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CHAPTER 1

GENERAL INTRODUCTION

While working on this dissertation, I was a non-Dutch member of a PhD team researching culture and cognition. We once went out for a borrel (a quintessential Dutch activity that means going out for small bites and drinks). While looking at the menu my colleagues considered going for a red wine. I was thinking of a lemonade (after years living in the Netherlands I still have not managed to automatically observe the Dutch custom of ordering an alcoholic beverage while borrel-ing or while waiting for dinner to be served). But then I figured: since everyone else but me wanted wine if I ordered wine as well we could order a whole bottle together, which was the more economical and convenient option. We then entered an impasse where my Dutch colleagues effusively defended my right to order what I myself really wanted while I insisted that wine was fine. To my Dutch colleagues, individual decision, regardless whether it was for themselves or for others, was most important; whereas, to me, the collective option had more weight.

These cultural differences are not only revealed in interpersonal situations but can also be observed in cross-country differences. Consider the case of the Beijing Summer Olympics Games in 2008. The highlight of the opening ceremony was a little pretty girl standing alone onstage and singing beautifully. It was later found out that what appeared to be solo performance was actually a joint effort as the singing was done by another girl offstage. While the American press highly disapproved of this decision, arguing that it was damaging to the girls' individual self-esteem, the Chinese decision makers did not share the same opinion. What was relevant for them was that together Lin and Yang were the face and voice of China and the goal was to collectively represent the country. While Americans attended to each individual separately, Chinese focused first on the individuals together representing the group (example adapted from Oyserman, 2011).

Culture in psychology has been studied with the hypothesis that some of the differences between cultural groups seem so fundamental that they have far-reaching implications for the way one perceives and thinks about oneself, about others, the way one responds in social situations, and how one judges what value weighs most heavily in a specific situation (Markus & Kitayama, 1991, 2010; Oyserman & Lee, 2008; Oyserman, Oyserman, & Oyserman, 1993; Singelis, 1994; Triandis, 1995b; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). And that has been the starting point of this dissertation.

BACKGROUND & AIM

What is culture? How does studying cultural differences in social cognition advance our knowledge? Human culture evolves within ecologies to provide working solutions to basic problems of survival such as how to manage social relationships, to maintain welfare, and to sustain the group (Oyserman, 2017). Specifics of cultural solutions can favor one or another approach to these basic problems, creating the characteristics of cultures (Oyserman, 2011). Triandis (1996, p. 407) defined culture as the “shared attitudes, beliefs, norms, and self-definitions and the values” that the members of a group hold. Markus and Kitayama (2010, p. 422) described culture as a “set of material and symbolic concepts, such as world, environment, contexts, cultural systems, social systems, social structures, institutions, practices, policies, meanings, norms, and values”. There seem to exist systematic, different cultural patterns (referred to as cultural orientations) between countries and peoples (although state-of-the-art research suggests that the differences do not necessarily reflect the traditional grouping criteria such as geographical boundaries, A. B. Cohen & Varnum, 2016).

Differences in working solutions to ecological problems reflected in differences in history, language, religion and philosophy seem to be associated with distinctive patterns of cognitive, emotional, motivational, and well-being functioning (Markus & Kitayama, 1991). Studies and documentations of psychological functioning given variances in culture are therefore important subjects. Firstly, they are because we want to know if phenomena are real and pan-human, i.e. if they transcribe across places and peoples or if they are only true in a specific group. Are there universal principles of how people make sense of themselves and of the world? Are these observable differences actual differences in psychological experiences and their manifestations? Secondly, and more importantly (as it is also the goal of this dissertation), learning how psychological processes can change due to cultural differences reveals if and how culture influences cognition and thereby contributes to our understanding of the way cultural environments shapes our minds (Markus & Kitayama, 1991, 2010; Oyserman, 2011).

The ultimate aim of studying the relation between culture and cognition is to understand how cultural environments affect our psychological world and not simply to verify if people in different countries or populations are different. Studies that are concerned with the divergent aspects of psychological processes are based on the assumptions that what lies beneath the idiosyncrasies between countries and populations in communicative patterns and social scripts are only various solutions to universal problems of survival (e.g., group building, relationship

maintenance, etc.). For example, although relationships are important and central to every human society, different strategies may be applied across different societies to achieve the goal of having successful and rewarding relationships (Cross, Hardin, & Gercek-Swing, 2011; Markus & Kitayama, 1991; Mesquita, De Leersnyder, & Albert, 2013). Studying what systematically diverges and converges across cultures and to find parsimonious models that can help to make sense of the divergences and convergences allows us to make predictions about the content, the processes, and the goals of cognition. In other words, the goal is to understand the systematic patterns of influence of culture on how the mind works and to disentangle the cultural contingencies that moderate human cognitive processes (Markus & Kitayama, 2010; Oyserman, 2011).

Moreover, cultural and institutional factors particular to a country or a population can only have an impact on psychological processes by interacting with cultural factors at the level of the individual and the situation to produce diverse outcomes (Oyserman & Uskul, 2008). Elements of cultures are institutionalized (on the country and population level), internalized by the individuals, and activated by specific situations selectively and differentially to create a heterogeneous complex of psychological processes (Oyserman & Uskul, 2008; Shweder & Sullivan, 1993). To study culture is to embrace these complexities.

To take up this challenge, many researchers have proposed a number of useful, operationalizable constructs such as tightness-closeness, power distance, uncertainty avoidance, and so on (Gelfand et al., 2011; Taras, Kirkman, & Steel, 2010). In this dissertation, to study how culture influences cognition, we focus on the two most widely researched cultural orientations, namely individualism and collectivism, which are the cultural differences typically found when contrasting Western (e.g., USA, Germany, the Netherlands) and East Asian countries (e.g., Japan, China) (Markus & Kitayama, 1991; Oyserman, Coon, & Kimmelmeier, 2002; Singelis, 1994; Triandis, 1995b).

Individualism and collectivism are also the core axes that have received a great deal of theorizing work that enables the generation of working hypotheses (Oyserman, 2017). Individualism and collectivism can influence our psychology precisely because they have fundamental implications for the way *the self* is constructed, referred to as self-construal (Markus & Kitayama, 1991). Where individualism is the prevailing culture, the self is construed as separate from others and detached from context, and that individual goals and personal autonomy are highly valued (independent self-construal) and social relationships should feel freely chosen and voluntary. However, for many cultures of the world, this notion of the self is not



the default sense of selfhood (Markus & Kitayama, 1991). In non-Western societies such as those in East Asia where collectivism is predominant, the self is construed as overlapping in identity with others, collective goals and harmony with others are important (interdependent self-construal) and social relationships can be ascribed and fixed. In sum, individualism and collectivism entail different ways in which the self is defined: independent and interdependent self-construal, respectively (for an extensive and nuanced discussion of independent and interdependent self-construal, see Markus & Kitayama, 1991, 2010).

Although sometimes seen as opposites, it is probably more accurate to understand individualism and collectivism as cultural orientations that differ in the weight that is given to a specific working solution to an ecological problem. Similarly, people from different cultural spheres can have both ways to construe the self but sample elements of these selves with different probabilities (Triandis, 1995b). Moreover, “cultural self-construal is only a theoretical model of a conceptual representation of the self and is not necessarily the equivalent to a person’s explicit model of his or her psychological world or a person’s explicit self-concept” (Shweder & Sullivan, 1993). Furthermore, critics of self-construal theory have also cautioned that culture might not be declarative knowledge that people can report on (T. R. Levine et al., 2003; Oyserman, 2011). Nevertheless, these conceptual representations enable the study and making sense of the actual psychological functioning of people (Markus & Kitayama, 2010; Shweder & Sullivan, 1993). The wealth of research and the advancement in theory allow the investigation of the mechanism of the cultural influence of individualism and collectivism on cognition.

Empirical works show that these consequences of individualism and collectivism for self-construal then in turn influence a number of psychological processes related to cognition, emotion, motivation, values, group processes, and well-being. For instance, interdependent self-construal can induce a context-bound style of thought while independent self-construal encourages a context-free cognitive style. Americans, scoring high on individualism, are faster and more accurate in recalling abstract and central information (representing context-free thinking) than Chinese, who embrace collectivism and outperform Americans in remembering the whole and background elements (representing context-bound thinking) (Markus & Kitayama, 1991; Nisbett & Masuda, 2003; Oyserman et al., 2002). Whether emotional suppression is detrimental to mental well-being also depends on culture. Emotional suppression turns out to have a negative impact on well-being in cultures where individual emotional expression is important for defining the self (e.g., individualistic cultures), while it does not in populations that

experience emotions as mostly socially constructed and are accustomed to adjusting their emotional responding to the group expectations and norms (i.e. collectivistic cultures) (Butler, Lee, & Gross, 2007). Motivation for self-enhancement also differs across cultures. When the self is construed as independent psychological health may depend on the ability to maintain and enhance a positive self. In a culture that advocates a self that is highly interdependent with others, a positive view of the self does little to promote the key social goals of belonging and fitting in with others and therefore, one may see little value in enhancing the positivity of an independent self. Indeed, Americans showed strong evidence of self-enhancement, whereas this effect was weaker among Chinese (Hampton & Varnum, 2017). The empirical results suggest that individualism and collectivism have far-reaching implications for our psychology because they influence the way we perceive and think about ourselves, other people, and social environments.

To manage our social life, humans need a set of social cognitive skills. We first need to have the ability to represent or adopt the visual view of another person, usually referred to as perspective taking (Surtees, Apperly, & Samson, 2013). Second, a step further is the ability to make inferences about other people’s unobservable thoughts and feelings, usually referred to as theory of mind (ToM) (Frith & Frith, 2001). Human empathy, sympathy, and compassion are thought to depend on perspective taking and ToM (Bruneau, Pluta, & Saxe, 2012; de Waal, 2008). Perspective taking and ToM are also considered to facilitate social competences such as prosocial behaviors (Declerck & Bogaert, 2008), moral judgments (Young, Cushman, Hauser, & Saxe, 2007), and conflict resolution (Bruneau & Saxe, 2012). Third, to navigate in social situations, humans also need to interpret emotional states of other people conveyed through ambiguous facial expressions correctly. Recognizing negative emotions is particularly important because they signal that a social threat or disruption exists and requires action (Ford & Mauss, 2015). Last but not least, to effectively interact with others humans also rely on one’s own emotional experiences and the regulation of emotional responses when other people are present (Coan & Beckes, 2011).

Given that culture has far-reaching implications for the way one perceives and thinks about oneself, other people, and social situations there has surprisingly been little research devoted to investigating how culture might have an impact on the above-mentioned social cognitive processes. The aim of this dissertation is therefore to gain insights into whether and how the variations in individualism and collectivism (measured on different levels, see Methodology) can influence them. The divergent construals of the self should have various consequences for the very



cognitive processes that are relevant to the self, others, and social relationships. In this dissertation, we focused on the central social cognitive abilities involved in inferring the visual perspectives (perspective taking), the mental states of other people (ToM), and the emotional states behind ambiguous facial expressions (emotion detection), and in adjusting one's own emotional responses (emotional responding) accordingly in a specific cultural situation. The ultimate goal is to obtain a theoretical understanding of the mechanisms through which cultural environments can impact social cognitive processes. *Chapter 2* and *3* describe the studies addressing how culture can affect perspective taking and ToM performance. *Chapter 4* and *5* will zoom into the social cognitive processes through which one learns of others' emotional states and through which one experiences and modifies one's own emotional states in the presence of others.

METHODOLOGY

Different proxies of culture

Currently there exist three popular approaches to operationalize culture: to use country (of residence) as a proxy, to measure self-construal with questionnaires, and to manipulate self-construal with culture priming. In most extant research, researchers usually use only one or two ways to approximate culture and this has been raised as one of the shortcomings that need to be overcome in the field (Cross et al., 2011; Oyserman & Lee, 2008). To this end, in this dissertation, a multi-level approach to individualism and collectivism (IC) was employed and culture was studied with the use of all these three proxies.

Typically, cross-cultural studies compare individuals from North America or Western Europe (representing an individualistic culture) with those from East Asia (representing a collectivistic culture). The idea is that existing cultural knowledge of these individuals (through passive or active continuous engagement in cultural practices) leads to different highly exercised and automatized patterns of psychological responses. To enable comparisons with previous research, in *Chapters 3, 4, and 5*, we collected data on participants residing in individualism- and collectivism-representative countries such as the Netherlands, and Vietnam and China, respectively. The Country IC level was used to investigate whether and how culture that is obtained through living in a country predominantly collectivistic or predominantly individualistic could lead to differences in how one infers mental states of other people (*Chapter 3*), learns of their emotional states (*Chapter 4*), and adjusts one's own emotional responses accordingly (*Chapter 5*).

Basing conclusions of cultural influences solely on group comparisons is insufficient. Cross-country comparisons lacks a direct examination of cultural orientations, but merely assumes that there is a causal effect (Matsumoto, Kudoh, & Takeuchi, 1996). Distant factors that reflect and embody culture such as history, language, religion and philosophy seem to have an effect on one's self-concept, cognition, affect, and behaviors but such effect should be moderated by how individuals internalize cultural orientations and what is salient in the immediate situation. Even though cultures vary systematically in how either I or C can be more dominant than the other, the elements of I and C should be universally available. Every individual internalizes elements of individualism and collectivism to varying degrees through the process of socialization (Matsumoto et al., 1996; Na et al., 2010; Shweder & Sullivan, 1993; Triandis, 1995b). Therefore, in the present research, we also used questionnaires to assess individualized IC (which we called Individual IC). This approach aims to study the relation between the degree of internalized IC and how one takes visual perspectives (*Chapter 2*), infers mental states of other people (i.e. ToM) (*Chapter 3*), learns of their emotional states (*Chapter 4*), and adjusts one's own emotional responses accordingly (*Chapter 5*).

Furthermore, cultures are not unstable and rigid prescription of how people think and organize the world. Societies where collectivism [individualism] is prevalent are more likely to have more structures and situations that cue a collectivistic [individualistic] orientation. Between-group differences emerge due to differences, not in the presence or absence of, but in the frequency and likelihood of situations in which interdependence and independence patterns are temporarily salient. This means that every situation also recognizes and legitimates some aspects of both I and C. Cognition, affect, and behaviors - in certain situations - could be guided relatively more by salient individualistic concepts (e.g., uniqueness, autonomy, personal expression), whereas in other situations they could be guided relatively more by collectivistic concepts (e.g., concern for interpersonal harmony and group cohesion) (Oyserman, 2011; Triandis, 1995b).

Individualistic and collectivistic concepts can influence cognition, affect, and behaviors in a specific situation by guiding their content and processes. In other words, their impact is exercised through a semantic and a procedural mechanism. Views of the self are stored in a semantic framework and activated conceptual information can temporarily alter a person's procedural mode of thinking (Kühnen, Hannover, & Schubert, 2001). This procedural mode of thinking then influences the way the person sees and responds to the world, by encouraging the corresponding processing style (Kühnen et al., 2001; Oyserman & Lee, 2008).

This is the principle of culture priming, which has been used and shown to make concepts of I or C temporarily salient and exert a spill-over effect on subsequent behaviors by providing the corresponding I or C cognitive schemas (Oyserman & Lee, 2008). This makes culture priming an effective way to study the what (content) and how (process) of cultural influence on cognition (Oyserman, 2011). In the present research, this approach is used to investigate whether the momentarily salient concepts of individualism and collectivism could lead to differences in how one takes visual perspectives (*Chapter 2*), infers mental states of other people (*Chapter 3*), learns of their emotional states (*Chapter 4*), and adjusts one's own emotional responses accordingly in the presence of others (*Chapter 5*).

Behavioral and electro-cortical measures

The effects of culture on the social cognitive processes that are the focus of the present research were quantified by behavioral measures (task accuracy and reaction time). Previous research has established that healthy adults fully developed a conceptual understanding of perspective taking and ToM and that these abilities are universally endowed abilities (Apperly et al., 2010). However, the use of these abilities is distinct from having a conceptual understanding of them. Furthermore, individuals can have similar abilities to make inferences of others' mental states but perspective taking and ToM use is strategic and contingent on situational demands. For example, external demands (e.g., in-group vs out-group context) and individual differences (e.g., internalized individualism and collectivism) can influence the accuracy and speed of perspective taking and ToM. In *Chapters 2, 3, and 4*, the success with which people deploy these processes were indexed by accurate rate and reaction time. In *Chapter 4*, participants' accuracy responses were also further analyzed within the framework of signal detection theory, yielding additional measures of perceptual sensitivity (how sensitive one is in recognizing a target emotion vs. neutrality) and of response bias (how biased one is towards labeling an ambiguous facial expression as a specific emotion).

Furthermore, electroencephalographic (EEG) techniques which measure electrical potentials of brain activation through the skull and scalp were used (Luck, 2014). These techniques enable the investigation of the mechanisms by which individualism and collectivism may influence psychological processes and the associated neural underpinnings. Additionally, since culture is tacit, implicit, and non-declarative explicit measures may not capture the subtle affective tendencies under the influence of culture. The use of EEG with excellent temporal

solution, as opposed to other brain imaging techniques such as fMRI, is especially well-suited to study moment-by-moment, transient changes in brain activities (Ibanez et al., 2012; Luck, 2014). In *Chapter 5*, EEG served as a converging approach, to the behavioral approach (i.e. the accuracy and reaction time indexes in task outcomes), to study the effects of culture.

OUTLINE

The dissertation comprises of four studies with experimental paradigms that complement each other.

Chapter 2 is a study on the influence of culture on perceiving another person's visual perspective (visual perspective taking). Individualistic and collectivistic cultural orientations could lead to two possible psychological consequences for perspective taking. The focus on others' perspective associated with collectivism and construing the self as overlapped with others' could mean heightened attention to and alignment with others' perspective. This in turn could lead to collectivism being associated with more accurate and faster perspective taking (the attentional hypothesis). However, construing the self as a separate entity from others, which is inherent in individualistic self-construal, could lead to clearer distinction between one's own and another's mental states. This could, in turn, lead to individualism being associated with better understanding of another's mental state, because egocentric bias (the tendency to conflate what oneself sees with what another sees) is better mitigated (the representational hypothesis). In this study, we investigated whether, on two different levels (individual and situation), individualism and collectivism might influence how one makes inferences of the perspective of other people.

Chapter 3 examines the influence of culture on inferring another person's thoughts and feelings (ToM). Specifically, this study investigated whether individualism and collectivism at country, individual, and situational levels influence how quickly and accurately people can infer these mental states using a ToM task instead of a visual perspective-taking task. Following the theoretical account in Chapter 2, we hypothesized that collectivism (having an interdependent self and valuing group concerns over individual concerns), compared to individualism (having an independent self and valuing individual concerns over group concerns), would be associated with greater accuracy and speed in recognizing and understanding the thoughts (cognitive ToM) and feelings (affective ToM) of others.



Chapter 4 reports a study on the influence of culture on how one makes inferences of another's emotional states based on ambiguous facial expressions. Previous theoretical and empirical research suggests that emphasis on interpersonal harmony might have a stronger association with collectivism than with individualism. Consequently, compared to individualism, collectivism might be associated with a higher demand or incentive for detecting emotions that signal that social expectations are not met or that interpersonal harmony is undermined. One possible consequence could be that collectivism is associated with being more astute at distinguishing anger from non-anger in ambiguous expressions (higher perceptual sensitivity). Another likely outcome is that collectivism is associated with perceiving higher costs of missed detection than false alarm, leading to construing an ambiguous facial expression as anger at the expense of incurring many incorrect responses (higher liberal response bias). In this study, following the principles of signal detection theory, we tested if any cultural differences would be a result of enhanced perceptual sensitivity or of response bias.

Chapter 5 describes an EEG study on the influence of culture on the experience and regulation of emotions in the presence of others. Previous research suggests that individuals from individualistic and collectivistic cultures, due to different construal of the self, others, and social groups, might have different emotional experiences and attenuate their emotional experiences differently across situations. This study tested this hypothesis, expecting the differences in terms of neural response to different valences of emotions and across different social situations to follow the individualism-collectivism cultural models. Event-related brain potentials were recorded when participants viewed pictures that induced positive, negative, and neutral emotions while being alone, being accompanied by a culturally similar person, or being accompanied by a culturally dissimilar person.

Finally, in *Chapter 6* the results described in the previous empirical chapters are discussed in light of the aim of the dissertation. Additionally, theoretical implications as well as recommendations for future research are presented.