University of Sussex

Multidimensional self-construals: Testing the model and refining measurement

Thesis submitted by Shengyu Yang to the University of Sussex for

the qualification of Doctor of Philosophy in Psychology,

December, 2017

I hereby declare that this thesis has not been and will not be, submitted in whole

or in part to another University for the award of any other degree.

Signature: _____shengyu yang_____

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<u>University of Sussex</u>

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Summary

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Markus and Kitayama (1991) developed self-construal theory, and proposed that independent and interdependent self-construals would account for cultural variations in cognition, emotion and motivation. Based on this theory and Vignoles and colleagues' (2016) reconsideration of self-construal measurement, this thesis investigates if a multi-dimensional model of self-construal helps explain cultural differences better than previous studies using the conventional two-dimensional model, as well as reporting the development of a scale that unpacks eight different ways of being independent and interdependent in multiple cultures.

The thesis includes three studies. Focusing on the cultures of China and the UK, Study 1 explores if a seven-dimensional self-construal model (Vignoles et al., 2016) helps provide previously missing evidence for the predicted mediation effects of self-construal on cultural differences in cognition, emotion and motivation. The results show that Chinese and British participants are significantly different in six dimensions of self-construal, and explicit self-construal significantly mediated cultural differences in certain aspects of cognition, emotion and motivation. In the same two cultures, Study 2 examines individualism and collectivism priming techniques, using the seven-dimensional self-construal model to detect what two commonly used self-construal primes actually manipulate. The results indicate that Similarities vs. Differences with Family and Friends task (SDFF) and Sumerian Warrior Story (SWS) cue different aspects of self-construal. Effects of SWS show a similar profile across the two cultures, whereas SDFF has a much stronger effect on Chinese participants than British participants. Study 3 reports the development of a new self-construal scale. By introducing a new factor and extending the participants to 13 countries, the final version is a 48-item eight-dimensional self-construal scale. The importance of the multidimensional model and the new measure are discussed.

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Looking back to the last three years, sometimes it feels like three days ago, while sometimes it feels like thirty years ago, which is more than my life time. Too many things have happened, and too many thanks are due.

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tension went away. You are much more than a supervisor to me in these three years. I will always remember your warmth, patience, and encouragement.

Too many gratitudes, I will keep them in my heart.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction and Literature Review

Before I came to the UK for the study of Master's degree, I expected there would be cultural differences between the UK and my home country, China. During the first several months here, I did find some conspicuous differences, like food, popular fashion styles, means of expression, etc., but these were not enough to cause a cultural shock. Then, a few months later, when I had deeper communications into different topics with local friends, I started to feel the differences I had missed. These differences were not like the preferences for food, which I could change temporarily, but more like the thoughts rooted in their hearts. These involved various aspects of life, like how they see themselves, how they treat their identities, and how they interact with their parents, friends, and partners. The seemingly prevailing thoughts I learned about here were quite different from what I had access to in China. I knew there could be numerous reasons leading to these cultural differences, but still, I was quite interested in finding a way to help explain them. Holding that in my mind, I started my PhD study.

Generally speaking, this thesis is mainly to investigate whether cultural differences can be influenced by how people see themselves in relation to others, to see if it can contribute to the whole cross-cultural research field, and to refine the relevant measurement. More specifically, I hope to dig deeply into the different ways of being independent and interdependent in various cultures, with the help of the multidimensional self-construal model and its related measurement.

To tell the story fluently, this introductory overview is divided into seven parts. In the first part, I briefly outline various definitions of culture. In the second part, I introduce the Hofstede Project and Individualism-Collectivism. In the third part, I introduce self-construal theory. In the fourth part, I introduce the commonly used self-

construal measures in the literature, and discuss some of their limitations. In the fifth part, I discuss the surprising paucity of evidence for self-construal as a mediator of cultural differences in cognition, emotion and motivation, and consider some possible explanations. In the sixth part, I introduce the literature on self-construal priming. In the final part, I provide an overview of the present research included in this thesis.

1.1 The Difficulty of Defining Culture

The term of 'culture', first used by an English anthropologist Tylor in 1871, referred to knowledge, belief, art, law, morals, custom (Tylor, 1877). Until 1963, two American anthropologists, Kroeber and Kluckhohn had already found 164 different definitions of culture after they reviewed the relevant literature. Nowadays, there is still no consensus how to define this term, mainly because 'culture' is so popular and it is used in a wide range of areas (Avruch, 1998). Actually, when we talk about culture, it could have different meanings associated with different targets. For instance, when used for individuals, it could refer to languages, beliefs, and values along with the cultivations to them; for groups, it could refer to traditions, customs and life styles held by different groupings or organizations, like families, communities, regions, nations, religions, companies etc.; and for activities, it could refer to the media or products of culture, like books, movies and museums (Rothman, 2014).

There is a tendency to treat culture as an almighty or universal term for various phenomena, but this is not helpful when we need to apply the concept of culture in concrete research (Eriksen, 2004). Hence, I will clarify in the following sections the understanding of culture on which this thesis is based.

In social psychology, definitions of culture still vary, but many researchers may agree on certain characteristics of the concept: culture is shared within certain groups; culture consists of multiple dimensions; and culture tends to be stable (but not unchangeable) (Maznevski and DiStefano, 1995; Taras, Rowney, & Steel, 2009; Triandis, 1994). However, although they have these common views, the different angles and focus of the perspectives lead to different ways of investigations of culture, in both conceptual and methodological ways (Berry, Poortinga, Breugelmans, Chasiotis, & Sam, 2011).

1.2 The Hofstede Project and Individualism-Collectivism

In this thesis, I take the position that culture is a combination of related beliefs, values, and self-representations. This can be traced back to the Hofstede Project during the 1960s and 1970s, which vastly influenced the development of cross-cultural research (Smith, Fischer, Vignoles, & Bond, 2013). Hofstede (2001) defined culture as 'the collective programming of the mind that distinguishes the members of one group or category of people from another' (p. 9). With a huge database from more than 70 countries, Hofstede (1980) established four distinct dimensions that would differentiate cultural variations[1], named as Power Distance, indicating the unequal power between superior and subordinate in various cultures; Uncertainty Avoidance, indicating the different acceptance of uncertainty and ambiguity in various cultures; Individualism-Collectivism (I-C), indicating whether individuals are viewed as having more separate identities or as being more connected to social groups in various cultures; and Masculinity-Femininity, indicating the different focus on assertiveness

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[1] Hofstede (2001) added a fifth dimension, which is Long Term Orientation, and Hofstede, Hofstede and Minkov (2010) introduced the sixth dimension, which is Indulgence/ Restraint.

or nurturance in various cultures. Among all the factors, I-C drew most attention, and is still the focal point of much research involving cross-cultural comparisons today (Smith et al., 2013).

When Hofstede established the factors, he assumed these dimensions were to characterise national variations, in other words, his hypotheses and analyses were based on a cultural level (or, as he termed it, 'ecological' level), instead of an individual level of explanation (Hofstede, 1980). Different from research with an individual-level analysis, where each participant is considered as a separate source of data, research with cultural-level analysis treats each nation (or other cultural group) as a single case (Smith, 2002). Hofstede (1980) pointed out that the characteristics captured at the cultural level would not necessarily exist at the individual level simultaneously (or vice versa), and his dimensions of national variation were only suitable for cultural-level analysis, but not for characterising individuals. However, these concepts have been applied to both levels of analysis in cross-cultural research confoundedly (Smith, 2006). Especially for I-C, it is very common that I-C is considered as an individual-level construct, which has caused a lot of confusions in the field (Smith et al., 2013).

Regarding I-C, 'the central theme of individualism is the conception of the individuals as autonomous from groups; the central theme of collectivism is the conception of individuals as aspects of groups or collectives' (Triandis, Chan, Bhawuk, Iwao, & Sinha, 1995, p. 462). As a prominent construct in the field of cross-cultural psychology, the framework of I-C is clear and attractive for detecting cultural variations (Oyserman et al., 2002; Triandis, 1995). However, with lots of research stemming from this framework, researchers have been concerned that I-C is such a broad concept that without further unpackaging the construct, the usefulness of the

9

framework and the precision of its predictions are limited (Brewer & Chen, 2007; Earley & Gibson, 1998; Hardin et al., 2004).

If culture is a combination of all the related beliefs, values, self-representations etc., there are themes, like I-C, gathering all those connected facets of culture (Brewer & Chen, 2007; Owe, 2013; Triandis, 1993). As noted above, being established as a cultural-level dimension, I-C has never been a simple concept, instead, it is more like 'multi-faceted cultural syndromes, encompassing normative beliefs, values, and practice' (Vignoles et al., 2016, p. 970). Involving those different facets of I-C, most relevant research has focused on investigating values and self-representations (Markus & Kitayama, 1991; Noguchi. 2007; Owe, 2013). In this thesis, I focus especially on the self-representations part, corresponding to the self-construal, or how individuals view and understand themselves and their relationships with others (Markus & Kitayama, 1991). The details of self-construal theory, the measurement model and its relationship with I-C will be described in the following parts of the introduction.

At the end of this section, it is worth mentioning that I regard each country as a separate cultural background in this thesis. It is common to use country as the unit to compare cultural variations nowadays (Smith, 2006). However, it is also arguable if each country can stand for a culture, especially under the influence of globalization and the massive immigrations among over 200 nations in the world. This approach may lead to some inaccurate conclusions and strengthen certain cultural stereotypes (Matsumoto, 1999; Smith et al., 2013). Nonetheless, as Minkov and Hofstede's (2012) research found, national culture could be a meaningful concept and a legitimate unit of analysis although there are in-country regional differences. In addition, setting country as the unit makes the data from each nation more

comparable. Moreover, with the multi-faceted model of self-construal applied in the studies, I believe there could be a better understanding of the dynamics of culture in each country, which will be discussed later.

1.3 Self-construal Theory

In 1991, Markus and Kitayama suggested that there were diverse 'modes of being' in different cultures, and firstly introduced the term of 'self-construal'. This concept mainly involves how people define and make meaning of the self and its relations with others (Markus & Kitayama, 1991). Markus and Kitayama proposed that there could be two fundamental ways of construing the self: independence and interdependence.

Based on Markus and Kitayama's (1991) theory, an independent self-construal refers to seeing the self as separate from the social context, being bounded, unitary, and stable; whereas an interdependent self-construal refers to seeing the self as connected to the social context, being flexible, fluid, and varying across the contexts (Markus & Kitayama, 1991). Markus and Kitayama suggested that people with independent self-construals (typically Western Europeans and North Americans) would value 'self-expression, uniqueness and self-actualization, acting autonomously based on their own thoughts and feelings, and pursuing their own goals'; on the other hand, people with interdependent self-construals (typically East Asians, but also those from other 'non-Western' parts of the world) would emphasize 'fitting in and maintaining harmony with relevant others, basing their actions on expectations and social norms, rather than personal wishes and preferences'.

According to Markus and Kitayama's (1991) central claim, cultural differences in independent and interdependent self-construal would account for a wide range of

differences in cognition, emotion and motivation. In this case, exploring what kind of self-construal is more prevalent in different cultures should be useful in helping understand cultural variations in different psychological processes, and this is also one of the main research directions in most relevant studies (Markus & Kitayama, 1991; Matsumoto, 1999; Smith et al., 2013).

Markus and Kitayama's (1991) theorizing implied that the cultural differences in cognition, emotion and motivation would be mediated by independent and interdependent self-construals. Matsumoto (1999) depicted the theoretical model of self-construals as a mediator of cultural variations (see Figure 1.1). To test this hypothesis, numerous measures of self-construal were created to detect independence and interdependence (Singelis, 1994; Gudykunst et al., 1996). I will review these measurements in the next part of this introduction. Also, I will review relevant research testing the mediation model in the fifth part.
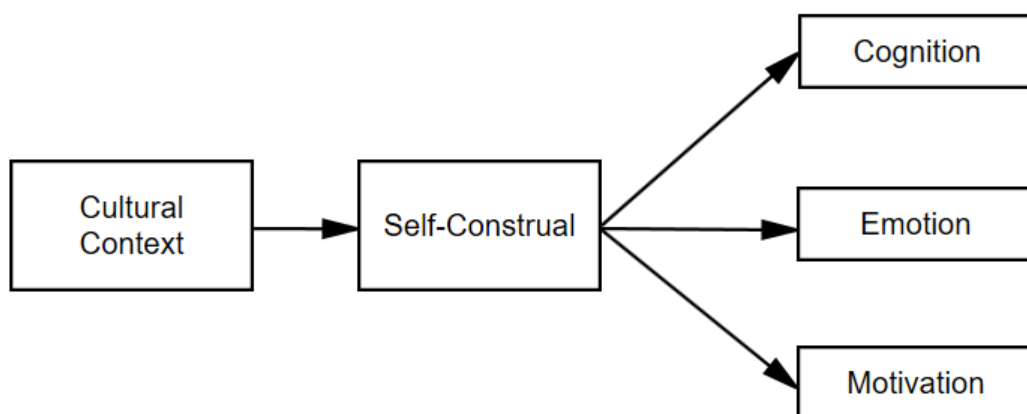
Figure 1. 1. Theoretical model of self-construals as a mediator of cultural variations (Matsumoto, 1999).

Since the relations between culture and the self were redefined by Markus and Kitayama (1991), the theory of self-construal has been highly influential in the field

of cross-cultural psychology (Cross et al., 2011; Matsumoto, 1999). A great number of studies have connected independent and interdependent self-construals to complex psychological outcomes, like self-esteem, well-being, social motives etc. (see Cross et al., 2011; Gudykunst & Lee, 2003 for more reviews). Self-construal theory provides several innovations and advantages. Firstly, self-construal seems to be a new framework to link culture with individuals (Matsumoto, 1999). In addition, some cultural differences make more senses with the help of self-construal, and researchers are able to link the individual differences in self-construal to more macroscopically national differences, like I-C (Smith et al., 2013).

However, there are also some deficiencies for self-construal theory. First of all, a major source of confusion in the literature is the relationship between self-construal and I-C (Cross et al., 2011; Smith et al., 2013; Vignoles et al., 2016). In Markus and Kitayama's (1991) paper, they did not explicitly connect self-construal to I-C. Nonetheless, under the background of Hofstede's (1980) I-C theory, and terms of independent and interdependent self-construals defined by Markus and Kitayama (1991), it is reasonable for researchers to link them together. With regard to their relations, some researchers suggest that I-C would cause differences in self-construals (Gudykunst et al., 1996; Park & Levine, 1999; Singelis & Brown, 1995); some believe that I-C and self-construal only differ in the level of analysis, one with cultural level and the other with individual level (Smith, 2011); some others think these two constructs are synonymous (Oyserman, Coon, & Kemmelmeier, 2002). These distinct claims cause confusions for the concept of self-construal in the literature.

In addition, the same items are usually applied to measure both I-C and self-construal, which further aggregate the complexity and ambiguity (Owe, 2013). As

discussed in the first part, I-C includes not only components of self-perception, but also beliefs, values, social norms etc., thus, it is clear that I-C could not be reducible to self-construal. Simultaneously, Vignoles and his colleagues' (2016) study showed that self-construals can be multifaceted and can explain some cultural differences not detected by I-C, which is reviewed in detail in next part. Hence, I hold the position in this thesis that there is overlap between I-C and self-construal, but neither I-C nor self-construal should be reducible to the other.

Besides the relation to I-C, the other negative critiques of self-construal involve: There is not enough evidence for the two-dimensional model (Levine et al., 2003; Vignoles et al., 2016); some of the predicted effects of self-construal on cultural differences in cognition, emotion and motivation by self-construal theory cannot be found (Matsumoto, 1999); measures for self-construal are not valid enough (Levine et al., 2003); and the samples are not spread enough to different parts of the world (Cross et al., 2011; Vignoles et al., 2016). In general, these comments are around how self-construal should be properly conceptualized and measured, which have not reached a consensus in the field, and these are also what I want to contribute with this thesis.

1.4 Self-construal Measurement

Markus and Kitayama (1991) proposed the theoretical differences between independent and interdependent self-construals based on their reviews of related literature from anthropology and cross-cultural psychology. In this part, I will review several most commonly used measures and introduce the self-construal measure applied in this thesis.

When Markus and Kitayama (1991) built the term of independent and interdependent self-construals, they appeared to treat self-construals as explicit individual-level self-perceptions. Although Markus and Kitayama (2003) claimed that the concept of self-construals was also developed to capture the culture-level representation of self and the relevant social orientations, many researchers tend to treat the term as referring to self-concepts of individuals, and most studies measured self-construals at the individual level (Cross et al., 2011; Matsumoto, 1999; Smith et al., 2013).

Researchers have directly measured self-construals in two main ways. One way is through content analyses of open-ended self-descriptions. Kuhn and McPartland (1954) first developed the 'Twenty Statements Test' (known as TST), which asks participants to give 20 answers to the question 'Who am I?' as quickly as possible and without considering the logic and importance of these answers. TST has been applied to measure both I-C and independent and interdependent self-construals, with various coding schemes for content analyses, which basically involve counting the frequencies of predicted feature descriptions (Bond & Cheung, 1983; Smith et al., 2013; Triandis et al., 1990).

The results of TST seem promising when only applied to compare Americans and East Asians (Triandis et al., 1990; Trafimow, Triandis, & Goto, 1991), however, when used to compare broader areas, the results are usually inconsistent and confusing, no matter for I-C or self-construal (Cross et al., 2011; Levine et al., 2003). Possible explanations could lie in methodological flaws of the TST as a measure of self-construal. Firstly, the wording of TST could be seen as a prime for the individualised, decontextualized and introspective self, which may influence the measure of selfhood (Kanagawa, Cross, & Markus, 2001). Also, the coding schemes

vary in different studies, which makes them hard to compare with each other and raises questions about their objectivity (Trafimow et al., 1991; Smith et al., 2013). Moreover, basing scores on frequencies could be inaccurate because even from the same category, the importance and weights of those statements can be quite different, especially when it involves multiple cultures (Triandis, 1995; Smith et al., 2013). In addition, when applied to different cultures, the formats of TST could vary because of the language. Although this has not been well explored in the literature, it could be another factor causing the variations. All these aspects make TST be more and more cautiously considered when applied to measure self-construal (Smith et al., 2013).

The other way to measure self-construals is through Likert-type scales. Two commonly used measures are Singelis (1994) Self-Construal Scale and Gudykunst et al. (1996) Self-Construal Scale. Both measures were tailored specifically to detect the features of Markus and Kitayama's (1991) hypotheses, and adopted a two-dimensional model of self-construal: independence and interdependence. There are separate subscales for independent and interdependent self-construals in each measure. The Singelis (1994) Scale includes 24 items, 12 for independent and interdependent self-construals respectively. The Gudykunst et al. (1996) Scale includes 30 items, 14 for independent self-construal and 16 for interdependent self-construal. Regarding the items, both scales include self-descriptive statements and some attitude statements (Smith et al., 2013).

These two scales were widely used to measure self-construals and to explore if the differences in self-construals could help interpret cultural variations in cognition, emotion and motivation (Gudykunst & Lee, 2003). The latter involves the discussion of self-construal as a mediator of cultural differences, which will be reviewed in detail in the next part. For the former use, some studies did find a few expected patterns,

like North Americans scored higher in independent self-construal, and East Asians

scored higher in interdependent self-construal (Kwan, Bond, & Singelis, 1997;

Singelis, 1994; Singelis & Sharkey, 1995), but in general, most studies with these two

measures show inconsistent and divergent conclusions about the directions, strengths

and effects of self-construal and can only provide evidence for Markus and

Kitayama's (1991) predictions in a very limited way (Levine et al., 2003; Matsumoto,

1999; Smith et al., 2013). For example, some studies found that North Americans and

Japanese would have equally high independent self-construal (Krull et al., 1999; Sato

& Cameron, 1999), and North Americans would have a higher interdependent self-

construal than Japanese (Kleinknecht, Dinnel, Kleinknecht, Hiruma, & Hirada, 1997;

Oyserman, Coon, & Kemmelmeier, 2002; Sato & Cameron, 1999).

To understand why these two measures cannot provide consistent results, several

criticisms have been mentioned in the literature. The first criticism is towards how

these measures were applied. For example, it is argued that the participants in these

studies relied too much on student samples (Schimmack, Oishi, & Diener, 2005).

The second criticism is about the items in these measures. All the items in the

measures are phrased in a positive direction, without considering the effect of

acquiescent response style (Smith et al., 2013; Vignoles et al., 2016). Acquiescent

response style refers to individuals' general tendencies to respond positively to

questionnaire items, regardless of the content, and it has been shown to have

significant cultural differences (Hofstede, 1980; Smith et al., 2013). With Singelis

(1994) and Gudykunst et al. (1996) scales, many participants score high or low on

both the two dimensions, as well as those who score high on one dimension and low

on the other, and in the situations when they score high or low on both dimensions, it

is hard to tell how much is influenced by the effect of acquiescent response styles

(Smith et al., 2013). As for the wordings, many items in the two measures were similar to the items used to measure I-C (Smith, 2011), and some suggested that the wordings could be too abstract and decontextualized, which would especially influence detection of interdependent self-construal (Fiske, Kitayama, Markus, & Nisbett, 1998).

The third criticism, which attracted more attention in the field, is about the two-dimensional self-construal structure applied in these measures. Across different samples and different cultural groups, the structure usually shows a more complicated pattern than two dimensions (Hardin, Leong, & Bhagwat, 2004; Christopher, Norris, D'Souza, & Tiernan, 2012). Kağitçibaşi (2005) suggested that independence and interdependence include both contrasts of relatedness vs. separateness (known as interpersonal distance) and heteronomy vs. autonomy (known as agency). Against the circumstance that separateness and autonomy are often seen as interchangeable in the literature, more and more researchers believe that relatedness and autonomy can be coexisting and even be a prevailing mode in certain cultures, and this may cause confusion and inaccuracy in the two-dimensional structure (Kağitçibaşi, 2005; Smith et al., 2013). Thus, although the two-dimensional model of self-construal remains dominant, lots of researchers believe independence and interdependence should be further unpacked (Brewer & Chen, 2007; Harb & Smith, 2008; Hardin et al., 2004; Levine et al., 2003).

Some researchers have suggested that interdependence can be divided into relational and collective interdependence based on the assumption that different relationships have different weights on the self across cultures (Brewer & Chen, 2007; Brewer & Gardner, 1996; Cross, Bacon, & Morris, 2000; Kashima et al., 1995; Sedikides & Brewer, 2001). In this case, the relational interdependent self-construal is

the tendency to think of oneself in terms of the relationships with significant others, whereas the collective interdependent self-construal is the tendency to think of oneself in terms of the relationships with general groups (Cross, Bacon, & Morris, 2000; Gabriel & Gardner, 1999). This has become a relatively popular way to deconstruct the original proposed two-dimensional model in the last decade, and a few other measures were based on this three-dimensional model, like Harb and Smith's (2008) self-construal model. This helps explore more details of interdependent self, however, the boundaries between relational and collective self-construals could be ambiguous, for both researchers and participants, and this model does not fit the relevant scales very well (Cross et al., 2011; Smith et al., 2013), which have led to some seemingly complex conclusions, like cultural groups may vary on collective interdependence, while gender groups differ on relational interdependence (Cross & Madson, 1997; Kashima et al., 1995).

Some others have argued that independence and interdependence are too broad constructs, which may not help capture enough characteristics of self-construal in cross-cultural research, and researchers should focus on different facets of independence and interdependence (Hardin et al., 2004; Levine et al., 2003; Vignoles et al., 2016). This differs from the above approaches in that, instead of emphasising what targets people may connect to, it focuses more on how people connect with these targets. In other words, it suggests that there are different ways of being independent and interdependent in various cultures (Markus & Kitayama, 2003; Owe, 2013; Smith et al., 2013; Vignoles et al., 2016).

Several groups of researchers have tried to identify what domains of self-construal are worth distinguishing. Hardin et al. (2004) developed a model with six facets of self-construal, including autonomy/assertiveness, individualism, behavioral

19

consistency, and primacy of self for independence, and esteem for group and

relational interdependence for interdependence. They found that European Americans

and Asian Americans only varied on domains of autonomy/assertiveness and primacy

of self, but not others (Hardin et al., 2004). Fernández, Paez, and González (2005)

identified four dimensions with an adjusted Singelis's (1994) Scale, which were

uniqueness, low context, group loyalty, and relational independence. These models

were not commonly applied, partly due to the unclear meaning of the defined factors,

but they indicated the necessity of identifying the different domains of self-construal

(Owe, 2013; Smith et al., 2013). Until today, more and more researchers believe that

self-construal can be multi-dimensional (Guo, Schwartz, & McCabe, 2008; Hardin et

al., 2004; Levine et al., 2003; Smith et al., 2013; Vignoles et al., 2016).

Vignoles and colleagues (2016) explored the conceptualization and measurement

of self-construal with two large multi-national surveys, including 2923 high school

students from 16 countries, and 7279 adults from 33 countries. They used factor

analyses to identify valuable dimensions of self-construal based on some previous

scales, and developed a seven-dimensional model of independent and interdependent

self-construals, including *self-reliance vs. dependence on others*, *self-containment vs.*

connectedness to others, *difference vs. similar to others*, *self-interest vs. commitment*

to others, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-*

expression vs. harmony.

Compared to previous research into the dimensionality of self-construal,

Vignoles and colleagues' (2016) studies have several innovations and advantages.

Firstly, they treat each dimension as a component with bipolar sides of independence

and interdependence, which means individuals could have different degrees of

independence and interdependence on each dimension. When most other research still

20

emphasizes the separate and higher order dimensions of independent and interdependent self-construals, and tells the story of self-construal as 'the one or the other', Vignoles et al. focus more on how cultures are characterized with different ways of being independent and interdependent. Secondly, in the choices of item wording, they built both positive-scored and reverse-scored items to control for the effect of acquiescent response styles. Thirdly, unlike most other studies that only applied their models to very limited cultural groups at first, usually North Americans and East Asians (Levine et al., 2003; Smith et al., 2013), they set up a high starting point with multiple cultures, making it possible to draw a map of self-construal in broader cultural backgrounds, and to test some of Markus and Kitayama's (1991) original proposals.

In their findings, Vignoles et al. (2016) reported that participants from different countries tended to show different profiles of self-construal, and the patterns of variations of self-construal across cultures could support some predictions by Markus and Kitayama (1991). What is more, as noted in the last part, the correlation between I-C and self-construal is unclear in the literature. With Vignoles and his colleagues' (2016) extensive research into multiple cultures, they suggested that neither I-C nor self-construal should be reducible to the other, because I-C includes not only self-representation, but also values, beliefs etc., whereas self-construal also contains certain aspects, like *self-reliance vs. dependence on others*, and *consistency vs. variability*, that do not covary with I-C. This finding contributes to the current literature of self-construal, and can be useful in clarifying the relationships between I-C and self-construal. In this thesis, I further test this model, and try to refine its measurement.

Besides the direct measures of self-construal at the individual level as introduced above, it is worth mentioning that there is another trend to consider self-construal as characteristics of cultural contexts instead of characteristics of individuals (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009; Kitayama & Uskul, 2011; Markus & Kitayama, 2010). Kitayama et al. (2009) applied Singelis (1994) Scale, as the explicit measure of self-construal, and five tasks involving cognition, emotion, and motivation to measure the implicit psychological tendencies towards independence and interdependence, to the participants of four countries (UK, USA, Japan and Germany). They found that cultural differences in the five tasks showed the expected patterns, for instance, American participants showed more correspondence bias, more disengaging emotions, and more symbolic self-inflation than Japanese participants, but the expected cultural differences in the explicit self-construal measure were not detected. Based on this result and the inconsistent conclusions of self-construal in previous research, they argued that independent and interdependent self-construals may not be effectively measured with explicit self-reported scales. Instead, independence and interdependence should be considered as 'cultural mandates', which refers to 'the ideals or general goal states (such as independence and interdependence) positively sanctioned by a given cultural group' (Kitayama et al., 2009, p. 238). In other words, they suggest that independence and interdependence, as individuals' implicit psychological tendencies, are heavily influenced by cultural contexts, and should only be studied at a cultural level. This study has important implications in the literature as it revisited Markus and Kitayama's (1991) original thoughts and complemented conceptualization and evidence for some early predictions (Smith et al., 2013). The first study of this thesis is partly based on this research, which will be introduced in further detail later.

1.5 Mediation Effects of Self-construal

As noted in Section 1.3, numerous self-reported self-construal scales have been developed to help understand cultural differences in cognition, emotion, and motivation. Although the commonly used measures are not optimal, researchers have found some evidence to connect self-construal to those cultural variations as Markus and Kitayama (1991) suggested (Levine et al., 2003; Matsumoto, 1999).

For cultural differences in cognition, Singelis (1994) found interdependent self-construal would correlate to the correspondence bias between Asian American students and Caucasian students. Na and Kitayama (2011) also found the mediation effect of independent self-construal on neural indicators of spontaneous trait inferences for Caucasian American students. For cultural differences in emotion, Singelis, Bond, Sharkey, and Lai (1999) detected the mediation effect of self-construal on embarrassability among three cultural groups, including Asian Americans in Hawaii, Hong Kong Chinese, and Caucasian Americans. Su, Lee and Oishi (2012) found the mediation effects of independent self-construal on expressive suppression between Chinese Singaporean and European American participants. With regard to cultural differences in motivation, Lam and Zane (2004) found the mediation effects of independent and interdependent self-construals on primary and secondary control strategies between Asian Americans and Caucasian Americans. Kitayama and Park (2014) detected mediation effects of interdependent self-construal on cultural differences in self-centric motivation between European American and Asian participants. In addition, beyond psychological effects, in the field of neuroscience, some researchers also found that cultural differences in brain activity could be mediated by self-construal (Chiao et al., 2013; Han & Northoff, 2008; Han et

al., 2013; Kitayama & Uskul, 2011). For instance, Ma et al. (2014) found that cultural differences in the brain activity of the temporoparietal junction (TPJ) could be mediated by the interdependence of self-construal between Chinese and Danish participants.

To demonstrate that self-construal can account for the cultural variations, a straightforward way is to apply the mediation test, but there are only very limited studies reporting mediation tests of self-construal in the literature (Cross et al., 2011). To deconstruct the mediation model (see Figure 1.1), among all the relevant research, much evidence shows the expected cultural differences in psychological outcomes (Cross et al., 2011; Smith et al., 2013); the expected correlations are often found between independent and interdependent self-construals and various psychological outcomes, like self-control (Seeley & Gardner, 2003), social anxiety (Okazaki, 1997), and preferred communication styles (Gudykunst et al., 1996); however, the cultural differences in self-construal are not often found to show the predicted patterns (Gudykunst & Lee, 2003; Levine et al., 2003). In Levine and colleagues (2003) meta-analysis study, they found that, with commonly used self-construal measures, there was only very weak evidence suggesting traditional Western countries would score higher in independence than Asian countries, and no significant support that Asian countries would score higher in interdependence than Western countries.

To consider the possible reasons why the predicted patterns of cultural differences in self-construal cannot be found, there are several inferences. The first possibility is that there are major flaws in the self-construal theory (Lindholm, 1997; Spiro, 1993). The second possibility is that it is inappropriate to test self-construal with self-reported scales, as Kitayama et al. (2009) suggested. The third possibility is that self-construal can be measured by self-reported scales, but it has not been

adequately explored in the literature. In this thesis, I believe the last possibility is the main reason, and that the prevailing two-dimensional model of independence and interdependence is not enough to capture all the key features of self-construal. Building on the study of Kitayama et al. (2009), I test the mediation effects of self-construal on Chinese and British cultural differences in cognition, emotion and motivation in the first study. The details are presented shortly.

1.6 Priming Effects of Self-construal

Before introducing the priming studies in self-construal literature, it is worth mentioning the foundation of priming theory. In 1955, Kelley established a model to describe the principle of primes: If variable 'A' has a causal influence on variable 'B', the effect is stronger when A is the focus of the participant's attention (see also Taylor & Fiske, 1978). Since then, experimental primes have been widely used in different fields of psychology (Smith et al., 2013). In cross-cultural research, to demonstrate that cultural variations are due to certain cultural frames, various priming manipulations are often applied to investigate if cultural differences are more pronounced systematically when the specific cultural features are accessible and salient (Oyserman & Lee, 2008).

In lab priming studies, researchers ask participants to complete some tasks, and the purpose of first task that participants should not know is to cue certain aspects. After that, researchers do comparisons between different groups (priming/ no priming or different primings), and test the effects of priming manipulations (Bargh & Chartrand, 2000). The effects of personal factors are weakened by randomizing the individuals to different priming conditions and controlling the exact aspects that are the main attentions of the participants (Oyserman & Lee, 2008).

Nowadays, there is a growing trend to prime the salience of independent and interdependent self-construals directly in the literature (Smith et al., 2013). This can be seen as another way of testing mediation model of the psychological constructs by manipulating the mediators (Spencer, Zanna, & Fong, 2005). In these manipulations, the independent self-construal prime is supposed to cue private self, or its specific aspects, like being different or unique; whereas the interdependent self-construal prime is supposed to cue collective self, or its specific aspects, like being similar to or obligated to family or friends (Brewer & Gardner, 1996; Oyserman & Lee, 2008).

With the broad applications of experimental manipulations, numerous priming methods have been developed to shift the accessibility and salience of independence and interdependence. The most commonly used priming methods of self-construal include Similarities vs. Differences with Family and Friends task (SDFF; Trafimow, Triandis, & Goto, 1991), which asks participants to think about being different or similar to their families and friends; Sumerian Warrior Story (SWS; Trafimow, Triandis, & Goto, 1991; Gardner, Gabriel, & Lee, 1999), which asks participants to judge a general's assignation of the command based on individuals' talents or family factors; pronoun circling task (Brewer & Gardner, 1996; Gardner, Gabriel, & Lee, 1999), which asks participants to circle the pronouns with either first person singular (I, me, mine) or first person plural (we, us, our); and scrambled sentence task (Srull & Wyer, 1979), which asks participants to form a sentence from four out of five words, which may include the key word to prime, for 15 times.

A lot of studies have tested the influences of the above priming methods on various psychological outcomes (Brewer & Gardner, 1996; Gardner, Gabriel, & Lee, 1999; Zhang & Mittal, 2007). Many findings suggest that the effects of independence and interdependence primings are similar to the effects of individuals' 'original'

orientations of independent and interdependent self-construals (Cross et al., 2011; Oyserman & Lee, 2008). Although the current evidence is far from enough to prove the cultural differences can be reducible to the variations of environmental accessibility and/ or salience of experimental primes, these findings do support that cultural variations can be at least partly influenced by features of social contexts (Smith et al., 2013). In addition, Oyserman and Lee (2008) found that with different cultural groups, different priming methods, or different outcome variables, the influences of self-construal primes can be quite uneven. For instance, Gardner et al. (1999) argued that the predominant cultural orientations of independence and interdependence would prominently affect how strong the priming effects are.

The above results raise the necessity to figure out the mechanism(s) underlying the effects of self-construal primes. In previous studies, some researchers did not conduct clear checks about what was cued by their manipulations (Suh, Diener, & Updegraff, 2008). Some others checked the manipulations with those commonly used self-construal measures (see Oyserman & Lee, 2008 for review). For TST scale, the effects of primes are usually small, while for the scales of Singelis (1994) and Gudykunst et al. (1996), the effects are small and heterogenous (Levine et al., 2003; Oyserman & Lee, 2008; Zhang & Mittal, 2007). As noted before, independent and interdependent self-construals are multifaceted, and the two-dimensional model of self-construal may not capture enough features or aspects which are primed during the process. Smith et al. (2013) suggested that SDFF might correlate more to the dimension of *difference vs. similar to others*, whereas the other priming methods could cue the different sets of self-construal domains. Simultaneously, most self-construal priming studies focus on Western samples, and more research is needed to

investigate how the primes perform in other parts of the world. In the second study of this thesis, I will try to contribute to these questions.

At last, I want to clarify that in the literature, the above priming methods have been variously labelled as I-C priming or self-construal priming (Oyserman & Lee, 2008). This could be due to the fact that these manipulations were designed to prime private or collective self, which should be covered by both terms. Actually, I-C primes are more commonly used as the term than self-construal prime or independent and interdependent primes. However, I-C as a property of culture, includes lots of constructs, which could be difficult to check if all being primed. In addition, the main topic of this thesis is about self-construal, so I will stick to the latter term.

1.7 Overview of Present Research

In the above introductory overview, I have described the main literature about the conceptualization and measurement of self-construal. Within this thesis, I adopt the idea that self-construal is multifaceted, and can be properly measured by self-reported scales. I test the model established by Vignoles et al. (2016), and I try to refine and extend the related measurement. Through this series of studies, I hope to contribute to the field by providing a useful measure of self-construal, and help further to understand the relationships between culture and the self.

The thesis includes three studies (see Appendices for questionnaires), and I wrote 3 papers out of them. Study 1 and 2 are based on questionnaire studies in the cultural groups of China and the UK. I designed the questionnaires with the help of my supervisor. I am responsible for the data collection, data analyses, and write up. Study 3 is based on a large multinational survey, with numerous collaborators across the

world. I am responsible for part of the data collection, and I take the lead role in data analyses and write up. The overviews of these three papers are in the following.

Study 1 explores the proposition raised by Markus and Kitayama (1991) that independent and interdependent self-construals would account for cultural variations in cognition, emotion, and motivation. This argument is studied here as there is not enough evidence showing the expected mediation effects of self-construal on cultural differences, and a possible explanation is that the two-dimensional model of self-construal cannot fully capture the key features, as noted above.

In this case, I applied a scale measuring seven dimensions of self-construal, as suggested by Vignoles et al. (2016), along with seven tasks of cognition, emotion, and motivation, including the cognitive tasks of dispositional (vs. situational) attribution, and inclusion of others in the self, the emotional task of intensity of engaged (vs. disengaged) emotions, and the motivational tasks of sociogram, relationship between happiness and engaging (vs. disengaging) emotions, achievement motivation and face motivation. As mentioned before, this study is partly based on Kitayama et al. (2009), and some tasks were closely adapted from their study. Also, these tasks are chosen because they can be regarded as implicit psychological tendencies of independence and interdependence, which are helpful to compare with the explicit measure of self-construal. This study is applied to two cultural groups, China and the UK.

Study 2 investigates what self-construal primes actually manipulate. I focus on this research topic for two reasons. Firstly, I want to further test the seven-dimensional model of self-construal. With the consideration of priming processes, I hope to dig deeper into the stability of each dimension. Secondly, directing at the inconsistent results in the research of self-construal prime, it is important to find what

aspects of self-construal are actually cued during these manipulations, which can be helpful for future research in this field.

Study 2 applies two different priming methods, SDFF and SWS, which are both commonly used in previous research, followed by the seven-dimensional scale of self-construal. There are five priming conditions in this study, including no priming (control condition), independent priming with SDFF, interdependent priming with SDFF, independent priming with SWS, and interdependent priming with SWS. Like Study 1, Study 2 is applied in the cultural groups of China and the UK.

Study 3 is a scale development study, focusing on refining the measurement of multi-dimensional self-construal model. After exploring the explanatory power of the multifaceted self-construal model on important parts of self-construal literature, like mediation effects and priming mechanism, in two cultural groups, this study aims to provide a generalizable measure of self-construal, suitable for use in multiple cultures. Also, it is worth mentioning that besides the seven dimensions included in the study of Vignoles et al. (2016) and Studies 1 and 2, Study 3 also includes the eighth dimension[2], which is *decontextualized self vs. contextualized self*. Thus, another important goal of this study is to test whether it is a valuable dimension for the new eight-dimensional model.

This study involves the participants from 13 countries, including USA, UK, Mexico, Argentina, Spain, Australia, France, Romania, Saudi Arabia, Thailand, China, Hungary, and Germany. The eighth dimension was conceptualized based on the reviews of Vignoles et al. (2016) and Owe (2013), and its items are adapted from Owe et al. (2013).

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[2] The items of the eighth dimension are also applied in study 1 and 2, but not included in the writing.

Chapter 2 (Study 1): Culture and the self revisited: Do self-perceptions of independence and interdependence account for Chinese-British differences in cognition, emotion and motivation?

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Reference:

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2.1 Abstract

A widely accepted proposition of self-construal theory (Markus & Kitayama, 1991) states that independent and interdependent self-construals account for cultural variations in cognition, emotion and motivation. Yet previous research rarely shows predicted mediation effects of self-construal on these cultural variations. We propose that this lack of support is due to using an incorrect two-dimensional measurement model for self-construals. We applied a seven-dimensional model of self-construals to explain Chinese-British differences in aspects of cognition, emotion and motivation that have been considered as implicit indicators of independence and interdependence. Chinese participants ($N = 108$) were more interdependent (vs. independent) than British participants ($N = 97$) in 6 dimensions of explicit self-construal. Moreover, explicit self-construals significantly mediated cultural differences in selected aspects of cognition (social closeness to ingroup vs. outgroup targets), emotion (engaging vs. disengaging emotions), and motivation (achievement motivation and face motivation). Differences in these psychological processes were mediated by different combinations of self-construal dimensions, showing the importance of distinguishing different ways of being independent and interdependent in cross-cultural research.

2.2 Introduction

Cross-cultural diversity of the self has been a focus of social psychological research for more than three decades, and a key concept in this field is that of self-construal. When Markus and Kitayama (1991) first proposed this concept, which referred to how people define and make meaning of the self in relation to others (Cross, Hardin, & Gercek-Swing, 2011; Smith, Fischer, Vignoles, & Bond, 2013), they contrasted two ways of construing the self: independent and interdependent. They believed that people with high independent self-construals (typically Western Europeans and North Americans) would value self-expression, uniqueness and self-actualization, whereas people with high interdependent self-construals (typically East Asians) would regard maintaining relationships with others and social harmony as important (Cross et al., 2011; Markus & Kitayama, 1991; Vignoles et al., 2016).

Central to Markus and Kitayama's (1991) thesis was the claim that cultural differences in independent and interdependent self-construal would account for a wide range of differences in cognition, emotion and motivation. Thus, self-construal could be a useful tool to help understand cultural differences in psychological outcomes. Figure 2.1 shows the original mediation model of self-construal, suggested by Markus and Kitayama's theory and made explicit by other researchers (Matsumoto, 1999; Singelis et al., 1995). In this model, different cultural contexts foster differences in self-construal, which in turn cause differences in cognition, emotion and motivation. Some studies have indicated that cultural differences in some aspects of cognition, emotion and motivation could be explained by individual differences in independent and interdependent self-construals to some extent, but few relevant studies reported mediation tests (Cross et al., 2011; Smith et al., 2013). Critically, as shown in a meta-analysis conducted by Levine et al. (2003; see also Smith et al., 2013), tests of

national differences in measures of independent and interdependent self-construal have shown little evidence for the expected pattern and even some significant results in the wrong direction. Thus, the mediation model shown in Figure 1 has not been well supported in the literature.
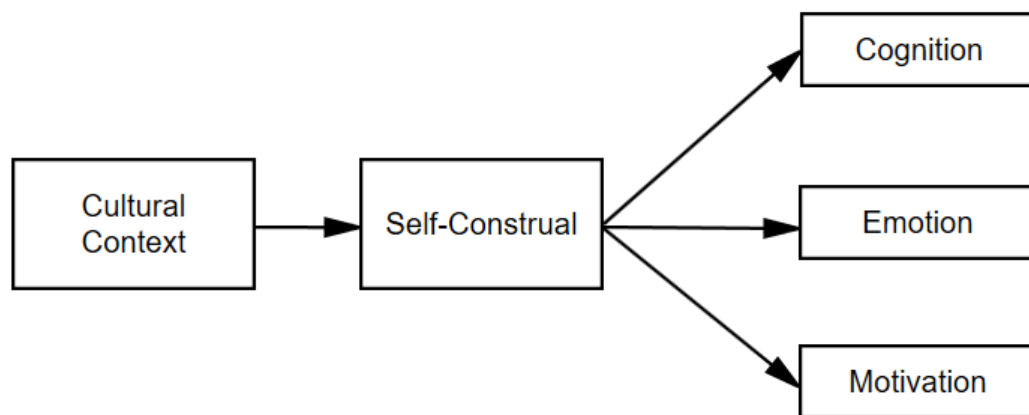
Figure 2. 1. Theoretical Mediation Model of Self-construal (Markus & Kitayama, 1991; Matsumoto, 1999; Singelis et al., 1995).

Kitayama et al. (2009) explored the cultural differences in self-construal, with Singelis (1994) Scale as the explicit measure of self-construal, and five tasks involving cognition, emotion and motivation as implicit psychological tendencies towards independence and interdependence in four countries (UK, USA, Japan and Germany). They found some expected cultural differences in independence and interdependence with the five tasks, but not with the explicit self-construal measure. Combining with some previous research (Markus & Kitayama, 2003), they argued that self-construal should be studied as implicit cultural-level mandates, instead of explicit individual-level self-perceptions. While we agree with Kitayama and colleagues' (2009) theoretical argument that cultural differences in cognition, emotion and motivation are unlikely to be reducible to individual-level self-construals, we

believe that self-construals may still play a role in explaining these differences and that this role has not been properly tested up to now. We believe that independent and interdependent self-construals have not been adequately measured in previous studies (Vignoles et al., 2016), and so a proper test of the original claims of self-construal theory has been long overdue. The goal of our current study is to provide such a test.

2.2.1 Measurement of Self-construals

Various scales have been designed to measure independent and interdependent self-construals as individual difference variables. The Twenty Statements Test (TST, Kuhn & McPartland, 1954), the Self-Construal Scale (SCS; Singelis, 1994), and the Gudykunst et al. (1996) scale are three commonly used measures. Among them, TST, as an open-ended analysis of self-descriptions, is more and more cautiously considered for reasons of methodological and response coding problems. Also, there are some criticisms towards Singelis (1994) scale and Gudykunst et al. (1996) scale, which are two-dimensional structured measures of self-construal, mainly following the concept and features described by Markus and Kitayama (1991) (Smith et al., 2013).

Firstly, for both Singelis (1994) and Gudykunst et al. (1996) scales, there are only items phrased in a positive direction, which neglected the different levels of acquiescent response styles in various cultures. Secondly, most studies were based on American and Japanese samples, and treated these two countries as prototypical exemplars of individualistic and collectivistic cultures, which may not fully detect the global variations and the differences between individualism and collectivism. Thirdly, the contents in the scales may also involve the measurement of values, for instance, 'I value being in good health above everything' (Singelis, 1994), which will lead to

inaccuracies in measurement of self-construals (Smith et al., 2013; Vignoles et al., 2016).

In addition, setting TST aside, considerable evidence has shown that the widely used two-dimensional structure with separate factors of independence and interdependence may not provide a good fit to the data obtained using these scales (Hardin, 2006; Hardin et al., 2004; Levine et al., 2003). Smith et al. (2013) put forward that the two-factor structure may be too broad to explore how self-construals vary across diverse cultures. In the literature, many researchers have explored other possible varieties of self-construals. Among the assumptions, one that people may treat themselves as an individual self, a relational self or a collective self at different times was popular (Brewer & Gardner, 1996; Sedikides & Brewer, 2001; Y. Kashima et al., 1995). Accordingly, independent self-construal is transformed to individual facet, and interdependent self-construal is divided into relational and collective facets, and the three-dimensional model, containing individual, relational and collective self-construals, emerged (Cross et al., 2011; Kashima & Hardie, 2000). In general, Markus and Kitayama's bipartite self-construals and the tripartite self-construals were the two main trends in studying self-construals.

Actually, the tripartite model of individual, relational and collective self-construals can be treated as an attempt to refine the original structure. Unfortunately, the boundaries between relational and collective self-construals are somewhat ambiguous, and this model also does not fit the commonly used scales very well (Cross et al., 2011; Smith et al., 2013). The current situation shows that there is no consensus on the self-construal measures. These issues of the measurement of self-construal could be the main reason why the mediation model cannot be well supported.

Recently, researchers have suggested that the measures of self-construals actually have a multidimensional structure, and that different aspects of independence and interdependence can be useful in explaining cross-cultural differences (Hardin, 2006; Hardin et al., 2004; Smith et al., 2013). If so, detecting the possible dimensions of self-construal and establishing related scales can be an important development in this field.

Lately, Vignoles and colleagues (2016) developed a new seven-dimensional model differentiating independence and interdependence into multiple bipolar facets, each of which was defined by items scored in both independent and interdependent directions. Unlike previous researchers, they developed and subsequently tested their dimensional model in an exploratory analysis involving participants from 16 nations and a confirmatory analysis involving participants from 55 cultural groups in 33 nations, controlling for acquiescent response style. In their studies, they did not regard independence and interdependence as unitary, separate, individual-level constructs as in other common measures, but identified seven bipolar dimensions on which both individuals and cultures could be positioned: *self-reliance vs. dependence on others*, *self-containment vs. connectedness to others*, *difference vs. similar to others*, *self-interest vs. commitment to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*.

Unlike the results of previous studies using two-dimensional measures, Vignoles et al. (2016) found with their seven-dimensional model that cultural groups from different world regions tended to show reliably different models of selfhood. Participants in different cultures endorsed different ways of being independent or interdependent, depending on the mainstream values, economic conditions and religious traditions in those societies. Hence, we believe that the seven-dimensional

model provides a valuable opportunity to conduct a more adequate test of Markus and Kitayama's (1991) original proposal that cultural differences in self-construal would account for differences in cognition, emotion and motivation (Figure 1).

2.2.2 Present Study

Our main goal was to conduct the first adequate test of the mediation effects of self-construal on the Chinese and British cultural differences in cognition, emotion and motivation as shown in Figure 1, using the cross-culturally validated seven-dimensional model of self-construals developed by Vignoles et al. (2016). We hope this study could contribute to resolving the common problems of lack of support for the mediation model with previous measures.

As for the seven-dimensional model of self-construal, one limitation of the Vignoles et al. (2016) study is that some dimensions were measured with as few as two items that passed their validation procedures. Hence, we sought to expand their measure with additional items, validated for use in our current samples. We used an item pool of 62 items for a new version of the Vignoles et al. (2016) measure that is currently under development. Also, we tested the proposed seven-dimensional structure, and conducted item selection procedures to identify the best performing items in our two cultural groups. With the improved measure of self-construal, our first hypothesis is:

H1: Chinese and British participants would differ significantly in explicit self-construals;

Also, based on the findings of Vignoles et al. (2016) that Western and Eastern areas would differ significantly in the dimensions of *difference vs. similar to others*, and *self-expression vs. harmony*, we would make an extra tentative hypothesis:

H1a: Chinese participants would score more interdependently than British participants in terms of *difference vs. similar to others*, and *self-expression vs. harmony*;

Since the cultural-level analyses in Vignoles et al. (2016) did not show a high statistical power, we are open to find different patterns on these seven dimensions.

In this study, except the explicit measure of self-construal, all the chosen tasks to test the cultural differences can be seen as implicit psychological tendencies of independence and interdependence. We replicated partial tasks of Kitayama et al. (2009) study[3], and added three other tasks[4]. Since there was no research into comparisons between Chinese and British participants on these tasks, we can only assume that on these tasks, Chinese participants would make more responses towards interdependence, whereas British participants would make more responses towards independence, and make some tentative hypotheses (H2 to H8).

As for cognitive tasks, we used two tasks. Dispositional (vs. situational) attribution task (version of Na et al., 2010) targets correspondence bias, by asking participants to rate the extent to which individuals' socially desirable or undesirable behaviors are due to their dispositions or the situations. The task of inclusion of others

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[3] Among all the five tasks in Kitayama et al. (2009), we applied four tasks, including the cognitive task of dispositional (vs. situational) attribution (version of Na et al., 2010), the emotional task of intensity of engaging (vs. disengaging) emotions, the motivation task of the relationships between happiness and engaging (vs. disengaging) emotions, and the motivation task of sociogram, except the Framed Line Task. We did not use this measure mainly because we were not sure how well it could be self-administered in a paper and pencil questionnaire.

[4] These tasks contain the cognitive task of inclusion of others in the self (IOS; Aron et al., 1992), and the motivational tasks of achievement motivation (Tao & Hong, 2013; Yang & Yu, 1987) and face motivation (Hwang, Francesco & Kessler, 2003). The main reason we added these three tasks is that we hoped to provide a better coverage of the cognitive and motivational outcomes.

in the self (IOS; Aron et al., 1992) measures interpersonal closeness, by asking participants to rate how much they feel close to certain types of people. About these two tasks, we hypothesize:

H2: In attribution task, Chinese participants would be inclined to make more situational (vs. dispositional) attributions, and British participants would make more dispositional (vs. situational) attributions;

H3: In IOS task, Chinese participants would rate greater differential closeness between ingroup and outgroup relationships than British participants;

Regarding the emotional test, we applied the task of intensity of engaging (vs. disengaging) emotions (Kitayama et al., 2009). In this task, participants are asked to rate the degrees of which they experience socially engaging emotions, such as friendly feelings and guilt, and socially disengaging emotions, such as pride and anger, towards ten daily situations. We hypothesize:

H4: In engaging (vs. disengaging) emotions task, Chinese participants would have more experience of engaging (vs. disengaging) emotions, and British participants would have more experience of disengaging (vs. engaging) emotions;

There are four motivational tasks in this study. The first is the sociogram task (Kitayama et al., 2009), which involves having participants to draw their social networks, with circles to represent themselves and their friends, and lines to represent the relationships. The comparison between self circle and the average size of other circles is the measure of symbolic self-inflation, and the greater symbolic self-inflation shows a sign of independence (Kitayama et al., 2009). The second one measures the relationships between happiness and engaging (vs. disengaging) emotions, and detects which emotions (engaging or disengaging) contribute more to general happiness. The third task is achievement motivation task (Tao & Hong, 2013;

Yang & Yu, 1987), which explores participants' socially oriented and individually oriented achievement motivations. The last one is face motivation task (Hwang, Francesco & Kessler, 2003). It investigates participants' motivations towards fear of losing face and desire of gaining face. About these four tasks, we hypothesize:

H5: In sociogram task, British participants would show greater symbolic self-inflation than Chinese participants;

H6: In the task for the relationship between happiness and engaging (vs. disengaging) emotions, the happiness of Chinese participants would correlate more to engaging (vs. disengaging) emotions; while the happiness of British participants would correlate more to disengaging (vs. engaging) emotions;

H7: In the achievement motivation task, Chinese participants would show more Socially Oriented Achievement Motivation (SOAM), and British participants would show more Individually Oriented Achievement Motivation (IOAM);

H8: In the face motivation task, Chinese participants would show more motivations towards fear of losing face, and British participants would be motivated more by desire of gaining face[5];

As mentioned before, the main purpose of this study is to test the mediation effects of self-construal on the cultural differences (as shown in Figure 1). Since the point is to make comparisons between the implicit psychological tendencies of independence and interdependence, the difference score of independent vs. interdependent responses within each task was used as the dependent variable in the mediation models. The relevant hypothesis is:

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[5] This hypothesis is based on the propositions of Hwang, Francesco and Kessler (2003) that interdependence could associate more with fear of losing face, and independence could associate more with desire of gaining face.

H9: The explicit self-construal would significantly mediate the cultural differences in China and the UK;

Considering there was no research into the differential consequences of the seven dimensions of self-construal, we can only make some tentative predictions towards the specific mediators for the above outcome variables based on our understanding of the tasks. The following hypotheses are exploratory.

H9a: *consistency vs. variability*, and *self-direction vs. reception to influence* would mediate the situational (vs. dispositional) attribution;

H9b: *self-containment vs. connectedness to others* would mediate the differential closeness between ingroup and outgroup;

H9c: *self-reliance vs. dependence on others*, and *self-containment vs. connectedness to others* would mediate the engaging (vs. disengaging) emotions;

H9d: *self-containment vs. connectedness to others*, and *self-interest vs. commitment to others* would mediate the symbolic self-inflation;

H9e: *self-reliance vs. dependence on others*, and *self-containment vs. connectedness to others* would mediate the differential sources of happiness;

H9f: *self-direction vs. reception to influence*, and *self-expression vs. harmony* would mediate the differential achievement motivation;

H9g: *self-direction vs. reception to influence*, and *self-expression vs. harmony* would mediate the differential face motivations.

2.3 Method

2.3.1 Participants

We recruited 205 participants in total[6]. Among them, 108 Chinese participants were mainly undergraduates from the Nanjing Normal University in China (47 men, 61 women; M_{age} = 23.3 years, SD = 2.18), and 97 British participants were mainly undergraduates from the University of Sussex (33 men, 64 women; M_{age} = 21.6 years, SD = 3.26). For all the participants, Chinese or English was their first language respectively. Participants' country of birth and ethnic group[7] were collected to make sure they come from Chinese or British cultural group we were exploring.

2.3.2 Measures

There were Chinese and English versions of the questionnaire. Scales of Individually-Oriented Achievement Motivation and Socially-Oriented Achievement Motivation (IOAM and SOAM) were originally in Chinese, whereas all other materials were originally developed in English. One Chinese-English bilingual did the translation, and three Chinese-English bilinguals, one British and one Turk took part in the back-translation (Brislin, 1970), to make sure the two versions were equivalent and comparable.

Each questionnaire contained 7 parts. A self-construal scale was used to test the different dimensions of participants' independence and interdependence explicitly. Seven other tasks which have been viewed as implicit indicators of independence and interdependence included (1) Sociogram Task; (2) Dispositional vs. Situational

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[6] The sample size of 50 is usually considered as the reasonable minimum in a factor analysis (

Arrindell & van der Ende, 1985; Winter, Dodou, & Wieringa, 2009). Considering the number of indicators in our model, we aimed to attain around 100 participants in each group, which should be an adequate number for a factor analysis, recommended by many researchers (Gorsuch, 1983; Kline, 1979; MacCallum, Widaman, Zhang & Hong, 1999).

[7] We did not apply ethnic group as the exclusion criterion.

Attribution Task; (3) Social Closeness Task; (4) Socially Engaging and Disengaging Emotions Task; (5) Relationship between Happiness and Emotion Task[8]; (6) Achievement Motivation Task; (7) Face Motivation Task. After these, there was a section of Demographics to record participants' personal details.

2.3.2.1 Self-construal Scale

We used the new Culture and Identity Research Network Self-Construal Scale Version 3x (CIRN-SCS-3x) based on the seven-dimensional model developed by Vignoles et al. (2016). The item pool consists of 62 items[9], including a mixture of positive and reversed worded items for each factor to remove the effect of acquiescent responding. Because the CIRN-SCS-3x is under development, we conducted item selection procedures, which are reported below.

Items were designed to measure 7 dimensions:

1) Contrasting a preference for *self-reliance* (e.g., 'You prefer to rely completely on yourself rather than depend on others') with a preference for *dependence on others* (e.g., 'You prefer to ask other people for help rather than rely only on yourself');

2) Contrasting a feeling of *self-containment* (e.g., 'Your happiness is independent from the happiness of your family') with a feeling of *connection to others* (e.g., 'If a close friend or family member is happy, you feel the happiness as if it were your own');

3) Contrasting a desire for *difference* (e.g., 'You like being different from other people') with a desire for being *similar to others* (e.g., 'You like being similar to other people');

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[8] This task is embedded in the same questionnaire of the Socially Engaging and Disengaging Emotions Task.

[9] There were 72 items in total. An additional 10 items measuring an eighth factor were included for exploratory purposes. These were not reported in this study.

4) Contrasting a priority of *self-interest* (e.g., 'You protect your own interests, even if it might sometimes disrupt your family relationships') with a priority of *commitment to others* (e.g., 'You value good relations with the people close to you more than your personal achievements');

5) Contrasting a sense of *consistency* (e.g., 'You behave in a similar way at home and in public') with a sense of *variability* (e.g., 'You act very differently at home compared to how you act in public');

6) Contrasting a tendency of *self-direction* (e.g., 'You prefer to do what you want without letting your family influence you') with a tendency of *reception to influence* (e.g., 'You prefer to follow your family's advice on important matters');

7) Contrasting a preference for *self-expression* (e.g., 'You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict') with a preference for maintaining *harmony* (e.g., 'You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings');

All the items were presented in a scrambled order and were rated on a 9-point response scale, ranging from 1= *does not describe me at all* to 5 = *describes me exactly* (with 0.5 as the intervals[10]) (the items are listed in the Appendix 1).

Regarding the item selection process, we conducted a Random Intercept Exploratory Factor Analysis (RI-EFA; Aichholzer, 2014) with the 7-factor self-construal model on Mplus. We applied a target rotation. Besides the seven substantive factors, we also modelled a random intercept, which loaded on each indicator with a fixed value of 1, to alleviate the influence of acquiescent responding (Vignoles et al., 2016, Welkenhuysen-Gybels et al., 2003). The cultural group was treated as the

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[10] In the analysis, we used a 9-point scale from 1-9, but we applied 1-5 with 0.5 as the intervals in the questionnaire because we did not want the participants to think about too many numbers.

predicting variable for self-construal. We used values of Root Mean Square Error of

Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and

Comparative Fit Index (CFI) to assess the model fit. For the entire pool of 62-items,

values of RMSEA and SRMR were acceptable, but the initial value of CFI was not

acceptable: $\chi^2 = 2805.062$, $df = 1531$, $p < .001$, RMSEA = .064 (90% CI [.060, .067]),

SRMR = .047, CFI = .807 (Hu & Bentler, 1999; Kline, 2005). To refine our scale, we

conducted the item selection based on the semantic meaning of each item, the

standardized loadings (> .30), and the Modification Indices (M.I. < 100). The chosen

30-item version of self-construal was with 4 items (2 independent and 2

interdependent indicators each) for 5 factors, including *self-reliance vs. dependence*

on others, difference vs. similar to others, consistency vs. variability, self-direction vs.

reception to influence and *self-expression vs. harmony*, and 5 items for the factors of

self-containment vs. connection to others and *self-interest vs. commitment to others*.

All fit indices were acceptable: $\chi^2 = 404.617$, $df = 267$, $p < .001$, RMSEA = .050

(90% CI [.040, .060]), SRMR = .032, CFI = .949 (Hu & Bentler, 1999; Kline, 2005).

Table 2.1 shows the reliability for each factor in Chinese and British groups. We then

computed the average rating of the indicators for each respective factor.

Table 2. 1 *The Reliability (Cronbach's Alpha), Descriptive of Tendencies to be Interdependent (vs. Independent) and T-tests of Each Factor by the Two Cultural Groups (N = 108 for China and N = 97 for the UK)*

Factor	Country	Cronbach's	*M*	*SD*	*t*	*Sig.*
Self-reliance vs. Dependence on others	China	.81	5.07	1.56	.50	.62
	UK	.75	4.41	1.32	-4.37	***
Self-containment vs. Connection to others	China	.68	6.89	.96	20.46	***
	UK	.65	5.69	1.07	6.40	***
Difference vs. Similar to others	China	.66	4.89	1.22	-.98	.33
	UK	.76	3.93	1.17	-9.07	***
Self-interest vs. Commitment to Others	China	.70	6.59	1.14	14.49	***
	UK	.56	6.52	.88	17.07	***
Consistency vs. Variability	China	.77	5.84	1.42	6.12	***
	UK	.83	4.62	1.43	-2.61	.01
Self-direction vs. Reception to influence	China	.57	5.50	1.15	4.53	***
	UK	.81	4.69	1.47	-2.08	.04
Self-expression vs. Harmony	China	.76	6.20	1.40	8.89	***
	UK	.75	4.60	1.23	-3.19	**

Note. ** $p < .01$ (2-tailed). *** $p < .001$ (2-tailed). The test value for *t*-tests is 5.

2.3.2.2 Sociogram Task

In this task, participants were asked to draw their social network. Each participant drew some ovals to represent him/herself and his/her friends (writing the initials and genders in the circles), and used lines to show their relationships (Duffy, Uchida, & Kitayama, 2008; Kitayama et al., 2009). Each participant had 5 minutes to draw the network. The horizontal diameter of each of the ovals was measured. Following Kitayama et al. (2009), we subtracted the average size of the circles for friends from the size of the self-circle, to obtain a measure of symbolic self-inflation.

2.3.2.3 Dispositional vs. Situational Attribution Task

We used the relevant questionnaire from Na and colleagues' study (2010) as our Dispositional vs. Situational Attribution Task. Participants read 4 scenarios describing behaviors that might be attributed either to dispositional or situational causes, and gave their judgements about the character's behavior in each scenario.

The characters in two of the scenarios (one male and one female character) behaved in a socially desirable manner (e.g., a pharmaceutical executive decided to donate medicine to African countries), while in the other two, the characters (one male and one female character) behaved in a socially undesirable manner (e.g., a banker masked the loss of the bank on the stock market and deceived the company's shareholders).

There were 4 statements after each scenario, to which participants indicated their degree of agreement: (1) Character's personality primarily influenced his/her behavior (dispositional attribution); (2) Character's circumstances primarily influenced his/her behavior (situational attribution); (3) Character would have acted differently if his/her personality had been different (counterfactual dispositional attribution); (4) Character would have acted differently if the particular circumstances had been different

48

(counterfactual situational attribution). For all the above items, a 7-point response scale was applied (ranging from 1= *strongly disagree* to 7 = *strongly agree*). After the statements, participants judged what influenced each character's decision more: his/her personality (coded 3) or particular circumstances (coded 5).

We chose to treat the scores of the four scenarios as separate outcomes in a repeated measure instead of using a composite score across the scenarios like earlier studies because the reliability of the total score across situations was very poor and we suspected that the character gender and behavior nature could influence participants' judgements to some extent. Thus, we obtained the mean scores of each situation, which indicated the degree to which participants chose situational attribution towards that scenario (a higher score suggests the tendency to choose situational attribution). The reliability for each scenario was shown in Table 2.2.

Table 2. 2 *The Reliability (Cronbach's Alpha or Pearson Correlations) of Scores in Dispositional vs. Situational Attribution Task, Social Closeness Task, Socially Engaging and Disengaging Emotions Task, Achievement Motivation Task, and Face Motivation Task by the Two Cultural Groups (N = 108 for China and N = 97 for the UK)*

	China	UK
Dispositional vs. Situational Attribution Task		
Scenario 1. Female/ Socially Desirable	.79	.63
Scenario 2. Male/ Socially Undesirable	.85	.71
Scenario 3. Female/ Socially Undesirable	.81	.65
Scenario 4. Male/ Socially Desirable	.88	.80
Social Closeness Task		
Ingroup closeness	.58	.69
Outgroup closeness	r = .29 **	r = .43 **
Socially Engaging and Disengaging Emotions Task		
Engaging positive emotions	.84	.84
Disengaging positive emotions	.81	.79
Engaging negative emotions	.67	.69
Disengaging negative emotions	.68	.76
General positive emotions	.74	.70
General negative emotions	.66	.63
Achievement Motivation Task		
SOAM	.84	.84
IOAM	.81	.73
Face Motivation Task		
Fear of losing face	.90	.79
Desire of gaining face	.82	.77

**. Correlation is significant at the 0.01 level (2-tailed).

2.3.2.4 Social Closeness Task

We used the inclusion of other in the self (IOS; Aron et al., 1992) scale to provide a measure of closeness in participants' social relations. Seven sets of two

circles, for which the degrees of overlap of the two circles progress linearly, were regarded as a 7-point scale of closeness. Participants would choose one set of the circles that could best describe their relationships with (1) *the person with whom you feel closest*; (2) *your best friend*; (3) *a stranger on the street*; (4) *others in general*; (5) *members of your family*.

We regarded the relationships with *whom you feel closest*, *your best friend*, and *members of your family* as intimate relationships, and averaged the ratings of the above three items to make it as the score of ingroup closeness. Then, we averaged the ratings of the other two items (assessing the relationships with *others in general* and *a stranger on the street)*, and treated it as the score of outgroup closeness. The reliability for ingroup and outgroup closeness was shown in Table 2.2.

2.3.2.5 Socially Engaging and Disengaging Emotions Task

The Implicit Social Orientation Questionnaire (ISOQ; Kitayama & Park, 2007; Kitayama et al., 2009) was used to explore (1) to what extent respondents experienced socially engaging emotions which involved (not) achieving interdependent goals (like feelings of closeness and shame) and socially disengaging emotions which involved (not) achieving personal or independent goals (like pride and anger); (2) if happiness could be more associated with socially engaging or disengaging positive emotions.

Ten daily social situations were presented, such as 'reading a novel or book', 'having good interaction with a family member', etc. Firstly, participants would be asked to remember when each situation last occurred to them. Then, they were shown a table of 12 emotions, and needed to report the degrees to which they experienced each emotion during each situation. As in the study of Kitayama et al. (2009), the 12 emotions were (1) socially engaging and positive (*feelings of closeness to others* and *friendly feelings*); (2) socially engaging and negative (*ashamed* and *guilty*); (3)

51

socially disengaging and positive (*proud* and *self-esteem*); (4) socially disengaging and negative (*frustration* and *angry*); (5) about well-being or general positive emotions (*elated*, *happy* and *calm*); (6) about negative well-being or general negative emotions (*unhappy*), and a 6-point response scale was used (ranging from 1 = *not at all* to 6 = *very strongly*).

To detect the experiences of engaging and disengaging emotions, following the study of Kitayama et al. (2009), 'For each situation, the rating of the general negative emotion (unhappy) was subtracted from the average rating of the three general positive emotions (elated, happy, and calm). If the situation was positive (i.e., if the difference was positive), the average rating of disengaging positive emotions (e.g., pride in self) and the average rating of engaging positive emotions (e.g., friendly feelings) were obtained; conversely, if the situation was negative (i.e., if the difference was negative), the corresponding average ratings were obtained for the disengaging negative emotions (e.g., anger) and the engaging negative emotions (e.g., shame). We then averaged the index across the 10 situations to yield an aggregate measure of the propensity to experience disengaging emotions and another aggregate measure of the propensity to experience engaging emotions' (p. 242 - p. 243).

To explore the correlations between happiness and engaging and disengaging emotions, for each participant, we attained the mean scores of engaging positive emotions, disengaging positive emotions and general positive emotions respectively in each scenario. All the Cronbach's alphas were shown in Table 2.2.

2.3.2.6 Achievement Motivation Task

We used scales of Social-Oriented Achievement Motivation (SOAM) and Individual-Oriented Achievement Motivation (IOAM) (Tao & Hong, 2013; Yang & Yu, 1987) to explore individuals' achievement orientations. The original scale

contains 30 items of SOAM and 30 items of IOAM, while in the present study, a shortened version developed by Tao and Hong (2000, 2013), which includes 15 items of SOAM (e.g., 'Before I do anything, I first consider whether my goals fit my parent's expectations') and 15 items of IOAM (e.g., 'I try to do my best if I consider the task worth doing') with highest factor loadings of the original version, was applied. Participants rated each item with a 6-point response scale (ranging from 1 = *very inaccurate* to 6 = *very accurate*). We calculated the reliability for SOAM and IOAM, and the Cronbach's alphas were in Table 2.2. Among the 30 items, we averaged the ratings of 15 items for SOAM and the other 15 for IOAM.

2.3.2.7 Face Motivation

We explored individuals' face motivation with 6 items, 3 were to measure the Desire of Gaining Face (e.g., 'I would like to have a position with high status'), and the other 3 were to measure Fear of Losing Face (e.g., 'I fear being laughed at') (Hwang et al., 2003). The responses were based on a 7-point scale (ranging from 1 = *strongly disagree* to 7 = *strongly agree*). We calculated the reliability for the fear of losing face and the desire of gaining face, and all the Cronbach's alphas were in Table 2.2. We then obtained the average scores for the fear of losing face and the desire of gaining face.

2.3.2.8 Demographics

We recorded each participant's age, gender, country of birth, ethnic group and major at university.

2.3.3 Procedure

Ethical approval for the study was granted by the Science and Technology Cross-Schools Research Ethics Committee (C-REC) of the University of Sussex.

The questionnaire was paper-based, and took around 40 minutes to finish. After participants checked the information sheet and the consent form, they successively completed the Self-Construal Scale; Sociogram Task; Dispositional vs. Situational Attribution Task; Social Closeness Task; Socially Engaging and Disengaging Emotions Task; Happiness Task; Achievement and Face Motivation Task; and Demographics.

2.4 Results

In this section, the first part is the results of explicit measure of self-construal. Then, we describe the cultural differences in the seven tasks. Finally, the mediation effects of self-construal on those cultural differences are shown.

2.4.1 Self-construal

As seen in Table 2.3, we used ANCOVA to test if the country groups differed in each dimension while controlling for gender. The results show significant main effects of country, $F(7,196) = 28.20$, $p < .001$, $\eta_p^2 = .50$, and gender, $F(7,196) = 10.67$, $p < .001$, $\eta_p^2 = .28$. Chinese participants were significantly different from British participants in six dimensions of independence and interdependence, except the dimension of *self-interest vs. commitment to others*, and the scores towards interdependence of the six dimensions were all higher in Chinese group than British group, which supported our H1 and H1a.

Table 2. 3 *ANCOVA for the 7 Dimensions of Independence and Interdependence with the 30-item Model by Chinese and British groups*

Factor	F	*Sig.*	η_p^2
Self-reliance vs. Dependence on others	13.61	***	.06
Self-containment vs. Connection to others	107.97	***	.35
Difference vs. Similar to others	34.80	***	.15
Self-interest vs. Commitment to others	0.69	.41	.003
Consistency vs. Variability	35.93	***	.15
Self-direction vs. Reception to influence	27.38	***	.12
Self-expression vs. Harmony	79.42	***	.28

*** $p \leq .001$.

Also, compared to the theoretical mid-point 5, Chinese participants showed significantly more interdependence (vs. independence) in five dimensions, suggesting a preference of connection to others, a desire to commit to others, a sense of variability, a tendency of reception to influence, and a preference for maintaining harmony; whereas British participants showed significantly more independence (vs. interdependence) in five dimensions and more interdependence (vs. independence) in two dimensions, suggesting a preference for self-reliance, a preference of connection to others, a desire for difference, a desire to commit to others, a sense of consistency, a tendency of self-direction, and a preference for self-expression. The exact t-test figures are shown in Table 2.1.

2.4.2 Dispositional vs. Situational Attribution

The descriptives of each scenario are shown in Table 2.4 and Figure 2.2. These mean scores were put into a $2 \times 2 \times 2 \times 2$ ANOVA with country and gender[11] as between-subjects factors, and the character gender and behavior manner (socially desirable or undesirable) as within-subjects factors. The results indicate significant main effects of country, $F(1,201) = 5.81$, $p = .02$, $\eta_p^2 = .03$, and character gender, $F(1,201) = 46.45$, $p < .001$, $\eta_p^2 = .19$, and significant interaction effects between character gender and participant gender, $F(1,201) = 7.42$, $p = .007$, $\eta_p^2 = .04$, between character gender and behavior manner, $F(1,201) = 98.46$, $p < .001$, $\eta_p^2 = .33$, and among character gender, behavior manner and country, $F(1,201) = 29.06$, $p < .001$, $\eta_p^2 = .13$.

To be specific, Chinese participants made more situational inferences than British participants as expected in H2. However, both male participants, $t(79) = 2.92$, $p = .005$, $d = .66$, and female participants, $t(124) = 7.16$, $p < .001$, $d = 1.29$, made significantly different attributions towards male and female characters, regardless of the behavior manners. Moreover, Chinese participants tended to attribute male character's socially desirable behavior to disposition, $t(107) = 5.54$, $p < .001$, $d = 1.07$, and male character's socially undesirable behavior to situation, $t(107) = 5.07$, $p < .001$, $d = .98$; and to attribute female character's socially desirable behavior to situation, $t(107) = 10.37$, $p < .001$, $d = 2.01$, and female character's socially undesirable behavior to disposition, $t(107) = 2.86$, $p = .005$, $d = .55$. British participants tended to attribute male character's socially desirable behavior to

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[11] In this study, we did not include age in our main analyses as the participants were mostly undergraduate students with similar age, and it was not our research of interest. We included gender in the main analyses as we believed that gender effects could be important, especially in certain tasks, for instance, Dispositional vs. Situational Attribution Task.

disposition, $t(96) = 4.67$, $p < .001$, $d = .95$, and to attribute female character's socially desirable behavior to situation, $t(96) = 3.58$, $p = .001$, $d = .73$. Thus, participants of both nationalities showed what appeared to be a patriarchal (i.e. male-target-serving) bias in their attributions, but this was stronger among the Chinese.
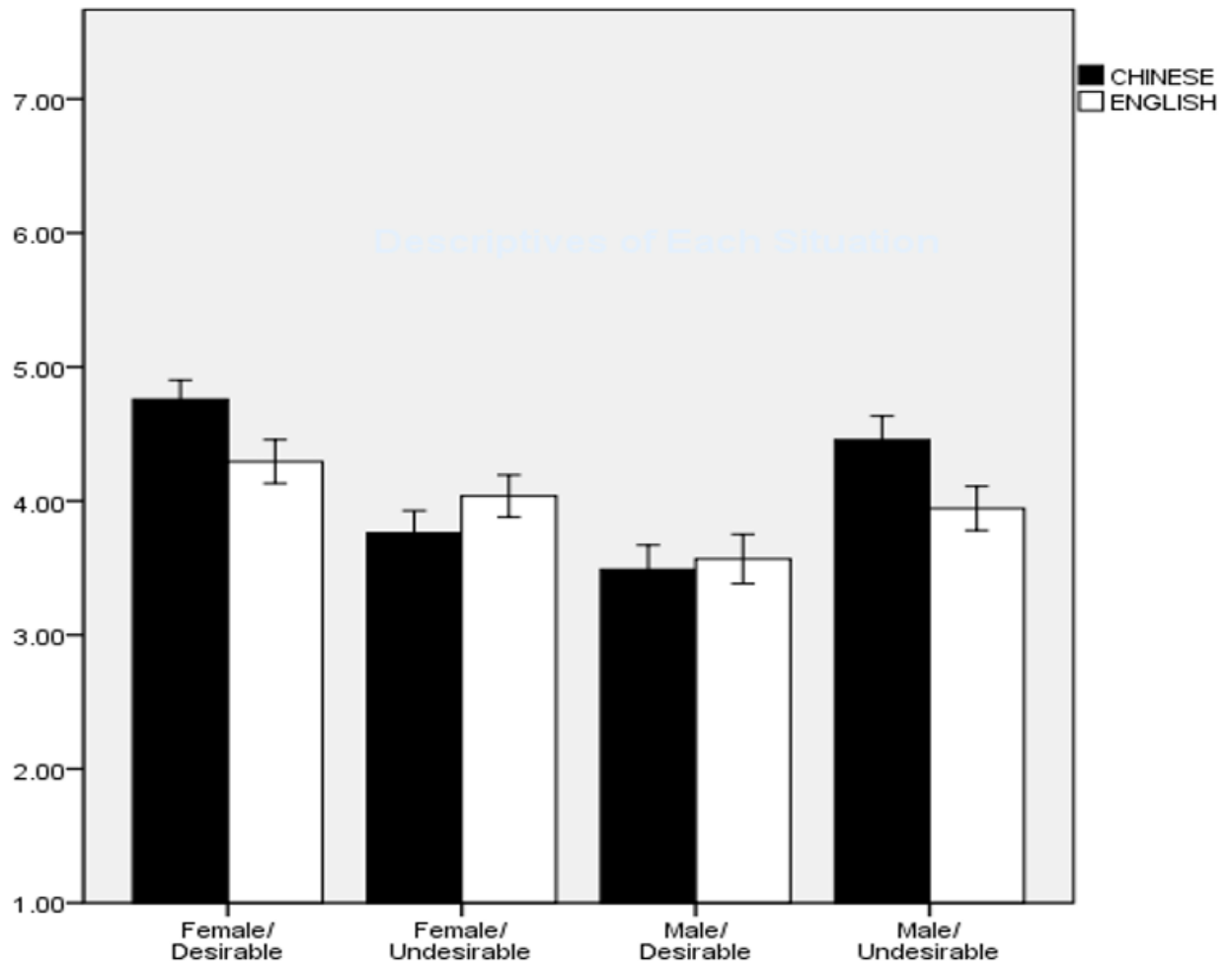
Figure 2. 2. Means of situational attribution in each scenario in the two country groups. Error bars indicate 95% CI of the mean.

2.4.3 Social Closeness

The descriptives are shown in Table 2.4 and Figure 2.3. The means of ingroup and outgroup closeness were put into a $2 \times 2 \times 2$ ANOVA with country and gender as between-subjects factors and the closeness type as a within-subjects factor. The

results indicate a significant main effect of the closeness type, $F(1,200) = 3387.83$, $p < .001$, $\eta_p^2 = .94$, and significant interaction effects between the closeness type and country, $F(1,200) = 93.57$, $p < .001$, $\eta_p^2 = .32$, and between the closeness type and gender, $F(1,200) = 22.07$, $p < .001$, $\eta_p^2 = .10$. Next, we calculated the relative closeness by subtracting outgroup closeness from ingroup closeness. Chinese group ($M = 3.94$) showed more differential closeness than British group ($M = 2.96$), $t(202) = 8.16$, $p < .001$, $d = 1.15$, which supported H3. For ingroup closeness, Chinese participants rated significantly higher than British participants, $t(202) = 4.40$, $p < .001$, $d = .62$, whereas for outgroup closeness, British participants rated significantly higher than Chinese participants, $t(163) = 5.94$, $p < .001$, $d = .93$.
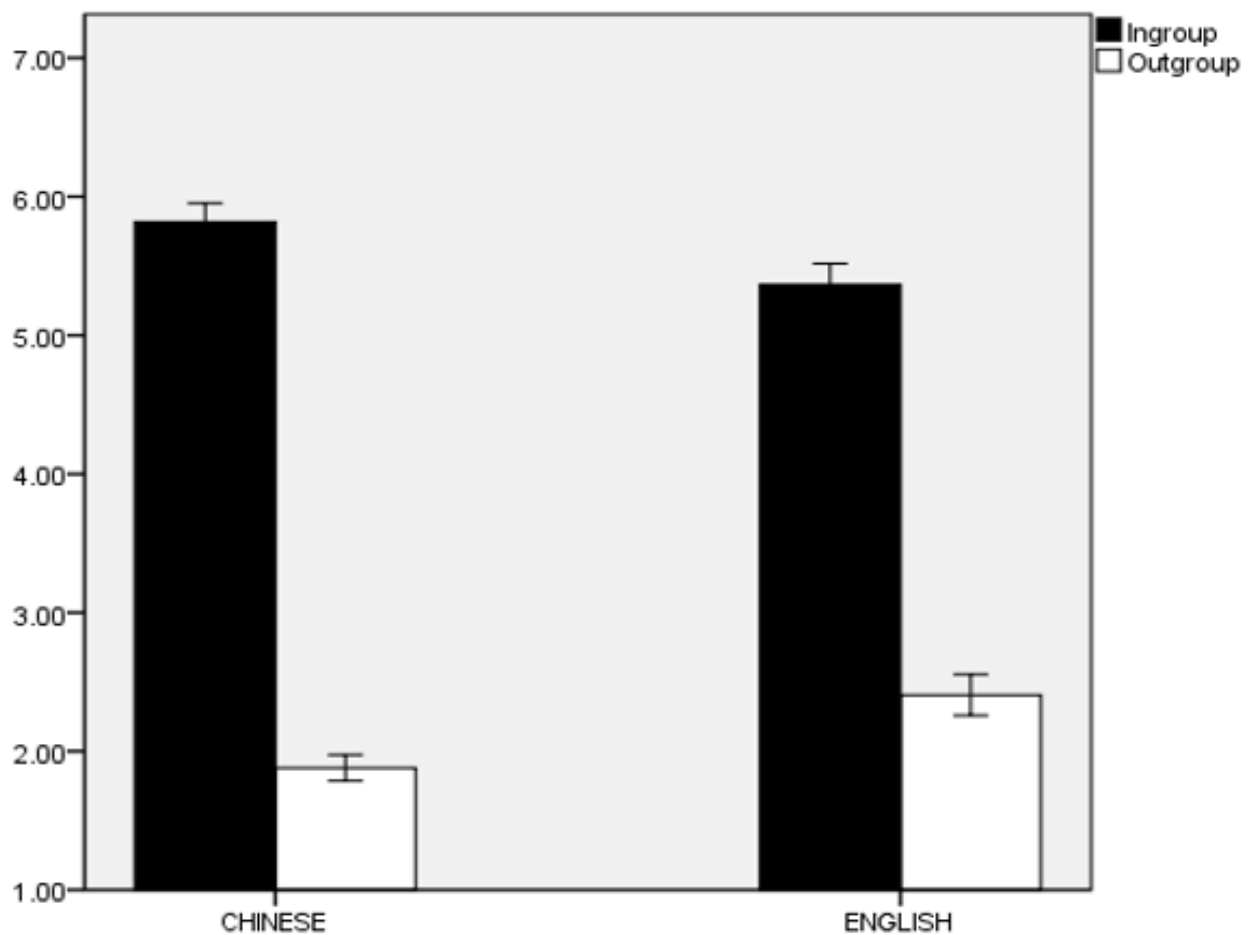
Figure 2. 3. Means of ingroup and outgroup closeness in the two country groups. Error bars indicate 95% CI of the mean.

2.4.4 Socially Engaging and Disengaging Emotions

2.4.4.1 Tendencies of experiencing engaging vs. disengaging emotions.

Table 2.4 and Figure 2.4 show the mean tendencies of experiencing engaging and disengaging emotions across the 10 situations in the two countries. We entered these scores into a $2 \times 2 \times 2$ ANOVA with country and gender as between-subjects factors and emotion type as a within-subjects factor. The results show significant main effects of country, $F(1,201) = 31.31$, $p < .001$, $\eta_p^2 = .14$, and emotion type, $F(1,201) = 7.04$, $p = .01$, $\eta_p^2 = .03$, and a significant interaction effect between emotion type and country, $F(1,201) = 34.52$, $p < .001$, $\eta_p^2 = .15$. Besides that, British participants rated significantly higher than Chinese participants in both the experience of engaging emotion, $F(1,201) = 6.23$, $p = .01$, $\eta_p^2 = .03$, and disengaging emotion, $F(1,201) = 50.02$, $p < .001$, $\eta_p^2 = .20$.

We also attained the relative propensity of experiencing engaging and disengaging emotions by subtracting mean scores of disengaging emotions from that of engaging emotions. Comparing this relative score between the two countries shows a significant difference, $t(203) = 6.40$, $p < .001$, $d = .90$. In addition, both Chinese ($M = .10$) and British ($M = -.28$) relative scores were significantly different from 0, $t(107) = 2.49$, $p = .014$, $d = .48$; $t(96) = 6.46$, $p < .001$, $d = 1.32$, respectively. Thus, Chinese participants experienced more engaging than disengaging emotions, whereas British participants experienced more disengaging than engaging emotions, which supported H4.
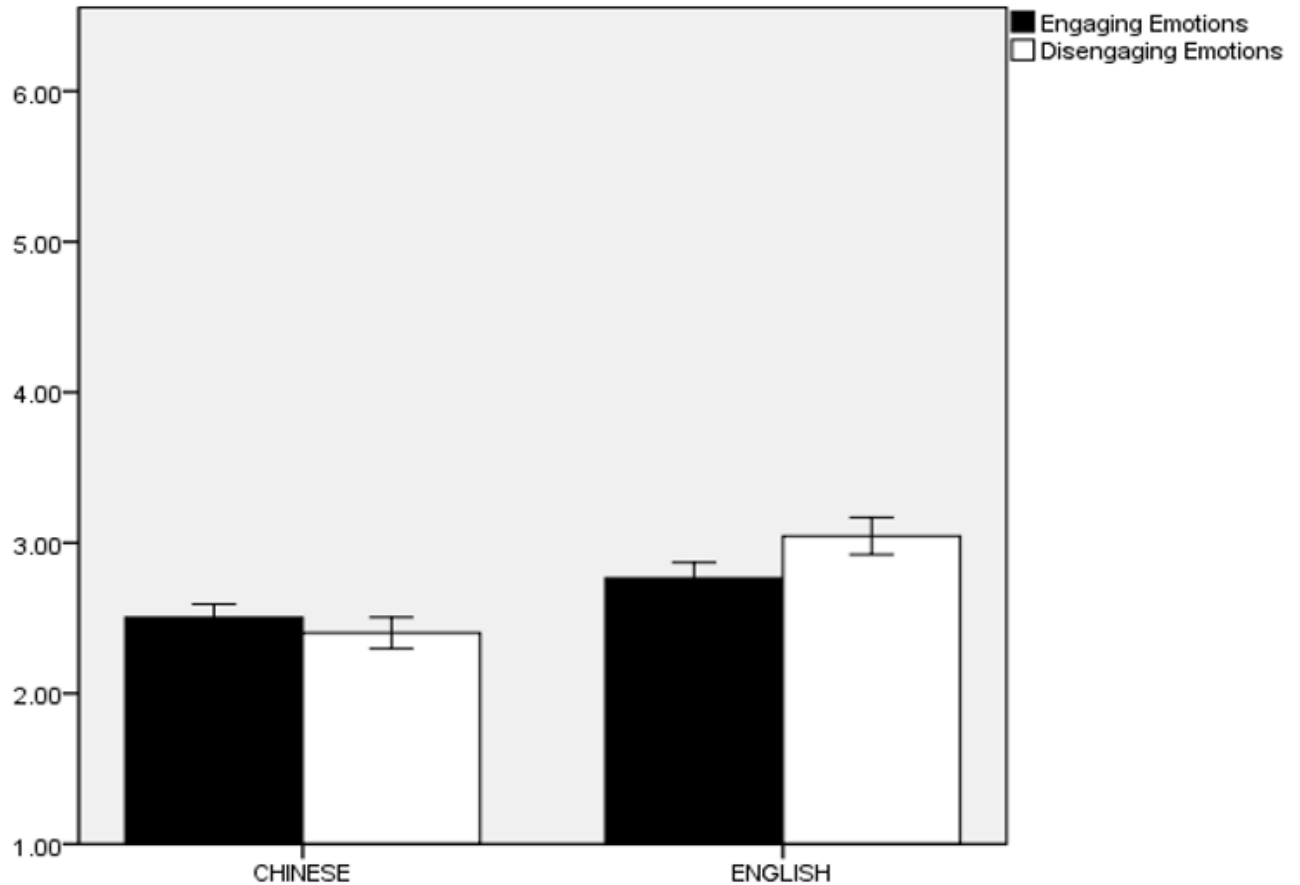
Figure 2. 4. Mean tendencies of experiencing engaging and disengaging emotions across the 10 scenarios in the two cultural groups. Error bars indicate 95% CI of the mean.

2.4.4.2 The correlations between happiness and engaging and disengaging emotions.

For each participant, the means of general positive emotions, which is a measure of happiness in this study, were regressed on average scores of engaging and disengaging positive emotions across the 10 scenarios. Through this process, we obtained the unstandardized regression coefficients (*B*s) for engaging and disengaging positive emotions, and the means of the coefficients are in Table 2.4. We put these coefficients into a $2 \times 2 \times 2$ ANOVA with country and gender as between-subjects factors and emotion type as a within-subjects factor. There was no significant main

effect of country, $F(1,201) = .01$, $p = .94$, $\eta_p^2 < .001$, or emotion type, $F(1,201) =$ 3.53, $p = .06$, $\eta_p^2 = .02$, but a significant emotion type × country interaction effect, $F(1,201) = 8.39$, $p = .004$, $\eta_p^2 = .04$. Based on this result, we subtracted the Bs for disengaging positive emotions from the Bs for engaging positive emotions, and the relative Bs were compared between the two countries. It showed that British relative Bs were significantly less than Chinese, $t(203) = 3.12$, $p = .002$, $d = .44$. In the meantime, the British relative Bs ($M = -.27$) were remarkably different from 0, $t(96) =$ 3.48, $p = .001$, $d = .71$; while the Chinese relative Bs ($M = .06$) were not significantly different from 0, $t(107) = .86$, $p = .39$, $d = .17$. Thus, British participants' happiness correlated more to disengaging positive emotions, which partially supported H6.

2.4.5 Sociogram

The average size of the circles for friends was subtracted from the size of self-circle. We ran a 2 × 2 ANOVA, predicting symbolic self-inflation with country and gender as between-subjects factors, and the results show no significant main effect or interaction effect, $F(1,172) < 1$, which did not support H5. Meanwhile, both the mean of Chinese relative width ($M = .31$) and the mean of British relative width ($M = .37$) were significantly greater than 0, $t(85) = 9.81$, $p < .001$, $d = 2.13$; $t(89) = 3.68$, $p < .001$, $d = .78$. Thus, there was no significant cultural difference in the degrees of symbolic self-inflation.

2.4.6 Achievement Motivation

The means of SOAM and IOAM are in Table 2.4 and Figure 2.5. These two sets of mean scores were submitted into a 2 × 2 × 2 ANOVA with country and gender as between-subjects factors and type of orientation as a within-subjects factor. The

results indicate significant main effects of country, $F(1,201) = 6.56$, $p = .01$, $\eta_p^2 = .03$, and orientation type, $F(1,201) = 537.64$, $p < .001$, $\eta_p^2 = .73$, and significant interaction effects between orientation type and country, $F(1,201) = 12.69$, $p < .001$, $\eta_p^2 = .06$, and between orientation type and gender, $F(1,201) = 7.90$, $p = .005$, $\eta_p^2 = .04$. Also, Chinese participants had significantly higher score of SOAM than British participants, $t(203) = 2.53$, $p = .012$, $d = .36$, while there was no significant difference for IOAM, $t(203) = 1.76$, $p = .08$, $d = .25$. Next, we subtracted the mean scores of SOAM from that of IOAM, and obtained a set of relative scores. The relative scores of British ($M = 1.47$) and Chinese ($M = 1.11$) groups were both remarkably positive, $t(96) = 18.56$, $p < .001$, $d = 3.79$; $t(107) = 13.92$, $p < .001$, $d = 2.69$, respectively. In this case, both British and Chinese participants had more IOAM than SOAM, which partially supported H7. Moreover, for this score, British group was significantly higher than Chinese group, $t(203) = 3.16$, $p = .002$, $d = .44$, suggesting that British participants showed significantly more differential motivation towards the social-oriented and individual-oriented than Chinese participants.
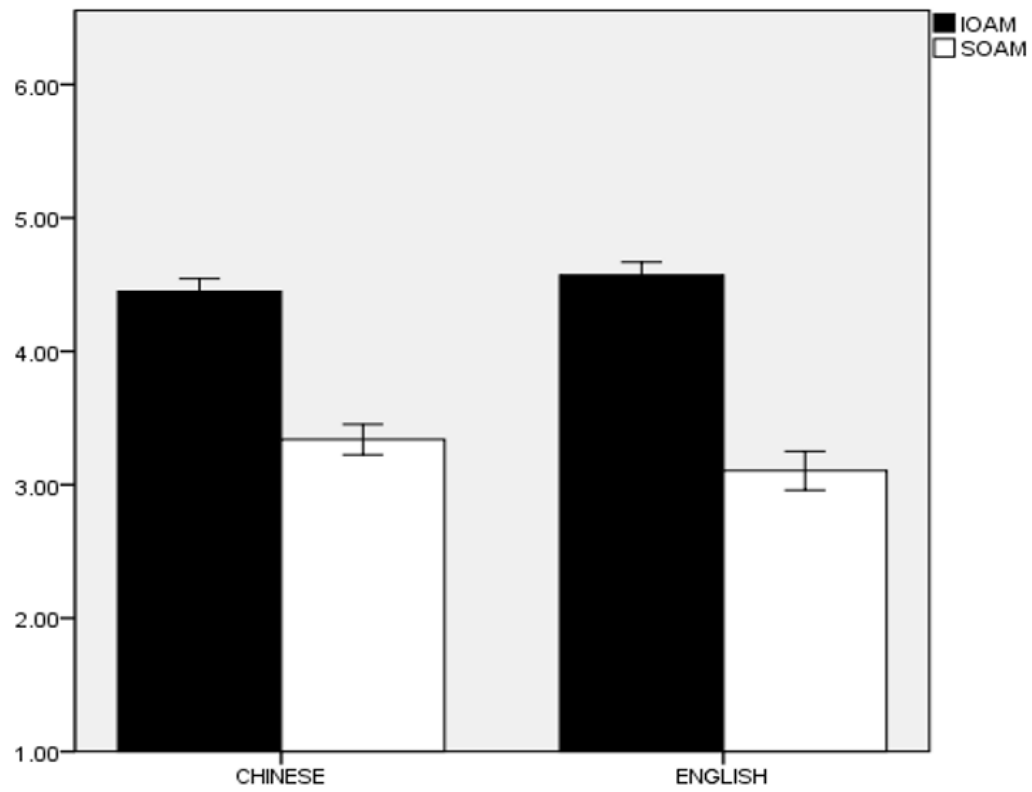
Figure 2. 5. Means of SOAM and IOAM in the two cultural groups. Error bars indicate 95% CI of the mean.
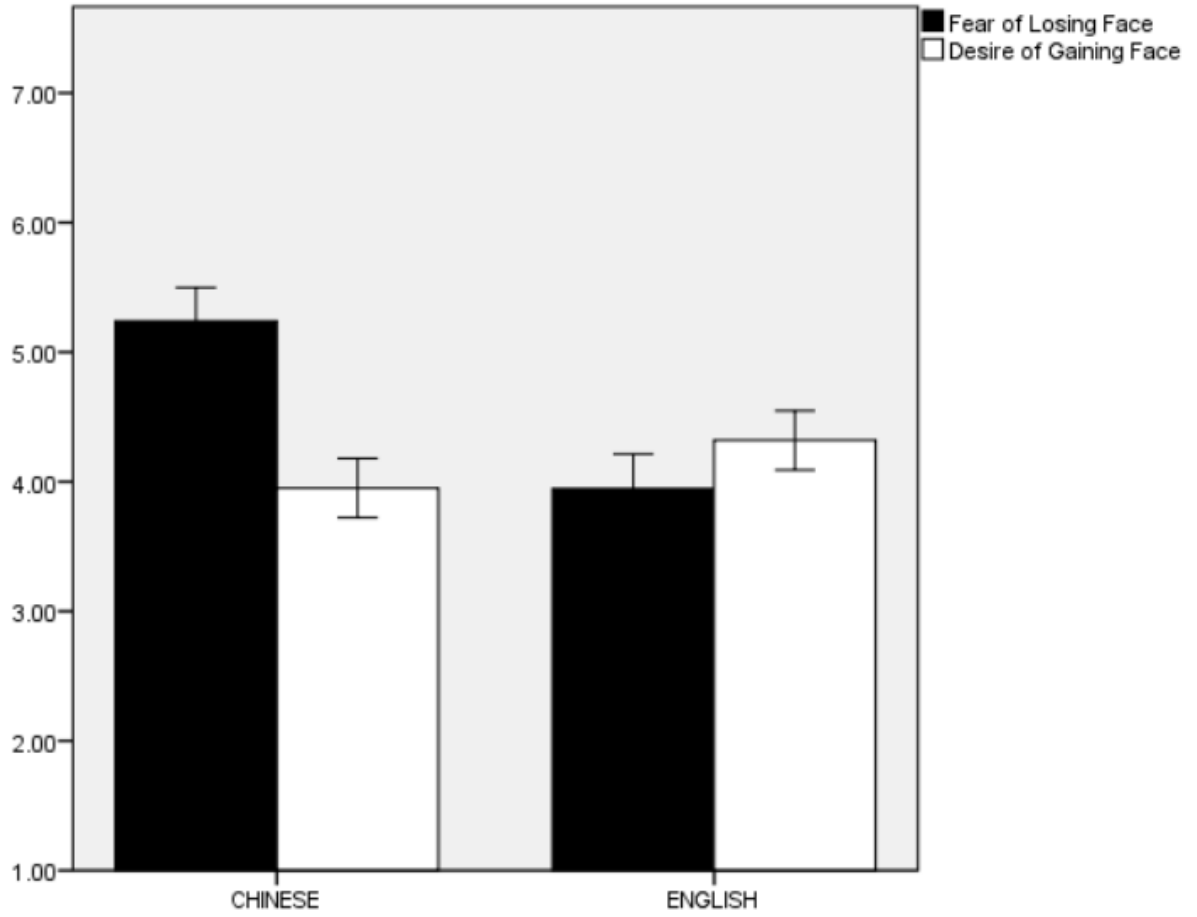
Figure 2. 6. Means of the fear of losing face and the desire of gaining face in the two cultural groups. Error bars indicate 95% CI of the mean.

2.4.7 Face Motivation

The means of fear of losing face and the desire of gaining face are shown in Table 2.4 and Figure 2.6, and were submitted into a $2 \times 2 \times 2$ ANOVA with country and gender as between-subjects factors and motivation type as a within-subjects factor. The analyses show significant main effects of country, $F(1,201) = 33.45$, $p < .001$, $\eta_p^2 = .11$, and motivation type, $F(1,201) = 6.48$, $p = .01$, $\eta_p^2 = .03$, and significant interaction effects between motivation type and country, $F(1,201) = 52.40$, $p < .001$, $\eta_p^2 = .21$, and between motivation type and gender, $F(1,201) = 19.47$, $p < .001$, $\eta_p^2 = .09$. After that, we subtracted the mean scores for the desire of gaining

face from that for fear of losing face, and put relative score into analysis. It showed that Chinese group scored significantly higher than British group, $t(203) = 6.54$, $p < .001$, $d = .92$, and female participants scored significantly higher than male participants, $t(203) = 3.27$, $p = .001$, $d = .46$. What is more, the relative scores of British ($M = -.37$) were significantly negative, $t(96) = 2.10$, $p = .038$, $d = .43$; while the relative scores of Chinese ($M = 1.29$) were significantly positive, $t(107) = 7.14$, $p < .001$, $d = 1.38$. Thus, Chinese participants were motivated more by fear of losing face, while British participants were motivated more by desire of gaining face, which supported H8, and male participants were motivated more by desire of gaining face compared to female participants.

Table 2. 4 *The Descriptives of Scores in Dispositional vs. Situational Attribution Task, Social Closeness Task, Socially Engaging and Disengaging Emotions Task, Achievement Motivation Task, and Face Motivation Task by the Two Cultural Groups (N = 108 for China and N = 97 for the UK)*

	China		UK	
	M	*SD*	*M*	*SD*
Dispositional vs. Situational Attribution Task				
Scenario 1. Female/ Socially Desirable	4.76	.76	4.29	.81
Scenario 2. Male/ Socially Undesirable	4.46	.93	3.94	.82
Scenario 3. Female/ Socially Undesirable	3.76	.86	4.04	.78
Scenario 4. Male/ Socially Desirable	3.49	.96	3.57	.91
Social Closeness Task				
Ingroup closeness	5.82	0.71	5.36	0.76
Outgroup closeness	1.88	0.49	2.41	0.73
Socially Engaging and Disengaging Emotions Task				
Engaging emotions	2.50	.47	2.77	.52
Disengaging emotions	2.40	.55	3.04	.61
Unstandardized regression coefficients for engaging positive emotions	.43	.31	.29	.31
Unstandardized regression coefficients disengaging positive emotions	.37	.52	.56	.49
Achievement Motivation Task				
SOAM	3.34	.60	3.11	.72

IOAM	4.45	.50	4.57	.48
Face Motivation Task				
Fear of losing face	5.24	1.35	3.95	1.33
Desire of gaining face	3.95	1.20	4.32	1.13

2.4.8 Mediation Effects of Self-construal on Cultural Differences in Above Outcomes

Based on our hypotheses, we put all the seven self-construal factors as parallel mediators, and the difference score in each task as the dependent variable to test the mediation model within the cultural contexts of China and UK. We found significant mediation effects on cultural differences in social closeness, socially engaging and disengaging emotions, achievement motivation and face motivation. As for dispositional vs. situational attribution, symbolic self-inflation, and the relationship between happiness and emotions, we did not find significant mediation effects, which did not support H9a, H9d, and H9e.[12]
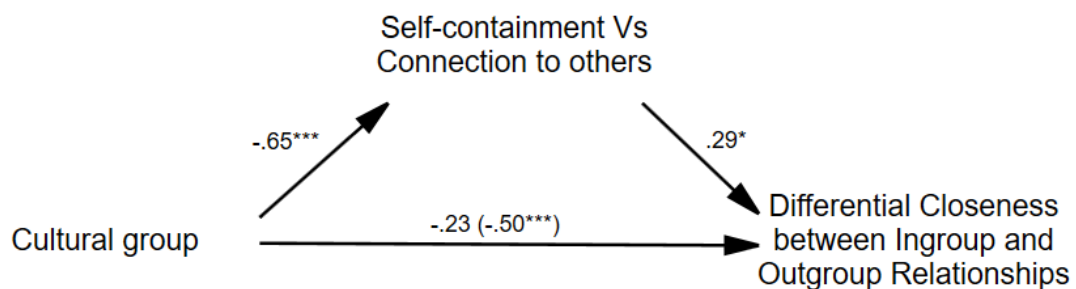
Figure 2. 7. Mediator function of the factor of *self-containment vs. connection to others* on the relationship between country group and differential closeness. The numbers were standardized regression coefficients, and the number in parentheses was the total effect of cultural group on the differential closeness. * p ≤ .05. *** p ≤ .001. (cultural group: China = 1, UK = 2).

For the mediation test on difference score of ingroup and outgroup closeness between the two cultural groups, as Figure 2.7 shows, the standardized regression

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[12] In this study, we conducted 5 mediation analyses, excepting for the tasks of Sociogram and Dispositional vs. Situational Attribution.

coefficients were all statistically significant, except the direct effect of cultural group on the outcome, controlling for the mediators. The standardized indirect effect via *self-containment vs. connection to others* was (-.65)(.29) = -.19. Thus, Chinese participants had more feelings of connection to others than British participants, and consequently, they rated more differential closeness between ingroup and outgroup relationships, supporting H9b.
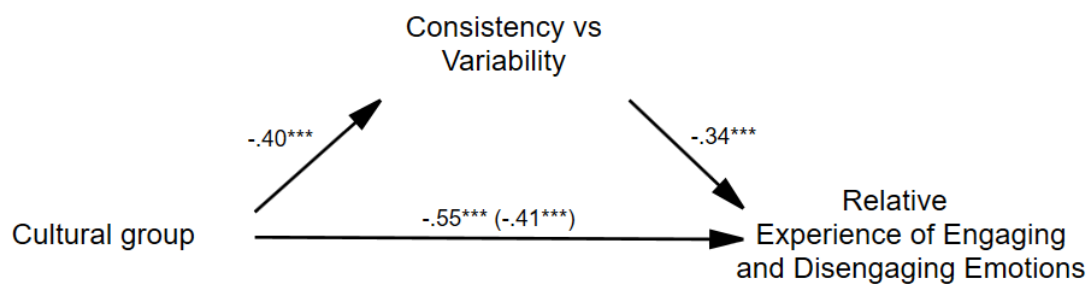
Figure 2. 8. Mediator functions of the factor of *consistency vs. variability* on the relationship between country group and relative experience of engaging and disengaging emotions. The numbers were standardized regression coefficients, and the number in parentheses was the total effect of cultural group on the relative experience of engaging and disengaging emotions. *** $p \leq .001$. (cultural group: China = 1, UK = 2).

Concerning the mediation test on the relative experience of engaging and disengaging emotions between the two cultural groups, the mediator function is shown in Figure 2.8. The standardized regression coefficients were all statistically significant. The standardized indirect effect via *consistency vs. variability* was (-.40)(-.34) = .14. Thus, compared to British participants, Chinese participants showed a greater tendency of variability across situations, and hence Chinese participants showed less difference between experiencing engaging and disengaging emotions than British participants, which did not support H9c.

Regarding to the mediation test on the difference score of SOAM and IOAM between the two cultural groups, the mediator function is shown in Figure 2.9. The standardized regression coefficients were all statistically significant, except the direct effect of cultural group on the outcome, controlling for the mediators. The standardized indirect effect of *self-expression vs. harmony* was $(-.57)(-.45) = .26$. Thus, compared to British participants, Chinese participants had a preference for maintaining harmony, and consequently, Chinese participants rated less difference between SOAM and IOAM than British participants, which partially supported H9f.
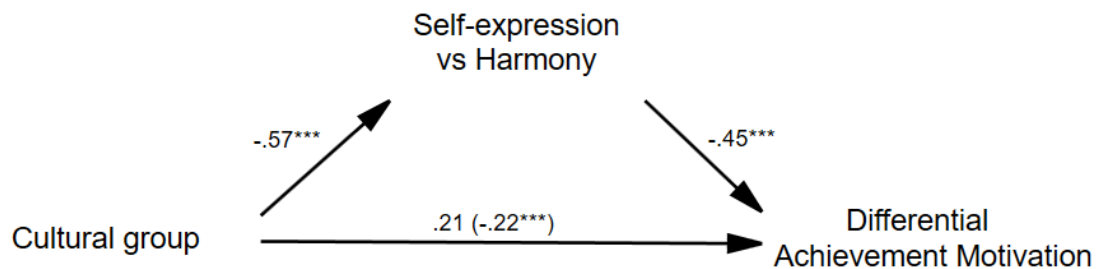
Figure 2. 9. Mediator functions of the factor of *self-expression vs. harmony* on the relationship between country group and difference of SOAM and IOAM. The numbers were standardized regression coefficients, and the number in parentheses was the total effect of cultural group on the difference score of SOAM and IOAM. *** $p \leq .001$. (cultural group: China = 1, UK = 2).

With the mediation test on the difference between the fear of losing face and the desire of gaining face between the two cultural groups, the mediator function is shown in Figure 2.10. The standardized regression coefficients were statistically significant, except the direct effect of cultural group on the outcome, controlling for the mediators. The standardized indirect effect of *difference vs. similar to others* was $(-.40)(.21) = -.08$; and of *self-expression vs. harmony* was $(-.57)(.25) = -.14$. Thus, compared to British participants, Chinese participants had preferences for being

similar to others and maintaining harmony, thusly, Chinese participants showed more differences between the motivation towards fear of losing face and towards desire of gaining face, which partially supported H9g.
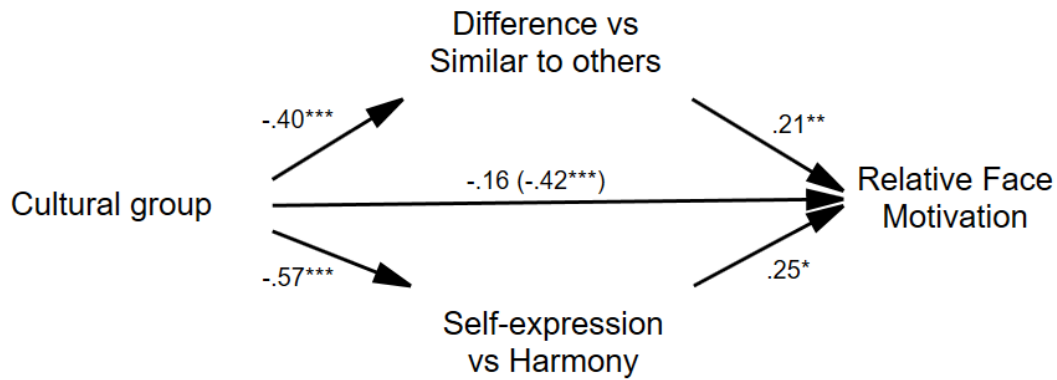
Figure 2. 10. Mediator functions of the factors of *difference vs. similar to others*, and *self-expression vs. harmony* on the relationship between country group and the difference between the fear of losing face and the desire of gaining face. The numbers were standardized regression coefficients, and the number in parentheses was the total effect of cultural group on the difference score of two face motivations. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. (cultural group: China = 1, UK = 2).

2.5 Discussion

By using Vignoles and colleagues' (2016) model for the self-reported self-construal measure, one purpose of this article was to test the seven-dimensional structure at the individual level, which referred to how individuals see themselves and their relations to others in different ways. It turns out that the original 62 items could already indicate the theoretical multiple dimensionality of being independent or interdependent identified in the literature review to some extent, with less satisfying model fits. The finally applied 30-item scale of self-construal in this article was acceptable in reliabilities and model fits, also suggesting the feasibility of the model.

Nevertheless, comparatively speaking, among the seven dimensions, not all factors worked equally well. During the item selection process, we found the indicators for the factors of *self-containment vs. connectedness to others*, and *self-interest vs. commitment to others* could not fit the data as well as expected. Considering the development of this scale is still ongoing, we retained one extra item for each factor. In future research, we hope to explore if there are better options for these two factors.

With the 30-item model, we found Chinese participants rated significantly higher than British participants on the scores towards the direction of interdependence in six out of seven dimensions (or vice versa with independence), except the dimension of *self-interest vs. commitment to others*, which was consistent with H1 and H1a. In addition, among the six dimensions showing significant differences, the four dimensions not included in H1a also showed the same directional trends suggested by Vignoles et al. (2016).

Within each country, we found some interesting results towards self-construal. Chinese participants only showed significant interdependence (vs. independence) in five dimensions, and the dimension of *difference vs. similar to others*, which was traditionally thought to be towards interdependent in Eastern cultures (Vignoles et al., 2016), did not show an expected pattern. As for British participants, besides the five dimensions showing more independence (vs. interdependence), *self-containment vs. connectedness to others* and *self-interest vs. commitment to others* showed significantly more interdependence. On the one hand, this suggests the nature of independence and interdependence is more complicated than two monolithic concepts. On the other hand, it also indicates the value of multi-dimensional model of self-construal, which unpacks independence and interdependence, and helps understand the detailed patterns of self-construal in various cultures.

We also obtained some interesting findings in dispositional vs. situational attribution task. At first, we followed Kitayama et al. (2009) analyses to attain the mean dispositional and situational scores across the 4 scenarios, but the reliabilities were very low for both scores. This led us to consider other possibilities, and we found there could be more complicated patterns. Among the 4 scenarios, there were one male or female character behaved in a socially desirable or undesirable manner. What if the gender of the character would also influence participants' attributions? With this assumption, we conducted new analyses. As the above results show, Chinese participants would tend to make more situational attributions than British participants, which fitted H2. Besides that, both male and female participants inclined to make significantly different attributions towards male and female characters. Also, participants in both countries tended to attribute male character's socially desirable behavior to disposition, and to attribute female character's socially desirable behavior to situation. These results show that the gender influence could be much bigger than expected when it comes to cognitive styles.

Regarding the social closeness task, we were interested in how participants showed differential closeness between ingroup and outgroup targets. As shown in the results, Chinese participants rated significantly more differential closeness than British participants, which fit H3. Also, Chinese participants showed significantly more ingroup closeness and less outgroup closeness than British participants, which suggested in interpersonal relations, Chinese participants were more inclined to make differential treatments towards ingroup and outgroup. One possible improvement for this task could be designing more specific ingroup and outgroup categories to make the comparisons more concrete.

In socially engaging and disengaging emotion task, we followed Kitayama et al. (2009) analyses, and H4 was met that Chinese group reported significantly more socially engaging than disengaging emotions, while British group reported significantly more socially disengaging than engaging emotions, although British group reported significantly more of both engaging and disengaging emotions than Chinese group. For H6, we found the correlation between happiness and disengaging positive emotions for British participants, indicating their happiness was associated more closely with social disengagement than social engagement. For Chinese participants, their happiness correlated to engaging and disengaging emotions to similar degree.

As for the sociogram task, we did not find the expected pattern. Following Duffy and colleagues (2008), as cited in Kitayama et al. (2009), we found no significant cultural difference, and the means of the relative size for both countries were significantly greater than 0. This suggested no cultural difference in independence, and both cultures showed more independence than interdependence, which were opposed to our hypothesis and quite different from what we attained from other parts of the study. We believed there could be some factors that may influence the accuracy of the task, especially when it was applied to various cultures, like different language systems, manners on writing initials, etc.

We applied the scales of IOAM and SOAM (Tao & Hong, 2013; Yang & Yu, 1987) as the achievement motivation task. To our knowledge, it is seldom used to compare different cultures, while we believed the concepts of these two motivation systems can be meaningful when involving with independence and interdependence. IOAM can be regarded as a motivation system focusing more on completing one's own aspirations and talents, while SOAM focus more on attaining social approval and

honor for the family (Tao & Hong, 2013). The results show that both groups rated significantly higher score for IOAM than SOAM, which does not fully fit H7. Also, we found British participants had significantly higher differential achievement motivation than Chinese participants, and it was mainly caused by the difference of SOAM that Chinese participants rated significantly higher.

The 'face', which refers to the image individuals try to maintain for social acceptance or recognitions, is a large part of culture, especially in Asians (Hwang, Francesco & Kessler, 2003). Previous research mainly compared Asia with U.S. (Hallahan et. al., 1997). Hwang et al. (2003) found the connection between independence and desire of gaining face, but did not detect the correlations between interdependence and fear of losing face. In this study, we did find that Chinese participants were motivated more by fear of losing face, while British participants were motivated by desire of gaining face, which fit H8. Also, this pattern could correspond with Lockwood, Marshall and Sadler's (2005) findings about promotion vs. prevention motivation, in which people from interdependent cultural contexts would have a prevention orientation, focusing on the strategy of avoiding failure; whereas people from independent cultural contexts would have a promotion motivation, emphasizing the strategy of pursuing success.

As discussed before, one important purpose of studying self-construal is to help understand the cultural differences, but few studies ever provided concrete evidence for mediation effects, and supported the theoretical model. In Kitayama et al. (2009), they suggested self-construal should not be studied at individual level, and there was a high-order factor of independence and interdependence, which was cultural mandates, operating to influence cultural differences in cognition, emotion and motivation.

However, we believe that with a proper measure, self-construal can be detected to account for the cultural variations.

In this article, one of our main hypothesis was the seven-dimensional model of self-construal could mediate the cultural differences in certain ways. As we treated independence and interdependence as bipolar sides on each factor of self-construal, instead of two separate and unitary dimensions, we were more interested in the relative scores of those implicit measures of independence and interdependence. It turns out that there were significant mediation effects of self-construal on cultural variations in differential closeness between ingroup and outgroup relationships, relative experience of socially engaging and disengaging emotions, differential achievement motivation, and relative face motivation.

Referring to the differential closeness between the two groups, the factor of *self-containment vs. connectedness to others* significantly mediated the cultural differences as expected in H9b. It is reasonable since interpersonal closeness involves with individuals' perceptions about how they connect to others, which is the main focus of this dimension.

In terms of the relative experience of engaging and disengaging emotions, the factor of *consistency vs. variability* was the significant mediator, which does not fit H9c. We assumed that *self-reliance vs. dependence on others* and *self-containment vs. connectedness to others* would influence this outcome because we thought these two dimensions could well fit the concepts of social engagement and disengagement. The effect of *consistency vs. variability* on this variable may suggest that individuals' perceptions about how stable they are across contexts or situations would influence the extent to which they experience the two types of emotions.

As for the achievement motivation and face motivation, we assumed that dimensions of *self-direction vs. reception to influence*, and *self-expression vs. harmony* would be significant mediators because that both factors could be associated with motivation, especially *self-direction vs. reception to influence*, and *self-expression vs. harmony* should differ prominently in the two cultures. However, only *self-expression vs. harmony* played a role in both outcomes as expected in H9f and H9g. Also, *difference vs. similar to others* influenced the face motivation, which might make sense in a way that seeing oneself as different from others can relate to pursuing success (desire of gaining face), and seeing oneself as similar to others can associate more with avoiding failure (fear of losing face).

Although self-construal showed significant mediation effects on the above variables, the significant mediators for each task did not fully fit the speculative hypotheses how self-construal should relate to the outcomes. In addition, there are still three other tasks which could not be explained by the explicit self-construal. Thus, more relevant research is needed in this field. For now, we are still in the very early stage of studying the mediation effects of self-construal, and we cannot well explain the underlying mechanism of these effects, but it is worth noting that different psychological processes were mediated by different dimensions, which emphasized the value of deconstructing the aspects of being independent and interdependent.

2.6 Conclusion

This study aimed to test the seven-dimensional model of self-construal developed by Vignoles et al. (2016), and to provide a new test of the theoretical mediation model of self-construal. We found Chinese and British participants were significantly different in six dimensions of self-construal, showing the different

patterns of independence and interdependence. In the meantime, there were significant differences in various aspects of cognition, emotion and motivation for the two groups. More importantly, the different domains of the explicit self-construal could significantly mediate the cultural variations in differential closeness between ingroup and outgroup relationships, relative experience of socially engaging and disengaging emotions, differential achievement motivation, and relative face motivation.

We believe with more investigation of the multi-faceted dimensions of self-construal, it is promising that we can use this model to understand those complicated psychological processes better in the future.

Chapter 3 (Study 2): What are Self-Construal Primes Really Manipulating?

Evidence from the UK and China

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3.1 Abstract

Studies have shown effects of priming independent and interdependent self-construals (also known as individualism and collectivism priming, or private and collective self priming) on numerous psychological processes. However, previous research has not looked closely at what these primes actually manipulate, nor tested their cross-cultural equivalence. We compared the effects of two frequently used priming tasks, Similarities vs. Differences with Family and Friends task (SDFF) and Sumerian Warrior Story (SWS), on 7 dimensions of independent vs. interdependent self-construal, among 118 British and 178 Chinese participants. The seven dimensions of self-construal were not equally cued by the primes. Also, the two priming methods were not equivalent in priming independence and interdependence. The effect of SWS showed a similar profile across the two cultures, while SDFF did not function universally in the two cultures, and had a stronger effect on Chinese participants than British participants. In addition, British participants did not show a clear predominant cultural orientation towards independence, while Chinese participants showed the orientation towards interdependence. The predominant orientations only influenced the effects of priming that the primes inconsistent with predominant orientations would have stronger influences than consistent primes in Chinese group. These findings would help further understand the mechanism of the self-construal primes.

3.2 Introduction

In cross-cultural research, an important issue is to understand better the mechanisms underlying observed differences across various cultures (Triandis, 1995). Among the potential factors that may matter, many researchers have emphasized the importance of individualism and collectivism (Oyserman, Coon, & Kemmelmeier, 2002) and the related constructs of independent and interdependent self-construals (Markus & Kitayama, 1991). While some studies have used measures of these constructs as potential mediators of cultural group differences in cognitive, affective, motivational outcomes (e.g., Singelis & Sharkey, 1995; Yang & Vignoles, 2017), others have used manipulations seeking to prime individualistic and collectivistic 'mindsets', or independent and interdependent self-construals, and thus test the effects of these cultural ingredients on the same outcomes (reviewed by Oyserman & Lee, 2008).

According to Kelley's (1955) model, if variable 'A' has a causal influence on variable 'B', the effect is more significant when A is the focus of the participant's attention (see also Taylor & Fiske, 1978). This is regarded as the main principle of most priming studies (Bargh & Chartrand, 2000). In cross-cultural psychology, researchers usually prime certain cultural features with specific manipulation methods, to explore if cultural variations are more significant systematically when the primed concepts are accessible and salient (Oyserman & Lee, 2008).

To be specific, in priming studies, there are usually multiple tasks, with the first one to cue certain constructs, and the following as the target outcome variables, and researchers detect the influences of priming manipulations by comparing the target variables between groups (priming/ no priming or different primings) (Bargh & Chartrand, 2000; Higgins, 1996). By randomizing the individuals to different priming

conditions and controlling the exact aspects that are the main attentions of the

participants, the effects of personal factors can be diminished (Oyserman & Lee,

2008).

Self-construal, a concept first developed by Markus and Kitayama (1991), refers

to how people define and make meaning of the self in relation to others, and is usually

divided into independent and interdependent self-construals (Cross, Hardin, &

Gercek-Swing, 2011; Smith, Fischer, Vignoles, & Bond, 2013). When it comes to the

priming of self-construal, the relevant priming tasks are usually focused on cueing

private self, or its specific aspects, like being different or unique; or cueing collective

self, or its specific aspects, like being similar to or being obligated to family or friends

(Brewer & Gardner, 1996).

It is worth mentioning that the same manipulations have been labelled as self-

construal primes or as primes of individualism and collectivism in the literature, and

the term of individualism-collectivism primes was more commonly used (Gardner,

Gabriel, & Lee, 1999; Suh, Diener, & Updegraff, 2008; Trafimow, Triandis, & Goto,

1991). The two manipulations used in the current study were originally developed to

cue "private self" or "collective self", which were seen as aspects of the broader

cultural contrast between individualism and collectivism (Trafimow et al., 1991).

However, individualism and collectivism, as multifaceted concepts, include various

constructs, like relevant beliefs, values, and practices (Brewer & Chen, 2007;

Triandis, 1993; Vignoles et al., 2016), and it is arguable and difficult to check that the

priming of private or collective self could influence all these key constructs within

individualism and collectivism. Thus, we prefer to use the term "self-construal

primes" in this article.

In this case, for independent-interdependent self-construal primes, various manipulations have been used to shift the accessibility and salience of the elements, such as Similarities vs. Differences with Family and Friends task (SDFF; Trafimow et al., 1991); Sumerian Warrior Story (SWS; Gardner et al., 1999; Trafimow et al., 1991); and Pronoun Circling task (Brewer & Gardner, 1996; Gardner et al., 1999).

As noted above, these methods were designed to cue private or collective selves, which are considered to be broad concepts and include numerous aspects (Trafimow et al., 1991). When it comes to the question of what exact aspects are cued in the priming manipulations, there are two approaches in the previous research. On the one hand, some researchers did not set up clear manipulation checks (Suh et al., 2008). These related priming studies usually applied one prime method, followed by different tasks to test values (Bovasso, 1997; Briley & Wyer, 2001), judgments (Gardner, Gabriel, & Lee, 1999), life satisfaction (Suh, Diener, & Updegraff, 2008), or other outcomes. It is found that there are some effects of self-construal priming on psychological outcomes (Cross et al., 2011). Gardner et al. (1999) found that European-American participants primed with independent or interdependent self-construal would show significant differences in values and social judgements. Suh et al. (2008) found that independent and interdependent priming would create different cognitive approaches in life satisfaction judgement.

However, although the priming effects are generally significant, with different outcome variables and different primes, the influences are usually uneven; for example, the primes have moderate-size effects on relation and cognition, but small effects on self-concepts and values (Oyserman & Lee, 2008). On the other hand, some other researchers did check what aspects are primed (Levine et al., 2003; Vohs & Heatherton, 2001), usually with one of three self-construal measures: The Twenty

Statements Test (TST, Kuhn & McPartland, 1954), or the self-construal scales of

Singelis (1994) or Gudykunst et al. (1996). Nevertheless, across most of these studies,

the effects of priming on the tested self-concept are small and heterogenous (Levine et

al., 2003; Oyserman & Lee, 2008; Zhang & Mittal, 2007). We believe that these

findings highlight the necessity of investigating more about what the primes really

manipulate.

It is reasonable to apply a self-construal measure to check the mechanism of

independent-interdependent priming, but it is arguable whether the three commonly

used self-construal measures could be able to capture all the key aspects being cued

during the process. The TST is more and more cautiously considered for its

methodological flaws, for instance, the wording and the coding schemes (Kanagawa,

Cross, & Markus, 2001; Smith et al., 2013). The scales of Singelis (1994) and

Gudykunst et al. (1996) both adopt the two-dimensional model of self-construal,

which treats independence and interdependence as two separate and unitary

dimensions. Nowadays, more and more researchers incline to believe that self-

construal should be multifaceted, and there could be different ways of being

independent and interdependent in various cultures (Smith et al., 2013; Vignoles et

al., 2016; Yang & Vignoles, 2017). In previous priming studies, independence and

interdependence are usually treated as monolithic constructs; however, adopting a

multi-dimensional view of self-construal would help to clarify the mechanisms

underlying effects of commonly used self-construal primes.

Vignoles and colleagues (2016) developed a seven-dimensional model of

independent and interdependent self-construals, including *self-reliance vs.*

dependence on others, *self-containment vs. connectedness to others*, *difference vs.*

similar to others, *self-interest vs. commitment to others*, *consistency vs. variability*,

self-direction vs. reception to influence, and *self-expression vs. harmony*. Using this model to explore what self-construal primes actually cue, our first research question is how many and which aspects of self-construal show significant differences during the process. Since each dimension has bipolar sides of independence and interdependence, a first hypothesis based on the common view in the literature is that the priming manipulations will cue all the seven factors more or less equally.

Regarding those commonly used priming methods, there has been no research comparing their possible differences in detail to our knowledge. Smith et al. (2013) proposed that it is possible these manipulations focus on different aspects of self-construal. For example, SDFF primes self-construal based on cueing individuals' thoughts of being different or similar to their families and friends, which may weigh more on the dimension like *difference vs. similar to others*, whereas SWS primes self-construal in a subtle way by depicting a general's assignation of the command based on individuals' talents or family factors, which is harder to link to specific dimensions (Smith et al., 2013). This brings the second research question that whether the priming methods are equivalent in what they manipulate. As these primes have not been studied as cueing different aspects in the literature, we would assume that they ought to be equivalent in priming self-construal.

In most self-construal priming studies, the participants are from Western cultural contexts (Cross et al., 2011). Among the studies including non-Western samples, the effects of priming usually varied, even with the same manipulation (Oyserman & Lee, 2008). Thus, the third research question is whether each of the priming methods can have a similar pattern cross-culturally. Without theoretical reasons to expect the variations, we hypothesize that these primes should be cross-culturally equivalent.

Finally, it is suggested that each culture may have different orientations towards independence and interdependence (Gardner et al., 1999; Oyserman & Lee, 2008), so it is necessary to set up a control condition with no prime when conducting priming research, which a lot of studies did not include (Cross et al., 2011). The relevant research question is if the predominant cultural orientations towards self-construal influence the effects of independent and interdependent primes.

In the study of Gardner et al. (1999), American and Chinese participants were cued with the primes which were either consistent or inconsistent with their predominant cultural orientations, and for both cultural groups, the participants who received the inconsistent primes were more strongly influenced by shifting their value judgements than those with consistent primes. Gardner and colleagues suggested that individuals in each culture would be chronically affected (or primed) by the cultural contexts and form the 'default' orientation of independence or interdependence, which would make them remain relatively uninfluenced by the situational primes consistent with this orientation and respond effectively towards those inconsistent primes, by activating the 'new' self-construal or suppressing the 'default' one.

As Zou, Morris and Benet-Martínez (2008) proposed, situational primes may have more effects on the self-construal with low baseline accessibility than with high accessibility. Sui, Zhu, and Chiu (2007) also found some supporting evidence for this. They found that Chinese participants primed with independence significantly differ from the participants with interdependent prime or no prime on self-description, and the participants primed with interdependence did not differ from the no-prime group.

However, there was also some evidence against the findings of Gardner et al. (1999). Wiekens and Stapel (2008) found that Dutch participants primed with either independence or interdependence were all significantly different from the participants

86

with no prime on subsequent motivation task, suggesting the predominant cultural orientation did not influence the effects of primes profoundly. Also, Norasakkunkit and Kalick (2002, 2009) found that European-American Participants with the independent prime significantly differed from the no-prime group on the scores of social anxiety.

Based on these findings, we hope this study can provide more evidence for the interaction between self-construal primes and the predominant cultural orientations. In the meantime, we would tentatively hypothesize that the prime inconsistent with the predominant cultural orientations towards self-construal may have a stronger effect. Since individuals' orientations towards self-construal could be different in various cultures, the effects of independent and interdependent primes, compared to the control condition, are not supposed to be symmetrical.

3.2.1 Present Study

In the current study, we aim to further explore what the self-construal primes actually manipulate based on the above four research questions. Our study extends previous research in several ways:

Firstly, we applied two different priming manipulations, while most previous studies only applied one (Oyserman & Lee, 2008). Among those commonly used priming manipulations, we chose Similarities vs. Differences with Family and Friends task (SDFF) and Sumerian Warrior Story (SWS)[13]. Secondly, instead of using TST (Kuhn & McPartland, 1954), or the Self-Construal Scales of Singelis (1994) or Gudykunst et al. (1996) as the manipulation check, we applied a seven-dimensional

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[13] Considering the number of participants needed for each group, we only included two priming methods in this article.

self-construal model (Vignoles et al., 2016; Yang & Vignoles, 2017) to test the effects of two primes across various forms of independence and interdependence. Thirdly, we compared two cultural groups of the UK and China, which most other self-construal priming studies rarely compare (Aaker & Lee, 2001; Briley & Wyer, 2001; Haberstroh et al., 2002; Oyserman & Lee, 2008). Fourthly, we added an 'empty' control group with no prime manipulation. As discussed above, based on the literature, the hypotheses of this study are as follows:

H1: The priming manipulations would cue all the seven dimensions of self-construal more or less equally;

H2: SDFF and SWS would show equivalent effects in priming independence and interdependence;

H3: Both SDFF and SWS would show similar profiles cross-culturally;

H4[14]: In the control condition, British participants would show more independence in five dimensions, including *self-reliance vs. dependence on others*, *difference vs. similar to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*, and more interdependence in two dimensions, including *self-containment vs. connectedness to others*, and *self-interest vs. commitment to others*; whereas Chinese participants would show more interdependence in five dimensions, including *self-containment vs. connectedness to*

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[14] This hypothesis is based on the findings of Yang & Vignoles (2017), in which they compared the explicit self-construal with the seven dimensional model in China and the UK, and found that Chinese and British participants were significantly different in six dimensions; also, compared to the mid-point (5), Chinese participants showed more interdependence in five dimensions, and British participants showed more independence in five dimensions, and more interdependence in two dimensions, as H4 would assume.

others, *self-interest vs. commitment to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*;

H5: Participants' predominant self-construal tendencies would influence the priming effects. The primes inconsistent with the predominant cultural orientations towards self-construal would have stronger effects. To be specific, British participants would be more influenced by interdependent priming, whereas Chinese participants would be more affected by independent priming.

3.3 Method

3.3.1 Participants

Our sample for main analysis consisted of 296 participants[15]. Among the data, of 118 British participants (23 men, 95 women; Mage = 21.5 years, SD = 3.07), 113 were undergraduates from the University of Sussex, 5 were undergraduates from Durham University; of 178 Chinese participants (77 men, 101 women; Mage = 21.7 years, SD = 1.27), 154 were undergraduates from the Nanjing Normal University in China, 24 were undergraduates from Changzhou University in China. For all the participants, English or Chinese is their first language respectively. Participants' country of birth and ethnic group were collected. Participants were asked to write down what they think the purpose of the study is. Participants' majors in both

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[15] The sample size of 50 is usually considered as the reasonable minimum in a factor analysis (Arrindell & van der Ende, 1985; Winter, Dodou, & Wieringa, 2009). Considering there were five groups in each country, we aimed to attain around 50 participants for each group.

countries varied, but none of them studied psychology[16]. The questionnaire was administered in a paper-and-pencil format.

3.3.2 Questionnaires

There were English and Chinese versions of the questionnaire. All the materials were originally developed in English. One Chinese-English bilingual did the translation, and two Chinese-English bilinguals and one English person took part in the back-translation (Brislin, 1970) to make sure the two versions were equivalent and comparable.

Each questionnaire contained 8 parts. Firstly, participants were primed with either independence or interdependence (or not primed in control condition). Then, following four intervening tasks[17], a seven-dimensional self-construal Scale was used

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[16] We recruited 592 participants in total. During the data exclusion, we excluded 9 participants for the missing information of country, and the other 4 participants (1 British and 3 Chinese) as they noticed the purpose of the study (detected by their answers in the question of 'what do you think the purpose of the study is'). We entered the remaining 579 participants (267 British and 312 Chinese) into the preliminary analyses. Firstly, data of 120 participants (55 British and 65 Chinese) in the control group were used to test and improve the seven-dimensional self-construal model. In the following analyses for the research questions, we found both priming methods showed almost no significant effect on British participants, and we thought the reason could be that British psychology students just attended the relevant course, and the knowledge of priming from the classes might compromise the results. Thus, we excluded all the British psychology students in the main analyses for the hypotheses, and also excluded all the Chinese psychology students for consistency. Considering the sample size for model testing, and the fact that data in the control condition are not influenced by participants' major, we still applied 120 participants (including psychology students in both countries) in the measurement model testing and improvement.

[17] The four tasks include participants' emotional state based on the Implicit Social Orientation Questionnaire (Kitayama et al., 2009), face motivation (Hwang, Francesco & Kessler, 2003), inclusion of other in the self (IOS; Aron, Aron, & Smollan, 1992), and Short Schwartz's Value Survey (Schwartz, 1992; Lindeman & Verkasalo, 2005). These tasks were applied to test whether different self-construal primes would lead to different psychological outcomes, which is a way of measuring mediation effects of self-construal. However, after dropping

to test the different dimensions of participants' independence and interdependence. After these, there was a section of Demographics to record participants' personal details. Finally, participants were asked to write down what they thought the purpose of the study was.

3.3.2.1 Priming Condition

Similarities vs. differences with family and friends task [SDFF]. This task was developed by Trafimow et al. (1991). The instructions for priming individualism were as follows: 'For the next two minutes, you will not need to write anything. Please think of what makes you different from your family and friends. What do you expect yourself to do?', while the instructions for priming collectivism were as follows: 'For the next two minutes, you will not need to write anything. Please think of what you have in common with your family and friends. What do they expect you to do?' (p. 651)

Sumerian warrior story [SWS]. This task was built by Trafimow et al. (1991), which involved reading a couple of paragraphs about a Sumerian warrior, and making a judgement about him (see Appendix 2). The participants were exposed to the context of choosing a warrior based on either individual talent or nepotism.

The story started as 'Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon I in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule. About 10 years later, Sargon 1 was conscripting warriors for a new war. Sostoras was obligated to send a detachment of soldiers to aid Sargon 1. He had to decide who to put in command of the detachment. After thinking about it for a long time, Sostoras eventually decided on

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the data from psychological students, we did not have enough data for mediation tests. To make the whole article more structured, we did not include the analyses of these four tasks in this article.

Tiglath who was a…' (Trafimow et al., 1991, p. 652) Then, participants were primed either with independence, continuing as '. . . talented general. This appointment had several advantages. Sostoras was able to make an excellent general indebted to him. This would solidify Sostoras's hold on his own dominion. In addition, the very fact of having a general such as Tiglath as his personal representative would greatly increase Sostoras's prestige. Finally, sending his best general would be likely to make Sargon I grateful. Consequently, there was the possibility of getting rewarded by Sargon I.' (p. 652), or with interdependence, continuing as '. . . member of his family. This appointment had several advantages. Sostoras was able to show his loyalty to his family. He was also able to cement their loyalty to him. In addition, having Tiglath as the commander increased the power and prestige of the family. Finally, if Tiglath performed well, Sargon I would be indebted to the family' (p. 652). After the story, all the participants answered the question 'Do you admire Sostoras? Circle the appropriate answer. The choices were yes, no, and not sure.' (p. 652).

We applied SDFF and SWS (Trafimow et al., 1991) to prime participants' independence or interdependence. Also, we added one control group with no prime. Thus, we have five priming conditions in all, including no priming, private priming with SDFF, collective priming with SDFF, private priming with SWS, and collective priming with SWS. Participants were randomly assigned across these five conditions. For British participants, the numbers of participants in these five conditions were 20, 21, 25, 20, 32, respectively; while for Chinese participants, the numbers were 41, 40, 28, 41, 28, respectively.

3.3.2.2 Self-construal Scale

The scale includes 7 dimensions:

1) Contrasting a preference for *self-reliance* (e.g., 'You prefer to rely completely on yourself rather than depend on others') with a preference for *dependence on others* (e.g., 'You prefer to ask other people for help rather than rely only on yourself');

2) Contrasting a feeling of *self-containment* (e.g., 'Your happiness is independent from the happiness of your family') with a feeling of *connection to others* (e.g., 'If a close friend or family member is happy, you feel the happiness as if it were your own');

3) Contrasting a desire for *difference* (e.g., 'You like being different from other people') with a desire for being *similar to others* (e.g., 'You like being similar to other people');

4) Contrasting a priority of *self-interest* (e.g., 'You protect your own interests, even if it might sometimes disrupt your family relationships') with a priority of *commitment to others* (e.g., 'You value good relations with the people close to you more than your personal achievements');

5) Contrasting a sense of *consistency* (e.g., 'You behave in a similar way at home and in public') with a sense of *variability* (e.g., 'You act very differently at home compared to how you act in public');

6) Contrasting a tendency of *self-direction* (e.g., 'You prefer to do what you want without letting your family influence you') with a tendency of *reception to influence* (e.g., 'You prefer to follow your family's advice on important matters');

7) Contrasting a preference for *self-expression* (e.g., 'You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict') with a preference for maintaining *harmony* (e.g., 'You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings');

Following Vignoles's et al. (2016) study, we applied a 9-point response scale, ranging from 1= *does not describe me at all* to 5 = *describes me exactly* (with 0.5 as the intervals[18]). The item pool consisted of 52 items[19] (as listed in Appendix 2), including a mixture of positive and reversed worded items for each factor to remove the effect of acquiescent responding. Because this version was under development, we conducted item selection procedures. All the items were presented in a scrambled order.

We conducted a Random Intercept Exploratory Factor Analysis (RI-EFA; Aichholzer, 2014) with the 7-factor self-construal model on Mplus[20]. We applied a target rotation and in addition to the seven substantive factors, we modelled a random intercept, which loaded on each indicator with a fixed value of 1, to alleviate the influence of acquiescent responding (Vignoles et al., 2016, Welkenhuysen-Gybels et al., 2003). The cultural group was treated as the predicting variable for self-construal. We used values of Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR) and Comparative Fit Index (CFI) to assess the model fit. For the initial pool of 52 items, values of RMSEA and SRMR were acceptable, but CFI was not acceptable: χ^2 = 1285.217, df = 771, p < .001, RMSEA = .075 (90% CI [.067, .082]), SRMR = .046, CFI = .832 (Hu & Bentler, 1999; Kline, 2005). Thus, we conducted the item selection process to further improve

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[18] In the analysis, we used a 9-point scale from 1-9, but we applied 1-5 with .5 as the intervals in the questionnaire because we did not want the participants to think about too many numbers.

[19] The item pool was based on the model we attained in the study of Yang and Vignoles (2017). In this study, we aimed to further improve the model.

[20] The sample involved the factor analysis of self-construal only included the participants in control condition to avoid any possible influence of priming manipulations. To maintain the enough sample size, we also included the participants with major of psychology in the control group.

the model. We dropped 24 out of 52 items based on the factor loadings (> .30), Modification Indices (M.I. < 100) and conceptual meanings, and finally we built a 28-item model, with 4 balanced items (2 interdependent items and 2 independent items) measuring each factor. For the 28-item model, $\chi^2 = 331.825$, df = 222, $p < .001$, RMSEA = .064 (90% CI [.049, .078]), SRMR = .034, CFI = .928, which can be considered as acceptable (Hu & Bentler, 1999; Kline, 2005). The reliabilities for each factor were all bigger than .60[21] in each country (see Table 3.1).

Table 3. 1 *The Reliability (Cronbach's Alpha) of Each Factor with the 28-item Self-Construal Model by the Two Cultural Groups (N = 55 for the UK and N = 65 for China)*

Factor	Cronbach's	
	UK	China
Self-reliance vs. Dependence on others	.82	.81
Self-containment vs. Connection to others	.74	.73
Difference vs. Similar to others	.76	.66
Self-interest vs. Commitment to Others	.80	.62
Consistency vs. Variability	.81	.65
Self-direction vs. Reception to influence	.74	.76
Self-expression vs. Harmony	.87	.69

3.3.2.3 Demographics

We recorded each participant's age, gender, country of birth, ethnic group and major at university.

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[21] Though Cronbach's α of .70 is usually the cut off, Hair et al. (2006) proposed that .60 could be enough, especially in exploratory studies. Also, Aron and Aron (1999) proposed that in psychological research, Cronbach's α of .70 is preferable, but Cronbach's α of .60 could be adequate.

3.4 Results

The main analyses include two parts. The first set of analyses is designed to test the first three hypotheses. This part does not include the empty control condition, because it is already assumed that the pre-existing cultural orientations towards self-construal are not equivalent across cultures. The second set of analyses includes all five conditions, in order to address hypotheses H4 and H5.

3.4.1 The first part of analyses (For H1, H2, and H3)

Table 3.2 shows the descriptives of the tendency to be interdependent (vs. independent) in each factor for the participants of each condition. To test hypotheses H1 to H3, we applied repeated measures ANCOVA, with the seven self-construal dimensions as the within-subjects factor, priming kind (independence vs. interdependence), priming method (SDFF vs. SWS) and country (the UK vs. China) as between-subjects factors, and gender[22] as covariate. Controlling for gender, there were significant main effects of self-construal dimension, $F(6,215) = 12.34$, $p < .001$, $\eta_p^2 = .05$; priming kind, $F(1,215) = 63.43$, $p < .001$, $\eta_p^2 = .23$; and country, $F(1,215) = 55.15$, $p < .001$, $\eta_p^2 = .20$; and significant interaction effects between priming kind and self-construal dimension, $F(6,215) = 2.20$, $p = .04$, $\eta_p^2 = .01$, which shows not all self-construal dimensions were equally affected by priming, and is against H1; among priming kind, priming method, and self-construal dimension, $F(6,215) = 3.09$, $p = .01$, $\eta_p^2 = .01$, suggesting the two priming methods differentially affected the different self-construal dimensions, and indicating the evidence against H2; and between priming kind and country, $F(1,215) = 6.32$, $p = .01$, $\eta_p^2 = .03$, which shows some

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[22] In this study, age and gender were not our research of interest. We included gender as a covariate considering the uneven number of male and female participants.

initial evidence against H3. However, there was no significant effect of priming method, $F(1,215) = 1.61$, $p = .21$, $\eta_p^2 = .01$; and no significant interaction effect among priming kind, priming method, and country, $F(1,215) = 3.18$, $p = .08$, $\eta_p^2 = .02$; and among priming kind, priming method, country and self-construal dimension, $F(6,215) = 1.08$, $p = .38$, $\eta_p^2 = .01$.

The above results already show some initial evidence against H1 to H3. Since there are significant interaction effects involving priming method and country, we split the sample by priming method and country to further unpack the manipulation process. For each country, we used MANCOVAs, predicting seven factors of self-construal, with SDFF or SWS as between-subjects factor and gender as the covariate, to detect which aspects of self-construal were significantly influenced by the priming. Regarding SDFF, the results show that there were significant effects of priming for British participants, $F(7,33) = 2.50$, $p = .04$, $\eta_p^2 = .35$, and for Chinese participants, $F(7,57) = 15.34$, $p < .001$, $\eta_p^2 = .65$. With independent-interdependent primes of SDFF, only one dimension (*Self-expression vs. Harmony*) showed significant difference for British participants, whereas all the seven dimensions of self-construal showed significant differences for Chinese participants. As for SWS, the results indicate significant effects of priming for British participants, $F(7,42) = 4.42$, $p = .001$, $\eta_p^2 = .42$, and for Chinese participants, $F(7,56) = 4.79$, $p < .001$, $\eta_p^2 = .38$. With the primes of SWS, two dimensions (*difference vs. similar to others* and *self-direction vs. reception to influence*) showed significant differences for both countries. The exact significance of these effects can be seen in Table 3.3.

Also, to explore whether country significantly moderated the effects of each separate manipulation, we split priming methods, and conducted MANCOVAs, predicting seven factors of self-construal, with country, and SDFF or SWS as

between-subjects factors and gender as the covariate. The results show that the interaction effect between priming kind and country is significant for SDFF, $F(7,97) = 3.71$, $p = .001$, $\eta_p^2 = .21$, against H3, but not significant for SWS, $F(7,105) = .28$, $p = .96$, $\eta_p^2 = .02$, supporting H3. As Table 3.3 indicates, SDFF had a much stronger effect on Chinese participants than British participants.

Table 3. 2 *The Descriptives of Tendencies to be Interdependent (vs. Independent) in Each Factor with the 28-item Model by the Participants of 5 Priming Conditions*

Factor	No Priming		Independent Priming with SDFF		Interdependent Priming with SDFF		Independent Priming with SWS		Interdependent Priming with SWS	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
UK participants										
Self-reliance vs. Dependence on others	**4.72**	1.31	**4.44**	.67	**4.91**	1.05	**4.40**	.86	**4.68**	.94
Self-containment vs. Connection to others	**5.49**	.98	**5.32**	.93	**5.65**	.79	**5.56**	.74	**5.69**	.50
Difference vs. Similar to others	**3.89**	1.35	**4.22**	1.21	**4.29**	.86	**3.43**	.77	**4.69**	1.30
Self-interest vs. Commitment to others	**5.75**	1.42	**5.93**	1.13	**6.39**	.88	**5.76**	1.34	**6.10**	.75
Consistency vs. Variability	**4.53**	.79	**4.54**	.90	**4.78**	.98	**4.46**	.64	**4.72**	.88
Self-direction vs. Reception to influence	**4.90**	1.24	**4.35**	.64	**4.70**	.87	**3.80**	1.02	**4.55**	1.07
Self-expression vs. Harmony	**4.56**	.54	**4.36**	1.01	**5.22**	.95	**4.88**	.99	**5.12**	.89

Self-reliance vs. Dependence on others	**5.14**	1.18	**4.56**	.76	**5.75**	1.02	**4.45**	.96	**5.02**	1.41
Self-containment vs. Connection to others	**6.89**	1.10	**6.28**	1.08	**7.43**	.65	**6.60**	1.13	**6.95**	1.37
Difference vs. Similar to others	**5.12**	1.23	**4.15**	.95	**5.47**	1.24	**4.01**	.83	**5.17**	1.10
Self-interest vs. Commitment to others	**6.28**	1.18	**5.69**	.96	**6.30**	.99	**5.46**	1.04	**6.21**	1.38
Consistency vs. Variability	**5.69**	.77	**4.76**	1.03	**5.87**	1.09	**5.31**	.90	**5.68**	1.29
Self-direction vs. Reception to influence	**5.45**	1.02	**4.33**	.71	**5.72**	.85	**4.56**	.99	**5.26**	1.34
Self-expression vs. Harmony	**6.40**	.97	**5.33**	1.00	**6.14**	1.08	**5.73**	.87	**5.82**	1.19

Table 3. 3 *MANCOVA for the 7 Dimensions of Interdependence (vs. Independence) with SDFF or SWS by British and Chinese Participants Controlling the Effect of Gender*

Factor	Country	Independent-Interdependent Primes with SDFF			Independent-Interdependent Primes with SWS		
		F	*Sig.*	η_p^2	*F*	*Sig.*	η_p^2
Self-reliance vs.	UK	2.45	.13	.06	1.62	.21	.03
Dependence on others	China	35.18	***	.36	2.11	.15	.03
Self-containment vs.	UK	1.82	.18	.04	.38	.54	.01
Connection to others	China	17.62	***	.22	.82	.37	.01
Difference vs.	UK	.47	.50	.01	23.28	***	.33
Similar to others	China	25.77	***	.29	16.03	***	.21
Self-interest vs.	UK	2.31	.14	.06	1.13	.29	.02
Commitment to Others	China	8.21	**	.12	3.77	.06	.06
Consistency vs.	UK	.64	.43	.02	.95	.33	.02
Variability	China	14.55	***	.19	1.35	.25	.02
Self-direction vs.	UK	2.01	.16	.05	7.03	.01	.13
Reception to influence	China	42.92	***	.41	3.88	.05	.06

| Self-expression vs. | UK | 7.64 | .01 | .16 | .50 | .48 | .01 |
| Harmony | China | 8.48 | ** | .12 | .11 | .74 | .01 |

Note. ** *p* < .01 (2-tailed). *** *p* < .001 (2-tailed).

Table 3. 4 *MANCOVA for the 7 Dimensions of Interdependence (vs. Independence) with the Control Condition by British and Chinese Participants Controlling the Effect of Gender*

Factor	F	*Sig.*	η_p^2
Self-reliance vs. Dependence on others	2.89	.10	.05
Self-containment vs. Connection to others	19.05	***	.27
Difference vs. Similar to others	11.12	**	.18
Self-interest vs. Commitment to Others	1.82	.18	.03
Consistency vs. Variability	26.67	***	.34
Self-direction vs. Reception to influence	5.15	.03	.09
Self-expression vs. Harmony	53.72	***	.51

Note. ** *p* < .01 (2-tailed). *** *p* < .001 (2-tailed).

3.4.2 The second part of analyses (For H4 and H5)

Table 3.2 shows the descriptives of the tendency to be interdependent (vs. independent) in each factor for the control condition. We compared the means of each factor in the control condition only, by applying a MANCOVA, with country as the between-subjects factor and gender as the covariate. The results show a significant effect of country, $F(7,46) = 11.63$, $p < .001$, $\eta_p^2 = .64$. British and Chinese participants were significantly different on five dimensions, including *self-containment vs. connectedness to others*, *difference vs. similar to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony* (see Table 3.4).

The main purpose of H4 is to test whether British participants showed a predominant cultural orientation towards more to independence, and Chinese participants showed more orientations towards interdependence. Thus, we were interested to see whether British and Chinese participants scored towards the independent or the interdependent end of the scale on each of the seven dimensions in the absence of priming, and we ran *t*-tests using the theoretical midpoint (5) as the test value. The results show, among all the seven dimensions in the control condition, British participants were more independent (vs. interdependent) in three dimensions, including *difference vs. similar to others*, *consistency vs. variability*, and *self-expression vs. harmony*, and more interdependent (vs. independent) in two dimensions, including *self-containment vs. connectedness to others*, and *self-interest vs. commitment to others*; whereas Chinese participants were more interdependent (vs. independent) in five dimensions, including *self-containment vs. connectedness to others*, *self-interest vs. commitment to others*, *consistency vs. variability*, *self-*

direction vs. reception to influence, and *self-expression vs. harmony*, which provide

some evidence for H4. The exact figures are in Table 3.5.

Table 3. 5 *T-tests for the 7 Dimensions of Interdependence (vs. Independence) in the Control Condition*

Factor	UK		China	
	t	*Sig.*	*t*	*Sig.*
Self-reliance vs. Dependence on others	-1.38	.18	1.03	.31
Self-containment vs. Connection to others	2.46	.02	11.53	***
Difference vs. Similar to others	-3.88	***	.58	.56
Self-interest vs. Commitment to Others	2.61	.02	7.30	***
Consistency vs. Variability	-2.77	.01	3.69	***
Self-direction vs. Reception to influence	-.23	.82	3.06	**
Self-expression vs. Harmony	-3.03	.01	8.20	***

Note. ** $p < .01$ (2-tailed). *** $p < .001$ (2-tailed). The test value is 5.

To test H5, we firstly checked whether priming method would significantly

influence the possible effects of the predominant cultural orientations. With the five

priming conditions, we split the data of the UK and China, and for each country, we

used MANCOVA to predict the seven dimensions of self-construal, with priming kind

and priming method as the between-subjects factors and gender as the covariate. The

results indicate that there were significant effects of priming kind for British

participants, $F(7,99) = 5.44$, $p < .001$, $\eta_p^2 = .28$, and for Chinese participants,

$F(7,156) = 10.58$, $p < .001$, $\eta_p^2 = .32$; while there was no significant effect of priming method for British participants, $F(7,99) = 1.55$, $p = .16$, $\eta_p^2 = .10$, and for Chinese participants, $F(7,156) = .95$, $p = .47$, $\eta_p^2 = .04$; and no interaction effect between priming kind and priming method for British participants, $F(7,99) = 1.63$, $p = .14$, $\eta_p^2 = .10$, and for Chinese participants, $F(7,156) = 1.90$, $p = .07$, $\eta_p^2 = .08$, suggesting no significant influence of priming method on H5.

Then, we contrasted the means of the control condition with the means of independent and interdependent conditions in each country. Table 3.6 shows the pairwise comparisons of the seven dimensions in these three priming groups (no priming, priming with SDFF, and priming with SWS) for each country. It indicates that for British participants, compared to the control condition, independent priming significantly influenced only one dimension, *self-direction vs. reception to influence*, and interdependent priming significantly influenced two dimensions, *difference vs. similar to others*, and *self-expression vs. harmony*; whereas for Chinese participants, compared to the control condition, independent priming significantly influenced all the seven dimensions, and interdependent priming influenced no dimension. Then, we applied helmert contrasts to explore whether the effects of predominant cultural orientations showed linear trends. As Table 3.6 indicates, for British participants, *self-direction vs. reception to influence* showed a non-linear trend, while for Chinese participants, *difference vs. similar to others*, *self-direction vs. reception to influence* and *self-expression vs. harmony* showed non-linear trends. Thus, for these factors, the scores of control conditions are all significantly closer to the scores of the related interdependent primes.

Table 3. 6 *The Pairwise Comparisons and Helmert Contrasts of the 7 Dimensions of Interdependence (vs. Independence) between Control Group and Individualism/ Collectivism Primes of SDFF/ SWS for British and Chinese Participants*

Country	Priming group	Priming group	Self-reliance vs. Dependence on others		Self-containment vs. Connection to others		Difference vs. Similar to others		Self-interest vs. Commitment to others		Consistency vs. Variability		Self-direction vs. Reception to influence		Self-expression vs. Harmony	
			Mean Difference	*Sig.*	Mean Difference	*Sig.*	Mean Difference	*Sig.*	Mean Difference	*Sig.*	Mean Difference	*Sig.*	Mean Difference	*Sig.*	Mean Difference	*Sig.*
UK	Control	Independence	.32	.25	.02	.91	.01	.97	-.11	.73	.02	.95	**.86**	**	-.09	.72
		Interdependence	-.05	.84	-.18	.37	**-.63**	**.01**	-.48	.10	-.22	.34	.29	.28	**-.61**	**.01**
		Mean	.13	.59	-.08	.68	-.31	.14	-.29	.30	-.10	.64	**.58**	**.02**	-.35	.13
China	Control	Independence	**.59**	**.01**	**.46**	**.04**	**1.01**	***	**.69**	**	**.66**	**	**.99**	***	**.87**	***
		Interdependence	-.31	.18	-.30	.21	-.25	.27	.01	.98	-.09	.70	-.06	.76	.42	.06
		Mean	.14	.47	.08	.70	**.38**	**.05**	.35	.09	.29	.14	**.46**	**.01**	**.65**	***

Note. Mean represents the mean scores of the two priming groups. The mean difference is the subtraction of the mean scores of independent and/or

interdependent primes from the mean scores of control group. ** $p < .01$ (2-tailed). *** $p < .001$ (2-tailed).

3.5 Discussion

As proposed in the introduction, the main purpose of this article is to investigate the mechanisms underlying self-construal by addressing the four research questions from the literature.

For the first question, the repeated ANCOVA indicates the main effect of priming kind, and an interaction effect between priming kind and self-construal, suggesting that the manipulation processes primed certain dimensions of self-construal, but the extents of the seven dimensions being cued are significantly different, which is against H1. With further detections into the data split by priming method and culture, we found the patterns of the priming could be much more complicated than has previously been considered in the literature. Nevertheless, this does support earlier findings that aspects of self-construal can be primed and at least be partly affected by the features of social contexts (Brewer & Gardner, 1996; Gardner et al., 1999; Smith et al., 2013; Trafimow et al., 1991).

This raises the second and third questions about whether or not the two priming methods have equivalent effects to each other (H2) and across cultures (H3). With different priming methods in different countries, the sets of factors being cued varied. For British participants, SDFF primed one dimension, *self-expression vs. harmony*, and SWS primed two dimensions, *difference vs. similar to others* and *self-direction vs. reception to influence*, whereas for Chinese participants, SDFF primed all the seven dimensions, and SWS primed two dimensions, *difference vs. similar to others* and *self-direction vs. reception to influence*. The significant interaction effect among priming kind, priming method and self-construal provides evidence against H2—the two priming methods do not have equivalent effects across the seven self-construal dimensions in our study. In addition, we did not find a significant interaction effect

among priming kind, priming method, and country, but with the data split by priming method, we found that based on the interaction effects between priming condition and country, SDFF does not seem to show similar profiles cross-culturally and seem to have stronger effects on Chinese than British group, while SWS shows a similar profile, which partly supports H3.

It is worth mentioning that SDFF did not significantly prime the dimension of *difference vs. similar to others* in British group, as we would expect. Also, there is not enough evidence in previous research to support why the factors of *difference vs. similar to others* and *self-direction vs. reception to influence*, but not other factors, would be influenced by SWS. However, it does raise a concern about whether the main functions of self-construal primes only involve changes in self-construal, or also in other domains, such as values and beliefs, as Oyserman and Lee (2008) suggested. We cannot solve this question in this study, and more relevant research is needed.

Our results indicate that SDFF functioned quite differently in the UK and China. This could be one advantage of applying the seven-dimensional model of self-construal. In previous studies, researchers have found significant effects of primes in both cultures (Gardner et al., 1999; Oyserman & Lee, 2008), but they could not test the possibility that different factors would be cued by the manipulations in each country. This could help explain why incompatible findings towards various outcome variables (see Oyserman & Lee, 2008 for review) exist in the literature.

About the fourth question, lots of researchers believe that there are predominant cultural orientations towards independence and interdependence (Cross et al., 2011; Gardner et al., 1999; Oyserman & Lee, 2008). In other words, individuals are under chronically primed conditions of independence and interdependence at every moment because of the salience of specific cultural contexts or atmospheres.

As in the findings of Yang and Vignoles (2017), British participants showed more independence (vs. interdependence) in five dimensions, including *self-reliance vs. dependence on others*, *difference vs. similar to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*, and more interdependence (vs. independence) in two dimensions, including *self-containment vs. connectedness to others*, and *self-interest vs. commitment to others*; while Chinese participants showed more interdependence (vs. independence) in five dimensions, including *self-containment vs. connectedness to others*, *self-interest vs. commitment to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony* (the other two dimensions did not show significance). In this study, we found the similar patterns in the two cultural groups, except two dimensions, including *self-reliance vs. dependence on others* and *self-direction vs. reception to influence*, did not show significant independence (or interdependence) in British group. Thus, H4 is partially supported.

We hold the position that predominant cultural orientations may exist, but not in the form of monolithic emphases on independence or interdependence. As Vignoles et al. (2016) stated, different ways of being independent and interdependent are emphasized in different cultures. Even if a culture is predominantly independent or interdependent, the profiles of its self-construal can be quite complex and dynamic. A predominantly independent culture is possible to be more interdependent in certain aspects of self-construal than a predominantly interdependent culture (or vice versa). For instance, Vignoles et al. (2016) found that on the dimension of *self-interest vs. commitment to others*, cultures with independent backgrounds can be more interdependent than some typically considered interdependent cultures. In general, we

believe that the seven dimensions of self-construal do not necessarily go together across cultures.

In this study, British participants did not show clear patterns of predominant cultural orientations towards self-construal, but only showed arguably more independence (vs. interdependence) on some dimensions, and Chinese participants showed clearly more interdependence (vs. independence). Gardner et al. (1999) found that priming participants with the primes consistent or inconsistent with their predominant cultural orientations of independence or interdependence would cause different strengths of effects: The inconsistent primes would have stronger influences than consistent primes.

According to what we found, the possible influences of predominant cultural orientations are not affected by priming methods. Comparing independent and interdependent priming conditions with control condition, for British participants, three factors showed significant differences, but only one factor showed a non-linear trend, which is *self-direction vs. reception to influence*, primed by independence; whereas for Chinese participants, all the seven factors showed significant differences, but three factors indicated non-linear trends, containing *difference vs. similar to others*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*, also primed by independence. Since *self-direction vs. reception to influence* did not show more independence (or interdependence) in British group, we would suggest British group did not show a significant effect of predominant cultural orientation. As for Chinese group, setting aside the factor of *difference vs. similar to others*, which did not show more interdependence (or independence), the non-linear trends of the other two factors suggest that predominant cultural orientations towards independence and

interdependence showed an expected effect for Chinese participants. Thus, H5 is partially supported.

Referring to the reason why British group did not indicate expected patterns in H5, it could be that British participants did not show a clear predominant cultural orientation in the first place. This also provides more evidence for the interaction between self-construal primes and predominant cultural orientations in the literature. What is more, as discussed in the introduction, there are some inconsistent findings towards the interaction, which could be due to that the nature of predominant cultural orientations is more complex than we would expect. Based on the findings in current study, it is necessary to conduct more relevant research on this subject to support the strength of this pre-primed effects of cultural contexts.

3.6 Conclusion

We conducted this study to explore what self-construal primes actually manipulate, which has been assumed but not adequately tested in previous literature. After applying two commonly used priming manipulations (SDFF and SWS) to members of two cultural groups (the UK and China), we found the underlying mechanisms of the primes were more complicated than we expected.

The manipulations did not prime all seven dimensions of self-construal equally, instead, different aspects were emphasized by each priming method. In addition, the two methods did not seem to be equivalent in priming independence and interdependence in each country. Also, SDFF did not show a similar profile across the two cultures, and had stronger effects in China than the UK, while SWS showed a similar function in the two cultures. Finally, British participants did not seem to show a clear predominant cultural orientation of independence, but Chinese participants

showed an orientation of interdependence. The effects of predominant cultural orientations were only found in Chinese group.

Generally speaking, this study suggests that cross-cultural researchers should be careful in their choices of priming methods, and notice that different priming techniques could focus on different aspects of self-construal. More importantly, the manipulation check should be applied to detect what the primes are actually doing.

With the seven-dimensional model of self-construal, we attained more information about what was cued during the priming processes, but with only two cultural groups and only two priming methods in our study, we believe more relevant research is needed, and we hope this study can contribute to the cross-cultural research on self-construal primes.

Chapter 4 (Study 3): Testing an Eight-Dimensional Model of Self-Construal

Across 13 Countries

4.1 Abstract

Independent and interdependent self-construals have been core theoretical constructs in the field of cultural psychology for several decades; however, researchers have disagreed on how to measure independence and interdependence properly. With increasing evidence against the popular two-dimensional model of self-construal, research has focused on building a multi-dimensional scale. Vignoles and colleagues (2016) found seven distinguishable facets of self-construal, and the purpose of this paper is to replicate and further develop their theoretical model with an additional eighth dimension: decontextualized versus contextualized self. Based on an initial pool of 72 items, tested in 13 countries, we developed a 48-item scale with acceptable model fit. The internal consistency of the new scale is relatively good. The different world regions show different profiles of self-construal. The eighth dimension shows a distinctive profile of cross-cultural variations. We hope this could contribute to the field of self-construal, and help explain the cultural diversity.

4.2 Introduction

In the social psychological study of cross-cultural differences, one concept has been absolutely central, which is self-construal. The common definition of self-construal is how people define and make meaning of the self in relation to others (Cross, Hardin, & Gercek-Swing, 2011; Markus & Kitayama, 1991; Smith, Fischer, Vignoles, & Bond, 2013). Since Markus and Kitayama (1991) first described two basic ways of construing the self, which were independence and interdependence, numerous related studies have been conducted, trying to help explain cultural differences (Matsumoto, 1999).

Although a few studies revealed effects of independent and interdependent self-construals on explaining cultural diversities to some extent, some key hypotheses proposed by Markus and Kitayama (1991) did not get enough empirical support (Cross et al., 2011; Smith et al., 2013). For example, some cultural differences were inconsistent with their theory (Matsumoto, 1999; Owe, 2013); and the theoretical model of the mediation role of self-construal was seldom supported, and with very weak evidence for the expected cross-cultural patterns (Levine et al., 2003; Smith et al., 2013; Vignoles et al., 2016).

A possible explanation for the gaps between Markus and Kitayama's theory and the findings is there are flaws with the traditional measurements of self-construal (Levine et al., 2003; Vignoles et al., 2016). Among the three commonly used self-construal scales, the Twenty Statements Test (TST; Kuhn & McPartland, 1954), with individuals listing up to 20 things about themselves, has been more and more cautiously applied because of the methodological and response coding problems (Smith et al., 2013). The other two scales were developed by Singelis (1994) and Gudykunst et al. (1996), which were both based on two dimensional structured

measures of self-construal: independence and interdependence. Researchers found with either one of the above measures, there were divergent results which did not fit the expected hypotheses (Matsumoto, 1999; Oyserman et al., 2002).

As suggested by Noguchi (2007), to better understand those specific cultural variations, certain facets of independence and interdependence should be extracted. Nowadays, more and more researchers believe that the self-construals are multi-dimensional (Guo, Schwartz, & McCabe, 2008; Hardin et al., 2004; Levine et al., 2003; Smith et al., 2013). Hardin et al. (2004) identified six factors of independence and interdependence. However, some factors were not well defined and with different themes (Owe, 2013).

Recently, Vignoles and colleagues (2016) built a seven-dimensional model of self-construal that would differentiate among various ways of being independent or interdependent. In this model, independence and interdependence were not treated as two unitary and separate dimensions, but were deconstructed into the seven bipolar dimensions of individual and cultural variations, which are *self-reliance vs. dependence on others*, *self-containment vs. connectedness to others*, *difference vs. similar to others*, *self-interest vs. commitment to others*, *consistency vs. variability*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*. Each dimension represents one specific and prominent facet of self-construal in cross-cultural contexts, and the whole structure is indicating that different forms of independence and interdependence can be presented in various ways cross-culturally, influenced by mainstream values, economic conditions and religious traditions in those societies (Vignoles et al., 2016).

With this seven-dimensional model, Vignoles et al. (2016) found there were different profiles of self-construal in different world regions. For instance, across all

the samples, Western parts, for example, US and UK, emphasized more independence on *difference vs. similar to others*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*, and more interdependence on *self-interest vs. commitment to others*; East European parts, for example, Hungary and Romania, emphasized more interdependence on *self-interest vs. commitment to others*; Middle Eastern parts, for example, Turkey and Egypt, emphasized more independence on *self-reliance vs. dependence on others*, and more interdependence on *self-containment vs. connectedness to others* and *self-expression vs. harmony*; East Asian parts, for example, China and Thailand, emphasized more interdependence on *difference vs. similar to others*, *consistency vs. variability*, and *self-expression vs. harmony*; and Latin American parts, like Brazil and Colombia, emphasized more independence on *difference vs. similar to others*, *self-interest vs. commitment to others*, *consistency vs. variability*, and *self-expression vs. harmony*.

As for the other use of this model, Smith et al. (2016) applied four of the seven self-construal dimensions to explore how self-construal would influence the effects of self-efficacy and relationship harmony on predicting depression and life satisfaction, and found significant moderation effects of the four self-construal dimensions[23]. Besides that, Yang and Vignoles (Chapter 2, this thesis) explored the mediation effects of self-construal on cultural variations in Chinese and British cultural groups with the seven-dimensional model, and found explicit self-construal could significantly mediate different aspects of cognition, emotion and motivation, which were seldom tested and supported in previous literature (see Cross et al., 2011 for review). In addition, Yang and Vignoles (Chapter 3, this thesis) also investigated the

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[23] The four dimensions included *self-reliance vs. dependence on others*, *self-containment vs. connectedness to others*, *self-interest vs. commitment to others*, and *self-direction vs. reception to influence*.

underlying mechanism of self-construal primes with the seven-dimensional model, and found that different priming methods may not function equivalently, and different sets of self-construal dimensions would be cued during the priming process. These studies show the seven-dimensional model can be useful in mapping the profiles of self-construal among different areas of world, in further exploring the role of self-construal in explaining cultural variations, and in filling up the gaps in self-construal literature.

However, there are still some limitations towards this seven-dimensional model. The first one is the lack of an adequate cross-culturally validated scale for measuring the dimensions with observed scores at an individual level of analysis. In Vignoles and colleagues' study (2016), there were not enough items in their finally selected scale, especially for some factors, for instance, only two items for *self-containment vs. connectedness to others*, and *self-direction vs. reception to influence*. After that, there were some attempts to extend the measure and improve the scale (Yang and Vignoles, Chapter 2 and 3 in this thesis), but they only focused on two cultures, and a more systematic test is needed.

Also, there are some deficiencies towards the factor of *self-containment vs. connectedness to others*. It mainly focuses on emotional connectedness to close or important others, and does not capture another sense of connectedness, which is the idea of the individual as separate from or embedded within their social contexts. The latter has a long history in cross-cultural research (see Owe et al., 2013 for review). Based on this idea, Owe et al. (2013) built a scale for 'contextualism', referring to the belief in the importance of context in understanding people. We believe it is worth exploring the effect of contextualism in the cultural models of selfhood.

4.2.1 Present Study

In Vignoles and colleagues' (2016) study, they identified seven distinguishable factors of self-construal. As noted above, we were interested to see if *decontextualized self vs. contextualized self* (based on Owe and colleagues' (2013) 'contextualism' construct) would form a valuable eighth dimension. Thus, this study tested the eight-dimensional model of self-construal in a wide range of 13 countries, and aimed to provide a cross-culturally validated scale of self-construal. Also, this study can be seen as an extension of Vignoles's et al. (2016) study, and we linked the self-construal profiles of world regions we detected to their findings. We hope that at the individual level, the characteristics of self-construal can be well captured by this measure.

4.3 Method

4.3.1 Item pool

The item pool for our new measure was developed over several years through consultation with representatives of a diverse range of cultures. Over several months during Spring 2012, one British, one Swedish, one Colombian and two Chilean researchers reviewed the items from Vignoles et al. (2016) and Owe (2013), extensively discussed the meanings of the constructs and proposed some revisions to the existing items as well as many additional items. Subsequent to this discussion, the eighth dimension was conceptualized, and items were adapted from Owe et al. (2013) In November 2013, a set of 69 items was circulated to members of the Culture and Identity Research Network from various national and cultural origins. Over several months during Spring 2014, one British, two German, one Dutch, one Turkish, one Romanian, one Greek, and one Russian researcher worked further on the item pool, adding three new items, further adjusting wordings to maximize theoretical precision,

clarity and translatability, and further refining the item wordings through an exercise of translation and backtranslation into their respective languages. The resulting set of 72 items formed the item pool for the current study (see Table 4.1).

The initial version of the questionnaire was in English. After testing the translatability of all the items in some other languages, the items were translated into French, Romanian, Arabic, Thai, Chinese, Hungarian, and German. The bilinguals of English and the specific language did the translations, and the back-translations were performed (Brislin, 1970) to make sure the different versions were equivalent and comparable.

4.3.2 Participants

We recruited samples of adults in different ways, and attained valid data of 2557 participants[24] from 13 countries[25]. Table 4.2 shows the demographic details, and the information about the recruitment procedure. Across all the samples, there were 848 men, 1631 women, and 78 unidentified; and the mean age is 30.4 years old, ranging from 18 to 86.

4.3.3 Measures

4.3.3.1 Self-construal Scale

We assume there are 8 dimensions:

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[24] The sample size of 50 is usually considered as the reasonable minimum in a factor analysis (Arrindell & van der Ende, 1985; Winter, Dodou, & Wieringa, 2009). Thus, during the data collection, we made sure the samples in each cultural group were more than 50.

[25] As shown in Table 4.2, the data of the first five countries are representative samples, and the rest are convenience samples. Chinese data are the same set from Study 1.

1) Contrasting a preference for *self-reliance* (e.g., 'You prefer to rely completely on yourself rather than depend on others') with a preference for *dependence on others* (e.g., 'You prefer to ask other people for help rather than rely only on yourself');

2) Contrasting a feeling of *self-containment* (e.g., 'Your happiness is independent from the happiness of your family') with a feeling of *connection to others* (e.g., 'If a close friend or family member is happy, you feel the happiness as if it were your own');

3) Contrasting a desire for *difference* (e.g., 'You like being different from other people') with a desire for being *similar to others* (e.g., 'You like being similar to other people');

4) Contrasting a priority of *self-interest* (e.g., 'You protect your own interests, even if it might sometimes disrupt your family relationships') with a priority of *commitment to others* (e.g., 'You value good relations with the people close to you more than your personal achievements');

5) Contrasting a sense of *consistency* (e.g., 'You behave in a similar way at home and in public') with a sense of *variability* (e.g., 'You act very differently at home compared to how you act in public');

6) Contrasting a tendency of *self-direction* (e.g., 'You prefer to do what you want without letting your family influence you') with a tendency of *reception to influence* (e.g., 'You prefer to follow your family's advice on important matters');

7) Contrasting a preference for *self-expression* (e.g., 'You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict') with a preference for maintaining *harmony* (e.g., 'You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings');

8) Contrasting the *de-contextualized self* (e.g., 'Someone could understand who you are without needing to know anything about your family') and *contextualized self* (e.g., 'If someone wants to understand who you are, they would need to know something about your family').

There are 72 items in the item pool to capture the key points of the theoretical eight dimensions (as listed in Appendix 3). To avoid the effects of acquiescent responding and to better indicate the bipolar sides of independence and interdependence for each factor, a mixture of positive and reversed worded items was developed, and their numbers were similar. All the items were presented in a scrambled order.

Following Vignoles's et al. (2016) study, we applied a 9-point response scale, ranging from 1= *does not describe me at all* to 5 = *describes me exactly* (with 0.5 as the intervals), and set the guide language as '*Below are some statements that someone might use to try to describe you. Probably some of the statements will not describe you well, whereas others will describe you better. Please circle a number beside each statement to show how well it describes you. For example, if the statement doesn't describe you at all, then circle 1. If the statement describes you very well, then circle 4. If you are undecided between two possible answers, you can circle the number in between (1½, 2½, 3½, 4½)*'.

4.4 Results

4.4.1 Refining the Scale of 8-dimensional Self-construal

Firstly, we conducted a Confirmatory Factor Analysis (CFA) with the 72-item version of self-construal model in Mplus 7 (Muthén & Muthén, 2010), with an extra method factor, the modelling acquiescence, loading to each indicator with a fixed

value of 1, to control the effect of acquiescent responding (Vignoles et al., 2016, Welkenhuysen-Gybels, Billiet, & Cambré, 2003). We applied maximum likelihood estimation with robust standard errors as the estimator, and cultural groups were clustered to test the measurement model at the individual level. In our model, all the intercepts were fixed. For our initial model, values of the Root Mean Square Error of Approximation (RMSEA) and Standard Root Mean Squared Residual (SRMR) were acceptable, but the Comparative Fit Index (CFI) was not (Hu & Bentler, 1999; Kline, 2005): $\chi^2 = 11652.637$, $df = 2519$, $p < .001$, RMSEA = .038 (90% CI [.037, .038]) (< .06), SRMR = .063 (< .08), CFI = .799 (> .90). As shown in Table 4.1, all the items loaded on their target factors in the expected direction, except for one item in *self-containment vs. connectedness to others* (we set the items with independent direction as positive, and with interdependent direction as negative). Also, most standardized loadings were statistically significant, except three items in *self-containment vs. connectedness to others*. However, the loadings of some indicators were small than .30.

Since the fit indices suggested that improvements were required to the model, we conducted some item selection processes. Firstly, we eliminated the items with non-significant or low (< .30) standardized loadings. Then, we referred to the modification indices, and removed the items with substantial cross-loadings (M.I. < 100) to the non-target factors. After that, we tried to keep each factor balanced (with the same number of independent and interdependent items), and evaluated the semantic meanings of the remaining items again to make sure that we were not artificially narrowing the meanings of each factor with our item selection procedures. Finally, we attained a 48-item scale, with 6 items for each factor, as seen in Table 4.1. The model fit was acceptable: $\chi^2 = 3505.362$, $df = 1085$, $p < .001$, RMSEA = .030 (90% CI

[.028, .031]) (< .06), SRMR = .039 (< .08), CFI = .907 (> .90) (Hu & Bentler, 1999;

Kline, 2005). All the items loaded on their target factors significantly (at $p < .001$)

and substantially (all standardized loadings > .30). Seven of the eight factors were

defined by a balanced set of 3 independent and 3 interdependent items; however, the

factor of *self-containment vs. connectedness to others* was defined by four

interdependent and two independent items.

Table 4. 1 *Standardized Item Loadings for 72-item and 48-item Versions of Self-Construal Scales*

Item	72-item Scale	48-item Scale
Self-reliance vs. Dependence on others		
SC42 Being able to depend on others is very important to you.	-.450	-.427
SC22 In difficult situations, you tend to seek help from others rather than relying only on yourself.	-.613	-.603
SC4 You feel comfortable to depend on the people close to you.	-.322	-
SC59 You prefer to ask other people for help rather than rely only on yourself.	-.705	-.702
SC50 You prefer to rely completely on yourself rather than depend on others.	.675	.686
SC30 You feel uncomfortable in situations where you are dependent on others.	.333	-
SC68 You try to avoid being reliant on others.	.564	.568
SC13 You tend to rely on yourself rather than seeking help from others.	.638	.657
Self-containment vs. Connectedness to others		
SC66 You would feel personally shamed if a close friend or family member did something shameful.	-.231	-
SC16 You feel that your actions can influence the reputation of your family.	-.137*	-
SC56 If a close friend or family member is happy, you feel the happiness as if it were your own.	-.671	-.725
SC40 If a close friend or family member is sad, you feel the sadness as if it were your own.	-.610	-.617
SC2 If someone in your family achieves something, you feel proud as if you had achieved something yourself.	-.568	-.582
SC28 If someone insults a member of your family, you feel as if you have been insulted personally.	-.557	-.510
SC62 Your view of yourself does not depend on your family's reputation.	.076	-

SC20 You would not feel personally insulted if someone insulted a member of your family.	.360	.306
SC48 If a close friend or family member had an important success or failure, your view of yourself would remain the same.	-.073	-
SC36 Your personal view of yourself does not depend on your family or friends.	.112	-
SC10 Your happiness is independent from the happiness of your family.	.396	.363
Difference vs. Similar to others		
SC47 You would rather be the same as others than be different.	-.663	-.669
SC65 You try to avoid being seen as different from others.	-.478	-
SC35 You see yourself as similar to others.	-.526	-.513
SC1 You like being similar to other people.	-.536	-.556
SC19 Being different from others makes you feel uncomfortable.	-.505	-
SC27 You like being different from other people.	.687	.645
SC39 You see yourself as unique and different from others.	.581	.512
SC9 You see yourself as different from most people.	.532	-
SC55 You try to avoid being the same as others.	.430	.466
Self-interest vs. Commitment to others		
SC70 You would sacrifice your personal interests for the benefit of your family.	-.595	-.583
SC38 You value good relations with the people close to you more than your personal achievements.	-.463	-.444
SC24 You look after the people close to you, even if it means putting your personal needs to one side.	-.574	-
SC52 You usually give priority to others, before yourself.	-.525	-.486

SC6 You often compromise your most important goals to meet the interests of your family.	-.416	-
SC32 Your own success is very important to you, even if it disrupts your friendships.	.449	.438
SC44 You protect your own interests, even if it might sometimes disrupt your family relationships.	.523	.556
SC15 You usually give priority to your personal goals, before thinking about the goals of others.	.487	.454
SC61 You value personal achievements more than good relations with the people close to you.	.489	-
Consistency vs. Variability		
SC71 You see yourself differently when you are with different people.	-.647	-.636
SC17 You see yourself differently in different social environments.	-.466	-
SC33 You act very differently at home compared to how you act in public.	-.627	-.603
SC53 You behave differently when you are with different people.	-.693	-.723
SC25 You behave in a similar way at home and in public.	.666	.639
SC45 You behave in the same way even when you are with different people.	.739	.747
SC63 You always see yourself in the same way even when you are with different people.	.642	-
SC7 You see yourself the same way even in different social environments.	.533	.512
Self-direction vs. Reception to influence		
SC11 You usually ask your family for approval before making a decision.	-.526	-.436
SC49 You usually do what people expect of you, rather than decide for yourself what to do.	-.575	-.600
SC67 You prefer to follow your family's advice on important matters.	-.513	-
SC29 You usually follow others' advice when making important choices.	-.503	-.471

SC3 You always make your own decisions about important matters, even if others might not approve of what you decide.	.553	.573
SC57 You usually decide on your own actions, rather than follow others' expectations.	.645	.701
SC41 You decide for yourself what goals to pursue even if they are very different from what your family would expect.	.624	.620
SC21 You prefer to do what you want without letting your family influence you.	.466	-
Self-expression vs. Harmony		
SC60 You try not to express disagreement with members of your family.	-.415	-.440
SC43 You try not to disturb the harmony among the people around you.	-.226	-
SC14 You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings.	-.463	-.526
SC31 You try to adapt to people around you, even if it means hiding your feelings.	-.451	-.503
SC69 You like to discuss your own ideas, even if it might sometimes upset the people around you.	.575	.485
SC37 You prefer to say what you are thinking, even if it is inappropriate for the situation.	.594	-
SC51 You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict.	.716	.602
SC23 You think it is good to express openly when you disagree with others.	.548	-
SC5 You show your true feelings even if it disturbs the harmony in your family relationships.	.468	.500
Decontextualized self vs. Contextualized self		
SC64 If someone wants to understand who you are, they would need to know something about your family.	-.551	-
SC18 If someone wants to understand who you are, they would need to know about the place where you live.	-.580	-.564
SC8 If someone wants to understand who you are, they would need to know about your social standing.	-.550	-

SC34 If someone wants to understand who you are, they would need to know which social groups you belong to.	-.635	-.682
SC54 If someone wants to understand who you are, they would need to know about your place of origin.	-.644	-.625
SC26 *Someone could understand who you are without needing to know about your place of origin.*	.607	.654
SC12 *Someone could understand who you are without needing to know about your social standing.*	.511	.504
SC58 *Someone could understand who you are without needing to know which social groups you belong to.*	.611	.575
SC72 *Someone could understand who you are without needing to know about the place where you live.*	.550	-
SC46 *Someone could understand who you are without needing to know anything about your family.*	.516	-

Note. All standardized loadings shown here are statistically significant at *p* < .001, except the figure marked with *, indicating *p* < .05, and the figures with *italic*, indicating *p* > .05. The items with *italic* are towards the direction of independence.

Table 4. 2 *Demographic Details for Each Cultural Sample*

Country	*N*	Mean age	*SD*	% Women	Administration	Language	Recruitment Procedure
U.S.	194	42.35	12.35	49	Online	English	Participants based on a national survey. Recruited online.
U.K.	198	41.46	12.41	53	Online	English	Participants based on a national survey. Recruited online.
Mexico	194	37.02	11.53	57	Online	Spanish	Participants based on a national survey. Recruited online.
Argentina	195	37.43	12.09	46	Online	Spanish	Participants based on a national survey. Recruited online.
Spain	201	40.53	11.20	53	Online	Spanish	Participants based on a national survey. Recruited online.
Australia	207	23.17	7.85	85	Online	English	Mainly students from a local university. Recruited by university teachers and students.
France	65	31.45	13.54	77	Online	French	Mainly students from a local university. Recruited by university teachers and students.
Romania	330	22.14	4.40	71	Online	Romanian	Mainly students from a local university. Recruited by university teachers and students.
Saudi Arabia	226	31.20	9.48	75	Paper and pencil	Arabic	Mainly students from a local university. Recruited by university teachers and students.

Thailand	171	20.32	1.38	75	Online	Thai	Mainly students from a local university.
							Recruited by university teachers and students.
China	108	23.32	2.18	57	Paper and pencil	Chinese	Mainly students from a local university.
							Recruited by university teachers and students.
Hungary	229	24.21	5.69	76	Online	Hungarian	Mainly students from a local university.
							Recruited by university teachers and students.
Germany	239	23.47	4.62	76	Online	German	Mainly students from a local university.
							Recruited by university teachers and students.

Table 4. 3 *Descriptive of Eight Dimensions of Self-construal for Each Country*

Country	Factor 1		Factor 2		Factor 3		Factor 4		Factor 5		Factor 6		Factor 7		Factor 8	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Representative samples:																
US	1.08	1.40	-.75	1.19	.81	1.34	-.61	1.11	.84	1.50	.96	1.26	.22	1.21	.90	1.35
UK	1.10	1.44	-.87	1.31	.51	1.46	-.73	1.29	.64	1.64	.91	1.26	.01	1.27	.99	1.49
Mexico	1.38	1.35	-1.23	1.21	1.40	1.33	-.08	1.33	1.21	1.72	1.32	1.35	.53	1.25	1.33	1.35
Argentina	1.24	1.34	-1.51	1.35	.98	1.38	-.69	1.27	.90	1.63	.89	1.32	.45	1.35	1.16	1.38
Spain	.91	1.29	-1.39	1.25	.60	1.30	-.55	1.13	.64	1.50	.63	1.09	.31	1.04	.74	1.14
Student samples:																
Australia	.73	1.47	-1.06	1.18	.68	1.31	-.54	1.06	.58	1.72	.71	1.30	.25	1.23	1.10	1.38
France	1.64	1.56	-1.24	1.76	1.29	1.43	-.35	1.59	.12	1.99	1.41	1.48	.70	1.44	1.36	1.78
Romania	1.15	1.40	-1.39	1.34	1.47	1.48	-.32	1.22	.64	1.55	.96	1.30	.64	1.45	1.53	1.50
Saudi	1.52	1.60	-2.15	1.34	1.22	1.39	.14	1.45	.19	1.65	.58	1.41	-.09	1.19	1.47	1.49
Thailand	1.01	1.36	-1.63	1.25	.76	1.26	-.41	1.02	.16	1.33	.50	1.18	-.43	1.06	.76	1.44
China	-.07	1.21	-2.36	.82	-.08	1.00	-1.52	1.14	-.85	1.38	-.64	1.17	-1.40	1.15	1.02	1.20
Hungary	.81	1.41	-1.31	1.32	1.06	1.28	-.66	1.24	-.40	1.65	1.13	1.27	.49	1.51	.80	1.77
Germany	.57	1.47	-.98	1.43	.82	1.27	-.60	1.24	.18	1.74	.99	1.36	.54	1.46	.98	1.50

Note: The mean scores in the table are ipsatized scores from the original scores to remove the effect of acquiescent response styles. All the scores are towards the direction of independence. Factor 1 represents Self-reliance vs. Dependence on others; Factor 2 represents Self-containment vs. Connectedness to others; Factor 3 represents Difference vs. Similar to others; Factor 4 represents Self-interest vs. Commitment

to others; Factor 5 represents Consistency vs. Variability; Factor 6 represents Self-direction vs. Reception to influence; Factor 7 represents Self-expression vs. Harmony; and Factor 8 represents Decontextualized self vs. Contextualized self.

Table 4. 4 *Reliability (Cronbach's α) of 48-item scale of Self-construal for Each Country*

Country	Self-reliance vs. Dependence on others	Self-containment vs. Connectedness to others	Difference vs. Similar to others	Self-interest vs. Commitment to others	Consistency vs. Variability	Self-direction vs. Reception to influence	Self-expression vs. Harmony	Decontextualized self vs. Contextualized self
U.S.	.843	.687	.808	.701	.856	.833	.753	.791
U.K.	.856	.759	.848	.802	.879	.808	.774	.845
Mexico	.723	.585	.637	.710	.847	.776	.632	.742
Argentina	.779	.746	.728	.725	.836	.780	.734	.777
Spain	.848	.777	.811	.762	.879	.761	.698	.771
Australia	.842	.656	.824	.690	.884	.778	.719	.786
France	.787	.777	.813	.753	.888	.869	.744	.854
Romania	.800	.663	.821	.700	.830	.754	.770	.782
Saudi Arabia	.741	.642	.749	.632	.664	.673	.497	.722
Thailand	.848	.762	.798	.712	.785	.763	.638	.815
China	.784	.631	.722	.831	.847	.793	.778	.800

Hungary	.840	.787	.777	.751	.864	.800	.838	.876
Germany	.814	.752	.753	.695	.877	.818	.765	.812

Note. All Cronbach's αs were computed with ipsatized scores of each item.

Table 4. 5 *Estimated Means and Significance of Contrasts between Western and East Asian Regions across Samples (Data of Australia, France, Germany, Thailand and China), between Western and Middle Eastern Regions across Samples (Data of Australia, France, Germany, and Saudi Arabia), and between Western and East European Regions across Samples (Data of Australia, France, Germany, Romania, and Hungary) for the Eight Self-Construal Dimensions*

Dimension	Western		East Asian		Middle Eastern		East European		C1	C2	C3
	M	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*	*B*	*B*	*B*
Self-reliance vs. Dependence on others	.76	.07	.58	.08	1.63	.10	1.03	.06	-.17***	-.16***	.09***
Self-containment vs. Connectedness to others	-1.08	.06	-1.88	.07	-2.37	.09	-1.36	.06	-.19***	.28***	.12***
Difference vs. Similar to others	.81	.06	.44	.07	.88	.10	1.29	.06	-.22***	-.02	.21***
Self-interest vs. Commitment to others	-.58	.05	-.83	.07	-.37	.10	-.46	.05	-.16***	-.12***	.09***

									C1	C2	C3
Consistency vs. Variability	.35	.08	-.24	.09	.47	.10	.23	.07	-.15***	-.03	.07**
Self-direction vs. Reception to influence	.91	.06	.07	.08	.44	.09	1.05	.06	-.27***	.16***	.25***
Self-expression vs. Harmony	.43	.06	-.79	.07	-.31	.08	.58	.06	-.37***	.15***	.32***
Decontextualized self vs. Contextualized self	1.09	.07	.85	.08	1.44	.10	1.23	.07	-.08*	-.06	.06*

Note. The mean scores in the table are ipsatized scores. All the scores are towards the direction of independence. 'Western' represents samples of Australia, France and Germany; 'East Asian' represents samples of Thailand and China; 'Middle Eastern' represents samples of Saudi Arabia; and 'East European' represents samples of Romania and Hungary. 'C1' represents contrast between Western and East Asian regions; 'C2' represents contrast between Western and Middle Eastern regions; and 'C3' represents contrast between Western and East European regions. * represents statistically significance at $p < .05$; ** represents statistically significance at $p < .01$; *** represents statistically significance at $p < .001$.

Table 4. 6 *Estimated Means and Significance of Contrast between Western and Latin American Regions across Samples (Data of US, UK, Spain, Mexico and Argentina) for the Eight Self-Construal Dimensions*

Dimension	Western		Latin American		C4
	M	*SE*	*M*	*SE*	*B*
Self-reliance vs. Dependence on others	1.03	.06	1.31	.07	.08***
Self-containment vs. Connectedness to others	-1.01	.05	-1.37	.07	-.09***
Difference vs. Similar to others	.64	.06	1.19	.07	.11***
Self-interest vs. Commitment to others	-.63	.05	-.39	.07	.03
Consistency vs. Variability	.70	.06	1.05	.09	.10***
Self-direction vs. Reception to influence	.83	.05	1.10	.07	.07***
Self-expression vs. Harmony	.18	.05	.49	.07	.06***

Decontextualized self vs. Contextualized self	.88	.05	1.24	.07	.09***

Note. The mean scores in the table are ipsatized scores. All the scores are towards the direction of independence. 'Western' represents samples of US, UK and Spain; and 'Latin American' represents samples of Mexico and Argentina. 'C4' represents contrast between Western and Latin American regions. *** represents statistically significance at $p < .001$.

4.4.2 Testing the Reliability of the New Self-Construal Scale

During the computation of the scores for each dimension of self-construal, to remove the effect of acquiescent response styles in various cultures, we used ipsatized scores instead of the original ones, with which we attained the average scores of 72 items for each participant firstly, then made the average score be subtracted from all the items towards independent direction and subtract all the items towards interdependent direction. In this way, all the items were towards independent direction, and a higher score suggested a relatively tendency of independence. Table 4.3 shows the ipsatized scores of eight dimensions in each country. Table 4.4 shows the reliability of 48-item scale of self-construal in each country. As we can see, most figures are more than .60[26] (86.5% were more than .70), except the figures for the factor of *self-containment vs. connectedness to others* in Mexico (α = .59) and of *self-expression vs. harmony* in Saudi Arabia (α = .50).

4.4.3 Self-construal Profiles in Different World Regions

To further explore how self-construal performed in various cultures, we compared the eight dimensions of self-construal in different regions of the world. Due to the difference in recruitment procedure, the participants in 8 (Australia, France, Romania, Saudi Arabia, Thailand, China, Hungary and Germany) of the all 13 countries were mainly university students, while the participants in the other 5 countries (US, UK, Mexico, Argentina and Spain) were representative. In this case, we separated these two parts of the data and conducted the analyses of comparison

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[26] Though Cronbach's α of .70 is usually the cut off, Hair et al. (2006) proposed that .60 could be enough, especially in exploratory studies. Also, Aron and Aron (1999) proposed that in psychological research, Cronbach's α of .70 is preferable, but Cronbach's α of .60 could be adequate.

respectively. Since both sets of data included Western samples (Australia, France, and Germany; US, UK, and Spain), we used the self-construal profile of Western regions as the baseline, and compared it to the other regions.

Regarding the 8 countries with student samples, we created planned contrasts in order to compare the eight dimensions of self-construal between Western (Australia, France and Germany) and East Asian (Thailand and China) regions, between Western and Middle Eastern (Saudi Arabia) regions, and between Western and East European (Romania and Hungary) regions. The ipsatized scores of eight dimensions of self-construal were put into a MANCOVA with gender, age[27] and the planned contrast variables as the covariates.

The results indicate significant multivariate effects of Western vs. East Asian contrast, $F(8,1483) = 31.94$, $p < .001$, $\eta_p^2 = .15$; Western vs. Middle Eastern contrast, $F(8,1483) = 34.34$, $p < .001$, $\eta_p^2 = .16$; Western vs. East European contrast, $F(8,1483) = 30.93$, $p < .001$, $\eta_p^2 = .14$; gender, $F(8,1483) = 9.04$, $p < .001$, $\eta_p^2 = .05$; and age, $F(8,1483) = 10.55$, $p < .001$, $\eta_p^2 = .05$. The estimated means and the difference of significance of each factor for these contrasts are shown in Table 4.5.

The contrast between Western and East Asian regions indicated significant differences in eight dimensions, and Western regions showed more independence (vs. interdependence) than East Asian regions in all the eight dimensions. The contrast between Western and Middle Eastern regions indicated significant differences in five dimensions, except *difference vs. similar to others*, *consistency vs. variability*, and *decontextualized self vs. contextualized self*; and Middle Eastern region showed more independence (vs. interdependence) than Western regions in two dimensions,

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[27] In this study, gender and age were not our research of interest. Considering the uneven number of male and female participants and the samples from different age groups, we included gender and age as the covariates.

including *self-reliance vs. dependence on others* and *self-interest vs. commitment to others*, and less independence (vs. interdependence) than Western regions in three dimensions, including *self-containment vs. connectedness to others*, *self-direction vs. reception to influence*, and *self-expression vs. harmony*. The contrast between Western and East European regions showed significant differences in all the eight dimensions, and East European regions showed more independence (vs. interdependence) than Western regions in six dimensions, including *self-reliance vs. dependence on others*, *difference vs. similar to others*, *self-interest vs. commitment to others*, *self-direction vs. reception to influence*, *self-expression vs. harmony*; and *decontextualized self vs. contextualized self*, and less independence (vs. interdependence) than Western regions in two dimensions, including *self-containment vs. connectedness to others* and *consistency vs. variability*.

As for the 5 countries with a wider distribution, we compared the eight dimensions of self-construal between Western (US, UK and Spain) and Latin American (Mexico and Argentina) regions. The ipsatized scores of eight dimensions of self-construal were put into a MANCOVA with gender, age and the planned contrast variables as the covariates. The results show significant multivariate effects of Western vs. Latin American contrast, $F(8,951) = 12.88$, $p < .001$, $\eta_p^2 = .10$; gender, $F(8,951) = 6.17$, $p < .001$, $\eta_p^2 = .05$; and age, $F(8,951) = 20.07$, $p < .001$, $\eta_p^2 = .14$. The estimated means and the significance of difference of each dimension for the contrast are in Table 4.6. The contrast between Western and Latin American regions showed significant differences in all the eight dimensions, and Latin American regions showed less independence (vs. interdependence) than Western regions in one dimension, *self-containment vs. connectedness to others*, and more

independence (vs. interdependence) than Western regions in the other seven

dimensions.

4.5 Discussions

Based on Vignoles et al. (2016) theoretical model of self-construal, we tried to

further improve the measurement scale of independence and interdependence. As seen

in above, most of the chosen 72 items loaded to the 8 dimensions as we expected.

After the item selection process, all the 48 items loaded to the target factors properly,

and did not cross-load to other non-target factors too much.

With the data from 13 countries, the reliability of the 48-item scale showed some

relatively good internal consistency, with only two figures less than .60. Setting aside

the reliability of *self-containment vs. connectedness to others* in Mexico (.59, which is

close to .60), the reliability of *self-interest vs. commitment to others* in Saudi Arabia

(.50) suggested that instead of a desire for harmony, there could be other reasons not

to express oneself freely in some cultures. This also suggests one limitation on the

cross-cultural validity of *self-expression vs. harmony*.

Also, we clustered certain countries into 5 regions, which were western (US, UK,

Spain, Australia, France, and Germany), East Asian (Thailand and China), Middle

Eastern (Saudi Arabia), East European (Romania and Hungary), and Latin American

(Mexico and Argentina). By comparisons of the eight dimensions of self-construal

among these regions, we intended to link our findings to Vignoles's et al. (2016)

study.

Vignoles et al. (2016) found that compared to Western regions, East Asian

regions would show less independence (vs. interdependence) in *difference vs. similar*

to others and *self-expression vs. harmony*; Middle Eastern regions would show more

independence (vs. interdependence) in *self-reliance vs. dependence on others*, and less independence (vs. interdependence) in *self-containment vs. connectedness to others* and *self-expression vs. harmony*; East European regions would show less independence (vs. interdependence) in *self-direction vs. reception to influence*; and Latin American regions would show more independence (vs. interdependence) in *self-interest vs. commitment to others* and *consistency vs. variability*. Except *self-direction vs. reception to influence* in East European regions show a different pattern between the two studies, the patterns of self-construal in other regions (compared to Western regions) found by Vignoles et al. (2016) were also detected by this study. In addition, we found more differences of self-construal dimensions among these regions. Considering the applied self-construal scales and the involved countries in each region were different in these two studies, we did not expect the patterns found would be exactly the same, and we hope this study can be seen as an extension of Vignoles's et al. (2016) research. In general, with this eight-dimensional model, we found the different world regions showed different profiles of self-construal.

As noted above, another purpose of this study is to test the eighth dimension, *decontextualized self vs. contextualized self*. To some extent, we added this dimension as a complement for *self-containment vs. connectedness to others*. It turns out that this factor can be useful in differentiating the importance of contextualism in different regions. For this factor, compared to Western regions, East Asian regions showed less independence (vs. interdependence), and Middle Eastern, East European, and Latin American regions all showed more independence (vs. interdependence); whereas for the factor of *self-containment vs. connectedness to others*, compared to Western regions, except East Asian regions showed less independence (vs. interdependence) as the same pattern, the other three regions showed less independence (vs.

interdependence) as the different pattern. It shows the differences between *self-containment vs. connectedness to others* and *decontextualized self vs. contextualized self* in depicting individuals' connectedness to close others and social contexts, especially in certain world regions. Also, it indicates the value of adding the eighth factor into the multi-dimensional self-construal model.

However, there are still improvements to be made in the future. During the item selection process, we found there were not enough items towards the independent direction for the factor of *self-containment vs. connectedness to others* to make it balanced, and the chosen two items with the independent direction did not load as much as the other four with interdependent direction to the factor. Also, it is worth mentioning we only tested the effectiveness of the new scales at the individual level because of the limited number of involved countries. We hope there will be more data in future to test how the scale performs on cultural level of analysis.

4.6 Conclusion

This study aimed to improve the theoretical model of self-construal built by Vignoles et al. (2016), and to develop a reliable scale to measure independence and interdependence in cross-cultural contexts. The finalized 48-item version of the self-construal scale fit the data from 13 countries well, and showed good internal consistency. The new eighth dimension also showed values to be added into the model. We hope this scale can help understand different ways of being independent and interdependent in various cultures and contribute to explaining cultural variations.

Chapter 5: General Discussion

5.1 Key Findings

This thesis includes three studies. In Study 1, I applied the seven-dimensional model of self-construal and seven tasks involving different aspects of cognition, emotion and motivation in Chinese and British cultural groups, in order to test the theoretical mediation model of explicit self-construal on cultural differences in cognition, emotion and motivation. In Study 2, I applied the seven-dimensional model of self-construal and two priming manipulations of self-construal in Chinese and British cultural groups, to explore the underlying mechanisms of the related priming processes. In Study 3, I applied the seven-dimensional model of self-construal, with an extra eighth dimension about contextualism, in 13 countries, aiming to refine the measurement of this model, and to provide a useful measure of self-construal in various cultures.

As for Study 1, the results show that Chinese participants were on average more interdependent (vs. independent) than British participants in six dimensions of explicit self-construal. Moreover, explicit self-construals significantly mediated cultural differences in cognition (social closeness to ingroup vs. outgroup targets), emotion (engaging vs. disengaging emotions), and motivation (achievement motivation and face motivation). Different combinations of self-construal domains mediated these variables, showing the value of distinguishing different ways of being independent and interdependent. With this study, I test the seven-dimensional model of self-construal, and initially improve its scale. I find this model can help fill the missing evidence of mediation effects of self-construal in the literature.

Regarding Study 2, the results indicate that both Similarities vs. Differences with Family and Friends task (SDFF) and Sumerian Warrior Story (SWS) would lead to

significant differences in certain aspects of self-construal, but the seven dimensions were not equally cued. Also, SDFF and SWS were not equivalent in priming independence and interdependence. In addition, the effect of SWS showed a similar profile across the two cultures, while SDFF did not function universally in the two cultures, and showed a stronger effect on Chinese than British groups. Moreover, Chinese participants showed the clear predominant orientation towards interdependence, and the primes inconsistent with predominant orientations would have stronger influences than consistent primes in Chinese group, regardless of priming methods, whereas British participants did not show a clear predominant cultural orientation towards independence (or interdependence), and the effects of predominant cultural orientation did not show in British group. Through these findings, I further test the seven-dimensional model, and provide one possible explanation for the confusing results across studies of self-construal primes.

In general, the first two studies could both help fill in the literature gap of the mediation effects of self-construal. The first study was inspired by Kitayama's et al. (2009) research, and was designed to test the hypothesis that explicit self-construal could mediate the cultural differences in different aspects of cognition, emotion and motivation. While for the second study, priming process itself can be seen as a way of testing mediation model of the psychological constructs by manipulating the mediators, as suggested by Spence, Zanna and Fong (2005). In this case, we explored what specific domains of self-construal would be cued during the primes, which could help researchers use these priming methods to investigate the mediation effects of self-construal.

If the first two studies were to test the necessity of deconstructing independence and interdependence into a multi-dimensional model of self-construal, the third study

was to refine and provide a useful scale of this model. In Study 3, I conducted Confirmatory Factor Analysis, and checked the relevant fit indices, followed by a series of item selection processes, including the considerations of item loadings, cross-loadings, and semantic meanings of items. Finally, it ends up with a 48-item scale, with 6 items for each factor. The internal consistency of the new scale is relatively good. With this eight-dimensional model, different world regions show different profiles of self-construal. Also, the new eighth dimension shows the value of adding contextualism into the model. With this study, I provide a reliable measure of self-construal in various cultures.

5.2 Limitations and Future Directions

Admittedly, there are some limitations in this thesis. With regard to the first study, although we found some evidence to support the mediation effects of self-construal on certain aspects of cognition, emotion and motivation, we cannot well explain or predict which self-construal dimensions would mediate which outcome variables. Also, the target variables we chose can all be seen as implicit tendencies of independence and interdependence, which may easily connect to the explicit self-construal in the first place. It is worth testing in the future how self-construal would account for more general outcome variables, like subjective wellbeing, and social anxiety. Thus, more relevant research in this area is needed.

For the second study, one limitation is the sample size. Since all the three studies involved model improvement, a critical consideration when I determined sample sizes was to make sure the sample is enough for model testing. As suggested by some researchers (Arrindell & van der Ende, 1985; Winter, Dodou, & Wieringa, 2009), the sample size of 50 is usually considered as the reasonable minimum in a factor

analysis. Considering there were five groups in each country, we believed that 50 participants in each group would be appropriate in Study 2. However, it turned out that we had to drop all the data from psychological students for most analyses, which left us with around 20 participants in each group. Although it did not influence the scale testing, which we can still use data from psychological students in the control condition, we could not run proper mediation tests. Also, it influences the statistical power of our conclusions.

In addition, we only applied two priming methods in this study. In the future, more priming manipulations should be investigated. Based on the results, the underlying mechanisms of self-construal primes are much more complicated than being expected, and different methods seem to manipulate different domains of self-construal, which raises the necessity to check what are being primed during the process, especially when applied to various cultures. What is more, with more understanding of the priming manipulations, new primes should be created to target specific self-construal dimensions, instead of cueing the vague private or collective selves.

Regarding the first two studies, there are some results which did not show exact same pattern. In the first study, we found Chinese and British participants were significantly different in six dimensions, whereas in the second study, only five dimensions (without *self-reliance vs. dependence on others*) differed significantly. Also, in the first study, British participants showed more independence in five dimensions, and more interdependence in two dimensions, while in the second study, British participants only showed more independence in the same three out of five dimensions (without *self-reliance vs. dependence on others* and *self-direction vs. reception to influence*) and more interdependence in the same two dimensions

(Chinese participants showed the same patterns in the two studies). These inconsistencies could be due to the facts that we did not apply the exact same self-construal scale in the two studies, and the sample size in the second study is not as many as the first one. Although the significance of difference is not exactly the same, the patterns of directions towards independence and interdependence of each factor in each culture are the same in these two studies. This suggests that when applying the multi-dimensional model to test the cultural differences in self-construal, the trends of each factor towards independence and interdependence (which are same in the two studies) could be more accurate than the specific comparisons between or within cultures.

As for the third study, one obvious limitation is there were still not enough cultural groups. Only Saudi Arabia was in the Middle Eastern region, and we did not obtain any data from African regions, which should be a focus in future research. Also, because of the limited number of cultural groups, we could not conduct a culture-level analysis. Vignoles et al. (2016) already tested the seven-dimensional model at the cultural level. With the improved eight-dimensional model of self-construal, one emphasis in future is to explore whether the new model could capture the key features of self-construal at both levels.

5.3 Conclusion

The traditional way to view self-construal with the dual dimensions of independence and interdependence divides the world into two parts, neglecting the dynamic and complex meanings of self-construal.

This thesis is based on Vignoles and colleagues' (2016) study, aiming to find a useful multi-dimensional model of self-construal, and to refine the related

measurement. Through the first study, I found concrete evidence to support the mediation effects of self-construal on cultural differences in some selected aspects of cognition, emotion, and motivation. With the second study, I filled in the gap of what the two self-construal primes (SDFF and SWS) actually manipulate, whether they can function equivalently, and whether each of them shows a similar profile cross-culturally in the literature. These two studies also show the benefits of deconstructing self-construal in a multi-dimensional way. The third study tested the eight-dimensional model of self-construal, with *decontextualized self vs. contextualized self* as an eighth factor to complement *self-containment vs. connectedness to others*, in 13 countries. The eighth dimension showed values of distinguishing profiles of self-construal in different world regions. The finalized 48-item scale showed a relatively good internal consistency, which is promising to be a useful measure of self-construal in various cultures.

The world is like a palette. Various cultures are various colors, with their edges interpenetrating and changing each other. Self-construal, as a small piece of 'cultural syndromes', is always participating in this dynamic revolution of color conversion, together with normative beliefs, values and practices (Vignoles et al., 2016; Triandis, 1993). It may be unrealistic to reveal the whole mysteries of cultural diversity through this small piece, but at least it will make us closer.

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Appendix 1

Appendix 1 includes the questionnaire applied in Study 1 (English version).

1. About You

Below are some statements that someone might use to try to describe you. Probably some of the statements will describe you not very well, whereas others will describe you better. Please select a number beside each statement to show how well it describes you. For example, if the statement doesn't describe you at all, then circle 1. If the statement describes you very well, then circle 4. If you are undecided between two possible answers, you can circle the number in between (1½, 2½, 3½, 4½).

How well does each statement describe you?

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**

Statement	1	1½	2	2½	3	3½	4	4½	5
You like being similar to other people.	1	1½	2	2½	3	3½	4	4½	5
If someone in your family achieves something, you feel proud as if you had achieved something yourself.	1	1½	2	2½	3	3½	4	4½	5
You always make your own decisions about important matters, even if others might not approve of what you decide.	1	1½	2	2½	3	3½	4	4½	5
You feel comfortable to depend on the people close to you.	1	1½	2	2½	3	3½	4	4½	5
You show your true feelings even if it disturbs the harmony in your family relationships.	1	1½	2	2½	3	3½	4	4½	5
You often compromise your most important goals to meet the interests of your family.	1	1½	2	2½	3	3½	4	4½	5
You see yourself the same way even in different social environments.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know about your social standing.	1	1½	2	2½	3	3½	4	4½	5
You see yourself as different from most people.	1	1½	2	2½	3	3½	4	4½	5
Your happiness is independent from the happiness of your family.	1	1½	2	2½	3	3½	4	4½	5
You usually ask your family for approval before making a decision.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know about your social standing.	1	1½	2	2½	3	3½	4	4½	5

You tend to rely on yourself rather than seeking help from others.	1	1½	2	2½	3	3½	4	4½	5
You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings.	1	1½	2	2½	3	3½	4	4½	5
You usually give priority to your personal goals, before thinking about the goals of others.	1	1½	2	2½	3	3½	4	4½	5

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**

You feel that your actions can influence the reputation of your family.	1	1½	2	2½	3	3½	4	4½	5
You see yourself differently in different social environments.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know about the place where you live.	1	1½	2	2½	3	3½	4	4½	5
Being different from others makes you feel uncomfortable.	1	1½	2	2½	3	3½	4	4½	5
You would not feel personally insulted if someone insulted a member of your family.	1	1½	2	2½	3	3½	4	4½	5
You prefer to do what you want without letting your family influence you.	1	1½	2	2½	3	3½	4	4½	5
In difficult situations, you tend to seek help from others rather than relying only on yourself.	1	1½	2	2½	3	3½	4	4½	5
You think it is good to express openly when you disagree with others.	1	1½	2	2½	3	3½	4	4½	5
You look after the people close to you, even if it means putting your personal needs to one side.	1	1½	2	2½	3	3½	4	4½	5
You behave in a similar way at home and in public.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know about your place of origin.	1	1½	2	2½	3	3½	4	4½	5
You like being different from other people.	1	1½	2	2½	3	3½	4	4½	5
If someone insults a member of your family, you feel as if you have been insulted personally.	1	1½	2	2½	3	3½	4	4½	5
You usually follow others' advice when making important choices.	1	1½	2	2½	3	3½	4	4½	5
You feel uncomfortable in situations where you are dependent on others.	1	1½	2	2½	3	3½	4	4½	5
You try to adapt to people around you, even if it means hiding your feelings.	1	1½	2	2½	3	3½	4	4½	5
Your own success is very important to you, even if it disrupts your friendships.	1	1½	2	2½	3	3½	4	4½	5

You act very differently at home compared to how you act in public.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5
You see yourself as similar to others.	1	1½	2	2½	3	3½	4	4½	5
Your personal view of yourself does not depend on your family or friends.	1	1½	2	2½	3	3½	4	4½	5

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly	
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**	

You prefer to say what you are thinking, even if it is inappropriate for the situation.	1	1½	2	2½	3	3½	4	4½	5
You value good relations with the people close to you more than your personal achievements.	1	1½	2	2½	3	3½	4	4½	5
You see yourself as unique and different from others.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member is sad, you feel the sadness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5
You decide for yourself what goals to pursue even if they are very different from what your family would expect.	1	1½	2	2½	3	3½	4	4½	5
Being able to depend on others is very important to you.	1	1½	2	2½	3	3½	4	4½	5
You try not to disturb the harmony among the people around you.	1	1½	2	2½	3	3½	4	4½	5
You protect your own interests, even if it might sometimes disrupt your family relationships.	1	1½	2	2½	3	3½	4	4½	5
You behave in the same way even when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know anything about your family.	1	1½	2	2½	3	3½	4	4½	5
You would rather be the same as others than be different.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member had an important success or failure, your view of yourself would remain the same.	1	1½	2	2½	3	3½	4	4½	5
You usually do what people expect of you, rather than decide for yourself what to do.	1	1½	2	2½	3	3½	4	4½	5
You prefer to rely completely on yourself rather than depend on others.	1	1½	2	2½	3	3½	4	4½	5
You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict.	1	1½	2	2½	3	3½	4	4½	5
You usually give priority to others, before yourself.	1	1½	2	2½	3	3½	4	4½	5

You behave differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know about your place of origin.	1	1½	2	2½	3	3½	4	4½	5
You try to avoid being the same as others.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member is happy, you feel the happiness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**

You usually decide on your own actions, rather than follow others' expectations.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5
You prefer to ask other people for help rather than rely only on yourself.	1	1½	2	2½	3	3½	4	4½	5
You try not to express disagreement with members of your family.	1	1½	2	2½	3	3½	4	4½	5
You value personal achievements more than good relations with the people close to you.	1	1½	2	2½	3	3½	4	4½	5
Your view of yourself does not depend on your family's reputation.	1	1½	2	2½	3	3½	4	4½	5
You always see yourself in the same way even when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know something about your family.	1	1½	2	2½	3	3½	4	4½	5
You try to avoid being seen as different from others.	1	1½	2	2½	3	3½	4	4½	5
You would feel personally shamed if a close friend or family member did something shameful.	1	1½	2	2½	3	3½	4	4½	5
You prefer to follow your family's advice on important matters.	1	1½	2	2½	3	3½	4	4½	5
You try to avoid being reliant on others.	1	1½	2	2½	3	3½	4	4½	5
You like to discuss your own ideas, even if it might sometimes upset the people around you.	1	1½	2	2½	3	3½	4	4½	5
You would sacrifice your personal interests for the benefit of your family.	1	1½	2	2½	3	3½	4	4½	5
You see yourself differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5

Someone could understand who you are without needing to know about the place where you live.	1	1½	2	2½	3	3½	4	4½	5

Someone could understand who you are without needing to know about the place where you live.	1	1½	2	2½	3	3½	4	4½	5

2. Sociogram Task

In this task, we would like you to create what is known as a socio-gram. This is basically a picture of your friend's relationship to you, and to each other. You will start by putting yourself in an oval. Next, draw ovals around you with the initials of your friends, and connect each friend to you with a line. If any two friends you graph are themselves friends, draw a line between the two.

This is a sample socio-gram, which is about hypothetical network of 4 friends. You have relationships with Friend A, B, and C. Friend A and friend B are themselves friends, but Friend B has another friend who is not directly your friend. Friend C is your friend that is not a friend of (or does not know) your other friends.

You have five minutes to finish this part of the study. You can make as complex a socio-gram as you want. Please only use initials of friends rather than full names, and please indicate after the initials M if the person is male and F if the person is female.
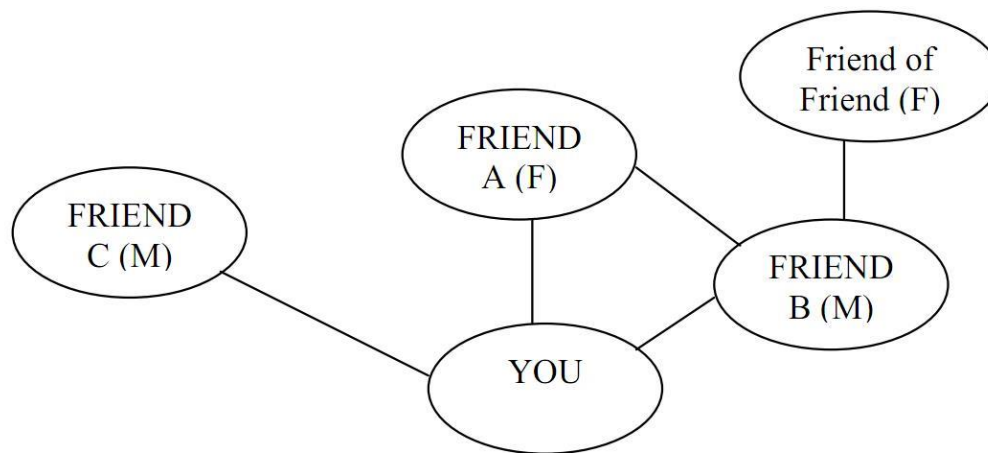
Draw sociogram here:

3. Cognition

In the following questionnaire we would like to find out more about the effects of social perceptions of different people. You will be presented with several situations. Each of them will describe a person involved in a certain activity. You will be asked to think about different reasons for this person's behavior, as well as to evaluate this person's behavior. **Please, carefully read and answer the following questions.**

Situation One

Sara Martin is a top executive of a company. The company is one of the leading pharmaceutical companies in the UK. However, the company has experienced a decline in their public image which has led to a decline in sales in the last half a year. Recently, the company started several activities, which were focused on the stabilization of their leading position in the pharmaceutical market.
Not too long ago, "XinK Int." developed a new drug for treating malaria. Shortly after that several African countries experienced an outbreak of malaria. As soon as Sara Martin found out about this event, she decided to donate a lot of medicine to the regions in Africa that needed assistance. Local mass media showed different reactions to this news.

Please, carefully read the following statements and indicate your level of agreement with each of them.

1. Sara Martin's personality primarily influenced her behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

2. Particular circumstances primarily influenced Sara Martin's behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

3. Sara Martin would have acted differently if her personality had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

4. Sara Martin would have acted differently if the particular circumstances had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Overall, what influenced Sara Martin's decision more?

(1) Her personality   (2) Particular circumstances

Situation Two

Since his childhood, David Conner wanted to become a doctor. Now, he is a young surgeon at a local hospital in Brighton. During his first year he has had a wonderful track record. However, due to a recent argument with the head physician, any little mistake would mean that he would be fired.
Last week, a patient died during his surgery because another doctor had given her an incorrect diagnosis. However, David decided to hide this fact and told the woman's family that the weak heart of the patient was the reason for her death and the doctors could not save her.

Please, carefully read the following statements and indicate your level of agreement with each of them.

1. David Conner's personality primarily influenced his behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

2. Particular circumstances primarily influenced David Conner's behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

3. David Conner would have acted differently if his personality had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

4. David Conner would have acted differently if the particular circumstances had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Overall, what influenced David Conner's decision more?

(1) His personality   (2) Particular circumstances

Situation Three

Emma Peterson is a banker at a large bank in the UK. Several major pension funds are heavily invested in the bank. In the last couple of months, the bank lost a large amount of money on the stock market. The current financial difficulties of the bank may devalue the bank's shares. However, Emma Peterson did not reveal the loss to the company's shareholders in order to avoid causing panic. Instead, Emma Peterson reported a sizeable profit at the annual meeting of the shareholders, hoping that the annual balance of the company would still be positive in comparison to the last year.

Please, carefully read the following statements and indicate your level of agreement with each of them.

1. Emma Peterson's personality primarily influenced her behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

2. Particular circumstances primarily influenced Emma Peterson's behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

3. Emma Peterson would have acted differently if her personality had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

4. Emma Peterson would have acted differently if the particular circumstances had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Overall, what influenced Emma Peterson's decision more?

(1) Her personality   (2) Particular circumstances

Situation Four

Steve Jensen is the president of a large construction company in London. Last year, local government fined the company, as unstable scaffolding caused problems resulting in injuries to several people. Recently, Steve Jensen started a special discount house building program for large families. Also, he decided to donate a large sum of money to a local orphanage.

Please, carefully read the following statements and indicate your level of agreement with each of them.

1. Steve Jensen's personality primarily influenced his behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

2. Particular circumstances primarily influenced Steve Jensen's behavior.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

3. Steve Jensen would have acted differently if his personality had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

4. Steve Jensen would have acted differently if the particular circumstances had been different.

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Overall, what influenced Steve Jensen's decision more?

(1) His personality   (2) Particular circumstances

You have finished half of the questionnaire, I appreciate it a lot for your time and efforts!

4. Connectedness to others

In this part, we are interested in the degree to which you feel personally connected to other people. Below are seven diagrams that express varying degrees of relatedness or connectedness with some other person. For each of the people listed below, indicate which diagram best expresses your relationship with that person. For example, Diagram 1 indicates no relationship or connectedness, Diagram 4 indicates a moderate degree of connectedness, and Diagram 7 indicates complete connectedness.
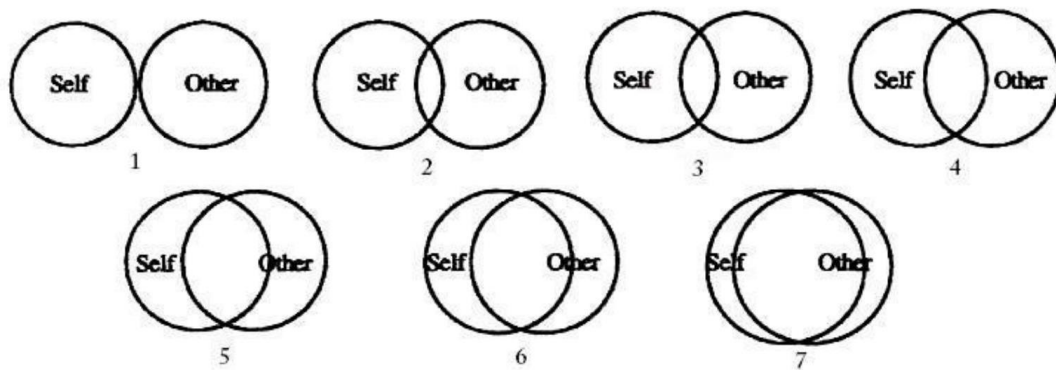
_____ 1.The connection between you and the person with whom you feel closest.
_____ 2.The connection between you and your best friend.
_____ 3.The connection between you and a stranger on a street.
_____ 4.The connection between you and others in general.
_____ 5.The connection between you and members of your family.

5. Emotion

In this part of study, we are interested in people's emotional experience. Please read the instructions carefully and answer the questions by circling one number from the 6-point rating scales below.

(1) Please remember the last time when you *thought about your appearances*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(2) Please remember the last time when you *had positive interaction with friends*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(3) Please remember the last time when you *read a novel or book*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(4) Please remember the last time when you *watched TV or listened to music*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(5) Please remember the last time when you *had good interaction with a family member*.

Approximately how many days ago was the last time this episode happened? ___ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(6) Please remember the last time when you *got ill or injured*.

Approximately how many days ago was the last time this episode happened? ___ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(7) Please remember the last time when you *were caught in a traffic jam*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(8) Please remember the last time when you *were overloaded with work*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(9) Please remember the last time when *something good happened to a family member of yours*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

(10) Please remember the last time when you *had a problem with a family member*.

Approximately how many days ago was the last time this episode happened? _____ Days ago

How much did you experience each of the following emotions during this episode?

	Not at all	Slightly	Somewhat	Moderately	Strongly	Very strongly
Ashamed	1	2	3	4	5	6
Feelings of closeness to others	1	2	3	4	5	6
Elated	1	2	3	4	5	6
Self-esteem	1	2	3	4	5	6
Frustration	1	2	3	4	5	6
Happy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Proud	1	2	3	4	5	6
Guilty	1	2	3	4	5	6
Angry	1	2	3	4	5	6
Friendly feelings	1	2	3	4	5	6
Unhappy	1	2	3	4	5	6

6. Motivation

Below are some statements about yourself. Probably some of the statements will describe you well, whereas others may not. Please select a number beside each statement to show how well it describes you.

How well does each statement describe you?

Very inaccurate	Moderately inaccurate	Slightly inaccurate	Slightly accurate	Moderately accurate	Very accurate
1	2	3	4	5	6

Statement						
When I work, I always try my best until I am satisfied.	1	2	3	4	5	6
I try my best to meet my parents' expectations so as not to disappoint them.	1	2	3	4	5	6
Before I do anything, I first consider whether my goals fit my parent's expectations.	1	2	3	4	5	6
I am concerned with whether my school performances meet my parent's expectation.	1	2	3	4	5	6
I always pursue the goals my parents intend for me.	1	2	3	4	5	6
Regardless of if anyone else knows about it, I feel a sense of accomplishment after finishing a task.	1	2	3	4	5	6
I study hard because teachers always praise hardworking students.	1	2	3	4	5	6
If I don't do well on school examinations, I feel I can't face my relatives and friends.	1	2	3	4	5	6
I would feel regretful to my ancestors if I do not achieve more than most other people.	1	2	3	4	5	6
I usually work hard to reach the academic standards my parents set for me.	1	2	3	4	5	6
My teachers' expectations and demands are the primary force for my studying harder.	1	2	3	4	5	6
My main goal in life is to try to make my parents proud.	1	2	3	4	5	6
I usually try my best to do the things my parents think are valuable.	1	2	3	4	5	6
No matter how difficult it is, I try to do my best if I consider the task worth doing.	1	2	3	4	5	6
When I work, I set high expectations and standards for myself.	1	2	3	4	5	6
Even without the presence of others, I would continue to work on a task until it is finished.	1	2	3	4	5	6
I enjoy reading because reading itself can increase my knowledge.	1	2	3	4	5	6
The standards I set for myself are usually higher than what others expect of me.	1	2	3	4	5	6
Completing a task successfully is a reward in itself, and any pay for the work is secondary.	1	2	3	4	5	6

I often try hard to do something only to demonstrate to myself that I am capable of doing it.	1	2	3	4	5	6
When I work, I usually set standards for myself based on the standards of my classmates or friends.	1	2	3	4	5	6
I prefer my achievements could be evaluated by others.	1	2	3	4	5	6
When I find out my classmates work harder than me, I will be afraid that my grades will fall behind those people.	1	2	3	4	5	6
After finishing a task, I like to evaluate it based on my own standards	1	2	3	4	5	6
I like working because work itself provides me with a sense of meaning in life.	1	2	3	4	5	6
When a teacher praises other students in my class, I feel I must work harder to do better.	1	2	3	4	5	6
After a poor test performance, I examine my study methods and consider ways to improve.	1	2	3	4	5	6
I would like to work hard for my personal success.	1	2	3	4	5	6
I usually do what I want to.	1	2	3	4	5	6
When I face difficulties in my work, I usually try different ways to fix them, based on my own judgment.	1	2	3	4	5	6

Strongly Disagree	Disagree	Somewhat Disagree	Neither	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

I fear making mistakes in class.	1	2	3	4	5	6	7
I like to associate myself with people who have prestige or status.	1	2	3	4	5	6	7
I fear being laughed at.	1	2	3	4	5	6	7
I would like to have a position with high status.	1	2	3	4	5	6	7
I am worried that I might be embarrassed in class.	1	2	3	4	5	6	7
I like for people to think of me as a person having prestige or status.	1	2	3	4	5	6	7

7. Demographics

Your age: I am ___ years old.

Your gender: □ male   □ female   □ other (please specify) _____

Country of birth: _____

Your ethnic group: _____

What are you studying at university: _____

Appendix 2

Appendix 2 includes the two priming methods and the self-construal scale applied in Study 2 (English version).

Priming private self with SDFF:

Firstly, for the next two minutes, you will not need to write anything. Please think of what makes you different from your family and friends. What do you expect yourself to do?

Then, please turn to the next page, and you will be asked to do several tasks.

Priming collective self with SDFF:

Firstly, for the next two minutes, you will not need to write anything. Please think of what you have in common with your family and friends. What do they expect you to do?

Then, please turn to the next page, and you will be asked to do several tasks.

Priming private self with SWS:

Firstly, we would like you to read a couple of paragraphs, and to make a judgment about the main character.

Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon I in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule.

About 10 years later, Sargon I was conscripting warriors for a new war. Sostoras was obligated to send a detachment of soldiers to aid Sargon I. He had to decide who to put in command of the detachment. After thinking about it for a long time, Sostoras eventually decided on Tiglath who was a talented general. This appointment had several advantages. Sostoras was able to make an excellent general indebted to him. This would solidify Sostoras's hold on his own dominion. In addition, the very fact of having a general such as Tiglath as his personal representative would greatly increase Sostoras's prestige. Finally, sending his best general would be likely to make Sargon I grateful. Consequently, there was the possibility of getting rewarded by Sargon I.

Please circle the appropriate answer for the question below.

Do you admire Sostoras?   Yes   No   Not sure

Now please turn to the next page, and you will be asked to do several tasks.

Priming collective self with SWS:

Firstly, we would like you to read a couple of paragraphs, and to make a judgment about the main character.

Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon I in conquering all of Mesopotamia. As a result, he was rewarded with a small kingdom of his own to rule.

About 10 years later, Sargon I was conscripting warriors for a new war. Sostoras was obligated to send a detachment of soldiers to aid Sargon I. He had to decide who to put in command of the detachment. After thinking about it for a long time, Sostoras eventually decided on Tiglath who was a member of his family. This appointment had several advantages. Sostoras was able to show his loyalty to his family. He was also able to cement their loyalty to him. In addition, having Tiglath as the commander increased the power and prestige of the family. Finally, if Tiglath performed well, Sargon I would be indebted to the family.

Please circle the appropriate answer for the question below.

Do you admire Sostoras?   Yes   No   Not sure

Now please turn to the next page, and you will be asked to do several tasks.

The following is the 52-item self-construal scale

About You

Below are some statements that someone might use to try to describe you. Probably some of the statements will describe you not very well, whereas others will describe you better. Please select a number beside each statement to show how well it describes you. For example, if the statement doesn't describe you at all, then circle 1. If the statement describes you very well, then circle 4. If you are undecided

between two possible answers, you can circle the number in between (1½, 2½, 3½, 4½).

How well does each statement describe you?

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**

You like being similar to other people.	1	1½	2	2½	3	3½	4	4½	5
You always make your own decisions about important matters, even if others might not approve of what you decide.	1	1½	2	2½	3	3½	4	4½	5
You feel comfortable to depend on the people close to you.	1	1½	2	2½	3	3½	4	4½	5
You show your true feelings even if it disturbs the harmony in your family relationships.	1	1½	2	2½	3	3½	4	4½	5
You see yourself the same way even in different social environments.	1	1½	2	2½	3	3½	4	4½	5
You see yourself as different from most people.	1	1½	2	2½	3	3½	4	4½	5
Your happiness is independent from the happiness of your family.	1	1½	2	2½	3	3½	4	4½	5
You usually ask your family for approval before making a decision.	1	1½	2	2½	3	3½	4	4½	5
You tend to rely on yourself rather than seeking help from others.	1	1½	2	2½	3	3½	4	4½	5
You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings.	1	1½	2	2½	3	3½	4	4½	5
You usually give priority to your personal goals, before thinking about the goals of others.	1	1½	2	2½	3	3½	4	4½	5
Being different from others makes you feel uncomfortable.	1	1½	2	2½	3	3½	4	4½	5
You would not feel personally insulted if someone insulted a member of your family.	1	1½	2	2½	3	3½	4	4½	5
You prefer to do what you want without letting your family influence you.	1	1½	2	2½	3	3½	4	4½	5
You think it is good to express openly when you disagree with others.	1	1½	2	2½	3	3½	4	4½	5
You look after the people close to you, even if it means putting your personal needs to one side.	1	1½	2	2½	3	3½	4	4½	5
You like being different from other people.	1	1½	2	2½	3	3½	4	4½	5
You usually follow others' advice when making important choices.	1	1½	2	2½	3	3½	4	4½	5

You feel uncomfortable in situations where you are dependent on others.	1	1½	2	2½	3	3½	4	4½	5
You try to adapt to people around you, even if it means hiding your feelings.	1	1½	2	2½	3	3½	4	4½	5
Your own success is very important to you, even if it disrupts your friendships.	1	1½	2	2½	3	3½	4	4½	5
You act very differently at home compared to how you act in public.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5
Your personal view of yourself does not depend on your family or friends.	1	1½	2	2½	3	3½	4	4½	5
You see yourself as unique and different from others.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member is sad, you feel the sadness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5
You decide for yourself what goals to pursue even if they are very different from what your family would expect.	1	1½	2	2½	3	3½	4	4½	5
Being able to depend on others is very important to you.	1	1½	2	2½	3	3½	4	4½	5
You protect your own interests, even if it might sometimes disrupt your family relationships.	1	1½	2	2½	3	3½	4	4½	5
You behave in the same way even when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know anything about your family.	1	1½	2	2½	3	3½	4	4½	5
You would rather be the same as others than be different.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member had an important success or failure, your view of yourself would remain the same.	1	1½	2	2½	3	3½	4	4½	5
You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict.	1	1½	2	2½	3	3½	4	4½	5
You usually give priority to others, before yourself.	1	1½	2	2½	3	3½	4	4½	5
You behave differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know about your place of origin.	1	1½	2	2½	3	3½	4	4½	5
If a close friend or family member is happy, you feel the happiness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5
You usually decide on your own actions, rather than follow others' expectations.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5

You prefer to ask other people for help rather than rely only on yourself.	1	1½	2	2½	3	3½	4	4½	5
You try not to express disagreement with members of your family.	1	1½	2	2½	3	3½	4	4½	5
You value personal achievements more than good relations with the people close to you.	1	1½	2	2½	3	3½	4	4½	5
Your view of yourself does not depend on your family's reputation.	1	1½	2	2½	3	3½	4	4½	5
You always see yourself in the same way even when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
If someone wants to understand who you are, they would need to know something about your family.	1	1½	2	2½	3	3½	4	4½	5
You would feel personally shamed if a close friend or family member did something shameful.	1	1½	2	2½	3	3½	4	4½	5
You prefer to follow your family's advice on important matters.	1	1½	2	2½	3	3½	4	4½	5
You try to avoid being reliant on others.	1	1½	2	2½	3	3½	4	4½	5
You would sacrifice your personal interests for the benefit of your family.	1	1½	2	2½	3	3½	4	4½	5
You see yourself differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
Someone could understand who you are without needing to know about the place where you live.	1	1½	2	2½	3	3½	4	4½	5

Appendix 3

Appendix 3 includes the finalized 48-item self-construal scale from Study 3 (English version).

About You

Below are some statements that someone might use to try to describe you. Probably some of the statements will describe you not very well, whereas others will describe you better. Please select a number beside each statement to show how well it describes you. For example, if the statement doesn't describe you at all, then circle 1. If the statement describes you very well, then circle 4. If you are undecided between two possible answers, you can circle the number in between (1½, 2½, 3½, 4½).

How well does each statement describe you?

doesn't describe me at all		describes me a little		describes me moderately		describes me very well		describes me exactly
1	1½	**2**	2½	**3**	3½	**4**	4½	**5**

1.You like being similar to other people.	1	1½	2	2½	3	3½	4	4½	5
2.If someone in your family achieves something, you feel proud as if you had achieved something yourself.	1	1½	2	2½	3	3½	4	4½	5
3.You always make your own decisions about important matters, even if others might not approve of what you decide.	1	1½	2	2½	3	3½	4	4½	5
5.You show your true feelings even if it disturbs the harmony in your family relationships.	1	1½	2	2½	3	3½	4	4½	5
7.You see yourself the same way even in different social environments.	1	1½	2	2½	3	3½	4	4½	5
10.Your happiness is independent from the happiness of your family.	1	1½	2	2½	3	3½	4	4½	5
11.You usually ask your family for approval before making a decision.	1	1½	2	2½	3	3½	4	4½	5
12.Someone could understand who you are without needing to know about your social standing.	1	1½	2	2½	3	3½	4	4½	5
13.You tend to rely on yourself rather than seeking help from others.	1	1½	2	2½	3	3½	4	4½	5
14.You prefer to preserve harmony in your relationships, even if this means not expressing your true feelings.	1	1½	2	2½	3	3½	4	4½	5
15.You usually give priority to your personal goals, before thinking about the goals of others.	1	1½	2	2½	3	3½	4	4½	5

	1	1½	2	2½	3	3½	4	4½	5
18. If someone wants to understand who you are, they would need to know about the place where you live.	1	1½	2	2½	3	3½	4	4½	5
20. You would not feel personally insulted if someone insulted a member of your family.	1	1½	2	2½	3	3½	4	4½	5
22. In difficult situations, you tend to seek help from others rather than relying only on yourself.	1	1½	2	2½	3	3½	4	4½	5
25. You behave in a similar way at home and in public.	1	1½	2	2½	3	3½	4	4½	5
26. Someone could understand who you are without needing to know about your place of origin.	1	1½	2	2½	3	3½	4	4½	5
27. You like being different from other people.	1	1½	2	2½	3	3½	4	4½	5
28. If someone insults a member of your family, you feel as if you have been insulted personally.	1	1½	2	2½	3	3½	4	4½	5
29. You usually follow others' advice when making important choices.	1	1½	2	2½	3	3½	4	4½	5
31. You try to adapt to people around you, even if it means hiding your feelings.	1	1½	2	2½	3	3½	4	4½	5
32. Your own success is very important to you, even if it disrupts your friendships.	1	1½	2	2½	3	3½	4	4½	5
33. You act very differently at home compared to how you act in public.	1	1½	2	2½	3	3½	4	4½	5
34. If someone wants to understand who you are, they would need to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5
35. You see yourself as similar to others.	1	1½	2	2½	3	3½	4	4½	5
38. You value good relations with the people close to you more than your personal achievements.	1	1½	2	2½	3	3½	4	4½	5
39. You see yourself as unique and different from others.	1	1½	2	2½	3	3½	4	4½	5
40. If a close friend or family member is sad, you feel the sadness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5
41. You decide for yourself what goals to pursue even if they are very different from what your family would expect.	1	1½	2	2½	3	3½	4	4½	5
42. Being able to depend on others is very important to you.	1	1½	2	2½	3	3½	4	4½	5
44. You protect your own interests, even if it might sometimes disrupt your family relationships.	1	1½	2	2½	3	3½	4	4½	5
45. You behave in the same way even when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
47. You would rather be the same as others than be different.	1	1½	2	2½	3	3½	4	4½	5
49. You usually do what people expect of you, rather than decide for yourself what to do.	1	1½	2	2½	3	3½	4	4½	5

	1	1½	2	2½	3	3½	4	4½	5
50.You prefer to rely completely on yourself rather than depend on others.	1	1½	2	2½	3	3½	4	4½	5
51.You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict.	1	1½	2	2½	3	3½	4	4½	5
52.You usually give priority to others, before yourself.	1	1½	2	2½	3	3½	4	4½	5
53.You behave differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5
54.If someone wants to understand who you are, they would need to know about your place of origin.	1	1½	2	2½	3	3½	4	4½	5
55.You try to avoid being the same as others.	1	1½	2	2½	3	3½	4	4½	5
56.If a close friend or family member is happy, you feel the happiness as if it were your own.	1	1½	2	2½	3	3½	4	4½	5
57.You usually decide on your own actions, rather than follow others' expectations.	1	1½	2	2½	3	3½	4	4½	5
58.Someone could understand who you are without needing to know which social groups you belong to.	1	1½	2	2½	3	3½	4	4½	5
59.You prefer to ask other people for help rather than rely only on yourself.	1	1½	2	2½	3	3½	4	4½	5
60.You try not to express disagreement with members of your family.	1	1½	2	2½	3	3½	4	4½	5
68.You try to avoid being reliant on others.	1	1½	2	2½	3	3½	4	4½	5
69.You like to discuss your own ideas, even if it might sometimes upset the people around you.	1	1½	2	2½	3	3½	4	4½	5
70.You would sacrifice your personal interests for the benefit of your family.	1	1½	2	2½	3	3½	4	4½	5
71.You see yourself differently when you are with different people.	1	1½	2	2½	3	3½	4	4½	5