W. L., Gabriel, S., & Lee, A. Y. (1999). “I” value freedom, but “we” value relationships: Self-construal priming mirrors cultural differences in judgment. *Psychological Science*, *10*, 321-326. doi:10.1111/1467-9280.00162
- Giorgio, J. M., Sanfilippo, J., Kleiman, E., Reilly, D., Bender, R. E., Wagner, C. A.,... Alloy, L. B. (2010). An experiential avoidance conceptualization of depressive rumination: Three tests of the model. *Behaviour Research and Therapy*, *48*, 1021-1031. doi:10.1016/j.brat.2010.07.004
- Glass, G. V., Peckham, P. D., & Sanders, J. R. (1972). Consequences of failure to meet assumptions underlying the fixed effects analyses of variance and covariance. *Review of Educational Research*, *42*, 237-288. doi:10.3102/00346543042003237

- Goodnick, P. J. (1997). Diabetes mellitus: Issues in theory and treatment. *Psychiatric Annals*, *27*, 353-359.
- Gotlib, I. H., Roberts, J. E., & Gilboa, E. (1996). Cognitive interference in depression. In I. G. Sarason, G. R. Pierce, & B. R. Sarason (Eds.), *Cognitive interference: Theories, methods, and findings* (pp. 347-377). Hillsdale, NJ, England: Lawrence Erlbaum Associates Inc.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348-362. doi:10.1037/0022-3514.85.2.348
- Grossmann, I., & Kross, E. (2010). The impact of culture on adaptive versus maladaptive self-reflection. *Psychological Science*, *21*, 1150-1157.
doi:10.1177/0956797610376655
- Guimond, S. (2008). Psychological similarities and differences between women and men across cultures. *Social and Personality Psychology Compass*, *2*, 494-510.
doi:10.1111/j.1751-9004.2007.00036.x
- Hankin, B. L., & Abramson, L. Y. (2001). Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin*, *127*, 773-796. doi:10.1037//0033-2909.127.6.773
- Harb, C., & Smith, P. B. (2008). Self-construals across cultures: Beyond independence-interdependence. *Journal of Cross-Cultural Psychology*, *39*, 178-197.
doi:10.1177/0022022107313861

- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behaviour change*. New York: Guilford Press.
- Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The Psychological Record, 54*, 553-578. Retrieved from <http://opensiuc.lib.siu.edu/tpr/vol54/iss4/5>
- Heine, S. J., Lehman, D. R., Peng, K., & Greenholtz, J. (2002). What's wrong with cross-cultural comparisons of subjective Likert scales?: The reference-group effect. *Journal of Personality and Social Psychology, 82*, 903-918. doi:10.1037/0022-3514.82.6.903
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: SAGE Publications.
- Hong, Y.-Y. (2009). A dynamic constructivist approach to culture: Moving from describing culture to explaining culture. In R. Wyer, C.-y. Chiu, & Y.-Y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 3-23). New York, NY: Psychology Press.
- Hong, W., Abela, J. R. Z., Cohen, J. R., Sheshko, D. M., Shi, X. T., Van Hamel, A., & Starrs, C. (2010). Rumination as a vulnerability factor to depression in adolescents in Mainland China: Lifetime history of clinically significant depressive episodes. *Journal of Clinical Child and Adolescent Psychology, 39*, 849-857. doi:10.1080/15374416.2010.517159

- Hong, Y.-y., Morris, M. W., Chiu, C.-y., & Benet-Martinez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*, 709-720. doi:10.1037//0003-066X.55.7.709
- Hong, Y.-Y., Wan, C., No, S., & Chiu, C.-Y. (2007). Multicultural identities. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 323-345). New York: Guilford Press.
- Hui, C. (1988). Measurement of individualism-collectivism. *Journal of Research in Personality, 22*, 17-36. doi:10.1016/0092-6566(88)90022-0
- Huynh, Q.-L., Howell, R. T., & Benet-Martínez, V. (2009). Reliability of bidimensional acculturation scores: A meta-analysis. *Journal of Cross-Cultural Psychology, 40*, 256-274. doi: 10.1177/0022022108328919
- Iwamoto, D. K., Liao, L., & Miu, M. (2010). Masculine norms, avoidant coping, Asian values, and depression among Asian American men. *Psychology of Men and Masculinity, 11*, 15-24. doi:10.1037/a0017874
- Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioural activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice, 8*, 255-270. doi:10.1093/clipsy.8.3.255
- Joiner, T., & Coyne, J. C. (1999). *The interactional nature of depression*. Washington, DC: American Psychological Association.
- Jose, P. E., & Huntsinger, C. S. (2005). Moderation and mediation effects of coping by Chinese American and European American adolescents. *The Journal of Genetic Psychology: Research and Theory on Human Development, 166*, 16-44. doi:10.3200/GNTP.166.1
- Jose, P. E., & Schurer, K. (2010). Cultural differences

- in coping among New Zealand adolescents. *Journal of Cross-Cultural Psychology*, *41*, 3-18. doi:10.1177/0022022109348783
- Just, N., & Alloy, L. B. (1997). The response styles theory of depression: Tests and an extension of the theory. *Journal of Abnormal Psychology*, *106*, 221-229. doi:10.1037/0021-843X.106.2.221
- Kimmelmeier, M., & Cheng, B. Y.-M. (2004). Language and self-construal priming: A replication and extension in a Hong Kong sample. *Journal of Cross-Cultural Psychology*, *35*, 705-712. doi:10.1177/0022022104270112
- Kennedy, M. A., Parhar, K. K., Samra, J., & Gorzalka, B. (2005). Suicide ideation in different generations of immigrants. *The Canadian Journal of Psychiatry*, *50*, 353-356. Retrieved from <http://ezproxy.lib.ucalgary.ca/login?url=http://search.proquest.com/docview/222815053?accountid=9838>
- Kim, B. S., & Hong, S. (2004). A psychometric revision of the Asian Values Scale using the Rasch model. *Measurement and Evaluation in Counseling and Development*, *37*, 15-27. Retrieved from <http://www.escholarship.org/uc/item/7455621m>
- Kitayama, S. (2002). Culture and basic psychological processes – Toward a system view of culture: Comment on Oyserman et al. (2002). *Psychological Bulletin*, *128*, 89-96. doi:10.1037//0033-2909.128.1.89
- Kitayama, S., Park, H., Sevincer, A. T., Karasawa, M., & Uskul, A. K. (2009). A cultural task analysis of implicit independence: Comparing North America, Western Europe, and East Asia. *Journal of Personality and Social Psychology*, *97*, 236-255. doi:10.1037/a0015999

- Kleinman, A. (1982). Neurasthenia and depression: a study of somatization and culture in China. *Culture, Medicine, and Psychiatry*, 6, 117-190. doi:10.1007/BF00051427
- Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London, England: Routledge.
- Kühnen, U., & Haberstroh, S. (2004). Self-construal activation and focus of comparison as determinants of assimilation and contrast in social comparisons. *Cahiers de Psychologie Cognitive*, 22, 289-310.
- Kühnen, U., Hannover, B., & Schubert, B. (2001). The semantic-procedural interface model of the self: The role of self-knowledge for context-dependent versus context-independent modes of thinking. *Journal of Personality and Social Psychology*, 80, 397-409.
- Kühnen, U., & Oyserman, D. (2002). Thinking about the self influences thinking in general: Cognitive consequences of salient self-concept. *Journal of Experimental Social Psychology*, 38, 492-499.
- Kuo, W. H. (1984). Prevalence of depression among Asian Americans. *Journal of Nervous and Mental Disease*, 172, 449-457. Retrieved from <http://journals.lww.com/jonmd/toc/1984/08000>
- Kuo, B. (2011). Culture's consequences on coping: Theories, evidences, and dimensionalities. *Journal of Cross-Cultural Psychology*, 42, 1084-1100. doi:10.1177/0022022110381126
- Kuo, B., Roysircar, G., & Newby-Clark, I. R. (2006). Development of the cross-cultural coping scale: Collective, avoidance, and engagement coping. *Measurement and*

- evaluation in counseling and development*, 39, 161-182. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ750139>
- Kuyken, W., & Brewin, C. R. (1994). Stress and coping in depressed women. *Cognitive Therapy and Research*, 18, 403-412. doi:10.1007/BF02357751
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing.
- Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology*, 78, 1122-1134.
- Lehman, D. R., Chiu, C., & Schaller, M. (2004). Psychology and culture. *Annual Review of Psychology*, 55, 689-714. doi:10.1146/annurev.psych.55.090902.141927
- Levine, T. R., Bresnahan, M. J., Park, H. S., Lapinski, M. K., Wittenbaum, G. M., Shearman, S. M.,... Ohashi, R. (2003). *Self-construal scales lack validity*. *Human Communication Research*, 29, 210-252. doi:10.1111/j.1468-2958.2003.tb00837.x
- Lin, N. (1989). Measuring depressive symptomatology in China. *Journal of Nervous and Mental Disease*, 177, 121-131. Retrieved from <http://journals.lww.com/jonmd/toc/1989/03000>
- Lo, C. S. L., Ho, S. M. Y., & Hollon, S. D. (2008). The effects of rumination and negative cognitive styles on depression: A mediation analysis. *Behaviour Research and Therapy*, 46, 487-495. doi:10.1016/j.brat.2008.01.013
- Lyubomirsky, S., & Nolen-Hoeksema, S. (1995). Effects of self-focused rumination on negative thinking and interpersonal problem solving. *Journal of Personality and Social Psychology*, 69, 176-190. doi:10.1037/0022-3514.69.1.176

- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*, 224-253. doi:10.1037//0033-295X.98.2.224
- Marsella, A. J., & Yamada, A. M. (2007). Culture and psychopathology: Foundations, issues, and directions. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 797-818). New York, NY: Guilford Press.
- Martell, C. R., Addis, M. E., & Jacobson, N. S. (2001). *Depression in context: Strategies for guided action*. New York: W. W. Norton.
- Martell, C. R., Dimidjian, S., & Herman-Dunn, R. (2010). *Behavioral Activation for Depression*. New York, NY: The Guilford Press.
- Matsumoto, D. (1999). Culture and the self: An empirical assessment of Markus and Kitayama's theory of independent and interdependent self-construals. *Asian Journal of Social Psychology*, *2*, 289-310. doi:10.1111/1467-839X.00042
- Matsumoto, D., Hee Yoo, S., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology*, *94*, 925-937. doi:10.1037/0022-3514.94.6.925
- McEvoy, P. M., Moulds, M. L., & Mahoney, A. E. J. (2013). Mechanisms driving pre- and post-stressor repetitive negative thinking: Metacognitions, cognitive avoidance, and thought control. *Journal of Behavior Therapy and Experimental Psychiatry*, *44*, 84-93. doi:10.1016/j.jbtep.2012.07.011
- McGrath, E., Keita, G. P., Strickland, B. R., & Russo, N. F. (1990). The relation of personality traits and other psychological factors to depression in women. In E. McGrath, G. P. Keita, B. R. Strickland & N. F. Russo (Eds.), *Women and*

depression: Risk factors and treatment issues: Final report of the American Psychological Association's National Task Force on Women and Depression (pp. 15-28). Washington, DC: American Psychological Association.

Michalak, J., Hölz, A., & Teismann, T. (2011). Rumination as a predictor of relapse in mindfulness-based cognitive therapy for depression. *Psychology and Psychotherapy: Theory, Research and Practice, 84*, 230-236.

doi:10.1348/147608310X520166

Miranda, R., & Nolen-Hoeksema, S. (2007). Brooding and reflection: Rumination predicts suicidal ideation at 1-year follow-up in a community sample. *Behaviour Research and Therapy, 45*, 3088-3095. doi:10.1016/j.brat.2007.07.015

Miller, J. G. (2002). Bringing culture to basic psychological theory – beyond individualism and collectivism: Comment on Oyserman et al. (2002).

Psychological Bulletin, 128, 97-109. doi:10.1037//0033-2909.128.1.97

Moore, J. L., & Constantine, M. G. (2005). Development and initial validation of the collectivistic coping styles measure with African, Asian, and Latin American international students. *Journal of Mental Health Counseling, 27*, 329-347.

Retrieved from <http://www.amhca.org/news/journal.aspx>

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128*, 638-662. doi:10.1037/0033-2909.128.4.638

Morina, N. (2011). Rumination and avoidance as predictors of prolonged grief, depression, and posttraumatic stress in female widowed survivors of war. *The Journal of Nervous and Mental Disease, 12*, 921-927.

doi:10.1097/NMD.0b013e3182392aae

- Moulds, M. L., Kandris, E., Starr, S., & Wong, A. C. M. (2007). The relationship between rumination, avoidance, and depression in a non-clinical sample. *Behaviour Research and Therapy*, *45*, 251-261. doi:10.1016/j.brat.2006.03.003
- Mowrer, O. H. (1947). On the dual nature of learning: A re-interpretation of “conditioning” and “problem-solving”. *Harvard Educational Review*, *17*, 102-148. Retrieved from <http://psycnet.apa.org/psycinfo/1950-03076-001>
- Murray, C. J., & Lopez, A. D. (1996). *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injury and risk factors in 1990 and projected to 2020*. Boston, MA: Harvard University Press.
- Ng, R. M. K., & Bhugra, D. (2008). Relationship between filial piety, meta-cognitive beliefs about rumination and response style theory in depressed Chinese patients. *Asian Journal of Psychiatry*, *1*, 28-32. doi:10.1016/j.ajp.2008.09.009
- Nisbett, R. E. (2003). *The geography of thought: How Asians and Westerners think differently... and why*. New York: The Free Press.
- Noh, S., & Kaspar, V. (2003). Perceived discrimination and depression: Moderating effects of coping, acculturation, and ethnic support. *American Journal of Public Health*, *93*, 232-238. doi:10.2105/AJPH.93.2.232
- Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin*, *101*, 259-282. doi:10.1037/0033-2909.101.2.259
- Nolen-Hoeksema, S. (1990). *Sex differences in depression*. Stanford, CA: Stanford University Press.
- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: The 1989 Loma Prieta

earthquake. *Journal of Personality and Social Psychology*, *61*, 115-121.

doi:10.1037/0022-3514.61.1.115

Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B. L. (1993). Response styles and the duration of episodes of depressed mood. *Journal of Abnormal Psychology*, *102*, 20-28. doi:10.1037/0021-843X.102.1.20

Nolen-Hoeksema, S., Parker, L. E., & Larson, J. (1994). Ruminative coping with depressed mood following loss. *Journal of Personality and Social Psychology*, *67*, 92-104. doi:10.1037/0022-3514.67.1.92

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, *3*, 400-424. doi:10.1111/j.1745-6924.2008.00088.x

Norenzayan, A., Choi, I., & Peng, K. (2007). Perception and cognition. In S. Kitayama & D. Cohen (Eds), *Handbook of Cultural Psychology* (pp. 569-594). New York, NY: Guilford Press.

Oishi, S., Wyer, R., & Colcombe, S. (2000). Cultural variation in the use of current life satisfaction to predict the future. *Journal of Personality and Social Psychology*, *78*, 434-445.

Ottensbreit, N. D., & Dobson, K. S. (2004). Avoidance and depression: The construction of the cognitive-behavioral avoidance scale. *Behaviour Research and Therapy*, *42*, 293-313. doi:10.1016/S0005-7967(03)00140-2

Oyserman, D. (1993). The lens of personhood: Viewing the self and others in a multicultural society. *Journal of Personality and Social Psychology*, *65*, 993-1009. doi:10.1037/0022-3514.65.5.993

- Oyserman, D. (2011). Culture as situated cognition: Cultural mindsets, cultural fluency, and meaning making. *European Review of Social Psychology*, 22, 164-214.
doi:10.1080/10463283.2011.627187
- Oyserman, D., Coon, H. M., & Kimmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128, 3-72. doi:10.1037//0033-2909.128.1.3
- Oyserman, D., Kimmelmeier, M., & Coon, H. M. (2002). Cultural psychology, a new look: Reply to Bond (2002), Fiske (2002), Kitayama (2002), and Miller (2002). *Psychological Bulletin*, 128, 110-117. doi:10.1037//0033-2909.128.1.110
- Oyserman, D., & Lee, S. W. S. (2007). Priming "culture": Culture as situated cognition. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 255-279). New York, NY: Guilford Press.
- Oyserman, D., & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134, 311-342. doi:10.1037/0033-2909.134.2.311
- Oyserman, D., & Sorensen, N. (2009). Understanding cultural syndrome effects on what and how we think: A situated cognition model. In R. Wyer, C.-y. Chiu, & Y.-Y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 25-52). New York, NY: Psychology Press.
- Oyserman, D., Sorensen, N., Reber, R., & Chen, S. X. (2009). Connecting and separating mind-sets: Culture as situated cognition. *Journal of Personality and Social Psychology*, 97, 217-235. doi:10.1037/a0015850

- Panayiotou, G., & Papageorgious, M. (2007). Depressed mood: The role of negative thoughts, self-consciousness, and sex role stereotypes. *International Journal of Psychology, 42*, 289-296. doi:10.1080/00207590701318389
- Parker, G., Cheah, Y.-C., Roy, K. (2001). Do the Chinese somatize depression? A cross-cultural study. *Social psychiatry and psychiatric epidemiology, 36*, 287-293. doi:10.1007/s001270170046
- Prentice, J., Epp, A. M., & Dobson, K. S. (2013). *The role of culture in cognition and psychopathology: A coding study*. Manuscript submitted for publication.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401. doi:10.1177/014662167700100306
- Rice, D. P., & Miller, L. S. (1995). The economic burden of affective disorders. *British Journal of Psychiatry, 166*, 34-42.
- Roberts, J. E., Gilboa, E., & Gotlib, I. H. (1998). Ruminative response style and vulnerability to episodes of dysphoria: Gender, neuroticism, and episode duration. *Cognitive Therapy and Research, 22*, 401-423. doi:10.1023/A:1018713313894
- Roger, D., Garcia de la Banda, G., Lee, H. S., & Olason, D. T. (2001). A factor-analytic study of cross-cultural differences in emotional rumination and emotional inhibition. *Personality and Individual Differences, 31*, 227-238. doi:10.1016/S0191-8869(00)00131-8
- Ross, M., Xun, W. Q. E., & Wilson, A. E. (2002). Language and the bicultural self. *Personality and Social Psychology Bulletin, 28*, 1040-1050.

- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79*, 49-65. doi:10.1016/j.psc.2011.11.006
- Ryder, A. G., & Chentsova-Dutton, Y. E. (2012). Depression in cultural context: “Chinese somatization”, revisited. *Psychiatric Clinics of North America, 35*, 15-36. doi:10.1016/j.psc.2011.11.006
- Ryder, A. G., Yang, J., & Heine, S. J. (2002). Somatization vs. psychologization of emotional distress: A paradigmatic example for cultural psychology. In W. J. Lonner, D. L. Dinnel, S. A. Hayes & D. N. Sattler (Eds.), *Online readings in psychology and culture*. Bellingham, WA: Centre for Cross-Cultural Research.
- Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, R. M. (2008). The cultural shaping of depression: somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology, 117*, 300-313. doi:10.1037/0021-843X.117.2.300
- Segal, A., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford Press.
- Shapiro, P. A., Lidagoster, L., & Glassman, A. H. (1997). Depression and heart disease. *Psychiatric Annals, 27*, 347-352.
- Shim, Y. R., & Schwartz, R. C. (2008). Degree of acculturation and adherence to Asian values as correlates of psychological distress among Korean immigrants. *Journal of Mental Health, 17*, 607-617. doi:10.1080/09638230701506838

- Schimmack, U., Oishi, S., & Diener, E. (2005). Individualism: A valid and important dimension of cultural differences between nations. *Personality and Social Psychology Review, 9*, 17-31. doi:10.1207/s15327957pspr0901_2
- Shulruf, B., Hattie, J., & Dixon, R. (2007). Development of a new measurement tool for individualism and collectivism. *Journal of Psychoeducational Assessment, 25*, 385-401. doi:10.1177/0734282906298992
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin, 20*, 580-591. doi:10.1177/0146167294205014
- Singelis, T. M., Triandis, H. C., Bhawuk, D. P. S., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-Cultural Research: The Journal of Comparative Social Science, 29*, 240-275. doi:10.1177/106939719502900302
- Smith, J. M., & Alloy, L. B. (2009). A roadmap to rumination: A review of the definition, assessment, and conceptualization of this multifaceted construct. *Clinical Psychology Review, 29*, 116-128. doi:10.1016/j.cpr.2008.10.003
- Spasojevic, J., & Alloy, L. B. (2001). Rumination as a common mechanism relating depressive risk factors to depression. *Emotion, 1*, 25-37. doi:10.1037//1528-3542.1.1.25
- Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology, 37*, 1660-1672. doi:10.1037/0022-3514.37.10.1660

- Statistics Canada (2001). *Profiles of ethnic communities in Canada: The Chinese community in Canada*. Ottawa, ON: Minister of Industry.
- Stewart, S. M., Kennard, B. D., Lee, P. W. H., Hughes, C. W., Mayes, T. L., Emslie, G. J., & Lewinsohn, P. M. (2004). A cross-cultural investigation of cognitions and depressive symptoms in adolescents. *Journal of Abnormal Psychology, 113*, 248-257. doi: 10.1037/0021-843X.113.2.248
- Stober, J., & Bokovec, T. D. (2002). Reduced concreteness of worry in generalized anxiety disorder: Findings from a therapy study. *Cognitive Therapy and Research, 26*, 89-96.
- Suinn, R. M., Ahuna, C., & Khoo, G. (1992). The Suinn-Lew self-Identity acculturation scale: Concurrent and factorial validation. *Educational and Psychological Measurement, 52*, 1041-1046. doi:10.1177/0013164492052004028
- Suinn, R. M., Rickard-Figueroa, K., Lew, S., & Vigil, P. (1987). The Suinn-Lew Asian self-identity acculturation scale: An initial report. *Educational and Psychological Measurement, 47*, 401-407. doi:10.1177/0013164487472012
- Tally, S. R. (2003). A comparative study of adolescent depressive symptomatology in U.S. and Chinese youths. Dissertation Abstracts International: Section B: The Sciences and Engineering, 63, 10-B. (UMI No. 3067709)
- Tobin, L. D., Holroyd, K. A., Reynolds, R. V., & Wigal, J. K. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognitive Therapy and Research, 13*, 343-361. doi:10.1007/BF01173478

- Trafimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between the private self and the collective self. *Journal of Personality and Social Psychology, 60*, 649-655. doi:10.1037/0022-3514.60.5.649
- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology, 76*, 284-304. doi:10.1037/0022-3514.76.2.284
- Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*, 247-259. doi:10.1023/A:1023910315561
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review, 3*, 506-520. doi:10.1037/0033-295X.96.3.506
- Triandis, H. C. (1994). Theoretical and methodological approaches to the study of collectivism and individualism. In U. Kim, H. C. Triandis, C. Kagitcibasi, S. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, method, and applications* (pp. 41-51). Thousand Oaks, CA: Sage.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview.
- Triandis, H. C. (2001). Individualism and Collectivism: Past, Present, and Future. In D. Matsumoto (Ed.), *The handbook of culture and psychology* (pp. 35-50). New York, NY: Oxford University Press.
- Triandis, H. C., Bontempo, R., & Villareal, M. J. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology, 54*, 323-338. doi:10.1037/0022-3514.54.2.323

- Triandis, H. C., Leung, K., Villareal, M. B., & Clark, F. L. (1985). Allocentric versus idiocentric tendencies: Convergent and discriminant validation. *Journal of Research in Personality, 19*, 395-415. doi:10.1016/0092-6566(85)90008-X
- Tsai, W., Chang, E. C., Sanna, L. J., & Herringshaw, A. J. (2011). An examination of happiness as a buffer of the rumination-adjustment link: Ethnic differences between European and Asian American students. *Asian American Journal of Psychology, 2*, 168-180. doi:10.1037/a0025319
- Varte, C. L., & Zokaitluangi (2006). Aspects of identity and symptoms of adjustment related problems in the acculturating Mizo students. *Social Science International, 22*, 111-132.
- Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin, 134*, 163-206. doi:10.1037/0033-2909.134.2.163
- Watkins, E., & Moulds, M. L. (2007). Reduced concreteness of rumination in depression: A pilot study. *Personality and Individual Differences, 43*, 1386-1395. doi:10.1016/j.paid.2007.04.007
- Wei, M., Liao, K. Y.-H., Heppner, P. P., Chao, R. C.-L., Ku, T.-Y. (2012). Forbearance coping, identification with heritage culture, acculturative stress, and psychological distress among Chinese international students. *Journal of Counseling Psychology, 59*, 97-106. doi:10.1037/a0025473
- Weissman, M. M., Leaf, P. J., Holzer, C. E., III, Myers, J. K., & Tischler, G. L. (1984). The epidemiology of depression: An update on sex differences in rates. *Journal of Affective Disorders, 7*, 179-188. doi:10.1016/0165-0327(84)90039-9

- Wester, S. R., Kuo, B. C. H., & Vogel, D. L. (2006). Multicultural coping: Chinese Canadian adolescents, male gender role conflict, and psychological distress. *Psychology of Men & Masculinity, 2*, 83-100. doi:10.1037/1524-9220.7.2.83
- Wong, Y.-M., & Hong, Y.-Y. (2005). Dynamic influences of culture on cooperation in the prisoner's dilemma. *Psychological Science, 16*, 429-434. Retrieved from <http://www.jstor.org/stable/40064244>
- World Health Organization (2007). Process of translation and adaptation of instruments. Retrieved August 24, 2007 from http://www.who.int/substance_abuse/research_tools/translation/en/.
- Ying, Y. W. (1988). Depressive symptomatology among Chinese Americans as measured by the CES-D. *Journal of Clinical Psychology, 44*, 739-746. doi:10.1002/1097-4679(198809)

Appendix A

Cognitive Vulnerability to Depression: Investigating the Role of Culture

Background Information Form

Date Completed: _____

Office Use: ID# _____

←----->

Please provide the following information in the spaces provided:

1. Gender : Male Female 2. Age: _____

3. Nationality: _____

4. Ethnic Origin(s): _____

5. Heritage Culture: _____

*The culture that has influenced you the most (other than North American culture). (If you feel that you have not been influenced by a culture other than North American culture, identify the culture that may have had an impact on previous generations of your family).

6. Religion: _____

7. City & country of birth: You: _____

Father: _____

Mother: _____

(father's side)

(mother's side)

Grandfather: _____

Grandmother: _____

:

*Please place a check beside your primary caregiver(s).

8. How long have you lived in Canada? _____

9. How many languages do you speak? _____ Please list them: _____

10. First language learned: _____

11. If you speak English, how long has it been? _____

12. What is the primary language spoken in your family's home: _____

13. Highest level of education obtained: You: _____

Parents: Father: _____ Mother: _____

14. Current occupation: _____

抑鬱症的認知點：文化角色的調查

Background Information Form

個人資料

填表日期：_____ Office Use : ID # _____

請填寫以下資料：

1. 性別： 男 女 2. 年齡：_____

3. 國籍：_____

4. 種族：_____

5. 傳統文化：_____

* 對你影響最深遠的文化（北美文化除外）。

(如果你認為除北美文化外，自己沒有受過其他文化影響的話，請指出一種可能對你家族有影響的傳統文化。)

6. 宗教：_____

7. 出生國家和城市：

你本人：_____

父親：_____ 母親：_____

祖父：_____ 外祖父：_____

祖母：_____ 外祖母：_____

* 請在你的主要照顧者旁（可多於一名）加上✓號

8. 你在加拿大居住有多久？_____

9. 你能講多少種語言：_____種 請註明：_____

10. 最先學習的語言：_____

11. 如果你能說英語，你說了多久？_____

12. 你在家中常用的語言是：_____

13. 最高學歷：你本人：_____

父母： 父親：_____ 母親：_____

14. 現時職業：_____

Appendix B

SCS

This is a questionnaire that measures a variety of feelings and behaviors in various situations. Listed below are a number of statements. Read each one as if it referred to you. Beside each statement write the number that best matches your agreement or disagreement. Please respond to every statement. Thank you.

1=STRONGLY DISAGREE	4=DON'T AGREE OR	5=AGREE SOMEWHAT
2=DISAGREE	DISAGREE	6=AGREE
3=SOMEWHAT DISAGREE		7=STRONGLY AGREE

- ___ 1. I enjoy being unique and different from others in many respects.
- ___ 2. I can talk openly with a person who I meet for the first time, even when this person is much older than I am.
- ___ 3. Even when I strongly disagree with group members, I avoid an argument.
- ___ 4. I have respect for the authority figures with whom I interact.
- ___ 5. I do my own thing, regardless of what others think.
- ___ 6. I respect people who are modest about themselves.
- ___ 7. I feel it is important for me to act as an independent person.
- ___ 8. I will sacrifice my self interest for the benefit of the group I am in.
- ___ 9. I'd rather say "No" directly, than risk being misunderstood.
- ___ 10. Having a lively imagination is important to me.
- ___ 11. I should take into consideration my parents' advice when making education/career plans.
- ___ 12. I feel my fate is intertwined with the fate of those around me.
- ___ 13. I prefer to be direct and forthright when dealing with people I've just met.
- ___ 14. I feel good when I cooperate with others.
- ___ 15. I am comfortable with being singled out for praise or rewards.
- ___ 16. If my brother or sister fails, I feel responsible.
- ___ 17. I often have the feeling that my relationships with others are more important than my own accomplishments.
- ___ 18. Speaking up during a class (or a meeting) is not a problem for me.
- ___ 19. I would offer my seat in a bus to my professor (or my boss).
- ___ 20. I act the same way no matter who I am with.
- ___ 21. My happiness depends on the happiness of those around me.
- ___ 22. I value being in good health above everything.
- ___ 23. I will stay in a group if they need me, even when I am not happy with the group.
- ___ 24. I try to do what is best for me, regardless of how that might affect others.
- ___ 25. Being able to take care of myself is a primary concern for me.
- ___ 26. It is important to me to respect decisions made by the group.
- ___ 27. My personal identity, independent of others, is very important to me.
- ___ 28. It is important for me to maintain harmony within my group.
- ___ 29. I act the same way at home that I do at school (or work).
- ___ 30. I usually go along with what others want to do, even when I would rather do something different.

SCS

這份問卷是量度人們於各種情況下的不同感受和行為。請細心閱讀下列每句句子，試想自己在句子描述的情況中。然後在每句句子旁邊寫上數字，代表你對句子的同意程度。請回答所有句子。多謝。

- 1=極不同意 4=中立 5=有些同意
2=不同意 6=同意
3=有些不同意 7=極同意

- ___ 1. 我欣賞自己在多方面都是與別不同 獨一無二的。
___ 2. 我能夠跟初次見面的人坦率地聊天，即使這個人比我年長很多。
___ 3. 即使我極不同意其他組員的意見，我避免與他們爭論。
___ 4. 我尊重那些與我交過的權威人士。
___ 5. 我不顧別人的看法，只做自己的事。
___ 6. 我尊重那些謙虛的人。
___ 7. 對我來說，我覺得充當成一個獨立的人是重要的。
___ 8. 我會為了團隊的益處而犧牲自己的利益。
___ 9. 我寧可直接說"不"，也不會冒被人誤解的風險。
___ 10. 對我來說，擁有豐富的幻想是重要的。
___ 11. 在訂立學習/就業計劃時，我必須要考慮父母的建議。
___ 12. 我覺得自己的命運是與我身邊的人的命運纏繞在一起。
___ 13. 我寧願選擇以坦率直接的態度對待我剛認識的人。
___ 14. 當我跟別人合作時，我的感覺良好。
___ 15. 當我被挑選出來接受讚美或獎勵時，我感到自在。
___ 16. 假若我的兄弟姊妹嘗到失敗，我認為是自己的責任。
___ 17. 我經常覺得我跟他人的關係比我個人的成就更為重要。
___ 18. 對我來說，在課堂(或會議)上發言並不是問題。
___ 19. 我會在巴士上讓座給我的教授(或上司)。
___ 20. 不論跟他在一起，我的行為沒有任何改變。
___ 21. 我的快樂建基於我身邊的人的快樂。
___ 22. 我珍惜我的健康多於一切。
___ 23. 如果我的團隊需要我，即使我跟他們一起不快樂，我也會留在團隊裡。
___ 24. 我會努力做為自己最想做的事，而不管這會對其他人帶來多大的影響。
___ 25. 對我來說，能夠照顧自己是最基本的。
___ 26. 對我來說，尊重團隊所作出的決定是重要的。
___ 27. 對我來說，我這有別於他人的身分是非常重要的。
___ 28. 對我來說，維持團隊內的和諧是重要的。
___ 29. 我在學校(或上班)時的行為跟在家時的行為相同。
___ 30. 即使我想做一些不同的事，我通常都會跟隨其他人做他們想做的事。

Appendix C

SEUX

This is a questionnaire that measures a variety of feelings and behaviors in various situations. Listed below are a number of statements. Read each one as if it referred to you. Beside each statement put a check mark in the box that best matches your agreement or disagreement. Please respond to every statement. Thank you.

	Strongly disagree	Disagree	Somewhat disagree	Don't agree or disagree	Agree Somewhat	Agree	Strongly agree
It is important to me to respect decisions made by the group.							
I can talk openly with a person who I meet for the first time, even when this person is much older than I am.							
I am comfortable with being singled out for praise or rewards.							
I value being in good health above everything.							
My personal identity, independent of others, is very important to me.							

	Strongly disagree	Disagree	Somewhat disagree	Don't agree or disagree	Agree Somewhat	Agree	Strongly agree
I respect people who are modest about themselves.							
I usually go along with what others want to do, even when I would rather do something different.							
I'd rather say "No" directly, than risk being misunderstood.							
I will sacrifice my self interest for the benefit of the group I am in.							
Having a lively imagination is important to me.							
If my brother or sister fails, I feel responsible.							
I feel good when I cooperate with others.							
I prefer to be direct and forthright when dealing with people I've just met.							
I feel my fate is intertwined with the fate of those around me.							
Even when I strongly disagree with group members, I avoid an argument.							
I should take into consideration my parents' advice when making education/career plans.							

	Strongly disagree	Disagree	Somewhat disagree	Don't agree or disagree	Agree Somewhat	Agree	Strongly agree
I often have the feeling that my relationships with others are more important than my own accomplishments.							
Speaking up during a class (or a meeting) is not a problem for me.							
I try to do what is best for me, regardless of how that might affect others.							
I act the same way no matter who I am with.							
My happiness depends on the happiness of those around me.							
I have respect for the authority figures with whom I interact.							
I will stay in a group if they need me, even when I am not happy with the group.							
I would offer my seat in a bus to my professor (or my boss).							

	Strongly disagree	Disagree	Somewhat disagree	Don't agree or disagree	Agree Somewhat	Agree	Strongly agree
Being able to take care of myself is a primary concern for me.							
I enjoy being unique and different from others in many respects.							
I act the same way at home that I do at school (or work).							
It is important for me to maintain harmony within my group.							
I do my own thing, regardless of what others think.							
I feel it is important for me to act as an independent person.							

SEUX

這份問卷是量度人們於各種情況下的不同感受和行為。請細心閱讀下列每句句子，試想自己在句子描述的情況中。然後在每句句子旁邊寫上數字，代表你對句子的同意程度。

請回答所有句子。多謝。

	極不同意	不同意	有些不同意	中立	有些同意	同意	極同意
對我來說，尊重團隊所作出的決定是重要的。							
我能夠跟初次見面的人坦率地聊天，即使這個人比我年長很多。							
當我被挑選出來接受讚美或獎勵時，我感到自在。							
我珍惜我的健康多於一切。							
對我來說，我這有別於他人的身分是非常重要的。							
我尊重那些謙虛的人。							
即使我想做一些不同的事，我通常都會跟隨其他人做他們想做的事。							
我寧可直接說"不"，也不會冒被人誤解的風險。							
我會為了團隊的益處而犧牲自己的利益。							
對我來說，擁有豐富的幻想是重要的。							
假若我的兄弟姊妹嘗到失敗，我認為是自己的責任。							
當我跟別人合作時，我的感覺良好。							
我寧願選擇以坦率直接的態度對待我剛認識的人。							
我覺得自己的命運是與我身邊的人的命運纏繞在一起。							
即使我極不同意其他組員							

的意見，我避免與他們爭論。							
在訂立學習/就業計劃時，我必須要考慮父母的建議。							
我經常覺得我跟他人的關係比我個人的成就更為重要。							
對我來說，在課堂（或會議）上發言並不是問題。							
我會努力做為自己最好的事，而不管這會對其他人帶來多大的影響。							
不論跟誰在一起，我的行為沒有任何改變。							
我的快樂建基於我身邊的人的快樂。							
我尊重那些與我交往的權威人士。							
如果我的團隊需要我，即使我跟他們一起不快樂，我也會留在團隊裡。							
我會在巴士上讓座給我的教授（或上司）。							
對我來說，能夠照顧自己是最基本的。							
我欣賞自己在多方面都是與別不同，獨一無二的。							
我在學校（或上班）時的行為跟在家時的行為相同。							
對我來說，維持團隊內的和諧是重要的。							
我不顧別人的看法，只做自己的事。							
對我來說，我覺得充當成一個獨立的人是重要的。							

Appendix D

VIA

INSTRUCTIONS:

Please answer each question as carefully as possible by circling *one* of the numbers to the right of each question to indicate your degree of agreement or disagreement.

Many of these questions will refer to your *heritage culture*, meaning the culture that has influenced you most (other than North American culture). It may be the culture of your birth, the culture in which you were raised, or another culture that forms part of your background. If there are several such cultures, pick the one that has influenced you *most* (e.g., Irish, Chinese, Mexican, Black). If you do not feel that you have been influenced by any other culture, please to identify a culture that may have had an impact on previous generations of your family.

Please write your *heritage culture* in the space provided: _____

Use the following key to help guide your answers:

Strongly Disagree	Disagree		Neutral/ Depends			Agree		Strongly Agree	
1	2	3	4	5	6	7	8	9	
1. I often participate in my <i>heritage culture</i> traditions.	1	2	3	4	5	6	7	8	9
2. I often participate in mainstream North American cultural traditions.	1	2	3	4	5	6	7	8	9
3. I would be willing to marry a person from my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
4. I would be willing to marry a North American person.	1	2	3	4	5	6	7	8	9
5. I enjoy social activities with people from the same <i>heritage culture</i> as myself.	1	2	3	4	5	6	7	8	9
6. I enjoy social activities with typical North American people.	1	2	3	4	5	6	7	8	9
7. I am comfortable working with people of the same <i>heritage culture</i> as myself.	1	2	3	4	5	6	7	8	9
8. I am comfortable working with typical North American people.	1	2	3	4	5	6	7	8	9
9. I enjoy entertainment (e.g., movies, music) from my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
10. I enjoy North American entertainment (e.g., movies, music)	1	2	3	4	5	6	7	8	9
11. I often behave in ways that are typical of my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
12. I often behave in ways that are 'typically North American.'	1	2	3	4	5	6	7	8	9
13. It is important for me to maintain or develop the practices of my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
14. It is important for me to maintain or develop North American cultural practices.	1	2	3	4	5	6	7	8	9
15. I believe in the values of my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
16. I believe in mainstream North American values.	1	2	3	4	5	6	7	8	9
17. I enjoy the jokes and humour of my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
18. I enjoy typical North American jokes and humour.	1	2	3	4	5	6	7	8	9
19. I am interested in having friends from my <i>heritage culture</i> .	1	2	3	4	5	6	7	8	9
20. I am interested in having North American friends.	1	2	3	4	5	6	7	8	9

VIA

請細心閱讀以下每句句，然後在右方選出你對該句子的同意程度。

下列大部份問題都與你的 *傳統文化* 有關。*傳統文化* 是指(除北美文化外)對你影響最深遠的文化。這可能是你出生地的文化，你成長地的文化，或是形成你某些背景的其他文化。如果你認為自己受多於一種文化影響的話，你可選擇一種對你影響最深的文化(例如：愛爾蘭、中國、墨西哥、黑人文化)。如果你不認為自己曾受其他文化影響的話，請指出一種可能曾影響你家族成員的文化。

請列出你的 *傳統文化*： _____

極不同意	不同意	中立/ 視乎情況			同意	極度同意		
1	2	3	4	5	6	7	8	9

1. 我經常參與我的 <i>傳統文化</i> 活動。	1	2	3	4	5	6	7	8	9
2. 我經常參與北美主流文化活動。	1	2	3	4	5	6	7	8	9
3. 我會願意跟一個與自己有相同 <i>傳統文化</i> 的人結婚。	1	2	3	4	5	6	7	8	9
4. 我會願意跟一個北美裔的人結婚。	1	2	3	4	5	6	7	8	9
5. 我喜歡與那些跟自己有相同 <i>傳統文化</i> 的人參與社交活動。	1	2	3	4	5	6	7	8	9
6. 我喜歡與地道北美裔人參與社交活動。	1	2	3	4	5	6	7	8	9
7. 我跟那些與自己有相同 <i>傳統文化</i> 的人一起工作時，感到自在。	1	2	3	4	5	6	7	8	9
8. 我跟地道北美裔人一起工作時，感到自在。	1	2	3	4	5	6	7	8	9
9. 我喜歡有關自己 <i>傳統文化</i> 的娛樂活動(例如：電影、音樂)。	1	2	3	4	5	6	7	8	9
10. 我喜歡北美的娛樂活動(例如：電影、音樂)。	1	2	3	4	5	6	7	8	9
11. 我的行為經常表現出自己的 <i>傳統文化</i> 。	1	2	3	4	5	6	7	8	9
12. 我的行為經常表現出地道北美文化。	1	2	3	4	5	6	7	8	9
13. 對我來說，保持或發展自己的 <i>傳統文化</i> 習俗是重要的。	1	2	3	4	5	6	7	8	9
14. 對我來說，保持或發展北美文化習俗是重要的。	1	2	3	4	5	6	7	8	9
15. 我相信自己 <i>傳統文化</i> 的價值。	1	2	3	4	5	6	7	8	9
16. 我相信北美主流的價值。	1	2	3	4	5	6	7	8	9
17. 我喜歡自己 <i>傳統文化</i> 的笑話和幽默感。	1	2	3	4	5	6	7	8	9
18. 我喜歡地道北美文化的的笑話和幽默感。	1	2	3	4	5	6	7	8	9
19. 我喜歡跟與自己有相同 <i>傳統文化</i> 的人交朋友。	1	2	3	4	5	6	7	8	9
20. 我喜歡跟北美裔人交朋友。	1	2	3	4	5	6	7	8	9

Appendix E

CES-D

INSTRUCTIONS:

Below is a list of the ways you might have felt or behaved in the past week. Please indicate how often you have felt this way during the past week.

- 0 RARELY OR NONE OF THE TIME (less than 1 day)**
1 SOME OR LITTLE OF THE TIME (1-2 days)
2 OCCASIONALLY OR A MODERATE AMOUNT OF TIME (3-4 days)
3 MOST OR ALL OF THE TIME (5-7 days)

During the past week:

- ___ 1. I was bothered by things that usually don't bother me.
- ___ 2. I did not feel like eating; my appetite was poor.
- ___ 3. I felt that I could not shake off the blues even with help from my family or friends.
- ___ 4. I felt that I was just as good as other people.
- ___ 5. I had trouble keeping my mind on what I was doing.
- ___ 6. I felt depressed.
- ___ 7. I felt that everything I did was an effort.
- ___ 8. I felt hopeful about the future.
- ___ 9. I thought my life had been a failure.
- ___ 10. I felt fearful.
- ___ 11. My sleep was restless.
- ___ 12. I was happy.
- ___ 13. I talked less than usual.
- ___ 14. I felt lonely.
- ___ 15. People were unfriendly.
- ___ 16. I enjoyed life.
- ___ 17. I had crying spells.
- ___ 18. I felt sad.
- ___ 19. I felt that people dislike me.
- ___ 20. I could not get "going."

CES-D

以下一些句子可能是你在過去一周會有過的感受或表現，請指出你在過去一周有多經常出現以下的感受。

- 0** 沒有或幾乎沒有(出現這類情況少於一天)
1 少有(一至二天內有)
2 常有(三至四天有)
3 大部份時間有(五至七天有)

在過去一周：

- ___ 1. 我會被一些平常不會困擾我的事情困擾著我。
 ___ 2. 我曾胃口很差，不想吃東西。
 ___ 3. 即使得到家人和朋友的幫助，我依然覺得自己無法揮卻抑鬱的感覺。
 ___ 4. 我覺得自己跟其他人一樣的好。
 ___ 5. 我曾難以集中精神工作。
 ___ 6. 我曾感到沮喪。
 ___ 7. 我曾覺得做任何事都很費勁。
 ___ 8. 我曾對將來感到有希望。
 ___ 9. 我曾覺得自己的一生很失敗。
 ___ 10. 我曾感到懼怕。
 ___ 11. 我睡覺時會輾轉反側，無法入眠。
 ___ 12. 我曾感到快樂。
 ___ 13. 我曾比平常少說話。
 ___ 14. 我曾感到寂寞。
 ___ 15. 其他人沒友善過。
 ___ 16. 我曾享受過生命。
 ___ 17. 我曾時常哭起來。
 ___ 18. 我曾感到悲哀。
 ___ 19. 我曾覺得別人不喜歡我。
 ___ 20. 我曾覺得沒有動力繼續下去。

Appendix F

RRS

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you **almost never, sometimes, often, or almost always** think or do each one when you feel down, sad, or depressed. Please indicate what you *generally* do, not what you think you should do.

Almost Never	Sometimes	Often	Almost Always	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Think about how alone you feel
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Think "I won't be able to do my job/work because I feel so badly"
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Think about your feelings of fatigue and achiness
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Think about how hard it is to concentrate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Think about how passive and unmotivated you feel
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Analyze recent events to try to understand why you are depressed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Think about how you don't seem to feel anything anymore
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Think "Why can't I get going?"
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Think "Why do I always react this way?"
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Go away by yourself and think about why you feel this way
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Write down what you are thinking about and analyze it
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Think about a recent situation, wishing it would have gone better
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. Think "Why do I have problems other people don't have?"
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14. Think about how sad you feel
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15. Think about all your shortcomings, failings, faults, mistakes
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. Think about how you don't feel up to doing anything
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17. Analyze your personality to try to understand why you are depressed
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18. Go someplace alone to think about your feelings
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19. Think about how angry you are with yourself
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20. Listen to sad music
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21. Isolate yourself and think about the reasons why you feel sad
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22. Try to understand yourself by focusing on your depressed feelings

RRS

當一般人感到抑鬱時,會有很多不同的想法和做法,請細閱下列每句句子,並指出當你感到情緒低落、憂愁或抑鬱時,你有多經常(幾乎沒有、間中、時常或經常)會出現以下的想法和做法。請選出你**通常**的做法,而並非你覺得你應該怎樣做。

幾乎沒有 **間** 時常 經常

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. 想到你是感到多麼的孤獨 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. 想：“我不能做我的工作,因為我的心情太差” |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. 想到你那疲乏和隱隱作痛的感覺 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4. 想到集中精神是多麼的困難 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5. 想到你是感到多麼的被動和欠缺動力 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. 分析最近發生的事情,試圖瞭解你抑鬱的原因 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. 覺得你好像對任何事情都再也沒有感覺 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8. 想：“為何我停滯不前?” |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 9. 想：“為甚麼我總是有這樣的反應?” |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10. 獨自離開,並想想為甚麼你會有這種感覺 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 11. 寫下你現在的想法,並加以分析 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12. 想到近期發生的一件事,但願它會比實際情況更好 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 13. 想：“為何我有的問題其他人卻沒有?” |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 14. 想到你是感到多麼的悲傷 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 15. 想到你所有的缺點,失敗,過錯和錯誤 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 16. 覺得自己不想做任何事情 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 17. 分析你的性格,嘗試瞭解你為何抑鬱 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 18. 獨自去一些地方,去想一想自己的感覺 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 19. 想到你是多麼的氣惱自己 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 20. 聽憂傷的音樂 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 21. 孤立自己,去想一想你感到悲傷的原因 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 22. 集中你的抑鬱感覺,而去嘗試瞭解自己 |

Appendix G

CBAS

Instructions: Different people use different strategies to deal with situations and problems in their lives. Below are a number of strategies that people may use to deal with situations and problems. A number of the items below refer to dealing with situations at work or school. If you are not currently working or attending school, answer these items instead using your daily duties and activities. Please read each statement carefully and indicate how true, *in general*, each statement is for you using the following key:

1= **Not at all** true for me
 2= **Somewhat** true for me
 3= **Moderately** true for me
 4= **Very much** true for me
 5= **Extremely** true for me

1. I avoid attending social activities.	1	2	3	4	5				
2. When uncertain about my future, I fail to sit down and think about what I really want.	1	2	3	4	5				
3. I would like to achieve things at work/school, but I have to accept my limits.	1	2	3	4	5				
4. I fail to do what is needed to follow through with achievement goals I have set for myself.	1	2	3	4	5				
5. In order to avoid feelings of disappointment, I just try not to get too serious about work/school.	1	2	3	4	5				
6. Rather than try new activities, I tend to stick with the things I know.	1	2	3	4	5				
7. I choose to turn down opportunities to further my education/career.	1	2	3	4	5				
8. I do not answer the phone in case people are calling with social invitations.	1	2	3	4	5				
9. I quit activities that challenge me too much.	1	2	3	4	5				
10. I try not to think about problems in my personal relationships.	1	2	3	4	5				
11. I think to myself that I will not be able to complete really challenging tasks.	1	2	3	4	5				
12. While I know I should make decisions about my personal relationships, I just let things go on as they are.	1	2	3	4	5				
13. I avoid trying new activities that hold the potential for failure.	1	2	3	4	5				
14. I do not go out to events when I know there will be a lot of people I do not know.	1	2	3	4	5				
15. Instead of thinking about problems in my social life, I tell myself that I prefer to be alone.	1	2	3	4	5				
16. I fail to discuss/address tension that builds in a friendship.	1	2	3	4	5				
17. I find that I often want to leave social gatherings.	1	2	3	4	5				
18. I do not try to think about ways to improve my work/school performance.	1	2	3	4	5				

CBAS

1= **Not at all** true for me
 2= **Somewhat** true for me
 3= **Moderately** true for me
 4= **Very much** true for me
 5= **Extremely** true for me

19. I try not to think about my future and what I will do with my life.	1	2	3	4	5				
20. I just wait out tension in my relationships hoping that it will go away.	1	2	3	4	5				
21. I tend to make up excuses to get out of social activities.	1	2	3	4	5				
22. There is nothing I can do to improve problems in my relationships.	1	2	3	4	5				
23. I turn down opportunities to socialize with the opposite sex.	1	2	3	4	5				
24. I tend to remain to myself during social gatherings or activities.	1	2	3	4	5				
25. I avoid making decisions about my future.	1	2	3	4	5				
26. When I experience confusion in my relationships, I do not try to figure things out.	1	2	3	4	5				
27. While I know that I have to make some important decisions about school/work, I just do not get down to it.	1	2	3	4	5				
28. Rather than getting out and doing things, I just sit at home and watch TV.	1	2	3	4	5				
29. I distract myself when I start to think about my work/school performance.	1	2	3	4	5				
30. I do not bother thinking about how to solve problems in my family – it is useless.	1	2	3	4	5				
31. I find myself avoiding tasks and assignments that are really important.	1	2	3	4	5				

Total of Shaded Portion of Column Page 1 — — — —
 + Total of Shaded Portion of Column Page 2 — — — —

TOTAL of Pages 1 and 2 — — — —
BS BN CS CN

Please indicate how helpful you feel the above described type of avoidance strategies are for you in dealing with life situations and problems by circling the number corresponding with helpfulness rating that applies to you:

1
2
3
4
5
 Not at all Somewhat Moderately Very much Extremely
 helpful helpful helpful helpful helpful

CBAS

指示： 不同的人會採用不同的方法處理他們生活上各種情況和問題。
 以下是一些人們或會用作處理事情和問題的方法。其中一些句子
 是與工作環境或學校有關。如果你現時沒有工作或上學，請你以
 一般日常生活的情況和活動作答。請仔細閱讀每句句子，
 然後指出一般來說，每句句子對你來說有多正確。

- 1 = 對我來說，完全不正確
 2 = 對我來說，有點正確
 3 = 對我來說，一般正確
 4 = 對我來說，非常正確
 5 = 對我來說，極之正確

		分數(計分)							
1.	我避免出席社交活動。	1	2	3	4	5			
2.	當我不能確定自己的將來時，我不會坐下來思考自己確實的需要。								
3.	我希望在工作上/學業上有所成就，但是我必需接受自己的限制。	1	2	3	4	5			
4.	我沒有就著自己訂下的目標循序漸進地去做。								
5.	為了避免令自己感到失望，我盡量嘗試不會對工作/學業過分認真。	1	2	3	4	5			
6.	我傾向安於自己熟悉的事物，而不去嘗試新活動。								
7.	我選擇放棄推展自己學業/事業的機會。	1	2	3	4	5			
8.	我不接聽來電，以防收到朋友的社交邀請。	1	2	3	4	5			
9.	我退出那些對我有極大挑戰的活動。	1	2	3	4	5			
10.	我嘗試不去想有關自己的人際關係問題。	1	2	3	4	5			
11.	我心想自己是不會能夠完成那些真正具挑戰性的工作。	1	2	3	4	5			
12.	當我知道我要就自己的人際關係做決定時，我只是任由事情自然發展。	1	2	3	4	5			
13.	我避免去嘗試那些存有失敗機會的新事物。	1	2	3	4	5			
14.	當我知道在那些活動中會有很多我不認識的人，我便不會去參加。	1	2	3	4	5			
15.	與其去思考自己社交生活的種種問題，我會告訴自己我寧可選擇孤獨一人。	1	2	3	4	5			
16.	我不去處理在友誼中產生的緊張關係。	1	2	3	4	5			
17.	我發現自己經常想離開社交聚會。	1	2	3	4	5			

CBAS

- 1 = 對我來說，完全不正確
 2 = 對我來說，有點正確
 3 = 對我來說，一般正確
 4 = 對我來說，非常正確
 5 = 對我來說，極之正確

分數(計分)

18.	我並沒有嘗試想辦法改善自己在工作/學業中的表現。	1	2	3	4	5				
19.	我嘗試不去想及自己的將來和在自己生命中打算做什麼。	1	2	3	4	5				
20.	我只是等待自己人際關係中的緊張狀態結束， 並期望它會消失。	1	2	3	4	5				
21.	我經常用藉口推掉社交活動。	1	2	3	4	5				
22.	我已沒有任何辦法改善自己的人際關係問題。	1	2	3	4	5				
23.	我拒絕與異性交往的機會。	1	2	3	4	5				
24.	在社交聚會或活動中，我傾向獨處。	1	2	3	4	5				
25.	我避免為自己的將來做決定。	1	2	3	4	5				
26.	當我在人際關係上遇到困惑時，我沒有設法解決事情。	1	2	3	4	5				
27.	當我知道我必須要在學業/工作上作出一些重要決定時， 我就是沒有認真去做。	1	2	3	4	5				
28.	與其出去做點事，我寧可坐在家中看電視。	1	2	3	4	5				
29.	當我開始想及自己的工作/學業表現，我會分散自己的注意。	1	2	3	4	5				
30.	我沒有費心去想辦法解決我的家庭問題-----這是沒有用的。	1	2	3	4	5				
31.	我覺得自己在逃避一些十分重要的工作和任務。	1	2	3	4	5				

總分(第一頁暗影部分)

_ _ _ _

+總分(第二頁暗影部分)

_ _ _ _

+總分數(第一頁及第二頁)

_ _ _ _
BS BN CS CN

請指出上述的逃避策略為你來說，在處理日常生活和問題時有多大的幫助。
 請圈出適合你的程度。

1	2	3	4	5
完全沒有幫助	有點幫助	有幫助	很有幫助	非常有幫助

Appendix H

CCCS

INSTRUCTIONS: Please think of a difficult or stressful situation you had in a close relationship, that you can remember well. Please describe the situation in a few words (e.g., relationship break-up, fight or argument, etc.) below.

Then carefully read and respond to the following statements. Rate how well the statements describe what you would *normally* do in a situation like that, on a scale from 1 (a very inaccurate description of you) to 6 (a very accurate description of you). There are no right or wrong answers. Please mark only one number for each description. The scale indicates the following:

VERY INACCURATE	INACCURATE	SOMEWHAT INACCURATE	SOMEWHAT ACCURATE	ACCURATE	VERY ACCURATE
1	2	3	4	5	6

1. _____ I think about the situation carefully and think of options before I decide what to do.
2. _____ I deal with the problem by doing what my parents do or say with regard to the situation.
3. _____ I look for something good or positive in this difficult situation.
4. _____ I take the course of action that seems most acceptable to my cultural values.
5. _____ I engage in activities that will help me to relax or feel better (e.g., sports, listening to or playing music, getting online, etc.).
6. _____ I just accept the fact that this happens and tell myself that I can't do much about it.
7. _____ I hold firmly to my position and face the problem.
8. _____ I get involved in other activities to keep my mind off the problem (e.g., study harder so as not to think about the problem).
9. _____ I turn to friends who have a similar ethnic/cultural or language background as me to obtain information or resources in dealing with my problem.
10. _____ I rely on myself to take action (e.g., finding out solutions) to deal with the situation.
11. _____ I engage in activities my parents would not approve to ease my anxiety or nervousness, such as smoking, drinking, and doing drugs.
12. _____ I try to block out or forget about what's bothering me.
13. _____ I talk with and get help from other members of my family (e.g. siblings, cousins, aunts, uncles, etc.).
14. _____ I tell myself that my problems will go away on their own.
15. _____ I take the course of action that seems most acceptable to my family.
16. _____ I turn to friends who have a similar ethnic/cultural or language background as me to get their understanding and support.
17. _____ I talk with and get help from one or both of my parents.
18. _____ I keep my emotions to myself and do not show them.

19. _____ I choose to resolve my problems in ways that would attract the least attention to me.
20. _____ I seek advice and help from someone else whom I consider to be wiser than me (e.g., teachers, parents, or elders).
21. _____ I put extra efforts or work extra hard to resolve the problem.
22. _____ I come up with a plan before tackling the situation.
23. _____ I trust my personal strengths and believe in myself in resolving the problem.
24. _____ I try to make myself feel better by telling myself that the problem is not as bad as it appears.
25. _____ I give up trying to solve the problem.
26. _____ Instead of dealing with the problem, I find myself daydreaming more.

27. How STRESSFUL was the situation (listed above) for you? Please circle one.

Not at all

A little

Somewhat

Moderately

Very

Extremely

CCCS

說明: 請回想您在親密關係中一次印象深刻的困難或煩惱的情境。
請用幾個詞語來形容當時的情況 (例如: 關係破碎, 打架 或爭吵, 等等.....)

然後, 請仔細閱讀下列陳述並作出回應。請以 1 (非常不準確) 至 6 (非常準確) 的等級指出這些陳述能有多準確地形容您在那些情況下 通常 會有的反應。答案沒有對或錯的。請為每項陳述只標明一個數字。等級表如下:

非常不準確	不準確	稍微不準確	稍微準確	準確	非常準確
1	2	3	4	5	6

1. _____ 在決定怎樣做之前, 我細心考慮情況和想出多個辦法。
2. _____ 我會按照父母對於這情況所作的意見或做法來處理這問題。
3. _____ 在這困難的情況下, 我期待有美好或積極的一面。
4. _____ 我採取的行動是最為我的文化價值觀所接納的。
5. _____ 我進行一些可以幫助我放鬆或感覺舒適的活動 (例如做運動, 聆聽或演奏音樂, 上網等)。
6. _____ 我會接受這事已成事實, 並告訴自己我已沒有什麼可做。
7. _____ 我堅守自己的立場, 並面對這問題。
8. _____ 我投入其他活動去令自己的思緒離開這問題 (例如: 加緊溫習, 讓自己不去想這問題)。
9. _____ 我找一些與我有相近種族/文化或語言背景的朋友, 以獲取資料或資源去處理這問題。
10. _____ 我依靠自己去採取行動 (例如: 找出解決方法) 來處理這問題。
11. _____ 我進行一些父母不會贊同的活動來舒解我的憂慮或緊張情緒, 例如: 吸煙, 飲酒, 和濫藥。
12. _____ 我嘗試隔絕或忘記那些困擾我的事。
13. _____ 我向家人 (例如: 兄弟姐妹, 表親, 叔伯, 姨母等) 傾訴和尋求他們的幫助。
14. _____ 我告訴自己問題會自然消失。
15. _____ 我採取一些似乎是最為家人所接受的行動。
16. _____ 我找一些與我有相近種族/文化或語言背景的朋友, 以取得他們的諒解和支持。
17. _____ 我找父母二人或其中一人傾訴, 尋求幫助。
18. _____ 我隱藏自己的情緒而不表露出來。
19. _____ 我選擇採用一個會惹來最少注目的方法去解決問題。
20. _____ 我向一個我認為比我更有智慧的人 (例如: 老師, 父母或長輩) 尋求意見和幫助。
21. _____ 我付出額外的努力或加倍盡力地去解決這問題。
22. _____ 在處理某種情況前, 我會先做一個計劃。
23. _____ 我依靠自己的個人力量, 並相信自己能解決這問題。
24. _____ 我試圖告訴自己問題不如想像中惡劣, 來讓自己好過一點。

25. _____ 我放棄嘗試解決這問題。

26. _____ 我不去解決問題，反而多作白日夢。

27. 假若以上情況發生在你身上，你認為對你來說，會有多大的壓力？

沒有壓力 有少許壓力 頗有壓力 有一般大壓力 有很大壓力 非常大壓力

Appendix I

SDFF Task (CP)

Please spend the next 5 minutes writing about *what you have in common with your family and friends*, and *what they expect of you*.

SDFF Task (CP)

請用五分鐘寫出 *你與家人和朋友的相同之處* 和 *他們對你的期望*。

SDFF Task (IP)

Please spend the next 5 minutes writing about what makes you *different from your family and friends*, and *what you expect of yourself*.

SDFF Task (IP)

請用五分鐘寫出 *你與家人和朋友的相同之處* 和 *你對自己的期望*。

Appendix J

Consent Form

Name of Researcher

Amanda Epp, MSc., Faculty of Graduate Studies, Department of Psychology
Office Phone: 403-220-3697
Email: amepp@ucalgary.ca

Supervisor:

Keith S. Dobson, PhD., Department of Psychology
Office Phone: 403-220-5096
Email: ksdobson@ucalgary.ca

Title of Project: Cognitive Vulnerability to Depression: Investigating the Role of Culture

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more details about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The University of Calgary Conjoint Faculties Research Ethics Board has approved this research study.

Purpose of the Study

The present study is a multicultural, international study. The purpose is to examine how thinking may vary across cultures, and how these diverse ways of thinking may be related to sad mood in each culture. This study does not assess or examine clinical depression. Rather, it assesses the symptoms of depression such as sad mood that fluctuate from day to day, within the general population.

What Will I Be Asked To Do?

You will be asked to complete questionnaires about your mood, different ways of thinking while in a sad mood, your values, how you relate to your culture, your personality, and demographics. You will also be asked to complete a brief writing task about your relationships, which does not include personal or identifying information. Participation in this study, including the informed consent and debriefing processes, will require approximately 1.5 hours of your time. In return for your participation, you will receive a small gift certificate. Your participation in this study is completely voluntary. You may withdraw from the study at any time, without penalty or loss of your gift certificate.

What Type of Personal Information Will Be Collected?

Should you agree to participate, you will be asked to provide some background demographic information such as: gender, age, heritage culture, ethnic origin, nationality, religion, place of birth, parents' place of birth, languages learned and spoken, education, occupation, and parents' education. This information, along with your completed questionnaires and writing task, will be kept separate from your name and will be identified only by code number.

Are There Risks or Benefits if I Participate?

In return for your participation, you will receive a small gift certificate. It is not expected that you will experience any reasonably foreseeable risks, harms, or inconveniences while participating in this research. However, the questionnaires ask about personal experiences, and may indicate that you are experiencing negative thoughts or emotional problems. As such, you will be provided with information and resources about depression, including information on how to seek out treatment, which you can use if you so choose.

What Happens To The Information I Provide?

All of the information that you provide will be kept anonymous and confidential. However, absolute anonymity and confidentiality cannot be guaranteed for participants completing the study in small groups. This consent form will be kept separate from the questionnaires and written task that you complete, which will be identified with only a code number. Only group information will be summarized for any presentation or publication of results. The information that you provide, including this consent form, will be kept in a locked cabinet in the Administration Building, Room 059. Only Amanda Epp, Keith Dobson, and other people working under their direct supervision will have access to the hard copy data, for a period of 5 years after the last publication. Following this period, the data will be destroyed. This study is being conducted in Calgary and in Hong Kong, with the assistance of a collaborator. The collaborator in Hong Kong will have access to an electronic copy of the data, with no identifying information. If you choose to withdraw from the study, the information that you provided up to that point will be destroyed.

Signatures

Your signature on this form indicates that you:

- 1) understand to your satisfaction the information provided to you about your participation in this research project, and
- 2) agree to participate as a research subject.

In no way does your signature waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from this research project at any time. You should feel free to ask for clarification or new information throughout your participation.

Participant's Name: (please print) _____

Participant's Signature _____ Date: _____

Researcher's Name: (please print) _____

Researcher's Signature: _____ Date: _____

Yes: ___ No: ___ I grant permission to be contacted for future research in the University of Calgary Depression Laboratory.

Questions/Concerns

If you have any further questions, or want clarification regarding this research and/or your participation, please contact Amanda Epp or Keith Dobson, as above.

If you have any questions or issues concerning this project that are not related to the specifics of the research, you may also contact Russell Burrows, Senior Ethics Resource Officer, Conjoint Faculties Research Ethics Board: rburrows@ucalgary.ca, 403-220-3782.

同意書

研究員姓名:

Amanda Epp, MSc., 研究生學院 心理學系

辦公室電話 403-220-3697

電子郵件: amepp@ucalgary.ca**監督人:**

Keith S. Dobson, PhD., 心理學系

辦公室電話 403-220-5096

電子郵件: ksdobson@ucalgary.ca**計畫標題 抑鬱症的認知觀點 文化角色的調查**

這份同意書(副本已給予閣下)只是知會同意過程的一部份, 主要是讓您對這研究計劃有基本概念及了解您的參與部份。如您想進一步了解同意書上的細節或其他沒有在同意書上提及的資料, 您可以隨時發問。請細閱這份同意書並了解相關的資料。

這研究已經被卡加利大學研究系道德規範部門批准及審核。

研究目的

這是一項集合多元文化及國際性的研究。研究目的是探討人類的思想會怎樣隨着不同文化背景而變得多樣化; 而這些不同的思想模式, 在不同的文化背景中又如何與憂傷情緒聯繫起來。這項研究不是評估或探討抑鬱症, 而是評估抑鬱徵狀, 例如一般大眾在日常生活中出現的不愉快心情。

我將要做什麼?

我們會請您填寫不同的問卷, 內容包括有關您的心情, 思想方法, 個人價值觀念, 您跟文化背景的聯繫, 您的個性及一些基本個人資料。接着, 您需參與一項簡短的寫作活動, 描述您的人際關係。您不需提供任何身份或個人證明的資料。整項研究, 包括講解同意書及研究報告要約需一小時三十分鐘。為答謝您的參與, 我們會送出一張小小的禮券。參加與否全屬自願性質。即使在研究進行中, 您亦能選擇隨時中止參與, 及仍可拿取禮券, 而不會受到任何處罰。

我需要提供什麼個人資料?

如果您同意參與這項研究, 我們會請您提供一些個人資料, 例如:

性別、年齡、傳統文化、種族起源、國籍、宗教、出生地點、父母的出生地點、所學和運用的語言、學歷、職業及父母的學歷。這些資料將會和您所填寫的問卷及完成的簡短寫作分開保存。我們只會用代號來識別資料。

如果我參與, 有風險或好處嗎?

完成研究調查後, 您會得到一張禮券作為報答您的參與。您在參加這研究時將不會經歷任何風險、損害或不便。但是, 問卷會問及一些關於您的個人經歷, 這有可能令您產生負面的想法或情緒。假如是這樣的話, 我們會提供一些關於抑鬱症的資料和資源, 包括有關怎樣尋求治療的資料。

我所提供的資料會怎樣？

您所提供的所有資料將會被保持機密和匿名。但是，小組裡參加者的資料則無法完全被保證。這張同意書和問卷調查以及其他文件等，將會以代號分開處理。只有總結以後的資料才會被公開。您所提供的資料，包括這張同意書，會被鎖在卡加利大學的行政大樓(Administration Building，房號：059)。只有 Amanda Epp、Keith Dobson有權取得這些資料，而所有其他工作人員，則在他們的監督下才能夠取得這些資料，為期五年(由資料公佈後起計)。五年後，這些檔案會被銷毀。這項研究正在卡加利和香港進行。香港的研究員將會取得這些資料的匿名電子副本。如果您選擇退出這項研究，您所提供的所有資料也會被銷毀。

簽署欄

您在這表格的簽署表示:

- 1) 您已清楚明白和滿意我們所提供的有關參與這項研究的資料, 及
- 2) 同意參與這項研究

您的簽署是不會除去您持有的合法權益，亦不會免除研究員、贊助者或有份參與的機構所要遵守的法律和專業上的責任。您可以選擇隨時中止參與。在您的參與過程中，您也可以隨意發問。

參加者姓名: (請填英文姓名) _____

參加者簽署: _____ 日期: _____

研究員姓名: (請填英文姓名) _____

研究員簽署: _____ 日期: _____

如卡加利大學的抑鬱症實驗室在未來有研究的需要，我准許他們聯絡我： 是: ___ 否: ___

疑問

如果您有任何疑問或想深入了解這項研究或您的參與，請聯絡Amanda Epp 或Keith Dobson。

如果您有任何關於這個計劃以外的疑問，您可聯絡Russell Burrows, Senior Ethics Resource Officer 連同Conjoint Faculties Research Ethics Board: rburrows@ucalgary.ca, 403-220-3782。

香港大學心理學系
抑鬱症的認知觀點：文化角色的調查
同意書

研究者

陳穎義小姐 香港大學臨床心理學博士研究生
Amanda Epp, 卡加利大學臨床心理學博士研究生
何敏賢博士 香港大學心理學系副教授
Keith Dobson 教授 卡加利大學心理學系教授

研究目的及裨益

這是一項集合多元文化及國際性的研究。研究目的是探討人類的思想在不同文化背景的變化；以及不同的思想模式，在不同的文化背景中又如何與憂鬱情緒聯繫起來。這項研究不是評估或診斷抑鬱症，而是評估抑鬱徵狀，例如一般大眾在日常生活中出現的不愉快心情。

研究程序

我們會請您填寫一份問卷

內容包括有關您的心情、思想方法、個人價值觀念、您跟文化背景的聯繫、您的個性及一些基本個人資料。接着，您需參與一項靜態的寫作活動，描述您的人際關係。您不需提供任何身份或個人證明的資料。整項研究，包括簽署同意書及研究報告要約需一小時三十分鐘。

潛在危險或不適

所有問卷過去曾多次用於不同的研究項目，並沒有令參加者產生任何形式之不安或潛在危險。如參加者在填寫問卷後感到不適，可聯絡研究員作進一步跟進。

資料絕對保密

在整項研究過程中所收集的個人資料只會用作研究用途，而且絕對保密。

報酬

每位參加者均可在完成整個研究程序後獲發港幣五十元超級市場禮券作為報酬。

退出

所有被訪者均以自願性質參與此項研究，並可於任何時候退出。

查詢

這項研究已獲香港大學非臨床研究操守委員會審批，有效期為一年(4/5/2010

至3/5/2011)。如對這項研究有任何疑問，可致電9101 5718與研究者陳穎義小姐聯絡。參加者亦可聯絡下列人士或機構：

1. 香港大學心理學系副教授何敏賢博士 (電話: 2859 8927); 或
2. 香港大學非臨床研究操守委員會 (電話: 2241 5267)。
3. 卡加利大學臨床心理學博士研究生 Amanda Epp (電子郵件: amepp@ucalgary.ca)
4. 卡加利大學心理學系教授 Keith Dobson (電子郵件: ksdobson@ucalgary.ca)

本人：_____，明白上述同意書中的各項內容，並同意參 (姓名 – 請用正楷填寫)
與這個研究計劃。

簽署：_____ 日期：_____

研究員：_____ 簽署：_____
(姓名 – 請用正楷填寫)

日期：_____

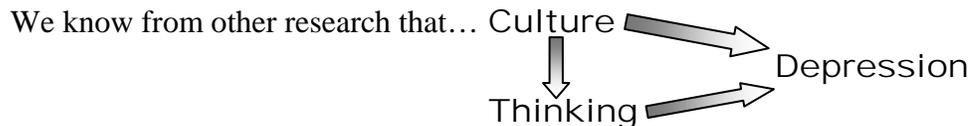
Appendix K

Debriefing Form

Cognitive Vulnerability to Depression: Investigating the Role of Culture

Amanda Epp, M.Sc.
Department of Psychology

It is well-known that culture and psychology influence each other (Lehman, Chiu, & Schaller, 2004). For example, thinking is part of psychology and research on thinking has shown that there are cross cultural differences in memory (e.g., Han, Leichtman, & Wang, 1998), language (e.g., Holtgraves & Yang, 1992), and perception (Roberson, Davidoff, & Shapiro, 2002), among others. Another research finding is that individuals from China tend to experience the physical symptoms of depression, such as sleep and appetite problems, more than other symptoms. In contrast, individuals from North America tend to experience the psychological symptoms of depression, such as guilt and self-blame, more than other symptoms (Ryder, Yang, & Heine, 2002). This pattern of results shows us that not only does culture influence thinking, but it also influences depression (Carter, 2005; Marsella & Yamada, 2007). Research also shows that thinking plays an important role in causing, maintaining, and making depression worse. SO, culture and thinking influence depression, and culture influences thinking, but does culture influence thinking related to depression?



We want to know if... Culture \rightleftarrows Thinking \rightleftarrows Depression ???

Specifically, we know that a way of thinking called rumination (repetitive negative self-reflection) and another way of thinking called avoidance affect depression in Canadians of European descent, but ***we want to know if rumination and avoidance affect depression in Chinese-Canadians and Hong Kong Chinese in the same manner.*** To answer this question we used a new research method that made you think in one of two ways that are commonly used in different cultures. Using this research method helps us to make sure that you used the specific cultural way of thinking that we are interested in. We then asked you to answer questions about ways of thinking, values, and personality. We will analyze your answers to see which ways of thinking, values, and personality are associated with which cultural perspective. It is not necessary for us to analyze answers specifically from people who are depressed because we will analyze higher or lower scores on our measures of rumination and avoidance in relation to levels of mood (i.e.,

higher or lower scores on a depression questionnaire), which will give us an answer to our question about depression.

We are collecting data from three participant groups: European-Canadians (born in Canada; with at least one parent also born in Canada; identify their heritage culture as European; ancestry originated in Europe), Chinese-Canadians (born in Hong Kong or in Canada; with both parents born in Hong Kong or Mainland China; first language Cantonese; primary language spoken in the home either English or Cantonese; identify their heritage culture as Chinese), and Hong Kong Chinese (born in Hong Kong or Mainland China; identify their heritage culture as Chinese; ancestry originated in Hong Kong or Mainland China; first language Cantonese; Cantonese the primary language spoken in the home). We plan to collect data from approximately 100 participants from each group, aged 18 through 65. We will compare the results we find across people from these three groups, and also look at the relationships among the variables we assessed within each group, to see if the patterns are similar or not. What we find will provide new data related to theories about culture, thinking and depression.

To learn more about this study, or for more information, you can contact Amanda Epp at amepp@ucalgary.ca.

Thank you for your participation!

研究 報告書

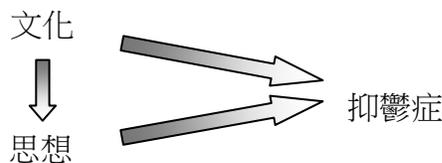
抑鬱症的認知視角：文化角色的調查

Amanda Epp, M.Sc.
心理學系

眾所周知,文化和心理學是互相影響的(Lehman,Chiu,&Schaller,2004)。例如,思想是心理學的一部份,而有關思想的研究顯示記憶(e.g.,Han,Leichtman,&Wang,1998)、語言(e.g.,Holtgraves&Yang,1992)和理解能力(Roberson,Davidoff,&Shapiro,2002)在文化上都是有差異的。另一項研究又顯示,中國人通常感受到抑鬱症中生理方面的徵狀多於心理上的徵狀,例如:睡眠和胃口的困擾。相比之下,北美洲的人傾向感受到抑鬱症中心理方面的徵狀多於生理上的徵狀,例如:內疚和自責(Ryder,Yang,&Heine,2002)。這些資料顯示,文化不但會影響思想,還會影響抑鬱症(Carter,2005;Marsella&Yamada,2007)

。研究亦指出,思想會在引發、維持和令抑鬱症惡化方面擔當着重要的角色。因此,而文化和思想影響抑鬱症,但文化又影響思想,那麼文化又會否影響抑鬱中的思想呢?

從研究中,我們知道...



我們想知...



具體來說,我們知道有兩種思想模式,分別為:沉思型(重複負面的自我反省)和逃避型。這兩種思想模式對於歐洲裔加拿大人的抑鬱症是有影響的, **但是我們想知道這兩種思想模式是否都對加拿大華裔和香港人的抑鬱症有相同的影響**。為了回答這個問題,我們使用了一種新的研究方法,讓您運用其中一種在其他文化也普遍使用的思想模式。這個方法協助我們去確定您運用了跟文化背景有關的思想 - 這就是我們有興趣了解的範圍。然後,我們會請你回答有關思想模式、價值觀和個人性格的問題。我們會分析您的答案,從而了解哪種思想模式、價值觀和個人性格跟不同文化觀點的聯系。我們不需要集中分析患有抑鬱症的參與者的回答,因為我們會比較沉思型和逃避型思想模式的評估分數與情緒指數的關係(註:抑鬱症問卷中得到的高或低的分數)

, 這些資料會為我們對抑鬱症的研究提供的答案。

我們是從三個不同的參與組別拿取資料：歐洲裔加拿大人(生於加拿大，雙親中至少一個是生於加拿大，確定傳統文化為歐洲，祖藉於歐洲)、加拿大華裔(生於香港或加拿大，雙親生於香港或中國大陸，廣東話為第一語言，在家裏主要用的語言是英語或廣東話,確定傳統文化為中國)、香港人(生於香港或中國大陸，確定傳統文化為中國，祖藉於香港或中國大陸，廣東話為第一語言，在家裏主要用的語言是廣東話)。我們計劃每組收集約一百名參與者的資料，年齡介乎18至65歲。我們將會對這三個組別的參與者所提供的資料作出比較，也會留意它們在不同項目中的關連，從而研究它們的模式是否相似。我們的研究結果會為文化、思想和抑鬱症相關的理論提供新資料。

如您想認識或查詢更多關於這項研究的資料，可以電郵給Amanda
amepp@ucalgary.ca.

Epp:

多謝您的參與！

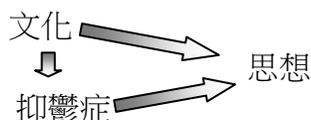
研究報告書

抑鬱症的認知焦點：文化角色的調查

眾所周知，文化和心理學是互相影響的(Lehman, Chiu, & Schaller, 2004)，例如：思想是心理學的一部分，而有關思想的研究顯示記憶(e.g., Han, Leichtman, & Wang, 1998)、語言(e.g., Holtgraves & Yang, 1992) 和聯誦能力(Roberson, Davidoff, & Shapiro, 2002)在文化上都是有差異的。另一項研究又顯示，中國人通常感受到抑鬱症中生理方面的徵狀多於心理上的徵狀，例如：睡眠和胃口的困擾。相比之下，北美洲的人傾向感受到抑鬱症中心理方面的徵狀多於生理上的徵狀，例如：內疚和自責(Ryder, Yang, & Heine, 2002)。這些資料顯示，文化不但會影響思想，還會影響抑鬱症(Carter, 2005; Marsella & Yamada, 2007)。

研究亦指出，思想會在引發、維持和令抑鬱症惡化方面擔當着重要的角色。因此，而文化和思想影響抑鬱症，但文化又影響思想，那麼文化又會否影響抑鬱症中的思想呢？

從研究中，我們知道…



我們想知…

文化 → 思想 → 抑鬱症???

具體來說，我們知道有兩種思想模式，分別為：沉思型(重複負面的自我反省)和逃避型。這兩種思想模式對於歐洲裔加拿大人的抑鬱症是有影響的，**但是我們想知道這兩種思想模式是否都對加拿大華裔和香港人的抑鬱症有相同的影響**。為了回答這個問題，我們使用了一種新的研究方法，讓您運用其中一種在其他文化也普遍使用的思想模式。這個方法協助我們去確定您運用了跟文化背景有關的思想 - 這就是我們有興趣了解的範圍。然後，我們會請你回答有關思想模式、價值觀和個人性格的問題。我們會分析您的答案，從而了解哪種思想模式、價值觀和個人性格跟不同文化觀點的聯系。我們不需要集中分析患有抑鬱症的參與者的回答，因為我們會比較沉思型和逃避型思想模式的評估分數與情緒指數的關係

(註:抑鬱症問卷中得到的高或低的分數)

，這些資料會為我們對抑鬱症的研究提供的答案。

我們是從三個不同的參與組別拿取資料：歐洲裔加拿大人

(生於加拿大，雙親中至少一個是生於加拿大，確定傳統文化為歐洲，祖藉於歐洲)、加拿大華裔(生於香港或加拿大，雙親生於香港或中國大陸，廣東話為第一語言，在家裏主要用的語言是英語或廣東話，確定傳統文化為中國)、香港人(生於香港或中國大陸，確定傳統文化為中國，祖藉於香港或中國大陸，廣東話為第一語言，在家裏主要用的語言是廣東話)。我們計劃收集約一百五十名參與者的資料，年齡介乎18至65歲。我們將會對這三個組別的參與者所提供的資料作出比較，也會留意它

們在不同項目中的關連，從而研究它們的模式是否相似。我們的研究結果會為文化、思想和抑鬱症相關的理論提供新資料。

如您想認識或查詢更多關於這項研究的資料，可以電郵給陳穎義：mchanwy@hku.hk 或Amanda Epp: amepp@ucalgary.ca.

多謝您的參與！

Appendix L

RESOURCES AND INFORMATION ABOUT DEPRESSION

Clinical Services	Contact Information
Family Physicians	Yellow pages or AMA
Psychiatrists	Yellow pages
Psychologists	Yellow pages
Emergency Services	Phone 911
Alberta Health Services Cognitive Therapy Program (Colonel Belcher Hospital) Psychiatric Assessment Services (Foothills Hospital) Young Adult Program (Foothills Hospital) Psychiatric Outpatient Service (Peter Lougheed Hospital) Crisis Assessment (Rockyview Hospital) SARG (Seniors; Rockyview Hospital) Women's Health Resources (Grace Women's Health Centre)	Access Mental Health
Provincial Mental Health Board Central Office Northwest Office Northeast Office	Physician referral or self-referral 403-297-7311 403-297-7345 2403-97-7196
Calgary Association of Self Help	403-266-8711
Emotions Anonymous	403-247-5381
Calgary Counselling Centre	403-265-4980
Calgary Family Services	403-269-9888
Catholic Family Services	2403-33-2360
Jewish Family Services	403-287-3510
Calgary Catholic Immigration Society	403-298-4111
Organizations	Contact Information
Psychologists Association of Alberta (referrals)	1-888-424-0297
Canadian Mental Health Association (Calgary Office)	403-297-1700
Depression and Manic-Depression Association of Alberta (Edmonton)	1-888-757-7077
Depression Awareness, Recognition and Treatment (U.S.)	1-800-421-4211
Canadian Psychological Association	www.cpa.ca
National Depressive and Manic Depression Association (U.S.)	www.ndmda.org
Useful Websites	www.canmat.org www.cognitivetherapy.com www.nimh.nih.gov www.psychologyinfo.com/depression www.bestsitez.com/depression www.depression.com www.depression-net.com www.feelingblue.com

關於抑鬱症的資料和資源

臨床服務	查詢資料
家庭醫生	黃頁或
精神科醫生	黃頁
心理醫生	黃頁
應急部門	致電911
亞省公共醫療衛生服務 認以行為治療法 (Colonel Belcher 醫院) 精神科胡爾敦山腳醫院 青少年服務 (山腳醫院) 精神科門診服務 (彼得羅伊醫院) 危機中心 (Rockyview 醫院) SARG (Seniors; Rockyview Hospital) 女性健康服務中心 (格雷斯女性健康中心)	公眾精神健康
省級精神健康局 中央辦公室 西北辦公室 東北辦公室	醫生轉介或本人參考 403-297-7311 403-297-7345 2403-97-7196
卡加利自助協會	403-266-8711
匿名情緒熱線	403-247-5381
卡加利心理輔導中心	403-265-4980
卡加利家庭服務	403-269-9888
天主教家庭服務	2403-33-2360
猶太人家庭服務	403-287-3510
卡加利天主教移民社團	403-298-4111
組織	聯絡資料
亞省心理醫生協會 (轉介)	1-888-424-0297
加拿大精神健康協會 (卡加利辦公室)	403-297-1700
亞省抑鬱症和躁鬱症協會 (愛民頓)	1-888-757-7077
抑鬱症察覺、識別和治療 (美國)	1-800-421-4211
加拿大心理協會	www.cpa.ca
全國抑鬱症和躁鬱症協會 (美國)	www.ndmda.org
有用的網頁	www.canmat.org www.cognitivetherapy.com www.nimh.nih.gov www.psychologyinfo.com/depression www.bestsitez.com/depression www.depression.com www.depression-net.com www.feelingblue.com

Appendix M

Coding Scheme

Participants were asked to write about similarities, differences, and expectations. Please read the response carefully and 1) record the number of concepts that fall into each of the below categories, and 2/3) rate the extent to which the response discusses different concepts.

- If written in Chinese, code according to the Chinese meaning of the word (i.e., don't translate into English and then code).
- If it is not clear whether the individual is speaking about similarities or differences, note the number of concepts in the "other" category (i.e., 1f).
- If an individual indicates that there are NO differences between them and their family/friends, this would count as one concept under similarities (and vice versa), unless subsequent reference is made to similarities (or differences).
- Bracket each concept on the participant's response and indicate above each bracket under which # the concept was coded.

1.	Concept	#
a	How many concepts relate to differences?	
b	How many concepts relate to similarities?	
c	How many concepts relate to expectations that the individual has for themselves?	
d	How many concepts relate to expectations that others have for the individual?	
e	How many concepts relate to expectations in general?	
f	How many other concepts are discussed?	
	TOTAL CONCEPTS:	

2. To what extent does the participant's response discuss personal qualities, attitudes, beliefs, or behaviours that do not relate to other people?

Not At All		Somewhat		Quite A Bit		Very Much So
1	2	3	4	5	6	7

3. To what extent does the participant's response discuss qualities of interdependence, friendship, responsiveness to others, or sensitivity to the viewpoints of others?

Not At All		Somewhat		Quite A Bit		Very Much So
1	2	3	4	5	6	7

Appendix N

Table 1

Chinese-Canadians: Pearson correlations among variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	.13	-.16	.23*	.08	-.15	-.20*	-.06	-.09	-.15	.33**	.11	-.13	.12	.77**	.07
2		-	.17	-.06	.27**	-.15	.13	-.09	.05	-.02	-.04	.37**	.09	.10	.20*	.83**
3			-	-.02	.15	.29**	.37**	.39**	.48**	.43**	-.29**	.20*	.42**	.58**	-.08	.18
4				-	.12	.07	-.04	.06	-.08	.01	.11	-.17	-.12	.20*	.18	.02
5					-	.05	.26**	.14	.03	.14	.08	.34**	.28**	.19	.07	.27**
6						-	.66**	.78**	.64**	.88**	-.10	-.02	.32**	.28**	-.15	-.18
7							-	.65**	.67**	.85**	-.26**	.17	.43**	.30**	-.15	.09
8								-	.76**	.91**	-.24*	-.03	.40**	.36**	-.08	-.12
9									-	.87**	-.29**	-.03	.41**	.39**	-.12	-.03

Table 1 (continued)

Chinese-Canadians: Pearson Correlations among Variables

	10	11	12	13	14	15	16
10	-	-.25*	.03	.44**	.38**	-.14	-.07
11		-	.22*	-.07	-.12	.22*	-.05
12			-	.27**	.13	.20*	.39**
13				-	.31**	-.08	.05
14					-	.15	.18
15						-	.25*
16							-

Note: N = 103. 1 = Self-Construal Scale - Independence, Time 1; 2 = Self-Construal Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Construal Scale - Independence, Time 2; 16 = Self-Construal Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.

Table 2

Hong Kong Chinese: Pearson correlations among variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	.13	.00	.26**	.12	-.09	-.26**	-.11	-.11	-.17	-.28	-.11	.05	.00	.85**	-.03
2		-	.00	.19	.38**	-.13	.01	-.00	-.06	-.06	.06	.29**	.04	.05	.12	.85**
3			-	.03	-.29**	.24*	.21*	.29**	.31**	.30**	-.29**	.01	.08	.60**	-.03	-.01
4				-	.29**	-.24*	-.27**	-.28**	-.29**	-.32**	.13	.09	-.03	.16	.19	.14
5					-	-.13	-.07	-.18	-.30**	-.19	.31**	.27**	.06	-.18	.01	.30**
6						-	.68**	.71**	.67**	.89**	-.14	-.19	.23*	.21*	-.20*	-.22*
7							-	.60**	.66**	.85**	-.20	-.11	.20*	.23*	-.31**	-.04
8								-	.71**	.86**	-.25*	-.13	.30**	.15	-.17	-.07
9									-	.87**	-.28**	-.11	.31**	.20	-.10	-.18

Table 2 (continued)

Hong Kong Chinese: Pearson correlations among variables

	10	11	12	13	14	15	16
10	-	-.25*	-.16	.30**	.23*	-.23*	-.15
11		-	.36**	.08	-.09	.38**	-.07
12			-	.10	-.06	.24*	.30**
13				-	-.08	-.01	-.07
14					-	.01	.09
15						-	.07
16							-

Note: $N = 100$. 1 = Self-Construal Scale - Independence, Time 1; 2 = Self-Construal Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Construal Scale - Independence, Time 2; 16 = Self-Construal Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.

Table 3

Euro-Canadians: Pearson Correlations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	-.33**	-.27**	.05	-.07	-.20*	-.30**	-.28**	-.23*	-.30**	.43**	.09	-.19	-.05	.85**	-.31**
2		-	.13	.08	.20*	.23*	.27**	.28**	.21*	.30**	-.21*	.22*	.22*	.16	-.32**	.88**
3			-	-.14	-.04	.53**	.48**	.51**	.45**	.59**	-.40**	-.18	.32**	.49**	-.29**	.10
4				-	.51**	-.16	.03	.07	.07	.00	.07	.25*	.05	.07	.08	.07
5					-	.02	.04	.09	.08	.07	.01	.30**	.16	.02	-.04	.20*
6						-	.58**	.60**	.46**	.80**	-.30**	-.10	.30**	.40**	-.19	.15
7							-	.55**	.72**	.85**	-.33**	.01	.31**	.52**	-.34**	.19
8								-	.62**	.84**	-.42**	-.10	.53**	.46**	-.24*	.18
9									-	.83**	-.47**	-.12	.36**	.41**	-.30**	.13

Table 3 (continued)

Euro-Canadians: Pearson correlations among variables

	10	11	12	13	14	15	16
10	-	-.46**	-.09	.45**	.54**	-.32**	.20*
11		-	.27**	-.20*	-.12	.42**	-.11
12			-	-.12	.01	.12	.30**
13				-	.22*	-.14	.20*
14					-	-.12	.20*
15						-	-.28**
16							-

Note: $N = 100$. 1 = Self-Construal Scale - Independence, Time 1; 2 = Self-Construal Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Construal Scale - Independence, Time 2; 16 = Self-Construal Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.

Table 4

Chinese-Canadians: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	.21	-.01	.23	.15	-.04	-.04	.09	.12	.04	.38**	.16	-.01	.11	.81**	.23
2	.05	-	.16	-.06	.33*	-.22	.17	-.16	.12	-.04	-.02	.26	.10	.10	.22	.89**
3	-.3*	.14	-	-.10	.08	.37**	.41**	.43**	.53**	.49**	-.36*	.08	.16	.67**	.02	.16
4	.24	-.10	.01	-	.02	.31*	.32*	.15	.06	.24	.25	-.15	-.08	.23	.17	.02
5	.02	.23	.37**	.17	-	.15	.41**	.22	.13	.25	-.05	.31*	.33*	.21	.15	.30*
6	-.27*	-.05	.22	-.14	-.04	-	.71**	.81**	.61**	.90**	-.14	-.05	.22	.50**	-.05	-.21
7	-.33*	.13	.37**	-.27*	.18	.62**	-	.68**	.68**	.86**	-.25	.08	.25	.68**	-.03	.16
8	-.20	-.01	.36**	-.02	.07	.76**	.64**	-	.74**	.92**	-.28	-.12	.25	.62**	.07	-.14
9	-.27*	-.03	.45**	-.20	-.04	.67**	.67**	.78**	-	.85**	-.44**	-.08	.24	.63**	.05	.11

Table 4 (continued)

Chinese-Canadians: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10	-.31*	.01	.39**	-.18	.05	.87**	.84**	.90**	.89**	-	-.31*	-.05	.27	.68**	.01	-.04
11	.30*	-.07	-.22	.00	.17	-.05	-.27	-.20	-.15	-.19	-	.35*	.01	-.25	.36*	.01
12	.07	.47**	.31*	-.20	.37**	.02	.26	.06	.01	.11	.10	-	.33*	.02	.22	.39**
13	-.22	.07	.65**	-.13	.24	.42**	.57**	.53**	.57**	.59**	-.14	.23	-	.29*	.06	.14
14	.13	.05	.46**	.14	.17	.06	.02	.11	.16	.10	-.00	.23	.33*	-	.17	.18
15	.74**	.17	-.22	.18	-.00	-.27*	-.25	-.24	-.30*	-.30*	.07	.16	-.21	.11	-	.25
16	-.05	.77**	.16	-.02	.24	-.14	.07	-.11	-.15	-.09	-.10	.37**	-.02	.11	.24	-

Note: N = 103. 1 = Self-Constraint Scale - Independence, Time 1; 2 = Self-Constraint Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Constraint Scale - Independence, Time 2; 16 = Self-Constraint Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.

Table 5

Hong Kong Chinese: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	.22	.20	.31*	.03	-.06	-.27	-.12	-.08	-.15	.33*	.03	-.06	.25	.86**	.06
2	.01	-	.05	.23	.50**	-.13	.01	-.08	-.26	-.13	.12	.31*	-.10	.04	.11	.84**
3	-.25	-.13	-	.06	-.33*	.22	.28*	.26	.32*	.30*	-.20	.13	.17	.65**	.20	.04
4	.20	.16	.01	-	.28	-.26	-.25	-.21	-.35*	-.30*	.10	.12	-.05	.16	.25	.19
5	.26	.22	-.26	.31*	-	-.18	-.08	-.17	-.36**	-.22	.33*	.34*	-.16	-.17	-.14	.40**
6	-.10	-.22	.19	-.20	-.09	-	.74**	.72**	.79**	.91**	-.16	-.25	.28*	.30*	-.13	-.29*
7	-.24	-.08	.05	-.30*	-.08	.57**	-	.69**	.72**	.89**	-.25	-.12	.22	.35*	-.33*	-.08
8	-.07	.04	.30*	-.37**	-.22	.65**	.39**	-	.71**	.87**	-.29*	-.18	.39**	.17	-.21	-.19
9	-.12	.18	.22	-.21	-.22	.41**	.52**	.69**	-	.90**	-.25	-.15	.40**	.28*	-.12	-.43**

Table 5 (continued)

Hong Kong Chinese: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10	-.17	-.04	.23	-.33*	-.18	.83**	.79**	.83**	.78**	-	-.27	-.20	.36*	.31*	-.22	-.27
11	.46**	.06	-.33*	.14	.31*	-.04	-.07	-.12	-.27	-.14	-	.30*	-.19	-.01	.34*	.07
12	.36*	.31*	-.13	.04	.18	-.05	-.07	-.02	.00	-.05	.41**	-	.11	.07	.07	.41**
13	.21	.15	-.05	.01	.29*	.13	.14	.17	.18	.19	.38**	.12	-	-.03	-.13	-.19
14	-.36*	.01	.52**	.18	-.21	.03	.02	.07	-.01	.04	-.12	-.21	-.16	-	.23	.07
15	.82**	.13	-.29*	.11	.22	-.28*	-.26	-.06	-.02	-.21	.41**	.48**	.15	-.26	-	.051
16	-.14	.85**	-.15	.10	.18	-.22	-.08	.02	.09	-.07	-.16	.20	.01	.05	.14	-

Note: $N = 100$. 1 = Self-Construal Scale - Independence, Time 1; 2 = Self-Construal Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Construal Scale - Independence, Time 2; 16 = Self-Construal Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.

Table 6

Euro-Canadians: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-	-.45**	-.19	.02	-.03	-.15	-.37**	-.20	-.19	-.27	.29*	.11	-.21	-.03	.81**	-.39**
2	-.24	-	.19	.16	.19	.32*	.48**	.42**	.33*	.46**	-.30*	.27	.20	-.00	-.38**	.89**
3	-.38**	.06	-	-.10	.00	.50**	.55**	.44**	.36*	.56**	-.35*	-.02	.43**	.45**	-.19	.18
4	.08	-.04	-.18	-	.50**	-.25	.09	.00	.14	-.02	.04	.29*	.07	.13	.11	.20
5	-.09	.23	-.08	.53**	-	.03	.09	.11	.05	.08	-.09	.11	.12	-.01	.06	.12
6	-.24	.13	.58**	-.01	.01	-	.53**	.66**	.41**	.80**	-.32*	-.13	.32*	.33*	-.17	.20
7	-.23	.05	.40**	-.04	-.01	.64**	-	.61**	.72**	.85**	-.32*	.08	.30*	.54**	-.45**	.41**
8	-.36*	.13	.59**	.17	.05	.51**	.48**	-	.65**	.88**	-.36*	-.01	.58**	.48**	-.13	.35*
9	-.30*	.07	.56**	-.02	.12	.54**	.72**	.60*	-	.82**	-.38**	-.10	.37**	.43**	-.28*	.27

Table 6 (continued)

Euro-Canadians: Pearson correlations among variables (collectivism-prime above, individualism-prime below)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10	-.34*	.11	.64**	.03	.05	.81**	.86**	.78**	.86**	-	-.41**	-.05	.47**	.53**	-.30*	.37**
11	.53**	-.18	-.45**	.08	.08	-.30*	-.35*	-.50**	-.55**	-.51**	-	.18	-.25	-.15	.21	-.24
12	.06	.16	-.32*	.20	.46**	-.07	-.04	-.17	-.12	-.12	.32*	-	-.21	.01	.08	.27
13	-.17	.28	.19	.04	.21	.27	.32*	.45**	.36*	.42**	-.16	-.00	-	.28*	-.10	.20
14	-.09	.31*	.54**	.01	.05	.52**	.52**	.46**	.39**	.57**	-.11	.00	.17	-	-.09	.53**
15	.89**	-.28	-.40**	.05	-.13	-.20	-.22	-.35*	-.34*	-.33*	.58**	.13	-.18	-.13	-	-.33*
16	-.27	.86**	-.00	-.10	.29*	.12	-.04	-.00	-.03	.01	-.05	.33*	.22	.29*	-.24	-

Note: $N = 100$. 1 = Self-Construal Scale - Independence, Time 1; 2 = Self-Construal Scale - Interdependence, Time 1; 3 = Centre for Epidemiologic Studies – Depression Scale; 4 = Vancouver Index of Acculturation – Mainstream Culture; 5 = Vancouver Index of Acculturation – Heritage Culture; 6 = Cognitive-Behavioural Avoidance Scale – Behavioural Social; 7 = Cognitive-Behavioural Avoidance Scale – Behavioural Non-Social; 8 = Cognitive-Behavioural Avoidance Scale – Cognitive Social; 9 = Cognitive-Behavioural Avoidance Scale – Cognitive Non-Social; 10 = Cognitive-Behavioural Avoidance Scale; 11 = Cross-Cultural Coping Scale – Engagement Coping Subscale; 12 = Cross-Cultural Coping Scale – Collective Coping Subscale; 13 = Cross-Cultural Coping Scale – Avoidant Coping Subscale; 14 = Ruminative Responses Scale; 15 = Self-Construal Scale - Independence, Time 2; 16 = Self-Construal Scale - Interdependence, Time 2.

* $p < .05$, ** $p < .01$, two-tailed.