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The Role of Culture in Empathy

The Consequences and Explanations of Cultural Differences in Empathy at the Affective and Cognitive Levels

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ABSTRACT

Our empathic abilities are central in social interaction and accordingly, our ability to feel and infer others' emotions is considered crucial for healthy functioning in interpersonal relationships (Blair, 2005; Eisenberg & Miller, 1987). One possible moderator of empathy is cultural background and although there is a wealth of theoretical knowledge to link culture and empathy, there is however, very limited empirical research directly examining the association between the two constructs. In five studies using culture as the principle unit of analysis, the research contained within this thesis has investigated the extent to which culture influences empathy using a variety of methods. Chapter Two reports results from an experimental study which show cultural differences in negative affect in response to physical pain; British reported greater negative affect compared to East Asians. Chapter Three reports results from an experimental study that replicate findings in the preceding chapter to a different type of situation, one that depicts social pain. In addition, results demonstrate greater empathic concern but lower empathic accuracy in British compared to East Asians. Chapter Four reports results from an experimental study that follow a similar pattern to preceding chapters; British report greater empathic concern, but lower empathic accuracy compared to Chinese individuals. In addition, the analyses demonstrate that neither an in-group advantage nor comprehension of video targets can explain cultural differences in affective and cognitive empathy. Emotional expressivity predicts British but not Chinese empathic concern. Chapter Five reports a study that demonstrates that empathic concern explains cultural differences in donating, a measure of prosocial behaviour. Chapter Six reports a study that demonstrates that Americans would side and feel more affective empathy for one friend over the other when the two friends are engaged in an intense disagreement compared to Japanese. These findings are interpreted from a dialectical thinking and interpersonal harmony theoretical framework. The association between dispositional

empathy and affective and cognitive empathic outcomes was assessed in all studies to understand the utility of dispositional empathy cross-culturally. Findings regarding dispositional empathy's utility are mixed but suggest that dispositional empathy is more useful to predict empathy in a Western cultural context, but not as useful in an Eastern cultural context. Chapter Seven considers the implications of the findings reported in the set of studies and explores future directions.

PREFACE

The student, Mr. Atkins, under the supervision and guidance of Dr. Uskul, was primarily responsible for the design and execution of the body of research presented in this thesis. With oversight from Dr. Uskul, Mr. Atkins was the lead investigator and responsible for all data collection and statistical analyses that were performed.

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For my family

CHAPTER ONE

“... We live in a culture that discourages empathy. A culture that too often tells us our principle goal in life is to be rich, thin, young, famous, safe, and entertained. A culture where those in power too often encourage these selfish impulses...”

Barack Obama, Northwestern University Commencement Address, June 16th 2006

In his Commencement speech the United States leader spoke of an “empathy deficit” that is rife among the American people and considered that this empathy deficit is a direct product of American culture. President Obama alludes to the culturally sanctioned quest for individualistic goals of self-enhancement as a source for these empathy gaps.

Empathy gaps are not uniquely associated with individualistic cultures such as those typically found in the West. Across the Pacific Ocean in Foshan, China, on the 13th of October 2011 a toddler named Wang Yue was victim of a hit and run and was left suffering as bystanders passed her by without going to her aid. The toddler did not survive her injuries. This incident instigated a public outcry in which the people of China demanded to understand the lack of empathy that was demonstrated by so many bystanders that day. It should be noted that the bystander effect, in which witnesses ignore victims requiring help in the presence of others, is not unique to Chinese culture. However, social media did stress that facets of Chinese culture could be responsible for the empathy gaps observed in Foshan that day (Brannigan, 2011); facets that relate to fears of reprisals from the victim (or victim’s family) should a Good Samaritan fail to save someone.

Thus, on both sides of the Pacific Ocean attention has been placed on the influential role of culture in empathy. Does it matter to know how culture influences empathy? Yes. Our empathic abilities help us understand the thoughts and feelings of other individuals and are therefore a useful tool in navigating social interactions and guiding behaviour. Likewise, the cultural values that are instilled in us through our lifetime impart us with knowledge to

adaptively fit into the cultural context we reside in. If these cultural values do influence our empathic abilities, then surely it is important to collectively endorse values that enhance our empathic abilities in order to efficiently interact with others and develop a more enriching community. The alternative is a gloomy prospect. If cultural values operate in ways that instill gaps in our empathic abilities then our understanding and interactions with other people suffer; our society might start to unravel. Consequently, incidents such as those in Foshan may become more commonplace.

Currently, there is little empirical work that directly examines the link between culture and empathy. Nevertheless, there is a wealth of theoretical and related empirical research from the cultural psychology literature that can be drawn upon to support the link between culture and empathy and guide research questions. Before delving into this research and my own empirical work, I will present a brief understanding of the history and definitions of empathy and culture.

History and Definitions of Empathy

The term “empathy” was established in the last century from the German word, *Einfühlung*, which referred to the process of feeling ourselves “into” that which we observe (Titchener, 1909). Originally, the term was used in philosophical aesthetics and entailed projecting oneself into an object of art, experiencing not only the visual, but sharing the feeling of the object. However, at the turn of the 20th century the term evolved into a more expansive meaning pertinent to the domain of the social sciences, and started referring to the process by which we come to feel others (Lipps, 1903, 1905). This definition strongly considers empathy as an affective phenomenon. However, theorists and researchers alike now also identify a cognitive component of empathy that is distinct from the affective component.

The affective component of empathy refers to an individual's emotional reaction in response to another person's feelings, which would typically mirror the other person's feelings or at least would be congruent with his or her emotional state (e.g., Feshbach, 1975; Hoffman, 1987; Eisenberg & Miller, 1987). The two most commonly examined indices of affective empathy are personal distress and empathic concern. Feelings of personal distress have been defined as an aversive response to witnessing someone else's negative emotional state and is generally associated with a greater motivation to attenuate one's own aversive feelings as opposed to an altruistic motivation to help the sufferer (e.g., Batson, Fultz & Schoenrade, 1987). In this respect, personal distress is considered a self-oriented, egoistic emotional response (Davis, 1980; Eisenberg & Strayer, 1987; Eisenberg, 2000) as the focus is on one's own negative emotions and the attenuation of these emotions (Batson et al., 1987; Eisenberg & Strayer, 1987; Eisenberg, 2000). In contrast, empathic concern, which is synonymous to sympathy (Wispé, 1986), is usually conceptualized as an 'other-focused' emotional response and is associated with attention turning towards the person in distress (Schroeder, Dovidio, Sibicky, Matthews, & Allen, 1988; Eisenberg et al., 1989). Empathic concern is thus considered an other-oriented, altruistic emotional response as the focus is on another's emotions and a motivation to help reduce the suffering of this person (Batson et al., 1987, Eisenberg & Strayer, 1987; Eisenberg, 2000).

As the term "sympathy" has been raised it should be noted that sympathy and empathy are distinct phenomena. The philosopher Adam Smith (1759) once described sympathy as a process that "allows the minds of men to become mirrors of one and other" which is a definition more akin to the empathy definition described earlier. However, sympathy in its present understanding is now defined as an emotional response that arises from an affective empathic response, and is more akin to feelings of concern for someone (Wispé, 1986) (i.e., empathic concern). It should also be noted that although much of the

research on affective empathy has examined personal distress and empathic concern, empathic affective responses pertaining to other emotions such as anger (e.g., deGreck et al., 2012) have also been examined.

The cognitive component of empathy emphasizes the understanding of the feelings of another (Kohler, 1929) and typically entails accurately recognizing another person's feelings (Davis, 1980; Hoffman, 1987; Ickes, Stinson, Bissonnette, & Garcia, 1990). This definition of empathy mainly focuses on the underlying cognitive processes and ignores the emotional responses to others' feelings. For example, perspective taking, which refers to a cognitive ability applied to understand the feelings of others by putting ourselves in their place (Mead, 1934), is one of the cognitive processes researched by empathy researchers. The most commonly examined index of cognitive empathy, however, is empathic accuracy (everyday mind reading), which helps individuals make successful inferences of targets' thoughts and feelings (Ickes, 1997, 2003).

Thus as humans, our empathic abilities help us to infer the thoughts and feelings of others (Ickes, 2009) and to generate the appropriate affective and behavioural responses (Hoffman, 1987) using both affective and cognitive components. These capacities are central to social interaction and accordingly, our ability to feel and infer others' emotions is considered crucial for healthy functioning in interpersonal relationships (Blair, 2005; Eisenberg & Miller, 1987).

Affective, Cognitive and Dispositional Measures of Empathy

Our empathic abilities have been induced, manipulated, and examined using a multitude of methods and outcome measures. In general, however, research has predominantly examined empathy in response to observing another person's pain or suffering. Empathic responses to others' pain have typically been studied by examining how

individuals empathically respond when watching others being subjected to painful physical stimuli (e.g., Avenanti, Buetti, Galati, & Aglioti, 2005; Minio-Paluello, Baron-Cohen, Avenanti, Walsh, & Aglioti, 2009; Valeriani et al., 2008), expressing painful facial expressions (e.g., Zhu, Zhang, Fan, & Han 2007), interacting in a naturalistic social interaction (e.g., Soto & Levenson, 2009; Ickes, Stinson, Bissonnette, & Garcia, 1990), or talking about an unpleasant or sad event (e.g., Zaki, Bolger, & Ochsner, 2009).

Methods used to assess affective empathy tend to be either based on self-report or psychophysiological measures. One self-report measure, the Emotional Response Questionnaire (ERQ; Coke, Batson, & McDavis, 1978), assesses self-reported empathic concern and personal distress in response to observing the suffering of another. The scale is commonly employed as a measure of intrapersonal affect in response to another's suffering (e.g., Batson, Eklund, Chermok, Hoyt & Ortiz, 2007; Batson, Fultz & Schoenrade, 1987; Batson, Lishner, Cook & Sawyer, 2005; Niezink, Siero, Dijkstra, Buunk, & Barelds, 2012), and is simple to administer consisting of emotional adjectives that reflect empathic concern and personal distress.

Psychophysiological techniques used to measure affective empathy include methods such as neuroimaging, electroencephalogram, facial electromyographic activity, startle blink reflexes, heart rate, blood volume pulse and galvanic skin response (for a review see Neumann & Westbury, 2011) that link affective empathy to the central and peripheral nervous system (Decety & Ickes, 2009). One advantage that these methods have over self-reported measures is that the assessed responses are less susceptible to volitional control, and are thus less influenced by response biases (e.g. social desirability bias). However, one potential limitation in using psychophysiological techniques to investigate empathy concerns the interpretation of the findings in relation to distinguishing between empathic concern and personal distress emotions. This limitation is evident in techniques such as galvanic skin

response which measure emotional arousal in general and therefore make it difficult to distinguish and identify specific emotions. This limitation does not apply to heart rate responses, and in fact, research demonstrates that heart rate can distinguish between empathic concern and personal distress. On one hand, an elevated heart rate is associated with a flight-or-fight response (Cacioppo, Berntson, Larsen, Peohlmann, & Ito, 2000) and is positively related to situations that evoke distress (Eisenberg, Fabes, Bustamante, Mathy, Miller, Lindholm, 1988; Eisenberg, Schaller et al. 1988; Eisenberg et al., 1991). Therefore it would be expected that observing another suffering physical pain may induce distress and in turn, elevate heart rate. On the other hand, the attenuation of the parasympathetic nervous system (i.e., deceleration of heart rate) has been associated with an orienting response. As empathic concern is an orienting emotional response that yields approach-related behavior to a target (Hoffman, 1984), it can be expected that a decelerated heart rate response would be associated with empathic concern (Suess, Porges, & Plude, 1994), an assertion supported empirically (see Eisenberg, Fabes et al., 1988; Eisenberg, Schaller et al., 1988; Eisenberg et al., 1991). Thus, heart rate is evaluated to be a useful measure of affective empathy that distinguishes the two focal emotional responses commonly investigated in the empathy literature (i.e., empathic concern and personal distress) and unlike self-report measures, is not as susceptible to response biases.

One novel use of psychophysiological techniques to study empathy examines the correspondence between two individuals' physiological states as a measure of emotional contagion. In short, emotional contagion is the extent to which two individuals' visceral emotional responses converge on one another (Hatfield, Cacioppo, & Rapson, 1993). Levenson and Ruef (1992) considered that the physiological synchrony between two people will lead to more accurate emotional inferences. To this end, they examined the correlations between married couples' physiological responses (e.g., heart rate, galvanic skin response)

and demonstrated that emotional inferences (i.e., empathic accuracy) were associated with the level of physiological synchrony between the married couples.

Outcome measures concerning cognitive empathy typically examine empathic accuracy which, as aforementioned, helps individuals to make successful inferences of targets' thoughts and feelings (Ickes, 1997, 2003). All measures of empathic accuracy require the participant to watch videos of a target discussing a personal experience. Studies using this method typically implement a two-phase protocol, a target phase and an observer phase. One method developed by Ickes, Bissonnette, Garcia, and Stinson (1990) requires targets, who have discussed and recorded an experience, to play back their own recording during the target phase and stop the video at times in which they recall thinking or feeling something specific. In the observer phase, participants are asked to watch the recording and infer the thoughts and/or feelings of the target at those times reported by the target in the target phase. Two other methods used to study empathic accuracy focus solely on emotional accuracy. In addition to physiological synchrony described above, Levenson and Ruef's (1992) method of empathic accuracy asks targets to play back their recordings during the target phase and continuously rate their emotional state (positive or negative) using a rating dial. The observer phase in this setup has participants watching each video and inferring targets' feelings using the same rating dial in real-time. A more recent measure of empathic accuracy uses the familiar two-phase protocol as the previous two examples, however, targets report on a number of emotions using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) following the recording in the target phase (Côté et al., 2011; Kraus, Côté, & Keltner, 2010; Ma-Kellams & Blascovich, 2012). Participants then infer the feelings of the target after watching the video using the same PANAS questionnaire in the observer phase. For all empathic accuracy measures, the correspondence between

targets' report and participants' inferences is the measure of empathic accuracy, with greater correspondence reflecting greater empathic accuracy.

Aside from affective and cognitive outcome measures in response to the suffering of another, there are a number of measures of empathy that assess dispositional empathic tendencies, which are typically recorded with questionnaires. The most widely used questionnaires are Hogan's (1969) Empathy Scale, which focuses on the dispositional cognitive aspects of empathy, and Mehrabian and Epstein's (1972) Questionnaire Measure of Emotional Empathy, which assesses dispositional affective empathic tendencies. By far the most popular questionnaire of dispositional empathy to date is Davis' (1980, 1983 and 1994) Interpersonal Reactivity Index (IRI). The popularity of this measure is partly due to the fact that the measure considers the multiplicity of empathy, by assessing both dispositional affective empathy of empathic concern and personal distress, and dispositional cognitive empathy of perspective taking and empathic fantasy.

Many studies in this literature have shown that the onlooker's responses to others' pain can be very different depending on interpersonal factors such as emotional sharing, relationship length, and the interpersonal relationship between the onlooker and the target (e.g., Avenanti et al., 2005; Avenanti, Sirigu, Aglioti, 2010; Marangoni, Garcia, Ickes, & Teng, 1995; Singer, Seymour, O'Doherty, Kaube, Dolan, & Frith, 2004; Singer, Seymour, O'Doherty, Stephan, Dolan, & Frith, 2006; Stinson & Ickes, 1992) and individual difference factors such as motivation (e.g., Pickett, Garner, & Knowles, 2004), self-monitoring (Mill, 1984) and gender (Klein & Hodges, 2001).

Genetic transmission is another antecedent that has been demonstrated to shape empathy. Twin studies have shown a modest influence of heritability on empathy in response to distress (Zahn-Waxler, Shiro, Robinson, Emde, & Schmitz, 2001; Zahn-Waxler, Robinson, & Emde, 1992) and dispositional empathic concern (Davis et al. 1994; Matthews, Batson,

Horn, & Rosenman, 1981; Rodrigues, Saslow, Garcia, John, & Keltner, 2009). In addition, environmental factors concerning child-rearing practices, such as the stability of long-term parenting practices, and the level of parent-child interaction are also associated with healthy empathy development in children (Tong et al., 2012). In a longitudinal study, Knafo, Zahn-Waxler, Van Hulle, Robinson, and Rhee (2008) (see also Knafo, Zahn-Waxler, Davidov, Van Hulle, Robinson & Rhee, 2009) examined the genetic and environmental contribution to dispositional empathic development in young twins (14 to 36 months) and their mothers at multiple time points. Findings from their research demonstrate that empathic dispositions are associated with both genetic and environmental factors. On one hand, genetic effects accounted for the variability in empathy from 20 months and steadily increased as children grew up, accounting for change and continuity in children's empathy over time. On the other hand, although a shared environment accounted for continuity in empathy over time in children as young as 14 months, this effect steadily decreased as children grew up. Importantly, in the same study, Knafo et al. (2008) also found that environmental factors, by contrasting monozygotic and dizygotic twins, accounted for the association between empathy and prosocial behaviour, thus suggesting the influential role of environment in the link between empathy and behaviour.

One possible (and understudied) factor likely to shape empathic responses is cultural background. As will be reviewed below, the existing evidence on the role of culture in empathy is scarce and limited to the examination of empathic responses to social pain using only certain indices of empathy. However, before proceeding with the review of empirical research examining the role of culture in empathy a clarification of the term "culture" will be presented.

Defining Culture

Similar to the term “empathy”, the term “culture” has also been conceived relatively recently, and for the last century its definition has been debated amongst scholars in different social science disciplines (for an early review see Kroeber & Kluckhohn, 1952). The term’s earliest conception, rooted in anthropology, defined culture as a human’s capabilities and habits (e.g., knowledge, art, morals, customs, speech, religion, government) obtained through being a societal member (Tylor, 1871; Wissler, 1923). In a similar vein, much later Triandis (1996) extended this definition to “a pattern of shared attitudes, beliefs, categorizations, self-definitions, norms, role definitions and values that is organized around a theme” (pp. 408). The definitions of culture outlined above essentially define culture as a pattern of descriptive outcomes (e.g., art, attitudes and beliefs) that revolve around a theme. However, although it is useful to specify culture in terms of descriptive cultural information these definitions will always be limited in their scope as there is little to inform us of the acquisition of these cultural outcomes.

Other scholars have focused explicitly on defining culture in terms of the process by which cultural information is shared and have implicated social mechanisms as the system responsible for the acquisition and spread of cultural information (Linton, 1936; Richerson, Boyd & Heinrich, 2003; Richerson & Boyd, 2005). Richerson, Boyd and Heinrich (2003; see also Richerson & Boyd, 2005) expand upon this definition with a discussion on the storage system required to hold cultural information. They propose that cultural information is stored implicitly in an individual brain (see Kroeber & Kluckhohn, 1952) or within any other form of media. Therefore, synergising all the definitions of culture presented thus far it becomes clear that culture is a pattern of thematic descriptive outcomes that is acquired through social interaction, and which is stored either in our brains or on other forms of media such as books.

Defining culture, albeit important, does not address the issue as to whether culture is a valid construct to measure, or whether culture can be measured at all.

Alfred Kroeber (1917), an influential anthropologist, argued that for at least two reasons, culture could be examined as its own level of analysis, as opposed to examining directly at the individual level for example. Firstly, individuals come and go and yet their culture will remain long after the passing of these individuals. Secondly, because cultural information is not contained within one individual but across the whole collective, culture can be treated as a group-level variable, super-ordinate to the individual level. If culture is considered a super-ordinate variable that consists of a pattern of other independent, yet relatively stable, variables (Lonner & Adamopoulos, 1997) then culture can be examined as a moderator with the power to influence the relationship between two variables.

Arguably, there is specific cultural information (or collections of cultural information) that has flourished over the centuries. This information has permeated the psychology of exposed individuals for generations and to a certain extent, define the boundaries of a culture. Furthermore, this information would be stored in the individuals themselves or in media such as song or books and would spread to others and with time, become ingrained within the minds of a sizeable number of individuals. For example, two collections of cultural information that have flourished are the ancient philosophical principles of Confucianism and Aristotelianism. Each of these philosophical principles have respectively influenced East Asian and European thought processes for centuries (Lloyd, 1996).

I will not delve into great detail on the main principles of Confucianism and Aristotelianism, however, I will briefly describe how each of these philosophical principles spread throughout East Asia and Europe defining aspects of each culture. Confucius was born in China and strived to teach others virtues that cultivate morality and filial piety. His collection of works, the Analects, refers to Confucius' ideas concerning social, moral and

political philosophy. In this collection, Confucius confers his idea of ren, a virtuous quality of benevolence one should exemplify, which if cultivated can be a guiding principle in creating harmonious social interactions. These principles, along with a host of others, were founded during the Tang dynasty and along with his disciples, spread throughout China. Although Confucian principles lost their influence after the Han dynasty to other philosophies (e.g., Buddhism and Daoism) ultimately Confucianism spread from China to Vietnam, Taiwan, Korea and eventually Japan. Thus, many individuals from East Asian nations have been exposed to information pertaining to Confucianism and to this day, the philosophy is arguably still continuing to shape the psychology of many East Asians (Nisbett & Masuda, 2003).

By the same token, many Western individuals have been exposed to Aristotelianism which is arguably a defining aspect of many Western Europeans and North Americans. Aristotle was born in Macedonia and wrote extensively on the philosophies of the mind, political theory and logic. Similar to Confucius, many of Aristotle's ideas were collated such as his collected works comprising the Organon, which generally refer to Aristotle's theses on logic. In this collection, Aristotle formulates rules for appropriate reasoning and in essence demonstrates how logic is the tool by which we come to learn anything. By principle Aristotle was extraordinarily concrete in his philosophical engagement, which differed from his predecessor, Plato, who typically engaged in more abstract thought. Aristotelian principles were predominantly unknown during the early medieval times, but his ideas quickly gained momentum and spread throughout Europe by Thomas Aquinas in the 13th century. Between the 13th and 16th centuries, Aristotelian principles were woven directly into Christianity. Much later, these principles spread to Northern America in the late 16th century when European settlers began colonizing the Americas.

Thus, Confucianism and Aristotelianism are two examples of collections of cultural information that in their spread have influenced the minds of men and women for centuries. It is important to note that there are other distal and more proximal factors throughout human history that may also have enriched specific cultures and in turn influence human psychology. For example, research examining ecocultural factors relating to farming has shown that differences in farming practices may have longstanding influences on cognition (Talhelm et al., 2014; Uskul, Kitayama & Nisbett, 2008). Confucianism and Aristotelianism merely represent two examples that demonstrate the evolution of a cultural group. In fact, Richard Nisbett (see Nisbett, 2003), an influential cultural psychologist, is a proponent of the notion that many of the cultural differences between Easterners and Westerners witnessed today are due to differences in the social structures, philosophies and ecology of ancient Greece and China.

Theoretical Arguments Linking Culture and Empathy

As noted above, Confucian and Aristotelian philosophic principles have spread throughout East Asia and Europe/North America respectively. Arguably these philosophic principles have defined many aspects of the two cultures insofar that each culture would not be the same without these principles. Therefore, one way to measure the role of culture in empathy would be to examine people that have resided in an area in which powerful cultural information (i.e., cultural information that has permeated the minds of many individuals), such as Confucianism and Aristotelianism, is widespread. East Asian nations and both Western European nations and the United States represent such examples in which the influence of cultural information pertaining to philosophic principles is evident. It should be stated that these philosophic principles do not define East Asian and Western cultures in their entirety, only that these principles are examples of cultural information that have potentially

shaped aspects of these cultures which may still influence psychological phenomena in the present day (Nisbett, 2003; Nisbett & Masuda, 2003). It should also be stated that there are likely to be other cultural groups with differing patterns of cultural information that might shape empathy in unique ways, however for this investigation only Eastern and Western cultural groups will be considered to examine the influencing role of culture in empathy. Throughout this thesis, you will notice that both British and American cultural groups will be contrasted against East Asian cultural groups. It should be noted that British and American cultural groups, on the one hand, are more similar to one and other in a number of personality dimensions (power distance, individualism, masculinity, uncertainty or avoidance, pragmatism and indulgence; Hofstede, 1980). On the other hand however, East Asian cultural groups (e.g. China, Japan, Taiwan) share many similarities with one and other in these dimensions which differ to more Western cultural groups (e.g. Individualism).

Therefore, considering Eastern and Western cultural groups as the unit of analysis four interrelated theoretical arguments that have been shown to differ as a function of cultural group membership are proposed. These arguments, which are outlined in greater detail below, pertain to: 1) self-construal development relating to independence and interdependence, 2) the endorsement of interpersonal harmony, 3) emotional expressivity and, 4) holistic/analytic cognitive thinking styles. The evidence supporting the four arguments presented above comes predominantly from comparative studies employing European American and East Asian individuals.

Self-Construals of Independence and Interdependence

Firstly, accumulated evidence of cultural differences in the construal of the self (i.e., how an individual perceives, comprehends and interprets their self) and interpersonal relationships suggests that empathic responses to others' emotional states would be expected

to vary as a function of cultural background. It has been suggested that in Western cultural contexts, the self is typically experienced as an independent entity, defined primarily by its internal attributes such as preferences, desires, and traits (Kitayama, Duffy & Uchida, 2007; Markus & Kitayama, 1991). In contrast, in Eastern cultural contexts, the self is typically experienced as an interdependent and interpersonally connected entity (Kitayama et al., 2007; Markus & Kitayama, 1991), primarily defined by one's place in social relationships and others surrounding the self.

In line with such cultural differences, several studies have demonstrated that, compared to European Americans, East Asians tend to pay greater attention to others' needs, desires and goals (e.g., Yamagishi, 1988), have their own feelings, thoughts, and needs closely linked to others' feelings, thoughts, and needs (e.g., Kitayama, Markus, & Kurokawa, 2000; Mesquita & Karasawa, 2002; Uchida, Norasakkunkit, & Kitayama, 2004), and perceive their own self as an extension to that of others who are important to them (e.g., Cousins, 1989; Heine, 2001; Kanagawa, Cross, & Markus, 2001). Based on this literature, it might be expected that, compared to Westerners, East Asians would be less self-oriented, perhaps exhibiting less personal distress and be more other-oriented, showing greater empathic concern in response to others' negative emotional states. This would help them direct their attention to the person in distress so they are able to behave in ways that are culturally sanctioned. Moreover, it might also be expected that greater concern for others' needs among East Asians would make them more empathically accurate than Westerners; particularly beneficial for maintaining interpersonal harmony, a Confucian principle that is fostered amongst Easterners from a young age (Rothbaum & Rusk, 2011).

Interpersonal harmony

Confucian principles emphasize the importance of maintaining interpersonal harmony (Lin, 1936; Munro, 1985). These principles of interpersonal harmony are fostered from a young age among East Asians which contrasts with European American children who are generally raised to endorse values that reflect an independent self-construal such as autonomy, environmental mastery and self-assertion (Rothbaum & Rusk, 2011).

Interestingly, research has demonstrated a positive association between emotional suppression and interpersonal harmony in East Asians but not European-Americans (Wei, Su, Carrera, Lin, & Yi, 2013). In addition, empirical studies have demonstrated that East Asians, compared to European Americans, demonstrate the tendency to suppress both positive and negative emotions in order to maintain interpersonal harmony (Chiang, 2012) and consider interpersonal harmony a relatively more important value to embody self-esteem (Kwan, Bond & Singelis, 1997). In fact, the motivation to maintain harmony is so strong in collectivistic cultures such as Japan that in conflict situations, Japanese are more concerned in maintaining interpersonal harmony compared to their American counterparts who are concerned with seeking justice (Ohbuchi, Fukushima, & Tedeschi, 1999). In keeping with these cultural differences in interpersonal values, studies consistently show cultural differences in conflict styles in which Easterners, compared to Westerners, have the tendency to avoid conflicts (Friedman, Chi, & Liu, 2006; Morris et al., 1998) and opt for less assertive conflict styles (Brew & Cairns, 2004).

Accordingly, it might be expected that, compared to Westerners, Easterners would be more empathically accurate, as a greater understanding of another's emotional state would assist behaviour in ways that maintain interpersonal harmony. In addition, if goals of harmony maintenance are paramount, as is often the case in Eastern cultural contexts, then affective empathic responses may be attenuated in Easterners compared to Westerners. A

three-person situation in which an individual observes two people engaged in an intense disagreement is such a condition in which the known cultural differences in motivational goals in conflict situations (i.e., harmony goals for Easterners and justice goals for Westerners) might emerge and shape empathy. Arguably, attenuating one's emotionally empathic responses could likely be a valid strategy to maintain the harmony between all parties involved in the conflict. This is because displaying one's emotions signals to all parties that you wish to become involved in the conflict which in turn could risk exacerbating the conflict between the two parties. Considering the topic of empathic displays of emotion segues into another potential argument that associates culture to empathy, the cultural differences in emotional expression.

Emotional expression

Considering affective empathic outcomes, a third argument that could illustrate the role of culture in empathy concerns cultural differences in emotional expressivity. The predominant view suggests that East Asian individuals have the propensity to display emotions less in comparison to their European American counterparts (e.g., Ekman & Friesen, 1969; Matsumoto, 1990; Matsumoto, Takeuchi, Andayani, Kouznetsova & Krupp, 1998). It is suggested that these cultural differences in emotional expression are due to culturally sanctioned display rules that dictate the suitability and intensity of emotional expressions in a given situation (Ekman & Friesen, 1969).

Studies have shown that Americans, compared to Japanese, report feeling emotions more intensely and for a longer duration (Matsumoto, Kudoh, Scherer, & Wallbott, 1988; Mesquita & Karasawa, 2002) and are less likely to mask emotions, closing the gap between internal emotional states and outward expression (Gross & John, 2003). Moreover, recent studies have shown that Japanese, compared to Americans, are less likely to report emotions

longitudinally (Mesquita & Karasawa, 2002) and mask emotional displays of negative and positive emotions when in the presence of others (Ekman, 1972; Friesen, 1972; Matsumoto & Kupperbusch, 2001).

Therefore, the evidence from this research supports a pattern of affective empathy that contrasts the pattern described by the self-construal theoretical framework, which asserts that East Asians would be more affectively empathic compared to Westerners. In fact, the pattern following an emotional expressivity framework is more in line with the expectations considered from an interpersonal harmony theoretical framework that also argued for attenuated affective empathic responses amongst Easterners compared to Westerners. Thus, it might be expected that compared to Westerners, the less emotionally expressive Easterners might exhibit less personal distress and empathic concern in response to others' negative emotional states, especially in public displays of affective empathic responses.

Cognitive thinking styles

Another potential argument supporting the association between culture and empathy concerns field-dependent/field-independent style of thinking (Witkin, Dyk, Faterson, Goodenough & Karp, 1962). On one end of the spectrum, field-independent (analytic) thinkers rely on internal bodily cues to orient themselves in the social environment, whereas field-dependent (holistic) thinkers are more reliant on external cues to navigate the social environment. Research has shown that analytic thinking is negatively related to trait emotional empathy in a group of introductory psychology students (DeVore, Beck, Clark, & Goorey, 1989). Surprisingly however, the influence of culture in empathy has not been examined using this theoretical framework considering the wealth of research that presents cultural differences in thinking styles.

Nisbett and colleagues (2001, 2003) suggest that Easterners have the tendency to think holistically, attending to the whole context, and perceiving contextual objects in relation to one and other. Conversely, Westerners have the tendency to think more analytically, attending to objects and their features, and perceiving objects independent of the surrounding context.

In line with these cultural differences, studies have shown that East Asians, compared to their European American counterparts: 1) attend to the relations between objects opposed to the object itself (Kitayama, Duffy, Kawamura, & Larsen, 2003; Masuda & Nisbett, 2001); 2) are more likely to reason by considering the relation between objects opposed to following a series of abstract rules (Choi, Dalal, Kim-Prieto, & Park, 2003; Norenzayan, Smith, Kim & Nisbett, 2002); 3) are less likely to commit the fundamental attribution error and explain behavior more in terms of situational biases opposed to dispositional biases (Morris & Peng, 1994); 4) are more tolerant of contradictory arguments (Peng & Nisbett, 1999); and 5) expect a phenomena to be in a state of constant change due to interactions with other elements, as opposed to remaining relatively static and unaffected by other interacting elements (Ji, Nisbett, & Su, 2001).

Pertinent to the current argument is research which demonstrates that East Asians are more influenced by the emotions of surrounding faces when judging a central target's emotions (Masuda, Ellsworth, Mesquita, Leu, Tanida, & van de Veerdonk, 2008; Masuda, Wang, Ishii, & Ito, 2012). Although there is a subtle nuance between emotional judgment and empathic accuracy, it is feasible that empathic accuracy responses for a target individual might also be influenced by others in the scene and follow a similar pattern. A three-person situation in which an individual observes two targets engage in an intense disagreement could provide a context to test this theory. This type of context could also examine how culture influences empathy when observing two people with contradictory viewpoints engaged in an

intense disagreement. As mentioned above, Easterners are more tolerant of contradictory arguments (Peng & Nisbett, 1999) and thus might be less likely to take sides in conflict situations compared to Westerners. However, to reconcile the contradictory arguments, Westerners might be more likely to pick a side and exhibit greater empathic concern for the target they have sided with.

In sum, there are at least four theoretical arguments demonstrating the influential role of culture on empathy. On one hand, self-construals of interdependence experienced among Easterners suggest that Easterners would be more empathically accurate and express more affective empathy in response to a suffering individual compared to Westerners who typically experience self-construals of independence. On the other hand, culturally sanctioned freedoms of emotional expressivity in the West suggest that Westerners might express more affective empathy in response to a suffering individual. Furthermore, in situations with multiple targets, cultural differences in attitudes towards contradictory views and/or motivations to maintain interpersonal harmony could shape affective and cognitive empathy for each of the parties involved in the situation.

Culture and Empathy: Empirical Research

As proposed above, there are multiple ways by which culture can influence empathy and yet interestingly, empirical research examining the link between cultural background and empathy is limited. Two studies investigating affective empathy cross-culturally demonstrate that Westerners tend to be less self-oriented in their emotional response to another person's distress than non-Westerners. Firstly, in an observational study, Trommsdorff, Friedlmeier, and Mayer (2007) examined emotional responses of sympathy, as well as both other-focused and self-focused distress (which were inferred from behavioural reactions to an adult displaying a sad event; her balloon popping), among preschool children across 4 different

cultural groups (Germany, Israel, Indonesia and Malaysia). They found a main effect of culture, children from other-oriented cultural groups (Indonesia and Malaysia) displayed more self-focused distress than did children from individual-oriented cultural groups (Germany and Israel). They did not find cultural group differences in sympathy and other-focused distress. Secondly, Cassels, Chan, Chung and Birch (2010) examined cultural differences in dispositional empathy focusing on empathic concern and personal distress among East Asian and European Canadian young adults, using Davis' (1980) Interpersonal Reactivity Index (IRI). They found that Westerners reported more empathic concern (the tendency to feel sympathy and/or concern for others in negative situations), but less personal distress (the tendency to experience distress and/or discomfort in response to another person's distress) than did East Asians. These findings mirror those by Trommsdorff and colleagues (2007) and also suggest that Westerners are more other-oriented in their emotional response to another person's distress than East Asians.

Concerning the cognitive aspects of empathy, two recent studies focusing on empathic accuracy report mixed findings regarding the effect of cultural background. Soto and Levenson (2009) tested participants from four cultural groups (African American, Asian American, European American and Mexican American) and examined their empathic accuracy of targets that were also of the same ethnicities (e.g., Mexican American); participants observed targets of each ethnicity. They found neither a main effect of culture, nor an in-group advantage (i.e., no participant ethnicity \times target ethnicity interaction) in empathic accuracy. This contrasts the in-group advantage effect that is typically present in cross-cultural research examining emotion recognition which shows greater emotional accuracy when perceivers and expressors share the same cultural background (for a review see Elfenbein & Ambady, 2002a). The in-group advantage has also been shown to modulate empathic responses at the neural level (Xu, Zuo, Wang, & Han, 2009) although increased

cultural experience with out-group members does attenuate this effect (Zuo & Han, 2013). It should be noted that a second review examining the emotion recognition literature has not identified a clear pattern of an in-group advantage occurring across cultural groups (Lee, Chiu, & Chan, 2005).

In another line of research which has examined the association between cognitive empathy and culture, Ma-Kellams and Blascovich (2012) studied an important moderator of cultural differences in empathic accuracy, namely whether the observed target is a stranger or a close other. They found that when European American and East Asian participants were asked to infer the emotions of strangers and close others who had described a recent emotional experience, East Asians inferred the emotions of close others more accurately than did European Americans. However, European American participants inferred the emotions of strangers more accurately than did East Asian participants.

Other lines of research have examined cultural differences in empathy at the neural level. One study recruited Chinese and German participants and, using fMRI, examined empathy for anger (deGreck et al., 2011). In this study, de Greck et al. (2011) asked participants to intentionally empathize with familiar faces displaying an angry expression, a familiar face displaying a neutral expression or an unfamiliar face displaying a neutral expression. They demonstrated a significant main effect of culture as shown in stronger dorsolateral prefrontal cortex (DLPFC) hemodynamic responses among Chinese participants compared to German participants when intentionally empathizing with a familiar face displaying anger. However, German participants, compared to Chinese participants, showed stronger right temporo-parietal junction, right inferior and superior temporal gyrus and left middle insula hemodynamic responses for the same condition. The DLPFC has been linked to emotional regulation strategies (e.g., Ochsner, Bunge, Gross, & Gabrieli, 2002; Ochsner & Gross, 2005) and thus the results are interpreted that the greater DLPFC activity evident in

the Chinese group reflects greater emotional regulation of anger emotions. One interpretation the authors suggest concerns cultural principles of interpersonal harmony. Because these principles are more valued in an Eastern cultural context compared to a Western cultural context (Markus & Kiyama, 1991), Easterners may have regulated their anger responses more efficiently to maintain harmony. A second study conducted by Xu et al. (2009), recruited Chinese and Caucasian participants and using fMRI, examined empathy in response for physical pain. For this study, the researchers were primarily interested in the in-group advantage affect and demonstrated greater activity in the anterior cingulate cortex and insula cortex, regions previously associated with empathy (see Fan, Duncan, de Greck, Northoff, 2011; Singer et al., 2004; Blair, Morris, Frith, Perrett, & Dolan, 1999; Carr, Iacoboni, Dubeau, Mazziotta, & Lenzi, 2003), in both Chinese and Caucasians when observing racial in-group members.

Aims of the Thesis

Overall, the studies relating to cultural differences in empathy are limited and lack consistency in terms of the type of methods that are used. Existing culture comparative studies typically examine either affective or cognitive components of empathy separately and aside from the study conducted by Xu et al., (2009), examined empathy in response to one form of pain: social pain. Thus, there are many issues unresolved in the literature, discussed in greater detail below, that highlight the need to conduct further research in this area. The empirical studies reported in this thesis were designed to extend our understanding of the association between culture and empathy and draw upon some of the theoretical frameworks presented in this introduction to guide research questions.

One unresolved issue in the literature concerns the generalizability of culture's influence on empathy to different situations. As demonstrated, the vast majority of research

has only examined social pain to induce empathic responses and only one study has examined physical pain to induce empathic responses. The first study in this thesis, described in Chapter Two, examines affective empathy, captured in real-time as participants observe someone subjected to physical pain. In addition, Chapters Three and Four report studies that examine affective and cognitive empathy in response to observing social pain. Chapter Five presents a study examining affective empathy in response to a situation of an individual battling cancer. Chapter Six presents a study examining empathy in a three-person situation in depicting an intense disagreement between two individuals. This study also represents the first study to examine cultural differences in empathy in a three-person situation. In this type of situation, an individual's affective empathy can be simultaneously assessed for the two people engaged in the intense disagreement.

A second unresolved issue pertains to the assessment of multiple indices of empathy in response to the same type of stimuli. Reviewing the limited literature documenting the role of culture in empathy it became clear that no studies prior to those reported in this thesis had cross-culturally and simultaneously examined both cognitive and affective empathic outcomes in response to observing a suffering individual. To this end, Chapters Three and Four examine both affective and cognitive components of empathy in response to observing social pain.

A third unresolved issue concerns behavioural consequences of any potential cultural differences in empathy. Trommsdorff et al. (2007) illustrates the relationship between empathic concern and prosocial behavior across cultures, replicating the general association between empathic concern and prosociality (e.g., Mehrabian & Epstein, 1972; Davis, 1983; Eisenberg & Miller, 1987). However, Trommsdorff et al. (2007) sampled children for their study, and it is unknown whether this association translates to an adult sample. To this end,

Chapter Five examines the association between empathy and the prosocial behaviour of charity donating in two cultural groups.

A fourth unresolved issue concerns explanations for any potential cultural differences in empathy. Four arguments relating to cultural differences in self-construal, interpersonal harmony, emotional expression and cognitive thinking styles were proposed that could account for the cultural variation in empathic responding. Driven by findings reported in Chapters Two and Three, Chapter Four considers one of these arguments and examines emotional expression norms as a potential explanation for cultural differences in affective and cognitive empathy. Chapter Six provides preliminary research that draws from a cognitive styles theoretical framework to explain cultural differences in affective empathy in response to observing two individuals engaged in an intense disagreement. As guided by Peng and Nisbett's (1999) suggestion that Easterners would be likely to take sides less compared to Westerners due to cultural differences in cognitive thinking styles relating to the acceptance of contradictory arguments (i.e., dialectical thinking), side-taking is used as a proxy for dialectical thinking in this study to explain cultural differences in affective empathy.

A fifth unresolved issue concerns the predictive value of dispositional empathy in empathic outcomes and prosocial behaviour which has already been established in the literature (Davis, 1983; Litvack-Miller, McDougall, & Romney, 1997). Specifically, the aim is to establish evidence that demonstrates whether the association between dispositional empathy and empathic outcomes generalizes to other cultural groups. Existing research has already examined and demonstrated the positive association between dispositional empathy and associated outcomes in Western samples. It is well documented that Westerners' personality traits exhibit the tendency to remain more stable, and to be generally more predictive of their behaviour in a variety of situations (Chiu & Hong, 1999; Hong, Ip, Chiu, Morris, & Menon, 2001; Choi, Norenzayan, & Nisbett, 1999). However, Easterners'

personality and attitudes exhibit the tendency as more changeable compared to their Western counterparts (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999) and adjust their behavior to fit the surrounding environment (Morling, Kitayama, & Miyamoto, 2002; Kanagawa et al., 2001). Thus, dispositional empathy may not be a useful tool to predict empathic outcomes and behaviours in an Eastern cultural context. In each chapter I examine the association between dispositional empathy and empathic outcomes with a focus on the moderating role of cultural group.

It is important to understand empathy from a cultural perspective because understanding the dynamics of individuals' responses to others' suffering cross-culturally has implications for understanding cultural differences in social psychological, clinical or organizational phenomena such as prosocial behavior, affective functioning in interpersonal interactions, and conflict resolution among others. Moreover, the study of how culture shapes empathy can contribute to the advancement of our general understanding of how cultural context shapes emotions. Therefore, the studies presented in the following chapters pave the way into researching the area of culture and empathy which will, I hope, reveal new directions for future research.

Overview of the thesis

In Chapter Two I present a study in which participants' self-reported affect ratings and physiological reactions (heart rate) were measured as they watched a physically painful situation. In addition, the moderating role of cultural group between dispositional empathy, as assessed by Davis' (1980) IRI (empathic concern, personal distress and perspective taking), and empathic outcomes (self-reported affect ratings and physiological reactions) was explored. Study results revealed that in response to observing physical pain, British participants reported greater negative affect compared to East Asian participants. However,

there were no cultural differences in heart rate. Concerning dispositional empathy, cultural group did not moderate the relationship between all dispositional empathy measures and empathic outcomes in response to observing physical pain. In addition, dispositional measures of empathy did not predict negative affect ratings in response to observing physical pain.

Chapter Three presents a study that examined self-reported affect rating, physiological reactions (heart rate), empathic concern and empathic accuracy as participants watched a socially painful situation. In addition, I continued to explore the moderating role of cultural group in the relationship between dispositional empathy and empathic outcomes. Study results in this chapter revealed the same pattern of findings reported in Chapter Two: British participants reported greater negative affect compared to East Asian participants in response to observing social pain and there were no cultural differences in heart rate. In addition, British participants reported greater empathic concern compared to East Asian participants. However, East Asian participants were more empathically accurate than their British counterparts. This effect was statistically independent of target comprehension for all affective outcomes. Results in this study also showed that dispositional empathic concern, although positively associated with empathic outcomes of empathic concern and heart rate is not moderated by cultural group. Moreover, although not moderated by cultural group, dispositional personal distress was negatively associated with empathic accuracy.

In Chapter Four I present a study that addresses potential explanations for the findings reported in Chapter Three, namely in-group advantage and target comprehension effects. The study is procedurally similar to the study presented in Chapter Three and examined empathic outcomes of self-reported affect rating, empathic concern and empathic accuracy (but not physiological reactions of heart rate). One important difference in this study was that both British and Chinese participants observed social pain experiences from Chinese, as well as

British individuals. In general, study results were in line with findings from Study 2; British participants reported greater empathic concern and were less empathically accurate compared to East Asian participants. However, there were no cultural differences in affect rating responses. Importantly, results concerning cultural differences revealed no in-group advantage or effects of target comprehension in any of the empathic responses. Results concerning dispositional empathy revealed that associations between dispositional empathic outcomes were only evident in the British group.

Chapter Five reports a study that specifically examined the behavioural consequences of cultural differences in empathy. The findings concerning empathic concern were in line with preceding studies and the research pertaining to culture and empathy in the literature. In addition, findings concerning personal distress replicated Trommsdorff et al. (2007) and Cassels et al.'s (2010) findings; Japanese individuals reported more personal distress. Importantly, empathic concern accounted for the cultural differences in prosocial behaviour.

Chapter Six explored cultural differences in empathy by targeting an overlooked area in the empathy literature, namely three-person situations. The findings demonstrated that American participants were more likely to take sides when observing a conflict between two friends and in addition, empathised with one friend over the other compared to Japanese participants. Interestingly, cultural differences in side-taking decisions accounted for the cultural differences in affective empathy (empathic concern and personal distress). In addition, cultural differences in empathic concern accounted for side-taking decisions. Findings are discussed and interpreted in terms of dialectical thinking, specifically the contrasting attitudes to contradiction noted to differ between Western and Eastern cultural groups. Findings from this study could also be interpreted in terms of interpersonal harmony which is discussed, specifically the contrasting motivations noted between Western and Eastern cultural groups in conflict situations.

In the final chapter I present a general overview of the research findings. This chapter ends with concluding remarks regarding each study and discusses the implications for real-world issues. A brief look at some of the unanswered questions regarding the current research is explored. Finally, the contribution of this research is evaluated concerning our understanding of culture and empathy and the possible directions that future research can explore.

CHAPTER TWO

Empathy in Response to Observing Physical Pain

The aims of the first study were to examine in two cultural groups 1) the moderating role of cultural group in emotional empathy in response to observing physical pain, and 2) the moderating role of cultural group in the relationship between dispositional empathy and emotional empathy. For this study, I construe self-reported emotional empathy broadly, defining it as an affective state in response to the suffering of another.

Below, I report results of an experiment conducted with White British (BR), to whom I refer as British from now on, and East Asian (EA) cultural groups residing in the UK to address the study aims. The experimental stimuli used to induce an empathic response consisted of four videos depicting a hand being punctured by a needle and three matching control conditions, similar to visual stimuli used in previous research investigating empathy for pain (e.g., Avenanti et al., 2005; Minio-Paluello et al., 2009; Valeriani et al., 2008).

To address the first aim of the study, British and East Asian participants were asked to report their affective state while watching the videos. In addition, participants' autonomic responses in the form of heart rate were recorded using electrocardiography (ECG) as a proxy for personal distress and empathic concern.

To address the second aim of the study, British and East Asian participants were asked to report their dispositional cognitive and affective empathy using Davis' (1980) Interpersonal Reactivity Index (IRI). Specifically, three of the subcomponents of the IRI were used to measure empathic concern and personal distress as a measure of dispositional affective empathy, and perspective taking as a measure of dispositional cognitive empathy.

Two opposing predictions can be made regarding the first aim of the study. On one hand, as Westerners have the tendency to be more expressive compared to their East Asian counterparts (Ekman, 1972; Friesen, 1972; Matsumoto et al., 1988; Mesquita & Karasawa,

2002), it may be expected that British participants would express more negative affect in response to another's physical pain compared to East Asian participants. On the other hand, as Easterners have the tendency to be more collectivistic compared to their Western counterparts (Kitayama et al., 2007; Markus & Kitayama, 1991), it may be expected that East Asian participants would be less self-oriented and more other-oriented and in turn feel the target's distress more strongly compared to British participants, which may result in East Asians reporting more negative affect.

Concerning autonomic responses, it is predicted that heart rate would reflect affect rating responses, although, no specific direction (i.e., increase or decrease in heart rate) is predicted. Although the video depicting a hand being punctured by a needle is designed to induce an empathic response (Avenanti et al., 2005; Minio-Paluello et al., 2009; Valeriani et al., 2008), the autonomic empathic response could manifest itself as either a reactive emotion of empathic concern (i.e., decrease in heart rate) or a parallel emotion of distress (i.e., increase in heart rate). It is expected that whichever cultural group expresses the greater negative affect rating then the difference in heart rate compared to a baseline from that cultural group should be greater in magnitude compared to the other cultural group.

The second aim of the study is exploratory and thus tentative predictions are made. In general, the IRI has proven to be useful in predicting behaviors of a pro-social nature (Davis, 1983; Litvack-Miller et al. 1997) such as organ donation willingness (Cohen & Hoffner, 2012) and actively helping persecuted school friends (Gini, Albiero, Benelli, & Altoè, 2007), and emotional empathic concern in response to an individual struggling through life (Davis, 1983). Thus, it may be expected that affective components of the IRI (i.e., empathic concern and personal distress) would predict negative affect rating. However, the existing studies recruited individuals from Western samples, whose personality traits have been shown to exhibit the tendency to remain more stable, and to be generally more predictive of their

behaviour in a variety of situations (Chiu & Hong, 1999; Hong et al., 2001; Choi et al., 1999). Therefore, the above prediction might only emerge for British participants, but not East Asian participants. In fact, the predictive value of the IRI for behavior in a Eastern sample is unknown. Easterners have the tendency to view their personality and attitudes as more changeable compared to their Western counterparts (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999) and adjust their behavior to fit the surrounding environment (Kanagawa et al., 2001; Morling et al., 2002). Consequently, Easterners' sensitivity to contextual cues and adaptability of behavior means that personality traits may not always be useful in predicting actual behavior. Hence, it could be (tentatively) predicted that the IRI would predict affect rating and heart rate only in the British sample, but not in the East Asian sample.

Method

Participants. Thirty-eight participants who self-identified as British (22 female, $M_{age} = 20.53$ years) and 33 participants of East Asian origin¹ (approximately 73% of Chinese background) (25 female $M_{age} = 23.70$ years) studying at a British university participated in a study on interpersonal relationships in exchange for £3.

Procedure. Participants completed the study individually in the lab. Initially, electrodes used to measure heart rate were fitted to participants followed by a signal check of

¹ The East Asian cultural group consisted of 19 Chinese (8 from Hong Kong), 4 Japanese, 4 Taiwanese, 4 Vietnamese, 2 Bruneians, 2 Koreans and 1 Malaysian. Concerning the duration of time that the East Asian cultural group had spent in the UK, 15.6% of the group had resided in the UK for less than 6 months, 34.4% for up to a year, 12.5% between 1 and 2 years, 28.1% between 2 and 5 years, and 9.4% between 5 and 10 years.

the ECG response. A 5-minute baseline heart rate response was then obtained as participants completed an online questionnaire containing three sub-components of Davis' (1980) IRI (Empathic Concern, Perspective Taking and Personal Distress) and demographic questions (age, sex, ethnicity and duration of residence in home country). Following the completion of the questionnaire, participants observed four approximately 10-second long videos in random order. The experimental condition (pain condition) showed a needle puncturing a female Caucasian hand (target) at a 45° angle. Three standard control conditions that are commonly used in the literature (see Avenanti et al., 2005; Minio-Paluello et al., 2009; Valeriani et al., 2008) were generated where: a) the needle was replaced by a Q-tip; b) the hand was replaced by a tomato; and c) the hand and the needle were replaced by a tomato and Q-tip. As participants observed videos, they were instructed to provide a continuous report of their affective state using a rating dial (see Affect rating for details). Following each video, participants were asked to indicate how much pain they thought the target was feeling using the Wong-Baker FACES Pain Rating Scale (see Perceived pain for details). At the end of the experiment, participants were thanked, debriefed, and paid.

Measures. To clarify, only heart rate and affect rating responses were continuously measured during each video presentation, whereas other measures were completed either before or after the presentation of the videos.

Interpersonal Reactivity Index (IRI). The three subscales of the IRI were assessed with 7 items each to measure empathic concern (e.g., "I often have tender, concerned feelings for people less fortunate than me") ($\alpha_{BR} = .84$; $\alpha_{EA} = .84$), personal distress (e.g., "I sometimes feel helpless when I am in the middle of a very emotional situation") ($\alpha_{BR} = .85$; $\alpha_{EA} = .67$) and perspective taking (e.g., "I try to look at everybody's side of a disagreement before I make a decision") ($\alpha_{BR} = .83$; $\alpha_{EA} = .72$) on a 5-point Likert scale (1 = does not describe me very well to 5 = describes me very well). Both the order of subcomponents and

items within each subcomponent were presented randomly. Resulting scores are averages for each subscale.

Affect rating. The rating dial used to measure participant's affective state was connected to the computer via a USB (similar to Levenson & Ruef, 1992) and manipulated a 9-point scale (1 = very negative to 9 = very positive) on the screen. The rating dial scale position was set to the mid-point (neutral) at the start of each video presentation and was designed to capture the participant's affect rating every 0.5 seconds.

Perceived pain. The Wong-Baker FACES Pain Rating Scale was used to assess participants' perceived target pain for each video condition using a 6-point scale (1 = no hurt to 6 = hurts worst) where each point on the scale was accompanied by a cartoon face which progressively appeared more distressed as the scale increased. The measure served to check the validity of the pain condition (i.e., that the pain condition was perceived as more painful than control conditions). This measure was also used to confirm that cultural groups perceived comparable levels of pain in the target.

Heart rate. Participants' ECG was continuously recorded during the study, measured in beats per minute using a Nexus-10 MKI system and its accompanying sensors (Mind Media B. V., The Netherlands). ECG was measured using the Lead II chest placement with a sample frequency of 32Hz. Two Ag/AgCl disposable electrodes were placed on the intercostal space with a third ground reference placed contra laterally to the negative electrode.

Results

First, I will report the cultural differences in perceived pain to check the validity of the pain condition and to examine whether the two cultural groups perceived comparable levels of pain in the pain condition. Next, in order to address the first aim of the study (to examine the moderating role of culture in emotional empathy in response to observing

physical pain), I will present the cultural differences in each empathic outcome measure (i.e., affect rating and heart rate). Finally, I will examine the moderating role of cultural group in the relationship between dispositional empathy and each outcome measure to address the second aim of the study. Following research that demonstrates sex differences in self-reported empathic measures (for a review see Eisenberg & Lennon, 1983), any effect that involves participant sex will be reported in a footnote.

Three separate 4×2 mixed ANOVAs were conducted with affect rating, perceived pain, and heart rate as dependent variables, with cultural group (British vs. East Asian) as the between-subjects variable and condition (needle-hand; needle-tomato; Q-tip-hand; Q-tip-tomato) as the within-subjects variable (see Table 2.1 for descriptive statistics).

Perceived pain. The 4×2 mixed ANOVA with perceived target pain as the dependent variable revealed a significant main effect of condition, $F(3, 207) = 125.30, p < .001, \eta_p^2 = .65$. Participants perceived significantly greater target pain in the pain condition compared to all control conditions (all $ps < .001$, range of $ds = 1.00 - 2.70$) demonstrating that the experimental manipulation worked as expected. Moreover, participants perceived significantly more pain in the needle-tomato condition compared to control conditions containing the Q-tip (all $ps < .001$, range of $ds = .99 - 1.26$). The main effect of cultural group, $F(1, 69) = .18, p = .67$, and the cultural group \times condition interaction, $F(3, 207) = .40, p = .751, \eta_p^2 = .01$, were not significant, indicating that each cultural group reported comparable levels of perceived target pain in all conditions. This finding suggests that any observed cultural differences in affect rating or heart rate cannot be attributed to cultural differences in perceived target pain.

Affect rating. To compute participants' affect rating scores that reflected their own affective response to each video, the time window from the onset of pain (i.e., when the needle/Q-tip touches the hand/tomato) to the end of the presentation was first identified. This

time window lasted for 7 seconds and contained 15 affect rating scores. As all 15 scores were dependent on the first score in the selected time window, difference scores were computed by subtracting the first of these 15 affect rating scores from all scores. Mean affect rating scores for each video using these difference scores were then computed. Negative scores in affect rating represent the level of negative affect participants experienced, whereas positive scores represent the level of positive affect participants experienced in response to the videos.

The 4×2 mixed ANOVA with affect rating as the dependent variable revealed a significant main effect of condition, $F(3, 207) = 65.67, p < .001, \eta_p^2 = .49$. Participants reported more negative affect in the pain condition compared to all control conditions (all p 's $< .001$, range of d s = .94 – 1.88). In addition, the needle-tomato control condition was significantly different to control conditions containing Q-tips (all p s $< .001$, range of d s = .93 – 1.21). This analysis also revealed a significant main effect of cultural group, $F(1, 69) = 7.55, p = .008$. British participants reported more negative affect overall ($M = -.53, SD = .43$) compared to East Asian participants ($M = -.27, SD = .36$), $d = .33$. These two main effects were qualified by a cultural group \times condition interaction, $F(3, 207) = 5.69, p = .001, \eta_p^2 = .08$. The simple main effects analysis conducted to decompose this interaction showed that British participants reported significantly more negative affect when observing the physical pain condition compared to East Asian participants, $F(1, 69) = 11.61, p = .001, d = .81$, whereas the two cultural groups did not differ significantly from each other in any of the control conditions (all p s $> .26$).

Heart rate. Five participants were removed from the analysis involving heart rate due to technical errors, leaving 37 British and 29 East Asian participants. Mean heart rate responses were computed using scores recorded from the same 7-second time window as affect rating scores. Heart rate difference score were then computed by subtracting the

baseline heart rate score from the mean heart rate score in each condition's 7-second time window. Negative heart rate difference scores represent a decrease in heart rate while observing physical pain compared to baseline, whereas positive scores represent an increase in heart rate in response to observing physical pain compared to baseline. The 4×2 mixed ANOVA with heart rate revealed no significant main effects of condition, $F(3, 192) = 1.09$, $p = .35$, $\eta_p^2 = .02$, or cultural group, $F(1, 64) = .57$, $p = .46$, $d = 0.14$. The cultural group \times condition interaction was also not significant, $F(3, 192) = .47$, $p = .71$, $\eta_p^2 = .01^2$.

Dispositional empathy. To assess the predictive value of dispositional empathy in outcome measures for each cultural group, or more specifically, to examine whether cultural group moderated the relationship between dispositional empathy, via the IRI subcomponents, and each outcome measure (affect rating and heart rate), two separate moderated regressions were conducted (see Table 2.2). Cultural group, the three subcomponents of the IRI and each cultural group \times IRI subcomponent interaction term were added as predictors in both regression analyses. All continuous predictor variables were mean centered prior to analysis. Neither of the analyses yielded a significant model, $R^2_{\text{affect rating}} = .17$, $F(7, 63) = 1.79$, $p =$

² Analyses conducted with participant sex as an additional factor revealed no main effects of sex for perceived pain scores, $F(1, 67) = .15$, $p = .70$, affect rating scores, $F(1, 67) = .08$, $p = .78$, and heart rate scores $F(1, 62) = .02$, $p = .88$. There was a significant condition \times sex interaction for affect rating, $F(3, 201) = 3.413$, $p = .02$. The simple main effects revealed that the significant sex difference emerged in a control condition (Q-tip-hand), and not in the pain condition, therefore would not affect interpretation of the results so will not be discussed any further. In addition, there was a significant cultural group \times sex interaction for perceived pain, $F(1, 67) = 4.05$, $p = .05$, but as there was no interaction between sex and condition these results will not be further explored.

$.10^3$, $R^2_{\text{heart rate}} = .05$, $F(7, 58) = .24$, $p = .87$. Thus, in both cultural groups the value of dispositional empathy, as assessed by the IRI, was not useful in predicting autonomic and self-reported emotional empathy in response to a target suffering from one type of physical pain.

Discussion

There were two aims in this study: 1) to explore the extent to which cultural group moderates emotional empathy in response to observing physical pain, and 2) to examine the moderating role of cultural group in the relationship between dispositional empathy and each outcome measure (i.e., affect rating and heart rate).

In response to the first aim, cultural group differences in affect rating were found using a commonly employed procedure in studying empathic responses (e.g., Avenanti et al., 2005; Minio-Paluello et al., 2009; Valeriani et al., 2008). Specifically, British participants reported significantly more negative affect than did East Asian participants when watching a hypodermic needle puncturing a hand, even though levels of perceived target pain were comparable across the two cultural groups. The two groups did not differ in affect when watching the control videos that did not depict physical pain, including the condition that contained a pain-inducing implement (i.e., the needle-tomato control condition).

There were no cultural differences in autonomic indices of distress/empathic concern (i.e., heart rate), even though one could have expected autonomic responses to follow self-reported affect rating responses. However, finding no cultural difference may not be so surprising given the somewhat mixed nature of cross-cultural differences in autonomic responses. With the exception of a few studies (Drummond & Quah, 2001; Tsai, Levenson, &

³ Cultural group was the only significant predictor of affect rating in this model, as shown in the ANOVA presented before.

Cartensen, 2000), research investigating cross-cultural differences in autonomic responses typically shows cultural similarities in such measures (Soto, Levenson, & Ebling, 2005; Tsai, Chentsova-Dutton, Friere-Bebeau, & Przymus, 2002; Tsai & Levenson, 1997; Tsai, Levenson, & McCoy, 2006), thus the current finding converges with the evidence showing no cultural difference in autonomic responses.

These findings challenge and extend our current understanding of the link between culture and empathy. First, challenging our current understanding, the results in response to observing physical pain did not reflect the general pattern found in past studies which have demonstrated that Easterners tend to report greater negative affect in terms of personal distress compared to Westerners (Cassels et al., 2010; Trommsdorff et al., 2007). The present study was conducted in controlled lab conditions and measured negative affect in real-time as participants were watching physical pain stimuli. Thus, this measure of affect is perhaps a more direct reflection of emotional empathy to a given situation than other measures of distress reported in past studies, which were assessed at the trait level (Cassels et al., 2010) or based on observations (Trommsdorff et al., 2007). As British participants expressed more negative affect compared to East Asian participants, the emotional expressivity theoretical account, which asserts that Westerners have the tendency to be generally more emotionally expressive than Easterners (Matsumoto, 1990; Matsumoto et al., 1998), may account for the current findings.

Concerning the second aim of the study, results showed that cultural group did not moderate the relationship between dispositional empathy and empathic outcomes. Past research has shown that dispositional empathy, as assessed by the IRI, is useful in predicting a variety of behaviours and emotional outcomes (e.g., Cohen & Hoffner, 2012; Davis, 1983; Gini et al., 2007; Litvack-Miller et al., 1997). These studies recruited Western samples, so it is perhaps surprising that the IRI did not predict outcome measures in the British sample. One

potential reason for the weak associations between trait empathy and empathic outcomes may relate to the stimuli used in our study. The IRI items referring to affective empathy generally convey emotionally distressing situations as opposed to physically distressing situations (e.g., “Being in a tense emotional situation scares me”), however there was no indication that the video target in the pain condition was actually in any kind of emotional distress (i.e., facial response or cry of pain) in the present study. Therefore, the type of pain and the presence of cues in the target’s pain experience may be an important factor to consider when examining the predictive value of the IRI, an area which should be explored further.

The weak association between dispositional empathy and outcome measures in the East Asian group is perhaps less surprising. Easterners tend to view their personality and attitudes as more changeable compared to Westerners (Chiu & Hong, 1999; Hong et al., 2001; Choi et al., 1999). They are also more sensitive to contextual cues (e.g., Ji et al., 2000; Masuda et al., 2008; Nisbett, 2003) and responsive to salient situational information (Masuda & Kitayama, 2004; Norenzayan et al., 2002), and adapt behavior as a function of the situation (e.g., Kanagawa et al., 2001; Morling et al., 2002). Therefore, it is feasible that contextual information garnered from observing the distress of the video target’s pain might have shaped East Asian participants’ empathic responses, disabling the predictive value of dispositional empathy. However, more research would be required to support this possibility.

This initial investigation into the relationship between culture and empathy provides preliminary evidence for cross-cultural differences in empathic responses to physical pain in an adult sample. However, it remains to be known whether the observed cultural group difference would extend to situations where individuals witness other types of pain. Moreover, in this study affect rating and heart rate were employed as indices of empathy and therefore it is unknown whether an examination of other indices of empathic response would reveal a similar pattern of cultural group differences. More research is also needed regarding

the predictive value of dispositional empathy across cultural groups. Items in the IRI connate emotional pain, thus, it is possible that the type of pain is likely to shape the predictive nature of the IRI. I address these issues in the next chapter where I present a study designed to examine additional empathic outcomes in response to observing social pain.

Table 2.1

Mean (SD) Scores for Affect Rating, Perceived Pain and Heart Rate Responses by Condition and Cultural Group

Condition	<u>Affect Rating</u>		<u>Perceived Pain</u>		<u>Heart Rate</u>	
	British	East Asian	British	East Asian	British	East Asian
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Hand - Needle	-1.95 (1.28)	-1.00 (1.04)	3.95 (1.36)	3.70 (1.38)	-5.73(6.08)	-5.13(5.85)
Hand - Q-tip	.21 (.79)	.15 (.42)	1.21 (.41)	1.15 (.51)	-6.15(6.33)	-5.67(4.61)
Tomato - Needle	-.66 (.70)	-.47 (.75)	2.47 (1.52)	2.39 (1.35)	-7.46(6.02)	-5.62(6.93)
Tomato - Q-tip	.30 (.67)	.24 (.63)	1.05 (.32)	1.18 (.64)	-6.70(4.30)	-6.52(3.88)

Note: Negative scores for affect rating represent negative affect and positive scores represent positive affect.

Table 2.2
Moderating Role of Dispositional Empathy (IRI) and Cultural Group for Affect Rating and Heart Rate Responses

	Affect Rating			Heart Rate		
	β	SE	p	β	SE	p
Main effects						
Intercept	-.97	.22	.001	-5.45	1.21	.001
Cultural group	-.99	.30	.002	-.46	1.58	.77
IRI Empathic Concern	-.08	.38	.84	-1.14	1.97	.57
IRI Perspective Taking	.22	.40	.58	1.05	2.12	.62
IRI Personal Distress	-.27	.47	.57	2.04	2.53	.42
Interactions						
Cultural group \times Empathic Concern	.04	.48	.94	2.86	2.44	.25
Cultural group \times Personal Distress	.16	.55	.78	-2.91	2.89	.32
Cultural group \times Perspective Taking	-.38	.51	.46	-3.01	2.64	.26

Note: Coding of Cultural group: British = 1, East Asian = 0.

CHAPTER THREE

Empathy in Response to Observing Social Pain

In the previous chapter, I presented findings from a study that demonstrated cultural differences in affective empathy in response to observing physical pain. However, it remains to be shown whether the pattern of findings observed in response to physical pain generalizes to other forms of pain such as social pain. Empathizing with social pain in the current context is defined as observing another person's emotional reaction as this person responds to the social exclusion or devaluation of any relationships that they value (MacDonald & Leary, 2005). Interestingly, social pain shares many of the neurobiological and neural mechanisms that underlie physical pain (Eisenberger, 2012; Eisenberger & Lieberman, 2004; Eisenberger, Lieberman, & Williams, 2003). For example, two neural regions, the dorsal anterior cingulate cortex (dACC) and anterior insula, have been associated with the affective component of both physical (Berthier, Starkstein, & Leiguarda, 1988; Foltz & White, 1962) and social pain (Kross, Berman, Mischel, Smith & Wager, 2011). Furthermore, as reviewed by Macdonald and Leary (2005), physical and social pain share similarities with regard to their relationships to other psychological constructs, such as introversion-extraversion, social support, anxiety-fear, depression and defensive aggression. However, there are also notable differences between the two types of pain. For example, reliving and re-experiencing social pain is easier, more intense and detrimental to cognitively demanding tasks in comparison to physical pain (Chen, Williams, Fitness, & Newton, 2008). In connection to the current thesis, observing social pain might elicit culturally shaped empathic responses. As there is the tendency for members of collectivistic cultures to value social relations more than members of individualistic cultures (Markus & Kitayama, 1991) and given that the emphasis of social pain is on the exclusion or devaluation of one's social relationships, members of collectivistic cultures may respond differently to a social pain situation compared to members of

individualistic cultures. With this in mind, it is important to examine the association between culture and empathy beyond empathic outcomes in response to physical pain to include empathic outcomes in response to observing social pain.

Thus, the main aim of the current study was to test the generalizability of the pattern of cultural differences observed in empathic responses in Study 1 to socially painful situations using a broader set of empathic measures. Following the lack of evidence for predictive value of the IRI in Study 1, a secondary aim of the current study was to examine the moderating role of cultural group in the relationship between dispositional empathy and empathic outcomes in response to observing social pain. Although, the IRI items do not specifically identify physical or social pain, it could be argued that some of the items stress emotional pain (e.g., “Being in a tense emotional situation scares me”). For this reason it is important to cross-culturally assess the predictive value of the IRI on empathic outcomes in response to social pain as the association between the items of the IRI and empathic outcomes in the current context are expected to be more congruent with one and other compared to the association presented in Study 1 in which empathic outcomes were in response to observing physical pain.

To this end, I report results of an experimental study conducted with British (BR) and East Asian (EA) cultural groups, residing in the UK. The experimental stimuli for this study consisted of videos of White British individuals (whom are called targets from now on) describing negative social events they experienced in the past.

To address the main aim of the study, a group of British and East Asian participants were asked to watch these videos and report: a) their own affective state while watching the videos (as in Study 1), b) their empathic concern for the target in the video, c) their perceived levels of pain of video targets (as in Study 1), d) their inferences of the target’s emotional

state (i.e., empathic accuracy), and e) their comprehension of the target. As in Study 1, participants' ECG was recorded as a proxy of personal distress and empathic concern.

To address the second aim of the study, individual differences of dispositional empathy were measured using Davis' (1980) IRI as in Study 1, focusing on the empathic concern, personal distress, and perspective taking subcomponents.

The same two opposing predictions outlined in Study 1 can also be made regarding the first aim of the current study. On the one hand, as Westerners have the tendency to be more emotionally expressive compared to Easterners (Ekman, 1972; Friesen, 1972; Matsumoto et al., 1988) it may be expected that British participants would report greater emotional empathy (i.e., negative affect and empathic concern) compared to East Asian participants. On the other hand, it could be expected that the more collectivistic East Asian participants would be more sensitive to social pain and thus report greater emotional empathy leading them to report greater levels of negative affect and heightened levels of empathic concern compared to their British counterparts. Considering the findings from Study 1 and the mixed evidence regarding cultural differences in autonomic indices (e.g. heart rate) in the cross-cultural literature, no specific prediction is proposed for the direction of heart rate responses in the current study. However, predictions regarding empathic accuracy responses can be proposed. Following findings by Ma-Kellams and Blascovich's (2012) who showed greater empathic accuracy among Westerners than Easterners when the target is a stranger, it might be expected that British participants would be more empathically accurate in comparison to East Asian participants, as video targets in the current study were also strangers to participants.

Predictions concerning the second aim continue to be tentative as this part of the current research is predominantly exploratory. As mentioned in Chapter 2, compared to Easterners, personality traits have the tendency to remain more stable in Westerners (Chiu &

Hong, 1999; Hong et al. 2001; Choi et al. 1999). However, Easterners' personality traits are more adaptive to the surrounding context and are typically less reliable in predicting behavioural outcomes (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999). Thus, the only specific, although tentative, prediction that is formulated is that associations between dispositional empathy and empathic outcomes would be more likely to emerge among British participants than East Asian participants.

Method

Participants. Forty-five participants who self-identified as British (22 female, $M_{\text{age}} = 22.56$ years) and 41 participants of East-Asian origin⁴ (approximately 68% of Chinese background) (32 female, $M_{\text{age}} = 24.49$ years) studying at a British university participated in a study on interpersonal relationships in exchange for £5.

Stimulus development. To create the social pain stimuli, a pre-study following a similar protocol to that employed by other researchers was conducted (e.g. Ma-Kellams & Blascovich, 2012; Zaki, Bolger & Ochsner, 2008). Eight female White British individuals were invited to the lab to be videotaped while describing two socially negative events they experienced in the past. They received £4 for this task. As with Soto and Levenson (2009), female targets were employed because women have the tendency to express more sadness to negative events (Hess, Senécal, Kirouac, Herrera, Philippot & Kleck, 2000), are more

⁴ The East Asian cultural group consisted of 29 Chinese (14 from Hong Kong), 2 Japanese, 3 Taiwanese, 2 Bruneians participants and 1 Vietnamese, 1 Korean, 1 Malaysian, 1 Singaporean and 1 Filipino participant. At the time of the study, 53.7% of the East Asian sample had resided in the UK for less than 6 month, 4.9% of for up to a year, 9.8% for between 1 and 2 years, 14.6% for between 2 and 5 years, 9.8% for between 5 and 10 years and 7.3% for more than 10 years.

emotionally expressive than men (Gross & John, 1995; Hall, Carter, & Horgan, 2000; LaFrance & Banaji, 1992), and stimulate greater empathic accuracy than men (Klein & Hodges, 2001; Levenson & Ruef, 1992). Before recording each event, to aid the recall experience, targets were asked to give each event a title and write about the relevant background of the event. Targets were then recorded talking about each negative event. Following the completion of the recording, targets rated the intensity (1 = not intense at all to 9 = extremely intense) and affective valence (1 = extremely negative to 9 = extremely positive) of the actual recall experience, which was later used for video selection for the main study. In addition, targets completed the original Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) immediately after each recording using a 5-point Likert scale (1 = very slightly or not at all to 5 = extremely) to reflect their feelings when they described their experiences. The PANAS contained 7 positive (happy, calm, confident, surprised, proud, excited, determined) and 13 negative emotions (angry, disgust, sad, afraid, lonely, guilty, ashamed, embarrassed, disappointed, jittery, scornful, irritable, frustrated).

The following criteria were used to determine video selection. The most intense videos were short-listed on the basis of affect valence (less than 3 on the 9-point scale) and intensity ratings (greater than 7 on the 9-point scale), which resulted in six videos from a total of sixteen videos. The final two videos were selected from this short-list on the basis of video content and ease of comprehension. Videos with easily comprehensible English speakers (e.g., who used no slang or idioms and had clear, articulate speech) and content describing experiences likely to be common to all participants regardless of cultural background (i.e., being a victim of bullying, breaking up) were selected. Intensity and affect valence ratings for video target 1 equaled 9 and 1, respectively. For video target 2, intensity and affect valence ratings equaled 8 and 1, respectively.

Procedure. As in Study 1, participants completed the study individually in the lab.

Initially, electrodes used to measure heart rate were fitted to participants followed by a signal check of the ECG response. A 5-minute baseline heart rate response was then obtained as participants completed an online questionnaire containing the three sub-components of Davis' (1980) IRI (empathic concern, personal distress, & perspective taking) and demographic questions (age, sex, ethnicity and duration of residence in home country). Following the completion of the questionnaire, participants watched two social pain videos whilst continuously indicating their affective state using the affect rating dial. Following each video, participants indicated how much pain they thought the target to be feeling while describing the event using the Wong-Baker FACES Pain Rating Scale. Participants then completed the same PANAS items that were completed by targets in the stimulus development phase, but with instructions to judge the *target's* feelings as the target was recalling the event in the video. Participants then indicated their feelings of empathic concern they experienced while watching the videos using a subset of items from the Emotional Response Questionnaire (ERQ, Cole et al., 1978). Finally, with 1 item, participants indicated how well they understood the person in the video. At the end of the study, participants were thanked, debriefed and paid for their participation.

Measures. It should be clarified that only heart rate and affect rating responses were continuously measured in real-time as each video was presented, whereas other measures were collected either before or after the presentation of the videos as described above.

Interpersonal Reactivity Index (IRI). The same three subscales of the IRI measured in Study 1 were presented to participants in the current study (see Chapter 2 for details). These subscales assessed empathic concern ($\alpha_{BR} = .80$; $\alpha_{EA} = .70$), personal distress ($\alpha_{BR} = .83$; $\alpha_{EA} = .77$), and perspective taking ($\alpha_{BR} = .83$; $\alpha_{EA} = .68$) at the trait level. Each subscale contained 7-items. Both the order of subcomponents and items within each subcomponent were presented randomly. Resulting scores are averages for each subscale.

Empathic concern. The ERQ (Coke, Batson, & McDavis, 1978), a commonly employed scale of empathic concern (e.g., Batson et al., 2007; Batson et al., 1987; Batson et al., 2005; Niezink et al., 2012), which consists of 6 emotional adjectives (compassionate, sympathetic, moved, tender, warm, softhearted), was used to measure feelings of empathic concern that participants experienced while watching stimuli videos (Target₁: $\alpha_{BR} = .88$, $\alpha_{EA} = .74$; Target₂: $\alpha_{BR} = .80$, $\alpha_{EA} = .58$). Each emotional adjective was rated on a 5-point Likert scale (1 = very slightly or not at all to 5 = extremely). Empathic concern scores were averaged across the two targets to generate a single omnibus empathic concern score ($r_{BR} = .66$, $p = .001$, $r_{EA} = .50$, $p = .001$).

Affect rating. As in Study 1, participants' affect rating was continuously assessed during each video presentation and was measured using a rating dial (see Chapter 2 for details).

Perceived pain. Participants' perception of target's pain was assessed using the Wong-Baker FACES Pain Rating Scale (see Chapter 2 for details). The measure served to confirm that cultural groups perceived comparable levels of pain in the target. Perceived pain scores were not collapsed into a single omnibus score as a correlation analysis conducted on perceived pain scores for target 1 and target 2 revealed a negative relationship between the two scores in both cultural groups ($r_{BR} = -.14$, $p = .35$, $r_{EA} = -.10$, $p = .53$). Therefore, any upcoming analyses with the perceived pain scores will consider video target as an additional factor.

Target comprehension. Target comprehension was assessed with 1 item ("Indicate the extent to which you understood the person in the video") on a 5-point Likert scale (1 = understood nothing to 5 = understood everything). As with perceived pain, target comprehension scores were not collapsed into a single omnibus score as a correlation analysis conducted on target comprehension scores for target 1 and target 2 revealed a poor

relationship between the two scores in the East Asian group ($r_{BR} = .83, p = .001$; $r_{EA} = .15, p = .36$). Therefore, as with perceived pain scores, any upcoming analyses with target comprehension scores will consider video target as an additional factor.

Heart rate. Participants' ECG was recorded continuously in the same manner as described in Study 1. A Nexus-10 MKI system and its accompanying sensors (Mind Media B. V., The Netherlands) were used, with a Lead II chest placement, and a sample frequency of 32Hz. Two Ag/AgCl disposable electrodes were placed on the intercostal space with a third ground reference placed contra laterally to the negative electrode. Heart rate was measured in beats per minute.

Empathic accuracy. Following a procedure used by other empathy researchers (see Côté et al., 2011; Kraus, Côté, & Keltner, 2010; Ma-Kellams & Blascovich, 2012) empathic accuracy scores were calculated by taking the absolute difference between each PANAS emotion score reported by the targets in the videos and those reported by the participants. For both videos, all emotions were collapsed to produce an empathic accuracy score for each target (Target 1: $\alpha_{BR} = .82, \alpha_{EA} = .90$; Target 2: $\alpha_{BR} = .87, \alpha_{EA} = .76$). These scores were then averaged across the two targets to generate a single omnibus empathic accuracy score ($r_{BR} = .43, p = .01, r_{EA} = .26, p = .10$). To ease interpretation, the average score was multiplied by -1 so that a lower score reflected poorer empathic accuracy and a higher score reflected greater empathic accuracy.

Results

First, I will examine the cultural differences in target comprehension and perceived pain to determine whether the two cultural groups understood/perceived comparable levels of content/pain in each video. Next, I will present cultural differences in each empathic outcome measures (i.e., affect rating, heart rate, empathic concern and empathic accuracy) in response to observing the social pain videos to address the first aim of the study. Finally, I

will examine the moderating role of cultural group in the relationship between dispositional empathy and each outcome measure to address the second aim of the study. Before conducting the descriptive and inferential analyses used to address the study aims, I will present a description of the data processing techniques which were applied to the empathic outcome measures.

Affect rating and heart rate data were processed prior to the main analysis, because although video targets were instructed to recall and share negative social events, there were moments during the course of each video in which references to positive aspects of the events were made (e.g., retaliating against a bully). Because the focus for the present study is on empathy for social pain experienced as a consequence of negative aspects of an event, data from time windows in affect rating and heart rate where targets made reference to positive information were excluded. It was important to identify these time windows in order to calculate appropriate (negative information) scores for the outcome measures obtained as participants were watching videos. To do so, two independent coders were asked to identify negative and positive information in the videos. The coders' responses were then used to isolate time windows containing negative information only. The starting point for a given time window was selected by identifying a point in the video where both coders agreed upon an instance of negative information. The end point for the time window was determined by selecting the next instance of positive information that followed the starting point, identified by at least one coder. Time window end points were selected on the basis of one coder's response to make the selection process of time windows as conservative as possible. Responses were then scanned for the next instance of negative information and the process described above repeated until the end of the video. This process revealed two time windows containing negative information from video 1, with a total duration of 123.5 seconds, and two time windows from video 2, with a total duration of 92.5 seconds. The analyses on the

outcome measures were conducted upon completion of this process. It should be clarified that participants watched each video in its entirety and only the measures recorded during the video presentation (i.e., affect rating and heart rate) were processed in the manner presented above. Empathic concern and empathic accuracy required no processing as these measures were recorded following the video presentation.

Following research that demonstrates sex differences in self-reported empathic measures (Eisenberg & Lennon, 1983) preliminary analyses that included sex as an additional factor were conducted and revealed no significant main effects or interactions with sex; therefore, sex was not included in the analyses reported below. All mean and standard deviations of empathic outcome variables are presented in Table 3.1.

Target comprehension. A 2×2 repeated measures ANOVA was conducted with target comprehension scores as the dependent variable, target (target 1 vs. target 2) as the within-subjects variable and cultural group (British vs. East Asian) as the between-subjects variable. This analysis revealed no significant main effect of target, $F(1, 84) = .01, p = .91, d = .01$, with no difference between comprehension for target 1 and target 2. There was a significant main effect of cultural group, $F(1, 84) = 26.16, p = .001$; British participants understood each target better ($M = 4.69, SD = .77$) compared to East Asian participants ($M = 3.94, SD = .81$), $d = 1.11$. The cultural group \times target interaction was not significant, $F(1, 84) = .15, p = .70, \eta_p^2 = .002$, demonstrating that the participants' comprehension of video targets in each cultural group did not differ specifically as a function of the target.

Perceived pain. A 2×2 repeated measures ANOVA was conducted with perceived pain scores as the dependent variable. Target (target 1 vs. target 2) was entered as the within-subjects variable and cultural group (British vs. East Asian) was entered as the between-subjects variable. This analysis revealed a significant main effect of target, $F(1, 84) = 4.05, p = .05$, with more pain perceived in target 1 ($M = 4.72, SD = .78$) compared to target 2 ($M =$

4.50, $SD = .78$), $d = .28$. There was no significant main effect of cultural group, $F(1, 84) = .12$, $p = .73$, $d = .06$; British and East Asian participants perceived comparable levels of pain in both video targets. In addition, there was no significant cultural group \times target interaction, $F(1, 84) = .43$, $p = .51$, $\eta_p^2 = .01$, suggesting that British and East Asian participants perceived comparable levels of pain regardless of the target.

Unless indicated otherwise, a series of independent-samples t-tests were conducted on affect rating, heart rate, empathic concern and empathic accuracy scores to investigate cultural differences in the outcome measures.

Affect rating. A similar procedure to that outlined in Study 1 regarding the processing of affect rating scores was followed. Initially, difference scores of all affect rating scores in a (negative) time window were calculated for each target by subtracting the first affect rating score in that time window from all scores in that particular window. Next, mean affect rating scores were produced for each target using these difference scores from selected (negative) time windows. Affect rating scores were not collapsed into a single omnibus score as a correlation analysis conducted on affect rating scores for target 1 and target 2 revealed a poor relationship between the two scores in the East Asian group ($r_{BR} = .31$, $p = .04$, $r_{EA} = .06$, $p = .69$). Therefore, inferential tests on affect rating scores consider video target as an additional factor. A 2×2 repeated measures ANOVA was conducted with affect rating scores as the dependent variable. Target (target 1 vs. target 2) was entered as the within-subjects variable and cultural group (British vs. East Asian) was entered as the between-subjects variable. There was a significant main effect of target, $F(1, 84) = 26.25$, $p = .001$, with greater negative affect scores felt in response to target 2 ($M = -1.04$, $SD = 1.02$) compared to target 1 ($M = -.34$, $SD = .66$), $d = .81$. There was also a significant main effect of cultural group, $F(1, 84) = 6.90$, $p = .01$, with British participants reporting more overall negative affect ($M = -.84$, $SD = .58$) compared to East Asian participants ($M = -.52$, $SD = .53$).

$d = .58$. The cultural group \times target interaction was significant, $F(1, 84) = 3.95, p = .05, \eta_p^2 = .05$. Unpacking this interaction revealed that the cultural difference emerged for target 2 only, $F(1, 84) = 7.58, p = .01$, with British participants reporting significantly more negative affect compared to East Asian participants, $d = .59$. Affect rating scores did not differ between cultural groups in response to the social pain depicted in target 1, $F(1, 84) = .11, p = .74, d = .08$.

Heart Rate. Two participants were removed from the dataset due to technical issues with the ECG recording, leaving 45 British and 39 East Asian participants for analysis. As with the affect rating measure, mean heart rate scores were produced using scores from the selected time windows. A heart rate difference score was then computed by subtracting the average baseline heart rate score from the mean heart rate score for each selected time window. Finally, mean difference scores were collapsed to produce one omnibus mean heart rate score for each cultural group ($r_{BR} = .31, p = .04, r_{EA} = .36, p = .02$). Negative heart rate difference scores represent a decrease in heart rate compared to baseline, whereas positive scores represent an increase in heart rate compared to baseline. Results revealed no significant cultural difference in heart rate scores between British and East Asian participants, $t(82) = -1.00, p = .32, d = -0.2$.

Empathic Concern. British participants reported significantly higher levels of empathic concern for video targets compared to East Asian participants, $t(84) = 3.32, p < .001, d = .70$.

Empathic Accuracy. East Asian participants were significantly more accurate at inferring targets' emotional states compared to British participants, $t(84) = 2.07$, $p = .04$, $d = .44$ ⁵.

The aforementioned cultural differences in target comprehension presented before constitutes a potential confound in the findings presented thus far. Therefore, analyses with perceived pain, affect rating, heart rate, empathic concern and empathic accuracy as dependent variables were repeated with target comprehension as a covariate. The pattern of cultural differences reported above remained for perceived pain, affect rating, heart rate and empathic concern. However, there was no longer a significant main effect of cultural group in empathic accuracy when controlling for target comprehension, $F(1, 82) = 2.64$, $p = .11$, $\eta_p^2 = .03$. It should be noted that the direction of the cultural difference did not change; East Asian participants reported greater empathic accuracy compared to British participants.

⁵ The relationship between empathic accuracy scores for each target in the East Asian cultural group was poor, therefore a 2×2 repeated measures ANOVA was conducted with empathic accuracy scores as the dependent variable. Target (target 1 vs. target 2) was entered as within-subjects variable and cultural group (British vs. East Asian) was entered as the between-subjects variable. There was a main effect of target, $F(1, 84) = 6.99$, $p = .01$, with more empathic accuracy in response to target 2 ($M = -1.23$, $SD = .37$) compared to target 1 ($M = -1.11$, $SD = .33$), $d = .34$. There was also a main effect of cultural group, $F(1, 84) = 4.16$, $p = .04$; East Asian participants were significantly more empathically accurate ($M = -1.10$, $SD = .32$) compared to British participants ($M = -1.23$, $SD = .39$), $d = .36$. However, the cultural group \times target interaction was not significant, $F(1, 84) = .23$, $p = .63$, demonstrating that the pattern of cultural differences held for both targets.

Dispositional empathy. A series of moderated regression analyses with each of the outcome measures (affect rating, heart rate, empathic concern and empathic accuracy) as criterion variables was conducted to assess the moderating role of cultural group in the relationship between dispositional empathy and empathic outcome measures (see Table 3.2). For each regression analysis, cultural group (British group = 0, East Asian group = 1), the subcomponents of the IRI, and each cultural group \times IRI subcomponent interaction term were entered as predictors. All continuous predictor variables were mean centered prior to analysis.

The regression analysis with affect rating as the criterion variable did not yield a significant model, $R^2 = .14$, $F(7, 74) = 1.73$, $p = .12$. The regression analysis with heart rate as the criterion variable revealed a significant model, $R^2 = .17$, $F(7, 72) = 2.14$, $p = .05$. Dispositional empathic concern was the only significant predictor of heart rate, with greater dispositional empathic concern predicting an increased heart rate (i.e., more distress).

The regression analysis with empathic concern in response to observing social pain as the criterion variable also revealed a significant model, $R^2 = .24$, $F(7, 74) = 3.34$, $p = .004$, with cultural group and dispositional empathic concern emerging as the only significant predictors of empathic concern. Cultural group predicted empathic concern in the same pattern as found in the t-test presented before (i.e., British participants reporting greater empathic concern compared to East Asian participants), and higher dispositional empathic concern predicted greater empathic concern.

Finally, the regression analysis with empathic accuracy as the criterion variable revealed a marginally significant model, $R^2 = .16$, $F(7, 74) = 1.93$, $p = .08$. Cultural group was the only significant predictor, as found in the t-test presented before (i.e., East Asian participants inferred targets' emotions more accurately compared to British participants). In

addition, dispositional personal distress marginally significantly predicted empathic accuracy, with greater personal distress predicting lower empathic accuracy.

To summarize, greater dispositional empathic concern predicted greater heart rate and empathic concern. Greater personal distress marginally predicted lower empathic accuracy. There were no interactions between cultural group and dispositional empathy. Cultural group predicted affect rating, empathic concern and empathic accuracy in patterns identical to those reported in the t-tests presented earlier.

Discussion

There were two aims to this study: 1) to test the generalizability of the pattern of findings reported in Study 1 to a wider array of empathy measures in response to social pain, and 2) to examine the moderating role of cultural group in the relationship between dispositional empathy and empathic outcomes in response to observing social pain.

In response to the first aim, the findings reported in the current study replicate the findings reported in Study 1 with social pain stimuli. Moreover, the findings extend the observed cultural differences to empathic concern. Specifically, findings showed that British participants reported more negative affect compared to East Asian participants in response to another's social pain, even though both cultural groups perceived the same levels of pain in the target. British participants also reported more empathic concern for the targets compared to East Asian participants, a finding in line with previous work that has shown Westerners reporting greater dispositional empathic concern (see Cassel et al., 2010). Two opposing predictions regarding potential cultural differences in affect rating and empathic concern were proposed: 1) that more collectivistic East Asian participants would be more sensitive to social pain and thus report greater affect rating and empathic concern, and 2) that the more emotionally expressive British participants would report greater affect rating and empathic concern. Current findings are in line with the latter prediction, favouring an emotional

expression theoretical account to explain cultural differences in affect rating and empathic concern results.

There were no cultural differences in autonomic heart rate responses, revealing that the differences in empathy were only at the self-report level, as in Study 1. This finding is once again in line with other observations in the literature that demonstrate cultural similarities in autonomic measures (Soto et al., 2005; Tsai et al., 2002; Tsai & Levenson, 1997; Tsai et al., 2006).

Finally, East Asian participants were more empathically accurate than British participants, contradicting Ma-Kellams and Blascovich's finding (2012) which showed greater empathic accuracy among Westerners compared to Easterners for targets that were strangers. Although speculative, it could be that heightened levels of emotional distress or empathic concern may lead to less accurate inferences of the emotions of others (in this case among British participants). Past studies have shown that emotionally laden states can impair cognitive tasks. For example, Oaksford, Morris, Grainger, and Williams (1996) showed poorer reasoning skills in tasks such as the Wason selection task, and Tower of London Task following a protocol designed to induce a negative mood. Similarly, Ellis and Ashbrook (1988) showed that negative depressive mood states can impair performance in a cognitive task. Furthermore, greater emotional arousal is related to greater self-focused attention (e.g., Silvia, Phillips, Baumgartner, & Maschauer, 2006; Wood, Saltzberg, & Goldsamt, 1990). Thus, it is possible that being in a highly emotionally empathic state may cloud the ability to accurately infer the emotions of a target due to the heightened emotions experienced in response to the suffering of another. In line with this reasoning, East Asians' lower level of emotional involvement might have freed cognitive resources to allow them to more accurately infer the emotions of targets.

With regard to the second aim, it was tentatively expected that dispositional empathy would predict empathic outcomes in the British group. However, this prediction did not receive any support; cultural group did not moderate the relationship between dispositional empathy and empathic outcomes. However, certain components of dispositional empathy did predict empathic outcomes irrespective of the cultural group. For instance, there was a significant positive association between dispositional empathic concern and heart rate in which greater empathic concern predicted an increase in heart rate (i.e., greater distress). This association is interesting as empathic concern is typically associated with an attenuated heart rate response (see Suess, Porges, & Plude, 1994; Eisenberg, Fabes et al., 1988; Eisenberg, Schaller et al., 1988; Eisenberg et al., 1991). It is possible that participants' empathic concern response reflects a motivation to alleviate any distress participants were feeling in response to observing social pain. If this is the case, then it would be expected that greater physiological distress (i.e., accelerated heart rate) could lead to more empathic concern in order to quell this physiological distress. Concerning other empathic outcomes, there was a positive association between dispositional empathic concern and empathic concern in response to observing social pain which could be expected as the two measures are congruent with each other. The results also showed that personal distress marginally predicted a lower empathic accuracy score which is in line with theoretical reasoning and synergizes with the argument raised earlier, which stressed that higher emotionally laden states could be detrimental to empathic accuracy. Feelings of personal distress are generally considered a self-oriented emotional response associated with an egoistic motivation to attenuate these emotions (Batson, 1987, Eisenberg & Strayer, 1987; Eisenberg, 2000). Thus participants' attentional focus is either solely on their own distressing emotions or divided between their own distressing emotions and the target. In either case, directing attention away from the target to oneself would likely be detrimental to an individual's ability to infer

the emotions of a target. Past studies have typically found no relationship between empathic accuracy and affective empathic emotions of empathic concern and personal distress (see Klein & Hodges, 2001; Stinson & Ickes, 1992). However, these studies computed empathic accuracy considering the accuracy of both a target's feelings and thoughts at a particular time point in a video, whereas the current study computed empathic accuracy for targets' feelings only and took into account the whole of the video in its computation as opposed to static points in the video. Using the Balanced Emotional Empathy Scale (BEES; Mehrabian, 2000), which is a general measure of affective empathy, one study has shown a positive association between dispositional affective empathy and empathic accuracy by accounting for the emotional expressivity of the target; an observer's dispositional affective empathy reliably predicted empathic accuracy for targets who were easy to read or were high emotional expressers (Zaki, Bolger, & Ochsner, 2008). As noted however, the BEES is a general measure of affective empathy and does not capture personal distress per se and thus the results from the current study may have identified a previously untapped relationship. Interestingly, cultural group was the only significant predictor for all self-report empathic outcomes which underlines the significance of culture as a valid construct to predict empathy in cross-cultural contexts.

Overall, this study demonstrates that there is cultural variation in both affective and cognitive components of empathy in response to observing social pain, but not the underlying physiological responses. In line with the findings from Study 1, British participants reported more affective empathic responses (affect rating and empathic concern) compared to East Asian participants when observing an individual suffering social pain. However, the opposite pattern emerged with the cognitive outcome of empathy, with East Asians reporting greater empathic accuracy compared to British. It is yet to be demonstrated as to why these findings emerge. The theoretical account raised in Study 1 relating to emotional expressivity could

potentially explain the cultural differences in emotional empathy observed in both Studies 1 and 2. An emotional expressivity theoretical account asserts that Westerners have the tendency to be more emotionally expressive than Easterners (Matsumoto, 1990; Matsumoto et al., 1998), thus, British participants may be expressing more negative affect and empathic concern in response to another's suffering compared to East Asian participants due to their more emotionally expressive nature. Furthermore, if high emotional empathy clouds an ability to accurately infer the emotions of others then this theoretical account could also explain the cultural differences in empathic accuracy. Further research is needed to explore this possibility.

A second potential explanation for the findings from Studies 1 and 2 concerns the in-group advantage effect. The in-group advantage effect is the tendency to value members of one's own group (in-group) more favorably compared to non-members of the group (out-group) (for a review, see Hewstone, Rubin, & Willis, 2002). In reference to emotional empathy, individuals who identify with targets in terms of personality, temperament, age, sex, culture or socio-economic status tend to feel more emotionally empathic towards these targets compared to a target that is not identified in these terms (see Krebs, 1975). Furthermore, evidence of the in-group advantage effect is also observed in cognitive appraisals of a target's emotion. Although emotions are universally recognized (Ekman, 1972; Izard, 1971) the in-group advantage effect explains biases in emotional recognition of a cultural in-group member (Elfenbein & Ambady, 2002a), a cognitive ability not too dissimilar to empathic accuracy. Thus, in the current study the observed cultural differences in emotional empathic outcomes may have arisen because British participants may have identified more with video targets (who were White British) compared to East Asian participants. However, empathic accuracy findings in the present study contradicts this

explanation as East Asian participants inferred targets' emotions more accurately compared to British participants.

A final explanation for the current findings concerns language comprehension. Results showed that British participants understood each target to a higher degree compared to East Asian participants. Therefore, British participants may not have needed to allocate as many cognitive resources to follow the language and thus had more resources available to interpret any subtler information presented by targets. Interestingly though, despite statistically controlling for target comprehension, there were still cultural differences in emotional empathy suggesting that language comprehension cannot explain the cultural differences in emotional empathy. Controlling for target comprehension only changed the finding regarding empathic accuracy, leading to a non-significant cultural difference. However, one would expect that if British participants understood more content in the videos, then presumably they would have understood the targets' feelings to a higher degree, thereby displaying greater empathic accuracy. This was not the case. Although, language comprehension did eliminate the cultural differences in empathic accuracy, the direction of the findings still suggest that East Asian participants inferred targets' emotions more accurately compared to British participants. Thus, taken together, the in-group advantage and language comprehension explanations do not seem to be likely candidates to explain all of the observed cultural differences. However, these two possibilities should be explored as potential explanations.

To that end, in the next chapter, I report a study designed to address any potential in-group advantage and language comprehension explanations by examining empathy in response to observing social pain in both East Asian and British cultural groups speaking their native languages. In addition, I explored dispositional emotional expressivity as a potential explanation for the cultural differences in empathy that have been shown thus far.

Table 3.1

Mean (SD) Scores for all Empathic Outcome Measures Separately for British and East Asian Cultural Groups

	British			East Asian		
	Target 1	Target 2	Omnibus	Target 1	Target 2	Omnibus
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Affect Rating	-.36 (.69)	-1.32 (1.04)	-	-0.31 (0.63)	-0.74 (0.93)	-
Perceived Pain	4.73 (.78)	4.44 (.69)	-	4.71 (0.78)	4.56 (0.85)	-
Target Comprehension	4.67 (.90)	4.71 (.63)	-	3.95 (0.84)	3.93 (0.79)	-
Empathic Concern	1.81 (1.16)	1.89 (1.00)	1.85 (.99)	1.39 (0.86)	1.12 (0.64)	1.26 (.65)
Empathic Accuracy	-1.18 (.33)	-1.28 (.44)	-1.23 (.33)	-1.03 (0.33)	-1.17 (0.30)	-1.10 (.25)
Heart Rate	-2.71 (3.71)	-2.53 (4.35)	-2.62 (3.27)	-1.19 (3.74)	-2.62 (4.03)	-1.91 (3.21)

Table 3.2

Moderated Regression Analyses for Affect Rating, Heart Rate, Empathic Concern and Empathic Accuracy on Dispositional Empathy

	Affect Rating			Heart Rate			Empathic Concern			Empathic Accuracy		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p
Main effects												
Intercept	-0.86	.09	.001	-2.01	.55	.001	1.91	.13	.001	-1.16	.05	.001
Cultural group	.31	.13	.02	-.86	.73	.25	-.63	.19	.002	.16	.07	.02
IRI Empathic Concern	-.17	.13	.19	3.13	1.12	.006	.58	.19	.002	-.09	.07	.17
IRI Perspective Taking	-.04	.12	.72	-1.11	.97	.26	-.05	.18	.78	-.02	.06	.70
IRI Personal Distress	-.07	.11	.57	.93	.78	.24	.16	.16	.33	-.11	.06	.06
Interactions												
Cultural group \times Empathic Concern	-.09	.23	.72	-2.16	1.32	.11	-.27	.34	.42	-.07	.12	.57
Cultural group \times Perspective Taking	.09	.21	.66	.94	1.17	.42	.01	.30	.98	.04	.11	.71
Cultural group \times Personal Distress	.20	.18	.27	-1.66	.99	.10	-.09	.26	.75	.08	.09	.39

Note: Coding of Cultural group: British = 0, East Asian = 1.

CHAPTER FOUR

Empathy in Response to Observing British and Chinese Social Pain

The investigations in the first two studies have provided evidence demonstrating cultural differences in emotional empathy and cognitive empathy. Specifically, compared to East Asian participants, British participants were more emotionally empathic in response to observing physical (Study 1) and social pain (Study 2). These findings emerged in two types of emotional response: negative affect and empathic concern. However, East Asian participants were more empathically accurate compared to British participants (Study 2). In addition, the exploratory analyses examining the predictive value of dispositional empathy for empathic outcomes did not show that dispositional empathy was a significant predictor of empathic outcomes in response to observing physical pain (Study 1). However in Study 2, dispositional empathic concern significantly predicted an increase in heart rate and greater empathic concern in response to observing social pain, and moreover, dispositional personal distress marginally predicted lower empathic accuracy scores. It should be noted that cultural group was the only significant predictor across all self-reported empathic outcomes (i.e., affect rating, empathic concern and empathic accuracy) suggesting that cultural group is an important factor to consider in predicting empathy in cross-cultural contexts, perhaps more so than dispositional empathy.

There are at least three potential explanations that may underlie the observed findings in the previous two studies. First, targets in the videos from Studies 1 and 2 were Caucasian and of White British origin, thus the reported findings may be explained by an in-group advantage. A meta-analysis of studies that have assessed emotion recognition cross-culturally provides support for the in-group advantage, which refers to individuals recognizing emotions of members of their own cultural group more accurately compared to non-members (Elfenbein & Ambady, 2002a, 2002b). Research examining the in-group

advantage in empathic outcomes, however, is somewhat mixed in the empathy literature. On the one hand, evidence supports the presence of an in-group advantage using a variety of self-report, neural and physiological empathy measures (e.g., Avenanti et al., 2010; Johnson, Simmons, Jordan, MacLean, Taddei, & Thomas, 2002; Neumann, Boyle, & Chan, 2013; Xu, Zuo, Wang & Han, 2009). For example, Neumann et al. (2013) presented images to Caucasian and Asian participants that depicted racial in-group or out-group members in socially positive and negative contexts. Participants scored higher on affect and perspective taking for images depicting racial in-group members compared to images depicting racial out-group members. On the other hand, evidence originating from self-reported empathic accuracy measures does not support the presence of an in-group advantage (e.g., Ma-Kellams & Blascovich, 2012; Soto & Levenson, 2009). For example, Soto and Levenson (2009) tested participants that were African American, Chinese American, European American or Mexican American and examined their empathic accuracy of targets that were also of the same ethnicities presented above (e.g., Mexican American). The results from their study demonstrated that participants were not as accurate in emotion judgments for in-group members. The aforementioned studies examined different outcome measures and used different methodological paradigms to assess empathy compared to the methods that have been used thus far in Studies 1 and 2. Hence it remains to be seen whether an in-group advantage would help explain the observed cultural group differences in the current context.

Second, the video targets in Study 2 shared their experiences using their native language, English, which might have undermined East Asian participants' comprehension of the content of the videos. It would be difficult to empathize with an individual without a clear understanding of the content of the videos, especially as verbal information is critically important for empathy (Hall & Schmid Mast, 2007; Zaki, Bolger, & Ochsner, 2009).

Third, one further possible explanation for the findings observed so far concerns culturally determined emotional expressivity norms. The predominant view in the literature is that East Asian individuals have the propensity to display emotions less (Ekman & Friesen, 1969; Matsumoto, 1990; Matsumoto et al., 1998) in comparison to their European American counterparts. It is possible that emotionally empathic outcomes, such as negative affect and empathic concern, may also be subject to culturally sanctioned display rules of emotional expression. Cultural differences in emotional expressivity could potentially explain the greater emotional empathic outcomes reported by British participants compared to Chinese participants. In addition, considering that outward emotional expression is associated with emotional arousal at the autonomic level (for a review, see Cacioppo et al., 1992) then emotional expressivity could be considered a proxy for emotional arousal in general and thus might mediate the relationship between cultural group and empathic accuracy. It was outlined in Study 2 that emotionally laden states can impair cognitive tasks such as successfully inferring the emotions of others (e.g., Ellis and Ashbrook, 1988; Oaksford et al., 1996). Therefore, if an individual's dispositional emotional state is highly expressive and reflective of underlying emotions then this could be detrimental to cognitive abilities resulting in an attenuated empathic accuracy response. Following the same line of reasoning, less expressive individuals may have more cognitive resources readily available to allow more accurate emotional inferences of targets

Therefore the current study was conducted to address the limitations in the previous two studies with the following three aims considered: 1) to address the potential in-group advantage and language proficiency confounds by examining empathic outcomes in response to observing social pain in English speaking British targets and Cantonese speaking Chinese targets, 2) to examine whether cultural differences in emotional expressivity can explain the cultural differences in empathic outcome measures, and 3) to further explore the predictive

value of the IRI on empathic outcomes in response to social pain and examine the moderating role of both culture and target ethnicity.

To this end, below I report results of an experimental study conducted with British and Chinese cultural groups residing in the UK. The experimental stimuli consisted of videos of White British individuals and Chinese individuals (who are called Chinese targets from now on) describing negative social events they experienced in the past. Subtitles were added to all videos to allow non-native speakers to follow the content of the videos, thereby eliminating any potential difficulties associated with language comprehension.

To address the first aim, a group of British and Chinese participants watched these videos and reported a) their own affective state while watching the videos (as in Studies 1 and 2), b) their empathic concern for the target in the video (as in Study 2), c) the perceived levels of pain (as in Studies 1 and 2) and, d) their inferences of target's emotional state as a measure of empathic accuracy (as in Study 2), and e) their comprehension of video targets (as in Study 2).

To address the second aim, individual differences in emotional expressivity were measured using Gross and John's (1997) Berkeley Expressivity Questionnaire (BEQ). The BEQ measures dispositional emotional expressivity, capturing the dispositional expression of positive and negative emotions, and the dispositional emotional impulse strength that an individual typically expresses. To address the third aim, individual differences of dispositional empathy were measured using Davis' (1980) Interpersonal Reactivity Index (IRI). As in Studies 1 and 2, the empathic concern, personal distress, and perspective taking subcomponents of the IRI were measured.

Concerning the first aim, no specific predictions were made due to the mixed findings in the literature concerning the role of in-group advantage in empathic outcomes. Support for the in-group advantage explanation would be found if each cultural group reported greater

cognitive and affective empathy for con-specific targets (i.e., British participants displaying greater empathy for British targets and Chinese participants displaying greater empathy for Chinese targets).

Concerning the second aim, as individuals of East Asian descent are typically less expressive than their Western counterparts at the trait level as assessed by the BEQ (Gross & John, 1997), then one would expect emotional expressivity to mediate the relationship between cultural group and emotionally empathic outcomes (i.e. affect rating and empathic concern). Furthermore, following the reasoning that greater emotional expression reflects greater emotional arousal (for a review, see Cacioppo et al., 1992) then it could also be expected that emotional expressivity would mediate the relationship between cultural group and the cognitive task associated with empathic accuracy given that past studies have shown that emotionally laden states can impair cognitive tasks (Ellis & Ashbrook, 1988; Oaksford et al., 1996).

As previously noted in Study 2 compared to Easterners, personality traits have the tendency to remain more stable among Westerners and be more predictive of their behaviors than among Easterners' (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999). However, as evidence to this effect has not been found in Studies 1 and 2 this prediction is becoming increasingly less viable. Therefore, predictions concerning the final aim remain exploratory.

Method

Participants. Forty-seven participants self-identified as British (39 female, $M_{\text{age}} = 21.53$ years) and 47 as Chinese⁶ (Hong Kong) (34 female, $M_{\text{age}} = 20.66$ years) studying at a British University participated in a study on interpersonal relationships in exchange for £4.

Stimulus development. The protocol outlined in Study 2 (see Chapter 3) was used in the current study to generate videos with Chinese targets. Six Chinese female targets were invited to the lab and videotaped describing in Cantonese two socially negative events they had experienced in their past. They received £4 for this task. Following the completion of each recording, targets rated the affective valence, intensity and their own feelings as they described the event using the PANAS (see Chapter 3 for more details).

The same criteria outlined in Study 2 were used for the selection of the final videos. The most intensely rated videos were short-listed on the basis of affect valence (less than 3 on the scale on the 9-point scale) and intensity ratings (greater than 7 on the scale on the 9-point scale), which resulted in 6 videos from a total of pool of 12 videos. The final two videos were selected based on content describing experiences likely to be common to all participants regardless of cultural background (i.e., being a victim of bullying and leaving friends behind, as opposed to a job rejection). Intensity and affect valence ratings for Chinese video target 1 equaled 7 and 3 respectively. For Chinese video target 2, intensity and affect valence ratings equaled 8 and 1 respectively.

The same two videos of British targets describing socially negative events presented in Study 2 were used in the current study. To address potential language proficiency

⁶ At the time of the study, 19.1% of the Chinese sample had resided in the UK for less than 6 months, 27.7% for up to a year, 6.4% for between 1 and 2 years, 17.0% for between 2 and 5 years, 25.5% for between 5 and 10 years and 4.3% for more than 10 years.

confounds, a bilingual speaker fluent in both English and Chinese translated the content in each video. Chinese subtitles were added to the videos of British targets and English subtitles to the videos of Chinese targets to aid non-native speaker's comprehension of the video content. A second independent bilingual speaker checked the translation for accuracy.

Procedure. The study proceeded using the same protocol outlined in Study 2, with the exception that in this study participants' heart rate was not measured. Participants completed the study individually in the lab and were initially presented an online questionnaire containing Davis' (1980) IRI, Gross and John's (1997) BEQ and demographic questions (age, sex, and ethnicity and duration of residence in home country). Following the completion of the questionnaire, participants were presented the two videos selected from the stimulus development phase in the current study (Chinese targets) and the two videos selected from the stimulus development phase in Study 2 (British targets) in random order. As participants watched the videos, they continuously indicated their affective state using the affect rating dial used in the previous two studies. Participants then completed the same PANAS items that were completed by targets in the stimulus development phase with instructions to judge the *target's* feelings as the target was recalling the event in the video. Following the PANAS, participants completed a set of emotional adjectives taken from the Emotional Response Questionnaire (ERQ; Coke et al., 1978) to indicate their feelings of empathic concern they experienced while watching the videos. Finally, participants indicated the extent to which they understood the person in the video. Once participants had watched all the videos and indicated their responses on all the measures, they were thanked, debriefed and paid for their participation.

Measures. As in previous studies, both the order of the scales included in the questionnaire measures and the items within each scale were presented randomly.

Interpersonal Reactivity Index (IRI). As in the previous studies, the same three subcomponents of the IRI were used to assess dispositional empathy (see Chapter 2 for details): dispositional empathic concern ($\alpha_{BR} = .83$; $\alpha_{CH} = .72$), personal distress ($\alpha_{BR} = .90$; $\alpha_{CH} = .60$), and perspective taking ($\alpha_{BR} = .68$; $\alpha_{CH} = .69$). Each subscale contained 7 items to which participants responded using a 5-point Likert scale. Resulting scores are averages for each subscale.

Berkeley Expressivity Questionnaire (BEQ). The BEQ contains 16 items in total, 4 items measuring positive emotional expressivity (e.g., “Whenever I feel positive emotions, people can easily see exactly what I am feeling”), 6 items measuring negative emotion expressivity (e.g., “I’ve learned it is better to suppress my anger than to show it”) and 6 items measuring emotional impulse strength (e.g., “I experience my emotions very strongly”). Participants responded to all items using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Resulting scores are averages for each subscale.

Empathic Concern. As in Study 2, the ERQ was used to assess feelings of empathic concern participants experienced while watching the videos (Target_{CH1}: $\alpha_{BR} = .88$, $\alpha_{CH} = .79$; Target_{CH2}: $\alpha_{BR} = .92$, $\alpha_{CH} = .76$; Target_{BR1}: $\alpha_{BR} = .83$, $\alpha_{CH} = .76$; Target_{BR2}: $\alpha_{BR} = .86$, $\alpha_{CH} = .69$) (see Chapter 3 for details on the ERQ). Empathic concern scores were then collapsed into a single omnibus score for Chinese targets ($r_{BR} = .69$, $p < .001$; $r_{CH} = .70$, $p < .001$), and a single omnibus score for British targets ($r_{BR} = .77$, $p < .001$; $r_{CH} = .66$, $p < .001$).

Affect Rating. As in Studies 1 and 2, affect rating was measured continuously during each video presentation using a rating dial (see Chapter 2 for details).

Empathic Accuracy. Empathic accuracy scores were computed using the same method described in Study 2. Absolute difference scores between each PANAS emotion score reported by the targets in the videos and those reported by the participants were computed. All emotions were then collapsed to produce empathic accuracy scores in response

to each target (Target_{CH1}: $\alpha_{BR} = .84$, $\alpha_{CH} = .84$; Target_{CH2}: $\alpha_{BR} = .80$, $\alpha_{CH} = .82$; Target_{BR1}: $\alpha_{BR} = .83$, $\alpha_{CH} = .84$; Target_{BR2}: $\alpha_{BR} = .86$, $\alpha_{CH} = .76$). These scores were then averaged for each target cultural group to generate a single omnibus empathic accuracy score for Chinese targets ($r_{BR} = .81$, $p = .001$; $r_{CH} = .70$, $p = .001$) and British targets ($r_{BR} = .71$, $p = .001$; $r_{CH} = .63$, $p = .001$). As in Study 2, each average empathic accuracy scores was multiplied by -1 so that a lower score reflected lower empathic accuracy and a higher score reflected greater empathic accuracy.

Perceived Pain. Perceived pain was assessed using the Wong-Baker FACES Pain Rating Scale (see Chapter 2 for details). For each cultural group, perceived pain scores did not significantly correlate between the two Chinese targets ($r_{BR} = .04$, $p = .80$; $r_{CH} = .11$, $p = .46$) and in the Chinese group, the two British targets ($r_{BR} = .30$, $p = .02$; $r_{CH} = .22$, $p = .15$), therefore any upcoming analyses with perceived pain scores will consider video target type as an additional factor.

Target Comprehension. Target comprehension was assessed with the same item used in Study 2 (see Chapter 3 for details). Target comprehension scores were collapsed into a single omnibus score for Chinese targets ($r_{BR} = .70$, $p = .001$; $r_{CH} = .47$, $p = .001$) and a single omnibus score for British targets ($r_{BR} = .48$, $p = .001$; $r_{CH} = .53$, $p = .001$).

Results

First, I will examine the cultural differences in target comprehension and perceived pain to determine whether the two cultural groups understood/perceived comparable levels of content/pain in each video. Second, as in previous studies, I will present the cultural differences in empathic outcome measures in response to observing social pain (i.e., affect rating, empathic concern, and empathic accuracy). Next, I will test the mediating role of emotional expressivity in the relationship between culture and empathic outcomes in response to observing social pain. Finally, I will examine the moderating role of cultural

group in the relationship between dispositional empathy and each empathic outcome measure to address the final aim of the study. Following research that demonstrates sex differences in self-reported empathic measures (Eisenberg & Lennon, 1983) preliminary analyses that included participants' sex as an additional factor were conducted and revealed no significant main effects or interactions with sex; therefore this variable was not included in the analyses reported below.

Target comprehension. A 2×2 repeated-measures ANOVA on target comprehension scores was conducted with target (British targets vs. Chinese targets) as the within-subjects factor and cultural group (British vs. Chinese) as the between-subjects factor. The analysis revealed no significant main effect of cultural group, $F(1, 92) = .01, p = .92, d = .01$. There was a significant main effect of target, $F(1, 92) = 13.90, p = .001$; participants comprehended British targets significantly more ($M = 4.26, SD = .68$) compared to Chinese targets ($M = 3.95, SD = .99$), $d = .37$. The cultural group \times target interaction was also significant, $F(1, 92) = 21.56, p = .001, \eta_p^2 = .19$. Unpacking this interaction revealed that British participants comprehended British targets significantly more compared to Chinese targets, $F(1, 92) = 35.04, p = .001, d = .80$. For Chinese participants, there was no significant difference in comprehension between videos of British targets and Chinese targets, $F(1, 92) = .42, p = .52, d = .09$. Regarding cultural differences for each target type, British participants comprehended British targets significantly more ($M = 4.44, SD = .59$) compared to Chinese participants ($M = 4.08, SD = .73$), $F(1, 92) = 7.02, p = .01, d = .47$. However, Chinese participants comprehended Chinese targets significantly more ($M = 4.15, SD = .90$) compared to British participants ($M = 3.76, SD = 1.04$), $F(1, 92) = 3.86, p = .05, d = .40$. In response to these findings, target comprehension was included as a covariate in the upcoming analyses.

Perceived pain. A 4×2 repeated-measures ANCOVA on perceived pain scores was conducted with each target (target_{CH1}, target_{CH2}, target_{BR1} vs. target_{BR2}) as the within-subjects factor and cultural group (British vs. Chinese) as the between-subjects factor. The analysis revealed a significant main effect of cultural group, $F(1, 920) = 11.60, p = .001$; Chinese participants perceived more target pain (adj $M = 4.36, SE = .07$) than did British participants (adj $M = 3.98, SE = .07$), $d = .76$. There was no significant main effect of target, $F(3, 270) = 2.02, p = .11, \eta_p^2 = .02$, or a cultural group \times target ethnicity interaction, $F(3, 270) = 1.16, p = .33, \eta_p^2 = .01$. Given the significant cultural difference in perceived pain scores and that any potential cultural differences in future analyses of empathic outcomes could be attributed to these cultural differences in perceived pain, each perceived pain score in response to each video target was added into each analysis as a covariate.

Separate 2×2 repeated-measures ANCOVAs were conducted with affect rating, empathic concern, and empathic accuracy as dependent variables. In each ANCOVA, cultural group (British vs. Chinese) was entered as the between-subjects variable and target (British targets vs. Chinese targets) was entered as the within-subjects variable. Both target comprehension for Chinese targets and British targets in addition to the four perceived pain scores were entered as covariate variables in each analysis (see Table 4.1 for descriptive statistics for all outcome measures).

Affect rating. Affect rating scores were processed prior to analysis, because as with the stimuli videos used in Study 2, there were points during the course of the videos that targets made reference to positive aspects of the events (e.g., developed close friendships). Therefore, steps were taken to exclude the time windows where targets made reference to positive information. To this end, the same protocol used in Study 2 to process affect rating data was adopted in the current study. Two independent coders were asked to identify negative and positive information in the videos with Chinese targets. Each coder's response

was used to isolate time windows containing negative information only. This process revealed one time window containing negative information from target_{CH1}, with a total duration of 67 seconds, and three time windows containing negative information from target_{CH2}, with a total duration of 36 seconds. The same time windows identified for British target videos in Study 2 were used in the current study which had revealed two time windows containing negative information from target_{BR1}, with a total duration of 123.5 seconds, and two time windows from target_{BR2}, with a total duration of 92.5 seconds.

Difference scores of all affect-rating scores were then computed by subtracting the first affect rating score in a time window from all scores in that particular window. Negative scores represent negative affect as a direct response to the videos, where as positive scores represent positive affect in response to the videos. The correlation between the two affect rating scores in response to Chinese targets for each cultural group ($r_{BR} = .21, p = .16$; $r_{CH} = .26, p = .08$), and in response to British targets for each cultural group ($r_{BR} = -.35, p = .02$; $r_{CH} = .20, p = .20$) were low. Therefore, affect rating responses were not collapsed and target was considered as an additional factor in the upcoming analyses. A 4×2 mixed ANCOVA analysis was conducted with each target (target_{CH1}, target_{CH2}, target_{BR1} vs. target_{BR2}) as the within-subjects variable and cultural group as the between-subjects variable. The analysis did not reveal significant main effects of target, $F(3, 258) = .26, p = .86, \eta_p^2 = .003$, or cultural group, $F(1, 86) = .18, p = .67$. The cultural group \times target interaction was also not significant, $F(3, 258) = .95, p = .42, \eta_p^2 = .01$.

Empathic Concern. The ANCOVA with empathic concern revealed a main effect of cultural group, $F(1, 86) = 15.65, p = .001$; British participants reported more empathic concern for targets (adj M = 2.04, SE = .14) compared to Chinese participants (adj M = 1.19, SE = .14), $d = .70$. There was neither a significant main effect of target, $F(1, 86) = .02, p = .88$, nor a significant cultural group \times target interaction, $F(1, 86) = .81, p = .37, \eta_p^2 = .01$.

Empathic accuracy. The analysis revealed a significant main effect of cultural group, $F(1, 86) = 5.44, p = .02$. Chinese participants were more empathically accurate (adj $M = -1.07, SE = .09$) compared to British participants (adj $M = -1.38, SE = .09$), $d = .26$. There was no significant main effect of target, $F(1, 86) = .78, p = .38$. In addition there was no significant cultural group \times target interaction, $F(1, 86) = 1.81, p = .18, \eta_p^2 = .02$.

Emotional Expressivity. A 3×2 repeated-measures ANOVA was conducted with cultural group (British vs. Chinese) as the between-subjects variable and the subcomponents of the BEQ (negative emotional expressivity, positive emotional expressivity and emotional impulse strength) as the within-subjects variable (see Table 4.2 for descriptive statistics). There was a significant main effect of BEQ subcomponent $F(2, 184) = 110.99, p = .001, \eta_p^2 = .55$. All subcomponents of the BEQ differed significantly from one and other. Positive emotional expressivity was rated the highest ($M = 5.46, SD = .98$), followed by impulse strength ($M = 4.84, SD = 1.30$) and finally negative emotional expressivity was rated the lowest ($M = 3.82, SD = 1.10$). There was neither a significant main effect of cultural group, $F(1, 92) = .55, p = .46, d = .15$, nor a significant cultural group \times BEQ interaction, $F(2, 184) = .69, p = .50, \eta_p^2 = .01$, demonstrating that both cultural groups were comparable in their general emotional expressivity.

With no cultural differences in emotional expressivity, a mediation analysis to explore the mediating role of emotional expressivity between cultural group and empathic outcomes was not justified. Nevertheless, emotional expressivity may explain the variability in empathic outcomes in at least one of the cultural groups. If emotional expressivity is related to empathic outcomes in one cultural group but not the other then a moderated regression analysis could show that emotional expressivity might still be an explanatory variable for at least one of the cultural groups. Furthermore, parsing the empathic outcomes by target ethnicity would also demonstrate whether emotional expressivity would only relate to

empathic outcomes in response to in-group members. To this end, a correlation analysis was conducted to explore the relationships between each of the BEQ subcomponents and each empathic outcome as a function of target ethnicity for each cultural group (see Table 4.3). In the British group, there were significant positive relationships between each BEQ subcomponent and empathic concern regardless of the target ethnicity. In the Chinese group, positive emotional expressivity was significantly positively related to empathic concern for British targets, and marginally significantly positively related to empathic concern for Chinese targets. In addition, positive emotional expressivity marginally significantly negatively related to empathic accuracy in the Chinese group, regardless of the target ethnicity. It should be noted that both negative emotional expressivity and impulse strength also related negatively to empathic accuracy in the Chinese group regardless of target ethnicity, but failed to reach conventional levels of statistical significance. There were no significant relationships between any of the subcomponents of the BEQ and affect rating in both cultural groups.

The exploratory correlation analysis revealed potential cross-cultural differences in the relationships between both emotional expressivity and empathic concern, and emotional expressivity and empathic accuracy. Considering that emotional expressivity is measured at the trait level, and that there is evidence demonstrating an association between trait measures and outcome measures in Western groups but not Eastern groups (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999), it is possible that dispositional emotional expressivity might explain the association between cultural group and empathic outcomes in the British group but not in the Chinese group. Therefore, separate post-hoc regression analyses were conducted to explore whether emotional expressivity predicted empathic concern and empathic accuracy in the British group, but not the Chinese group.

As all the subcomponents of the BEQ were significantly related to empathic concern in the British group in the same direction, I opted to compute an average of all three subcomponents of the BEQ ($\alpha_{BR} = .90$; $\alpha_{CH} = .84$) and conducted the first regression analysis with this omnibus BEQ as the moderator in the relationship between cultural group and empathic concern (see Table 4.3 for the correlation between the omnibus BEQ and empathic concern for each cultural group as a function of target ethnicity). Gross and John (1997) demonstrate that the three latent factors (negative emotional expressivity, positive emotional expressivity and impulse strength) define a super-ordinate factor of generalized emotional expressivity therefore it seemed appropriate to opt for a general emotional expressivity measure if all the latent factors correlate with empathic concern. Concerning the second regression analysis, although negative emotional expressivity and emotional impulse strength were not significantly related to empathic accuracy in the Chinese Group, both relationships were in the same direction as positive emotional expressivity. In fact the omnibus BEQ was statistically related to empathic accuracy (see Table 4.3). Therefore, the omnibus BEQ was used in the second regression analysis to test the moderating role in emotional expressivity between cultural group and empathic accuracy. For each regression analysis, cultural group (British group = 0, Chinese group = 1), the omnibus BEQ, and the cultural group \times omnibus BEQ interaction, target and the target \times omnibus BEQ interaction were entered as predictors (see Table 4.4). All continuous predictor variables were mean centered prior to the analysis.

The first analysis with empathic concern as the criterion variable revealed a significant model, $R^2 = .24$, $F(5, 182) = 11.55$, $p = .001$. Cultural group significantly predicted empathic concern, replicating the pattern observed in the main effect of the ANCOVA presented before. The only other significant predictor of empathic concern was the cultural group \times omnibus BEQ interaction term. This interaction term was unpacked by conducting separate regression analyses for each cultural group with the omnibus BEQ, target

and the target \times omnibus BEQ interaction as predictors which confirmed the pattern of findings reported in the correlation analysis presented earlier (see Table 4.5). The omnibus BEQ was the only significant predictor of empathic concern in the British group ($R^2 = .26$, $F(3, 90) = 10.57$, $p = .001$), with greater emotional expressivity predicting greater empathic concern. However, the omnibus BEQ did not significantly predict empathic concern in the Chinese group ($R^2 = .02$, $F(3, 90) = .45$, $p = .72$).

The second analysis with empathic accuracy as the criterion variable revealed a significant model, $R^2 = .11$, $F(5, 182) = 4.66$, $p = .001$. The omnibus BEQ significantly predicted empathic accuracy, with greater dispositional emotional expressivity predicting less empathic accuracy ($\beta = -.15$, $SE = .08$, $p = .05$). In addition, target type also significantly predicted empathic accuracy, with greater empathic accuracy for Chinese targets ($\beta = -.27$, $SE = .08$, $p = .001$) compared to British targets. There were no other significant predictors of empathic accuracy.

To summarize, cultural group did not interact with emotional expressivity in predicting empathic accuracy; greater overall emotional expressivity predicted lower empathic accuracy for both cultural groups. In addition, although there was no justification to examine the mediating role in emotional expressivity in the relationship between cultural group and empathic concern, exploratory analyses demonstrated that emotional expressivity did at least explain variability in empathic concern responses in the British group, but not the Chinese group (i.e., greater overall emotional expressivity predicted greater empathic concern).

Dispositional Empathy. To assess the moderating role of culture and target in the relationship between dispositional empathy and empathy in response to social pain, three moderated regression analyses were conducted with each empathic outcome measure (affect rating, empathic concern and empathic accuracy) as the criterion variable. For each

regression analysis, cultural group (British group = 0, Chinese group = 1), the subcomponents of the IRI (empathic concern, perspective taking and personal distress), the cultural group \times IRI interaction terms, target type (British target = 0, Chinese target = 1), and the target \times IRI interaction terms were added as predictors. All continuous predictor variables were mean centered prior to analysis.

The first analysis with affect rating as the criterion variable did not reveal a significant model, $R^2 = .06$, $F(11, 176) = 1.01$, $p = .44$ (see Table 4.6)⁷.

The next analysis with empathic concern as the criterion variable revealed a significant model, $R^2 = .26$, $F(11, 176) = 5.61$, $p = .001$ (see Table 4.6). Cultural group significantly predicted empathic concern as found in the ANCOVA presented before. Dispositional empathic concern marginally significantly predicted empathic concern, with greater dispositional empathic concern predicting greater empathic concern. The cultural group \times dispositional empathic concern interaction also significantly predicted empathic concern. Neither perspective taking and personal distress, nor their respectful interaction terms with cultural group and target ethnicity significantly predicted empathic concern. A regression analysis was conducted on empathic concern responses for each cultural group to unfold the cultural group \times dispositional empathic concern interaction with each of the IRI subcomponents, target type and their interaction terms entered as predictors (see Table 4.7). The model was not significant for the Chinese group, $R^2 = .08$, $F(7, 86) = .88$, $p = .52$.

⁷ It should be noted that perspective taking was a significant predictor of affect rating, with greater perspective taking predicting less negative affect rating scores. Personal distress also marginally significantly predicted affect rating with greater personal distress predicting less negative affect rating scores. However, as demonstrated the overall model was not significant.

However, the model was significant for the British group $R^2 = .26$, $F(7, 86) = 4.33$, $p = .001$, with dispositional empathic concern as the only significant predictor of empathic concern.

The final analysis with empathic accuracy as the criterion variable revealed a significant model, $R^2 = .15$, $F(11, 176) = 2.73$, $p = .003$ (see Table 4.6). Cultural group significantly predicted empathic accuracy, as presented in the ANCOVA before. In addition, target type was also a significant predictor of empathic accuracy, with participants reporting greater empathic accuracy for Chinese targets compared to British targets. The final significant predictor of empathic accuracy was the cultural group \times perspective taking interaction. A regression analysis was conducted for each cultural group to unfold this interaction (see Table 4.7), with each of the IRI subcomponents, target type and the target \times IRI component interaction terms entered as predictors. With a focus on perspective taking, the model was not significant for the Chinese group, $R^2 = .11$, $F(7, 86) = 1.55$, $p = .16$. However, the model was significant for the British group $R^2 = .15$, $F(7, 86) = 2.18$, $p = .04$; perspective taking was marginally significant with greater perspective taking predicting greater empathic accuracy. To summarize, in the current study dispositional empathic concern and dispositional perspective taking was useful in predicting empathic concern and empathic accuracy responses respectively in response to social pain in the British group, but not the Chinese group.

Discussion

There were three aims to the current study: 1) to address the potential in-group advantage and language proficiency explanations by assessing empathic outcome measures in response to observing social pain in English speaking British targets and Cantonese speaking Chinese targets, 2) to address whether cultural differences of emotional expressivity could explain the cultural differences in emotional and cognitive empathy, and 3) to explore the

moderating role of culture and target in the relationship between dispositional empathy and empathy in response to observing social pain.

The results revealed no cultural group differences in affect rating when observing an individual suffering social pain, which contrasts with findings from Studies 1 and 2. The task given to participants as they watched each video was much more cognitively demanding compared to the previous studies. Participants were required to observe each video target, attend to subtitles and provide their affect rating simultaneously. It is possible that this cognitive load might have influenced affect rating findings. Participants may have concentrated more on understanding the video content and less on their reporting of their own affective states. However, emotionally empathic findings reported following the presentation of the video replicated findings from Study 2. British participants reported more empathic concern for targets compared to their East Asian counterparts. As noted in Study 2, this finding is in line with research that shows Westerners reporting greater dispositional empathic concern compared to Easterners (see Cassels et al., 2010). In addition, results showed that Chinese participants were more empathically accurate compared to British participants also replicating the findings reported in Study 2. Finally, converging with research that finds no in-group advantage in empathic accuracy (e.g., Ma-Kellams & Blascovich, 2012; Soto & Levenson, 2009) there was no in-group advantage in any of the empathic outcome measures reported in the current study.

In response to the second aim, although running a mediation analysis was not justified due to the lack of cultural differences in emotional expressivity, two exploratory moderation analyses were conducted to assess the moderating role of cultural group in the relationship between: 1) emotional expressivity and empathic concern, and 2) emotional expressivity and empathic accuracy. Cultural group moderated the relationship between emotional expressivity and empathic concern, regardless of the target ethnicity in the first moderation

analysis. Specifically, greater emotional expressivity predicted greater empathic concern in the British group but not in the Chinese group, which suggests that emotional expressivity is useful in predicting empathic concern for British participants but not for Chinese participants. The BEQ captures trait levels of emotional expressivity and given that it is well documented that personality traits are more stable in Western populations (Chiu & Hong, 1999; Hong et al. 2001; Choi et al. 1999) it is not surprising that this association emerges in the British group. As stated above, dispositional measures of emotional expressivity did not predict empathic concern in the Chinese group. However, it is possible that more contextualized measures of emotional expressivity (e.g., facial expressions) assessed in real-time as participants watch the videos, might moderate Chinese participants' empathic concern. Future research should examine whether culture moderates the relationship between more contextualized emotional expressivity measures, like the example given above, and empathic concern. Interestingly, the moderating pattern presented above did not replicate between emotional expressivity and empathic accuracy, rather in both cultural groups greater emotional expressivity predicted lower empathic accuracy scores. In fact, although not reaching conventional levels of significance, the relationships between all the subcomponents of the BEQ and empathic accuracy are greater for the Chinese group compared to the British group which contradicts expectations. If emotional expressivity is considered to be a proxy for emotional arousal (for a review, Cacioppo et al., 1992) then it is possible that the impairing effect of emotional states on cognitive tasks (Ellis & Ashbrook, 1988; Oaksford et al., 1996), such as empathic accuracy, is more pronounced in Easterners compared to Westerners because emotional expressivity is not endorsed and practiced amongst Easterners compared to Westerners (Ekman & Friesen, 1969; Matsumoto, 1990; Matsumoto et al., 1998). Another interesting point to note from this finding is the very fact that greater emotional expressivity predicted lower empathic accuracy. Juxtaposing the research

associating outward emotional expression with emotional arousal (for a review, see Cacioppo et al., 1992) with the research demonstrating that emotionally laden states impair cognitive task performance (Ellis & Ashbrook, 1988; Oaksford et al., 1996) then this finding supports the assertion that emotional arousal can impair empathic accuracy. Furthermore, these results synergize with findings reported in the previous chapter that showed personal distress marginally predicting lower empathic accuracy scores.

In relation to the final aim, the data revealed that greater dispositional empathic concern predicted more empathic concern in the British group regardless of the target ethnicity, but not in the Chinese group. In addition, greater perspective taking predicted more empathic accuracy regardless of the target ethnicity in the British group, but not in the Chinese group. Following the reasoning concerning the stability of personality traits in Western populations (Chiu & Hong, 1999; Hong et al., 2001; Choi et al., 1999), it was also speculatively proposed that dispositional empathy would predict empathic outcomes in the British group but not in the Chinese group. These findings fit with this speculation and suggest that dispositional measures are useful in predicting emotional outcomes in a British cultural group, but not in a Chinese cultural group. That this finding emerged in the current study and not in Study 2 requires further attention. It is possible that this discrepancy can be explained by the increased comprehension of the video targets in the Chinese group. As Chinese participants would have understood video targets to a greater degree than they might have adapted their empathic response as a function of the context as opposed to their empathic dispositions in general. Rectifying findings from Study 2, it is possible that the East Asian participants did not comprehend enough of the content in the videos to derive a more tailored empathic response that was true to their general nature (i.e., more situational dependent) but still garnered enough information to understand that an empathic response

was appropriate, and thus resorted to their general dispositional empathy to determine empathic outcomes.

This study aimed to address potential in-group advantages and language comprehension explanations noted in response to the materials used in Study 2. The results replicated the findings reported in previous studies concerning cultural differences in empathic concern and empathic accuracy, and ruled out in-group advantage and language comprehension effects as potential explanations for the cultural differences in empathy. No cultural differences were observed for affect ratings. A potential explanation for failing to replicate this difference in this study is the cognitive load required to simultaneously observe the target, attend to subtitles in order to understand the target and supply ratings of affect, the only measure recorded as participants were watching the videos. In addition, the current study presents findings that showed the moderating role of emotional expressivity in the relationship between cultural group and emotional empathic outcomes relating to empathic concern.

The three studies reported so far provide novel evidence for the relationship between culture and empathy. However, the behavioral consequences of the observed cultural differences in empathy remain to be known. Empathic responses such as feelings of empathic concern have been shown to predict pro-social behaviors (e.g., helping, see Davis, 1983; Schroeder, 1988). To examine whether the so far examined cultural differences apply to behavioral outcomes, in the following chapter I examine the role of cultural background in donating behavior in response to the suffering of another. In addition, I examine the extent that affective empathic emotions of empathic concern and personal distress can explain any potential cultural differences in donating behavior.

Table 4.1

Mean (SD) Scores for Affect Rating, Empathic Concern, Perceived Pain and Empathic Accuracy Responses for Cultural Group in response to British and Chinese Video Targets

Condition	<u>British</u>				<u>Chinese</u>			
	Chinese Targets		British Targets		Chinese Targets		British Targets	
	M (SD)		M (SD)		M (SD)		M (SD)	
Empathic concern	1.84 (1.09)		1.99 (1.00)		1.36 (.89)		1.24 (.77)	
Empathic accuracy	-1.17 (.57)		-1.42 (.59)		-1.01 (.52)		-1.30 (.51)	
Target comprehension	3.76 (1.04)		4.44 (.59)		4.15 (.90)		4.08 (.73)	
	Target _{CH1}	Target _{CH2}	Target _{BR1}	Target _{BR2}	Target _{CH1}	Target _{CH2}	Target _{BR1}	Target _{BR2}
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Affect rating	-.71 (.68)	-.45 (.46)	-.17 (.51)	-1.12 (.73)	-.86 (.82)	-.31 (.49)	-.23 (.61)	-.87 (.74)
Perceived pain	4.13 (.68)	2.98 (.98)	4.53 (.86)	4.32 (.70)	4.40 (.80)	3.55 (.86)	4.64 (.92)	4.81 (.74)

Note: Negative scores for affect rating reflect negative affect and positive scores reflect positive affect. More negative empathic accuracy scores reflect poorer empathic accuracy.

Table 4.2

Mean (SD) Scores in Emotional Expressivity (BEQ) for each Cultural Group

	British	Chinese
	M (SD)	M (SD)
Negative emotion expressivity	3.90 (1.14)	3.74 (1.05)
Positive emotion expressivity	5.60 (.91)	5.33 (1.03)
Emotional impulse strength	4.84 (1.49)	4.84 (1.10)
Omnibus expressivity	4.78 (1.01)	4.64 (.88)

Table 4.3

Correlations between Emotional Expressivity (BEQ) and Empathic Outcomes in Response to Observing Social Pain in British and Chinese Targets

Outcome Measures	British				Chinese			
	Negative expressivity	Positive Expressivity	Emotional impulse strength	Omnibus BEQ	Negative expressivity	Positive Expressivity	Emotional impulse strength	Omnibus BEQ
British Targets								
Affect rating	.07	-.17	.05	.00	-.02	-.18	-.11	-.13
Empathic concern	.43**	.36*	.51**	.52**	.02	.31*	-.08	.10
Empathic Accuracy	-.08	-.15	-.17	-.16	-.20	-.27 [†]	-.22	-.28 [†]
Chinese Targets								
Affect rating	-.04	-.24	-.17	-.17	-.06	-.04	.02	-.03
Empathic concern	.31*	.38**	.55**	.50**	.01	.25 [†]	-.01	.10
Empathic Accuracy	-.06	-.13	-.15	-.14	-.18	-.25 [†]	-.21	-.26 [†]

** < .01 * < .05 [†] < .10

Table 4.4

Moderating Role in Cultural Group and Target Type in the Relationship between both Emotional Expressivity (BEQ) and Empathic Concern, and Emotional Expressivity (BEQ) and Empathic Accuracy

	Empathic Concern			Empathic Accuracy		
	β	SE	p	β	SE	p
Intercept	1.30	.11	.001	-1.03	.07	.001
Cultural group	.57	.13	.001	-.12	.08	.12
BEQ	.10	.12	.43	-.15	.08	.05
Cultural group \times BEQ	.43	.14	.002	.07	.09	.40
Target type	.02	.13	.90	-.27	.08	.001
Target type \times BEQ	-.01	.14	.94	-.01	.08	.89

Note: Coding of Cultural group: British = 1, Chinese = 0; Coding of Target Type: British = 1, Chinese = 0.

Table 4.5

Moderating Role in Target Type in the relationship between Emotional Expressivity (BEQ) and Empathic Concern for each Cultural Group

	Empathic Concern					
	British group			Chinese group		
	β	SE	p	β	SE	p
Intercept	1.81	.13	.001	.14	.12	.001
BEQ	.54	.13	.001	.10	.14	.48
Target Type	.15	.19	.42	-.12	.17	.49
BEQ \times Target Type	-.03	.19	.89	-.02	.20	.94

Note: Coding of Target Type: British = 1, Chinese = 0.

Table 4.6

Moderating Role in Cultural Group and Target Type in the Relationship between IRI Subcomponents and each Outcome Measure

	Affect Rating			Empathic Concern			Empathic Accuracy		
	β	SE	p	β	SE	p	β	SE	p
Intercept	-.57	.12	.001	1.26	.22	.001	-.72	.13	.001
Cultural group	-.02	.07	.80	.66	.14	.001	-.20	.08	.02
IRI Empathic concern	-.16	.11	.15	.35	.21	.10	-.09	.13	.50
IRI Perspective taking	.29	.11	.01	-.10	.21	.65	.07	.13	.60
IRI Personal distress	.18	.11	.09	.14	.20	.50	-.10	.12	.41
Cultural group \times Empathic concern	-.02	.13	.90	.60	.25	.02	-.17	.15	.26
Cultural group \times Perspective taking	-.12	.16	.45	-.48	.30	.11	.36	.18	.05
Cultural group \times Personal distress	-.10	.12	.40	-.08	.22	.73	.16	.14	.24
Target Type	-.01	.07	.84	.02	.13	.90	-.27	.08	.001
Target type \times Empathic concern	.12	.13	.34	.01	.24	.98	.04	.15	.77
Target type \times Perspective taking	-.18	.14	.22	-.06	.27	.81	.03	.16	.84

Table 4.6 (cont.)

	Affect Rating			Empathic Concern			Empathic Accuracy		
	β	SE	p	β	SE	p	β	SE	p
Target type \times Personal distress	-.08	.10	.44	-.08	.19	.69	-.08	.12	.52

Note: Coding of Cultural group: British = 1, Chinese = 0; Coding of Target Type: British = 1, Chinese = 0.

Table 4.7

Moderating Role of Target Type in the Relationship between IRI Subcomponents and Outcome Measures (Empathic Concern and Empathic Accuracy) for each Cultural Group

	Empathic Concern						Empathic Accuracy					
	British group			Chinese group			British group			Chinese group		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p
Intercept	.28	1.31	.83	.02	1.08	.99	-1.79	.79	.03	-.78	.67	.25
Empathic concern	.94	.27	.001	.36	.23	.12	-.29	.17	.08	-.05	.15	.74
Perspective taking	-.55	.37	.14	-.11	.22	.63	.43	.23	.06	.07	.14	.63
Personal distress	.02	.20	.91	.13	.24	.58	.05	.12	.67	-.09	.15	.53
Target type	.16	.20	.44	-.11	.19	.57	-.27	.12	.03	-.27	.12	.02
Target type \times Empathic concern	.01	.39	.98	-.02	.33	.96	.11	.23	.64	-.04	.20	.86
Target type \times Perspective taking	-.11	.53	.83	-.04	.31	.89	.02	.32	.94	.04	.19	.84

Table 4.7 (cont.)

	Empathic Concern						Empathic Accuracy					
	British group			Chinese group			British group			Chinese group		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p
Target type \times Personal distress	-.01	.29	.98	-.07	.33	.84	-.07	.18	.71	-.09	.21	.65

Note: Coding of Target Type: British = 1, Chinese = 0.

CHAPTER FIVE

Emotional Empathy and Pro-Social Behaviour in Response to Emotional Pain

The first three studies have thus far demonstrated cultural differences in both affective and cognitive empathy. However, one unexplored question so far concerns the behavioural consequences of these observed cultural differences in empathic outcomes. Past research has demonstrated that empathy is associated with pro-social behaviour (e.g., Mehrabian & Epstein, 1972; Davis, 1983; Eisenberg & Miller, 1987). For example, dispositional empathy has proven to be useful in predicting behaviours of a pro-social nature (Davis, 1983; Litvack-Miller et al., 1997; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), organ donation willingness (Cohen & Hoffner, 2012), actively helping persecuted school friends (Gini, Albiero, Benelli, & Altoè, 2007) and is an ingredient of a pro-social personality (Penner, Fritzsche, Craiger, & Freifeld, 1995). By the same token, empathy has also been associated with spontaneous pro-social behaviours, informal helping behaviours and in situations where the need of an individual was directly required (Einolf, 2008). Clearly, empathy is associated with a seemingly broad array of pro-social behaviours and is a useful construct to predict pro-sociality, at least in Western samples. The association between empathy and pro-social behaviour has not been examined cross-culturally and it is unknown whether emotional empathy, in particular, would relate to behaviours of a pro-social nature in an Eastern cultural context.

Therefore, the first aim of the current study was to examine the cultural differences in empathic concern, personal distress and donating behaviour to a suffering individual using an alternative method to that employed in Studies 1 to 3. The second aim of the study was to examine whether two measures of affective empathy (empathic concern and personal distress) explain any potential cultural differences in donating behaviour. As there is

evidence of an association between dispositional empathy and prosocial behaviours (e.g., Davis, 1983; Litvack-Miller et al., 1997), the final aim of the current study was to examine the extent to which dispositional empathy predicts empathic outcomes and donating behaviour. Moreover, the moderating role of cultural group in these relationships was also investigated.

To address the study aims, I report results of an online experiment with Caucasian American (US) and Japanese (JP) participants residing in their home country. The stimuli used to induce an empathic and pro-social response consisted of a fabricated transcript of an interview with a cancer sufferer (whom is called target from now on) who provided an account of her experience living with cancer. Participants were asked to report their emotions of distress and empathic concern for the target in the transcript. In addition participants were asked to indicate the percentage of their participation payment that they would donate to an organisation that supports cancer sufferers such as the target in the transcript. As in previous studies, dispositional empathy was measured using Davis' (1980) IRI to examine the moderating role of culture in the relationship between dispositional empathy and empathic outcomes of empathic concern, personal distress and in addition, donating behaviour.

Considering the findings that have been reported thus far in previous studies, it would be expected that compared to Japanese participants, American participants would report more empathic concern and personal distress in response to the article. Guided by research showing that Americans have the tendency to donate to charities more frequently compared to Japanese (Charities Aid Foundation, 2012) it is expected that American participants would be willing to donate a higher percentage of their participation payment to the charity organisation compared to Japanese participants. In addition, guided by the research demonstrating the association between empathy and prosocial behaviours presented above it

is expected that any potential cultural differences in donating behaviour could be explained by potential cultural differences in empathic concern and personal distress.

I consider the third aim of the study as exploratory given the mixed findings that have been reported in the previous three studies in this thesis. It might be expected that dispositional empathic concern would predict emotional empathic outcomes of empathic concern as this finding has been reported in both Studies 2 and 3. Although, whether this association emerges in the American group only or both cultural groups is difficult to predict as Studies 2 and 3 demonstrated different patterns for this association. Following the research that demonstrates the association between empathy and prosociality, it would be expected that dispositional empathy would predict donating behaviour. However, no prediction is proposed regarding the moderating role of cultural group in this relationship. As previously mentioned, findings from Studies 2 and 3 concerning the association between dispositional empathy and empathic outcomes have been mixed and given the association between empathy and prosociality described before it is feasible that the mixed findings reported thus far between dispositional empathy and empathic outcomes could also translate to donating behaviour.

Method

Participants. One hundred American (55 female, $M_{\text{age}} = 38.09$ years) and 110 Japanese participants (75 female, $M_{\text{age}} = 37.41$ years) were recruited via the Mechanical Turk and Lancers crowd sourcing marketplace, respectively, and paid equivalently in the appropriate currency (US Dollar vs. Japanese Yen) to participate in a research program that was presented as one aiming to develop an information pack for a charity organisation.

Procedure and Materials.

Pre-test. A pre-test was conducted before the main study to assess the validity of the

stimulus transcript which contained an interview with a South Asian acute myelogenous leukemia sufferer. The main purpose of the pre-test was to assess the emotional arousal of the stimulus transcript. The transcript needed to be powerful enough to induce an emotional response, but not overpowering insofar that a ceiling effect would emerge in empathic outcome responses. Ten British volunteers were recruited to participate in this pre-test. Volunteers read through the interview transcript, responded to questions that served as a check that the transcript was read thoroughly and indicated emotions of empathic concern in response to the article using Coke et al.'s (1978) Emotion Regulation Questionnaire (ERQ) as in Studies 2 and 3. Furthermore, an additional subset of emotional adjectives taken from the ERQ pertaining to emotional personal distress (distressed, alarmed, disconcerted, bothered, irritated, worried, troubled, anxious, disturbed, perturbed, upset, grieved) were presented to volunteers. These items were measured using a 5-point Likert scale (1 = very slightly or not at all to 5 = extremely). It was found that the stimulus transcript induced an emotional empathic response, measured both as distress ($M = 2.46$, $SD = .88$) and empathic concern ($M = 3.30$, $SD = .76$) with scores around the mid-point of the scale. As no ceiling effects were identified the transcript was used in the main study.

Main study procedure. Participants were presented with an online questionnaire. The cover story informed them that they would be providing information to help a charity organisation develop a pack designed to raise awareness of cancer. Specifically, the charity organisation's mission was described as raising awareness for the under representation of South Asians in global stem cell and bone marrow donor pools. The cover story was introduced to legitimize the use of a charity donation measure (described below), which was presented later in the study. Following the cover story participants completed a consent form and a number of demographic items (age, sex, ethnicity, and duration of residence in home country). As in Studies 1-3, participants completed Davis' (1980) Interpersonal Reactivity

Index (IRI) and responded to subcomponents measuring empathic concern ($\alpha_{US} = .88$; $\alpha_{JP} = .82$), personal distress ($\alpha_{BR} = .87$; $\alpha_{JP} = .76$) and perspective taking ($\alpha_{BR} = .87$; $\alpha_{JP} = .66$). Participants were then presented with and asked to carefully read the interview transcript. Following the transcript presentation, participants responded to two questions pertaining to the information presented in the transcript. These questions served as a check that participants had read through the transcript carefully. Participants then completed the ERQ to indicate feelings of empathic concern ($\alpha_{US} = .94$; $\alpha_{JP} = .83$) and personal distress ($\alpha_{US} = .94$; $\alpha_{JP} = .93$) that participants experienced while reading the transcript. Using a slider ranging from 0 to 100, participants then indicated the percentage of their payment that they would be willing to donate to the charity organisation outlined in the cover story. Finally, participants were debriefed and instructed to submit their questionnaire responses. All materials were translated from English into Japanese by a bilingual speaker. A second independent bilingual speaker checked the translation for accuracy and any changes to the translation of materials were discussed before implementation.

Results

I will first examine the cultural differences in emotions of empathic concern and personal distress in response to the article, followed by an examination of the cultural differences in donating behaviour (see Table 5.1 for descriptive statistics). Next, I will examine empathic concern and personal distress as mediators in the potential cultural differences of donating behaviour. Finally, I will investigate the moderating role of culture in the relationship between dispositional empathy and each in turn, empathic concern, personal distress and donating behaviour. Following research that demonstrates sex differences in self-reported empathic measures (Eisenberg & Lennon, 1983), any effects involving participant sex will be reported in a footnote.

Emotional Response. To address the first aim, a 2×2 ANOVA was conducted with emotional responses (empathic concern vs. personal distress) as the within-subjects factor and cultural group (American vs. Japanese) as the between-subjects factor. There was no significant main effect of cultural group, $F(1, 208) = 2.95, p < .09$, but a significant main effect of emotional response, $F(1, 208) = 31.27, p < .001$; participants reported greater empathic concern ($M = 3.17, SD = 1.03$) compared to personal distress ($M = 2.86, SD = .99$), $d = .31$, in response to the interview transcript. In addition, there was a significant cultural group \times emotional response interaction, $F(1, 208) = 161.83, p < .001, \eta_p^2 = .44$. The simple main effects analysis conducted to decompose this interaction showed that American participants reported significantly more empathic concern in response to the interview transcript compared to Japanese participants, $F(1, 208) = 63.46, p < .001, d = 1.09$, and Japanese participants reported significantly more personal distress in response to the article compared to Americans, $F(1, 208) = 22.07, p < .001, d = .65$.

Donating behaviour. An independent-samples t-test on donating behaviour responses demonstrated that, compared to Japanese participants ($M = 12.46, SD = 18.58$), American participants were significantly more willing to donate a significantly higher percentage of their payment to the charity organisation ($M = 30.81, SD = 36.70$), $t(208) = 4.63, p = .001, d = .63^8$.

⁸ A univariate ANOVA analysis on donating behaviour with sex (male vs. female) and cultural group (American vs. Japanese) as between-subjects factors was conducted. Results revealed a significant main effect of sex, $F(1, 206) = 4.25, p = .04$, with female participants willing to donate a higher percentage of their payment to the charity organization ($M = 23.39, SD = 31.09$) compared to male participants ($M = 17.64, SD = 28.08$). In addition, there was also a significant main effect of cultural group, $F(1, 206) = 21.52, p = .001$, with American

Demonstrating cultural differences in empathic concern, personal distress and donating behaviour partly fulfils the criteria required to test the mediating role of empathic outcomes between cultural group and donating behaviour (Baron & Kenny, 1986). Next, the relationships between each empathic outcome measure and donating behaviour were examined in order to check the final criteria to conduct a mediation analysis. Empathic concern was significantly positively related to donating behaviour ($r = .29, p = .001$), however, personal distress was not significantly related to donating behaviour ($r = .08, p = .25$). Therefore, the cultural differences in empathic concern and donating behaviour, in addition to the positive relationship between empathic concern and donating behaviour fulfill the pre-requisites required to test the mediating role in empathic concern between cultural group and donating behaviour. The recommendations of Preacher and Hayes (2004) who advise a bootstrapping method to compute a confidence interval to test the indirect effect of cultural group on donating behaviour through empathic concern were followed. A mediation effect is present if zero falls outside the interval of the confidence intervals. A resample procedure of 5000 bootstraps samples, bias corrected, accelerated estimates and 95% Confidence Intervals was used with cultural group entered as the independent variable, donating behaviour as the dependent variable and empathic concern as the mediator. The direct effect of cultural group on donating behaviour was equal to 4.47 with the 95% confidence interval ranging from 4.01 to 21.62. The indirect effect via empathic concern was equal to 5.53 with the 95% confidence interval ranging from 1.51 to 10.86, and thus

participants willing to donate a higher percentage of their payment to the charity organization ($M = 30.81, SD = 36.70$) compared to Japanese participants ($M = 12.46, SD = 18.58$). There was no significant cultural group \times sex interaction, $F(1, 206) = .27, p = .60$.

indicating that empathic concern partially mediated the relationship between cultural group and donating behaviour (see Figure 5.1)

Dispositional Empathy. To address the third aim of the study, the moderating role of cultural group in the relationship between dispositional empathy on the one hand and empathic outcomes and donating behaviour on the other hand was explored by conducting separate regression analyses with empathic concern and personal distress outcomes in response to the transcript, and donating behaviour as the criterion variables. The subcomponents of the IRI (empathic concern, personal distress and perspective taking), cultural group and the cultural group \times IRI interaction terms were entered as predictors for each regression analysis. All continuous predictor variables in all regression analyses were mean centered.

The first regression analysis with empathic concern as the criterion variable revealed a significant model $R^2 = .48$, $F(7, 202) = 26.84$, $p = .001$ (see Table 5.2). Cultural group was a significant predictor of empathic concern and reflected the pattern of findings reported in the ANOVA presented before (i.e., American participants reporting greater empathic concern compared to Japanese participants). In addition, dispositional empathic concern significantly predicted greater empathic concern in response to the transcript. The cultural group \times perspective taking interaction was also marginally significant. To unfold this interaction, separate regression analyses were conducted for each cultural group with perspective taking added as a predictor. Perspective taking significantly predicted empathic concern ($\beta = .64$, $SE = .11$, $p = .001$) in the American group, $R^2 = .25$, $F(1, 99) = 32.90$, $p = .001$, but not in the Japanese group, $R^2 = .02$, $F(1, 109) = 2.18$, $p = .14$.

The second regression analysis with personal distress as the criterion variable revealed a significant model $R^2 = .23$, $F(7, 202) = 8.40$, $p = .001$ (see Table 5.2). Cultural group significantly predicted personal distress with cultural group reflecting the pattern in the

ANOVA presented earlier (i.e., Japanese participants reporting greater personal distress compared to American participants). Empathic concern also significantly predicted personal distress with greater empathic concern predicting greater personal distress. None of the interaction variables were a significant predictor of personal distress.

The third regression analysis with donating behaviour as the criterion variable also revealed a significant model $R^2 = .12$, $F(7, 202) = 4.07$, $p = .001$ (see Table 5.2). In this analysis, cultural group was the only significant predictor and reflected the pattern of findings reported in the t-test presented earlier (i.e., American participants donating more to the charity compared to Japanese participants). Dispositional empathy did not predict donating behaviour in either of the cultural groups.

Discussion

There were three aims in the current study: 1) to examine the cultural differences of empathic concern, personal distress and donating behaviour using a different method to that employed in Studies 1 to 3, 2) to examine the mediating role of empathic outcomes in donating behaviour, and, 3) to examine the extent to which dispositional empathy predicts empathic outcomes and donating behaviour and the moderating role of cultural group in these relationships.

The results demonstrated that American participants reported more empathic concern but less personal distress in response to the article compared to Japanese participants. These results mirror findings from Cassels et al. (2010) and Trommsdorff et al. (2007). In addition, empathic concern findings are in line with findings reported in Studies 2 and 3 of this thesis. However, personal distress findings reported in the literature and in the present study contrast the affect rating findings reported in Studies 1 and 2. The emotion of personal distress does elicit a negative affective state (Batson et al., 1987), therefore an argument can be proposed that personal distress and negative affect, as measured by the rating dial in previous studies,

are very similar empathic responses. However, it is possible that the affect rating empathic outcome measure used in previous studies does not reflect feelings of personal distress per se, but rather taps more of a general emotional arousal response that can encapsulate many negative emotions (e.g., anger, frustration, sadness). Thus, perhaps personal distress is an emotional response that Japanese participants express to a greater degree compared to American participants, as evident in the current study and the literature (Cassels et al. 2010; Trommsdorff et al., 2007). However, other negative emotions, which were possibly measured with the affect rating dial in previous studies, may not be as strongly expressed by Japanese and in fact, using a generalized negative affect measure in the rating dial might have diluted personal distress emotions. Research has demonstrated that Japanese have the tendency to mask the expression of negative emotions compared to Americans when in the presence of others (Ekman, 1972; Friesen, 1972; Matsumoto & Kupperbusch, 2001). Consequently, these other negative emotions are likely to be more strongly expressed by Western participants, and could explain the discrepancy between the greater negative affect reported by the British participants compared to East Asian participants in Studies 2 and 3, and the greater personal distress reported by Japanese in the current study. A second explanation for the discrepancy of personal distress findings reported in previous studies and the present study concerns differences in sample demographics. The majority of participants in the East Asian samples in Studies 1 to 3 were not of Japanese origin whereas the current study recruited Japanese nationals exclusively. Therefore, this discrepancy in personal distress could be explained by cultural differences between Japanese nationals to other East Asian nationals. Another potential explanation concerns the stimuli transcript. There were references to the sufferer's family in the interview transcript that described the impact of her suffering to her family. Easterners have the tendency to attend to the relations between objects to a greater degree (Kitayama et al., 2003; Masuda & Nisbett, 2001; Nisbett, 2001,

2003), are more sensitive to contextual cues (e.g., Ji et al., 2000; Masuda et al., 2008; Nisbett, 2003) and responsive to salient situational information (Masuda & Kitayama, 2004; Norenzayan et al., 2002). Thus it is possible that these relational consequences between the sufferer and her family may have been more salient to Easterners compared to Westerners and accounted for the greater personal distress evident in the Japanese participants. However, more research would be needed to identify the mechanisms underlying these cultural differences in personal distress.

Empathic concern, but not personal distress, partially mediated the cultural differences in donating behaviour. This finding suggests that it is other-oriented emotions which reflect an altruistic motivation (i.e., empathic concern), as opposed to self-oriented emotions (i.e., personal distress) that would suggest a more egoistic motivation, that explain the cultural differences in charity donations.

Concerning the third aim, dispositional empathic concern predicted emotional empathic concern in response to the transcript in both cultural groups replicating results from Study 2, in which it was also demonstrated that greater dispositional empathic concern predicted greater empathic concern. In Study 3, I reported a positive association between perspective taking and empathic accuracy, both of which are considered measures of cognitive empathy and are thereby congruent, in the British group. In the current study however, perspective taking predicted empathic concern, an affective empathic measure, in the American group but not the Japanese group. As the stimuli transcript was text-based, as opposed to a video, it is possible that more perspective taking skills would need to be tapped to imagine the sufferer and the context she was embedded as depicted by the transcript, which would in turn help to understand the feelings of the sufferer. Those with greater dispositional perspective taking skills would possibly be able to understand the sufferer's state more acutely which would in turn trigger empathic concern responses. Finally, dispositional

empathy did not predict donating behaviour which is not consistent with findings in the literature (see Davis, 1983; Litvack-Miller et al., 1997).

The current study aimed to investigate the consequences of the cultural differences in empathy reported in Studies 1 to 3 by examining emotional empathy and a behavioural measure associated with empathy using an alternative paradigm. Cultural differences in empathic concern were sustained in the current study. In addition, the cultural differences in empathic concern partially explained the cultural differences in donating behaviour. There was no association between dispositional empathy and donating behaviour. Interestingly, the cultural differences in donating behaviour were accounted for by empathic concern and suggest that altruistically motivated feelings are partly the underlying mechanism in participants' donating behaviour. As empathic concern did not fully mediate the cultural differences in donating behaviour it is likely that there are other explanatory variables embedded in Western and Eastern cultures that shape charity donating behaviours which would require more research.

In the next chapter I depart from examining empathy in response to a single target and explore an overlooked area in the empathy literature; namely empathic responses with at least two targets in the empathic scene. Examining empathic responses with two targets in the contextual scene can possibly reveal another mechanism by which culture shapes empathy, which will be described in the next chapter.

Table 5.1
 Mean (SD) for all Outcome Measures in Response to the Interview Transcript in Both
 Cultural Groups

	American	Japanese
	M (SD)	M (SD)
Empathic concern	3.69 (.96)	2.70 (.85)
Personal Distress	2.54 (.96)	3.15 (.92)
Donating behaviour	30.81 (36.70)	12.46 (18.58)

Table 5.2

Moderating Role in Cultural Group in the Relationship between Dispositional Empathy and Empathic Outcome Measures

	Empathic concern			Personal distress			Donation		
	β	SE	p	β	SE	p	β	SE	p
Intercept	2.78	.09	.001	3.20	.11	.001	14.38	3.42	.001
Main effects									
Cultural group	.81	.13	.001	-.63	.15	.001	15.33	4.80	.002
Empathic concern	.68	.13	.001	.49	.15	.001	4.50	4.75	.35
Perspective taking	-.11	.16	.50	.27	.19	.16	3.89	6.23	.53
Personal distress	-.02	.12	.87	.11	.14	.40	-1.76	4.37	.69
Interactions									
Cultural group \times Empathic concern	-.09	.18	.63	-.20	.21	.35	-.40	6.79	.95
Cultural group \times Perspective taking	.39	.21	.07	-.20	.25	.42	1.11	8.01	.89
Cultural group \times Personal distress	.07	.15	.65	.06	.18	.72	2.35	5.67	.68

Note: Coding of Target Type: British = 1, Chinese = 0.

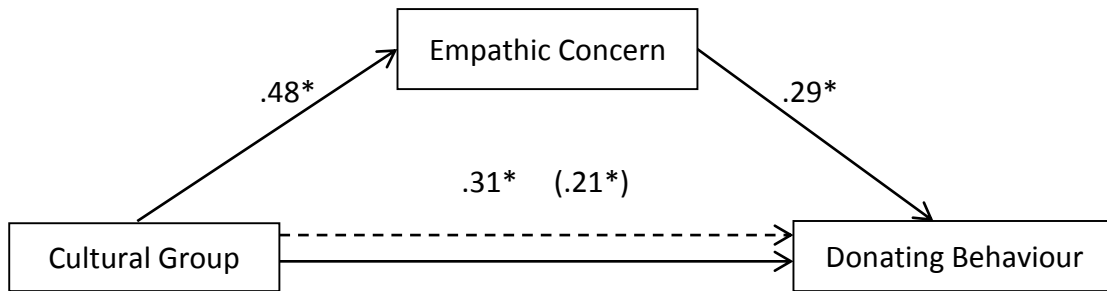


Figure 5.1. Standardized regression coefficients for the relationship between cultural group and donating behaviour as mediated by empathic concern. The standardized regression coefficient between cultural group and donating behaviour, controlling for empathic concern is in parentheses.

* $p < .05$.

CHAPTER SIX

Empathic Responses for Two Targets in Two Cultural Groups

In the previous studies, I presented empirical evidence demonstrating cultural differences in affective empathy (Studies 1 - 4) and cognitive empathy (Studies 2 and 3). In addition, I have shown that cultural group moderates the relationship between emotional expressivity and empathic concern in response to observing social pain such that greater emotional expressivity predicted more empathic concern in the British cultural group but not the Chinese cultural group (Study 3). Furthermore, cultural differences in prosocial behavior were partially mediated by cultural differences in empathic concern (Study 4).

The current study will draw upon another culturally related theory to develop our understanding of the association between culture and empathy, namely cultural differences in dialectical thinking. Dialectical thinking in this thesis is conceived as a style of cognition relating to the management of contradictory arguments (see Paletz & Peng, 2009). Briefly, the practice of dialectical thinking that stems from Western philosophical traditions (e.g., Marx & Engels) resolves an issue by juxtaposing a thesis with its anti-thesis in order to formulate a new thesis (the synthesis) by reconciling the preceding contradictory arguments. However, in the East the practice of dialectical thinking, which has been notably influenced by Eastern philosophical traditions such as Confucianism, Taoism, and Buddhism, is according to Peng and Nisbett (1999), the cognitive tendency to tolerate contradictory arguments or beliefs. Peng and Nisbett (1999) have shown that Chinese show greater ease endorsing two contradictory arguments compared to Americans who perceive contradictory arguments as irreconcilable. Moreover, dialectical thinking has been linked to emotional states: the relationship between positive and negative self-reported affect tends to be orthogonal among Americans, but are positively related among East Asians (Bagozzi, Wong,

& Yi, 1999). Thus, East Asians either do not perceive the experience of positive and negative emotions as contradictory or simply tolerate the contradictory nature of positive and negative emotions. One potential consequence of these cultural differences in dialectical thinking for social interactions is that East Asians might be less likely to take sides in conflict situations compared to Westerners, as suggested by Peng and Nisbett (1999). In fact, East Asians have a tendency to opt for a compromise approach in order to resolve a conflict (Leung, 1987; Peng & Nisbett, 1999) which arguably suggests that East Asians view both sides of the conflict and may tolerate the contradictory arguments proposed by the conflicting parties. Thus, side-taking is a social behavior that may come under the influence of dialectical thinking. However, although taking sides is a cognitive decision it may not be an exclusively cognitive experience. Individuals' side-taking decisions may feed into empathic emotions felt for a particular side in the conflict as suggested by Breithaupt (2012).

Alternatively, the side-taking decision might be driven by the empathic emotions felt for one side in the conflict. Damasio (1994, 1996, & 2004; see also Damasio, Tranel, & Damasio, 1991) proposed the Somatic Marker Hypothesis (SMH) which refers to a process by which decisions are influenced by biologically regulated physiological signals (somatic markers) that are represented by emotional circuits in the brain. Although support for the SMH is predominantly from economic decision making tasks such as the Iowa Gambling Task (Bechara, Damasio, Damasio, 1994; Bechara, Tranel, Damasio & Damasio, 1996), the SMH may also account for why empathic emotions would drive side-taking decision-making considering that observing a conflict would likely induce powerful somatic markers.

Side-taking requires at least three people in a situation, two targets and an observer. Surprisingly though, much of the empirical research investigating empathy solely considers two-person situations, using methods which contain an observer who relates to the thoughts and feelings of a single target (Breithaupt, 2012). Thus, there is a gap in the literature

overlooking empathy in three (or more)-person situations, which has resulted in a lack of research designed to investigate the relationship between side-taking and empathic outcomes.

Following Peng and Nisbett's (1999) reasoning, a three-person empathy context, such as a situation with an individual observing two targets engaged in a conflict, can result in at least four responses from the observer: 1) the observer denies that there is a contradiction between the two party's perspectives, 2) the observer can accept both contradictory arguments as true and empathize with both parties, 3) the observer can compare and differentiate both arguments (or the parties themselves), decide which argument to be right, support that argument (or party) and empathize with that party over the other, or 4) the observer can discount both arguments and empathize with neither party because the two arguments contradict one and other. I propose that culture would shape empathic responses for the two parties and influence side-taking judgments that have been linked to dialectical thinking. To this end, I report results of an experiment conducted with American (US) and Japanese (JP) participants. The experimental protocol asked participants to recall a time when they had observed two friends engage in an intense disagreement with one and other.

The first aim of the current study was to cross-culturally examine side-taking and emotionally empathic responses of personal distress and empathic concern for two targets (i.e., friends). To address this aim, British and East Asian participants reported emotions of personal distress and empathic concern felt for each friend in response to witnessing the intense disagreement. In addition, participants reported the extent to which they sided with each friend. Guided by research that demonstrates East Asians as more dialectic thinkers in comparison to Westerners (for a review see Spencer-Rodgers, Williams, & Peng, 2010) and Peng and Nisbett's (1999) reasoning that East Asians should be expected to take sides less strongly compared to a Western group in a conflict scenario, it is predicted that American participants would report more polarized responses (i.e., feel more empathic concern,

personal distress and side-taking for one friend over the other) compared to Japanese participants.

The second and third aims of the study explored explanations for (potential) cultural differences in the emotional outcomes and the side-taking decisions. Breithaupt (2012) argues that upon encountering a conflict situation between two people, first a side-taking judgment is made and empathic emotions follow to support the side-taking decision. Following this line of reasoning, one might expect that side-taking would mediate any potential cultural differences in empathic outcomes (i.e., empathic concern and personal distress). Therefore, the second aim of the study was to examine the mediating role of side-taking in the relationship between cultural group and each empathic outcome measure.

Alternatively, it could be argued that empathic emotions fuel the decision making process of side-taking considering the assertions of the SMH (Damasio, 1994, 1996, & 2004; Damasio, Tranel, & Damasio, 1991). Thus, the third aim will examine the mediating role of both empathic concern and personal distress in the relationship between cultural group and side-taking. It is unknown to what extent empathic concern and personal distress would individually explain the relationship between cultural group and side-taking, or whether both emotional responses are needed to explain the relationship between cultural group and side-taking. Therefore, both affective reactions to the intense disagreement will be explored as mediators simultaneously.

Method

Participants. One-hundred and nine American participants (73 female, $M_{\text{age}} = 32.56$ years, $SD = 8.84$) and 182 Japanese participants (119 female, $M_{\text{age}} = 36.75$ years $SD = 12.53$) residing in their home country were recruited via the Mechanical Turk and Lancers crowd sourcing marketplace, respectively, and paid equivalently in the appropriate currency (US Dollar vs. Japanese Yen) to participate in study on interpersonal relationships.

Materials and Procedure. Using an online questionnaire, participants first completed a consent form, followed by demographic items (age, sex, ethnicity, and duration of residence in home country).

Participants were then asked to recall and think of a time when they witnessed two friends engage in an intense disagreement with one another. They were given 3 minutes for this recall task. In order to ensure participants recalled an actual event, they were asked to provide personal details of both friends (initials, sex and age) and the number of people who witnessed the event. In addition, participants reported the extent to which they valued their relationship with each friend on 7-point Likert scales (1 = not at all to 7 = a great deal) before the intense disagreement took place. Participants then typed a brief account of precisely what the intense disagreement was about which was used to confirm that a 3-person situation had been recalled (all participants recalled a 3-person situation). To control for any potential confounding variables, participants then completed questions that assessed the intensity of the disagreement on Likert scales, (1 = not intense at all to 7 = very intense), how heated the disagreement was using a 10-point visual thermometer, and the frequency that the two friends disagreed with one another (1 = never to 7 = daily). Finally, a number of outcome measures in response to the disagreement followed the recall task which related to participants' affective reactions (empathic concern and personal distress) and side-taking for each friend in the intense disagreement. All materials were translated from English into Japanese by a bilingual speaker. A second independent bilingual speaker checked the translation for accuracy and any changes to the translation of materials, particularly concerning equivalence of emotion words, were discussed before implementation.

Measures.

Affective reactions. As in previous studies, Coke et al.'s (1978) Emotion Regulation Questionnaire (ERQ; see Chapter 3 for details) was used to assess the extent to which

participants felt empathic concern for each friend separately (Friend 1: $\alpha_{US} = .94$; $\alpha_{JP} = .80$; Friend 2: $\alpha_{US} = .84$; $\alpha_{JP} = .94$). Furthermore, two additional emotional adjectives (distress, upset) from the ERQ were used to calculate the extent to which participants felt personal distress for each friend separately (Friend 1: $r_{US} = .69$, $p = .001$; $r_{JP} = .51$, $p = .001$; Friend 2: $r_{US} = .68$, $p = .001$; $r_{JP} = .47$, $p = .001$). As the focus in this study was to examine the disparities between affective reactions for each friend, the absolute difference between empathic concern/personal distress scores for friend 1 and friend 2 was computed to determine if participants felt more empathic concern/personal distress for one friend over the other. Thus, a score of zero would be interpreted as feeling equal levels of empathic concern for both friends, whereas any deviation from zero would suggest experiencing more empathic emotions for one friend over the other. Summed empathic concern/personal distress scores (e.g., empathic concern [friend 1] + empathic concern [friend 2]) were also computed as an indicator of overall empathy in response to the intense disagreement.

Side-taking. Participant's side-taking decision in response to the intense disagreement was assessed using two questions. Participants reported the extent to which they sided with each of their friends ("To what extent did you side with [friend 1]/friend 2] when the intense disagreement took place") on 7-point Likert-type scales (1 = not at all to 7 = completely). As with affective reaction scores, the absolute difference between side-taking scores for friend 1 and friend 2 was computed to determine if participants sided with one friend over the other. A score of zero would be interpreted as siding equally for both friends, whereas any deviation from zero would suggest siding for one friend over the other.

Results

I first report findings related to cultural differences in differential empathic concern and personal distress, and cultural differences in summed empathic concern and personal distress. These analyses are followed by the cultural differences in side-taking (see Table 6.1

for all descriptive statistics for affective reactions and side-taking). Next, I report the findings concerning the mediating role of side-taking in the relationship between cultural group and each differential affective reaction. Finally, I present results examining the mediating role of differential empathic concern and differential personal distress in the relationship between cultural group and side-taking. Following research that demonstrates sex differences in self-reported empathic measures (Eisenberg & Lennon, 1983), any effect that involves participant sex will be reported in a footnote.

Differential Affective Reactions. A 2×2 repeated-measures ANOVA on differential affective reactions was conducted. Emotion type (differential empathic concern vs. differential personal distress) was entered as the within-subject variable and cultural group (American vs. Japanese) was entered as the between-subjects variable. There was no significant main effect of emotion type, $F(1, 289) = .002, p = .97$, but a significant main effect of cultural group, $F(1, 289) = 15.05, p = .001$; American participants reported higher levels of emotion for one friend over the other ($M = .98, SD = .96$) compared to Japanese participants ($M = .64, SD = .54$), $d = .44$. There was a marginally significant cultural group \times emotion type interaction, $F(1, 289) = 3.38, p = .07, \eta_p^2 = .01$. Unpacking this interaction revealed cultural differences in both differential empathic concern, $F(1, 289) = 19.54, p = .001$, and differential personal distress, $F(1, 289) = 5.09, p = .03$ (see Figure 6.1). American participants reported significantly greater personal distress for one friend over the other compared to Japanese participants, $d = .26$. In addition, American participants reported significantly greater empathic concern for one friend over the other compared to Japanese participants, $d = .50$. Although there were cultural differences in both empathic outcome measures in the same direction, this interaction shows that the cultural difference in affective

reactions is greater in differential empathic concern responses compared to differential personal distress responses⁹.

Summed Affective Reactions. A 2×2 repeated-measures ANOVA on summed affective reactions was conducted. Emotion type (summed empathic concern vs. summed personal distress) was entered as the within-subject variable and cultural group (American vs. Japanese) was entered as the between-subjects variable. There was a significant main effect of emotion type, $F(1, 289) = 97.12, p = .001$; participants reported higher levels of personal distress ($M = 5.44, SD = 2.01$) compared to empathic concern ($M = 4.27, SD = 1.59$), $d = .65$. In addition, there was a significant main effect of cultural group, $F(1, 289) = 21.89, p = .001$; American participants reported higher overall levels of emotional empathy in response to the intense disagreement ($M = 5.38, SD = 1.63$) compared to Japanese participants ($M = 4.54, SD = 1.38$), $d = .56$. There was no significant cultural group \times emotion type interaction, $F(1, 289) = .58, p = .45, \eta_p^2 = .002$.

Side-taking. An independent-samples t-test was conducted to examine cultural differences in side-taking. Results from the t-test demonstrated that American participants were more likely to take a side compared to Japanese participants, $t(289) = -3.92, p = .001, d = .47$ ¹⁰. Before exploring whether side-taking mediates the relationship between cultural

⁹ Including disagreement intensity, the absolute difference in relationship value between friends and the frequency of disagreements between friends also revealed a significant main effect of cultural group in the same pattern reported in the main body, $F(1, 286) = 6.47, p = .01, \eta_p^2 = .02$. However, there was no interaction between cultural group and emotion type, $F(1, 286) = 1.37, p = .24, \eta_p^2 = .01$.

¹⁰ The only effect to emerge in analyses with participant sex as an additional factor was a main effect of sex for affective reaction scores, $F(1, 287) = .758, p = .006$; female

group and differential empathic concern, a correlation analysis was conducted to examine the relationships between side-taking, differential empathic concern and differential personal distress. Side-taking was significantly related to both differential empathic concern ($r = .53$, $p = .001$) and differential personal distress ($r = .52$, $p = .001$)¹¹.

With the ANOVA and t-test identifying the cultural differences in differential affective reactions and side-taking and the correlation analysis demonstrating significant relationships between side-taking and both differential affective reactions, the criteria required to conduct the mediation analyses were fulfilled. First, a mediation analysis was conducted with differential empathic concern as the criterion variable. The recommendations of Preacher and Hayes (2004) who advise a bootstrapping method to compute a confidence interval to test the indirect effect of cultural group on differential empathic concern through side-taking were followed. A mediation effect is present if zero falls outside the interval of the confidence intervals. A resample procedure of 5000 bootstraps samples, bias corrected, accelerated estimates and 95% Confidence Intervals was used with cultural group entered as the independent variable, differential empathic concern as the dependent variable and side-taking as the mediator. The direct effect of cultural group on differential empathic concern

participants reported higher levels of emotion for one friend over the other ($M = .85$, $SD = .61$) compared to male participants ($M = .62$, $SD = .80$), $d = .32$. As there were no emotion type/cultural group \times sex interactions, sex was not explored any further as an explanatory variable.

¹¹ Including disagreement intensity, the absolute difference of relationship value between friends and the frequency of disagreements between friends also revealed a significant main effect of cultural group in the same pattern reported in the main body, $F(1, 286) = 7.24$, $p = .01$, $\eta_p^2 = .03$.

was equal to .25 with the 95% confidence interval ranging from .07 to .42. The indirect effect via side-taking was equal to .19 with the 95% confidence interval ranging from .09 to .32, indicating that side-taking partially mediated the relationship between cultural group and differential empathic concern (see Figure 6.2). Second, a mediation analysis was conducted with differential personal distress as the criterion variable following the same procedure. The direct effect of cultural group on differential personal distress was equal to .03 with the 95% confidence interval ranging from -.16 to .22. The indirect effect via side-taking was equal to .21 with the 95% confidence interval ranging from .10 to .34, indicating that side-taking fully mediated the relationship between cultural group and differential personal distress (see Figure 6.2).

Finally, considering Damasio's (1994, 1996 & 2004; see also Damasio, Tranel, & Damasio, 1991) SMH and the evidence demonstrating the role of emotion in decision-making (Bechara et al., 1994; Bechara et al., 1996), a mediation analysis was conducted to test the argument that differential affective reactions pertaining to empathic concern and personal distress would mediate cultural differences in side-taking judgments. As it is unknown to what extent differential empathic concern and differential personal distress would individually explain the relationship between cultural group and side-taking, or whether both differential affective reactions are needed to explain the relationship between cultural group and side-taking the two differential affective reactions were entered as mediators into the same model. Entering differential empathic concern and differential personal distress into the same model would identify if both differential affective reactions mediated the relationship between cultural group and side-taking, or if only one differential affective reaction is driving the mediation. Using Preacher and Hayes guidelines, a mediation analysis using the Model 6 template, resample procedure of 5000 bootstraps samples, bias corrected, accelerated estimates and 95% Confidence Intervals was conducted with cultural group as the predictor

and side-taking as the criterion. Differential emotions of empathic concern and personal distress were entered as mediators (see Figure 6.3). The direct effect of cultural group on side-taking was equal to .42 with the 95% confidence interval ranging from -.01 to .84. The indirect effect via differential empathic concern was equal to .39 with the 95% confidence interval ranging from .20 to .64, indicating that differential empathic concern controlling for personal distress fully mediated the relationship between cultural group and side-taking. The indirect effect via differential personal distress was equal to .02 with the 95% confidence interval ranging from -.14 to .21, indicating that differential personal distress controlling for differential empathic concern in the model did not mediate the relationship between cultural group and side-taking. The indirect effect via differential empathic concern and differential personal distress was equal to .18 with the 95% confidence interval ranging from .09 to .31, indicating that differential empathic concern and differential personal distress together fully mediated the relationship between cultural group and side-taking. Even though the model with both affective reactions as mediators fully mediated the relationship between cultural group and side-taking, the results suggest that differential empathic concern is the principal affective reaction that is explaining the variability in side-taking scores between cultural groups as differential personal distress scores did not mediate the relationship.

Discussion

In the current study, American and Japanese participants were asked to recall an interpersonal conflict situation in which participants had observed two friends engage in an intense disagreement to examine the following three aims: 1) to examine the moderating role of cultural group in side-taking and affective empathic emotions of personal distress and empathic concern, 2) to examine the mediating role of side-taking in the relationship between cultural group and each empathic outcome, and 3) to examine the mediating role of both empathic outcomes in the relationship between cultural group and side-taking.

The summed affective scores demonstrate that American participants reported greater overall affective empathy compared to Japanese participants. Interestingly, American participants reported greater emotional disparities between friends compared to Japanese participants; this cultural difference was evident in both empathic concern and personal distress emotions. The same pattern of cultural differences in affective reactions was also evident in side-taking disparities between friends; American participants were more likely to side with one friend over the other compared to Japanese participants. These findings can be interpreted in two ways. Firstly, Peng and Nisbett (1999) suggested that one consequence in cultural differences of dialectical thinking in social interactions is that East Asians might be less likely to take sides in conflict situations compared to Westerners. The findings support this argument and thus dialectical thinking may be driving these cultural differences. A second interpretation relates to motivations for conflict resolution. Confucian principles emphasize the importance of maintaining interpersonal harmony (Lin, 1936; Munro, 1985). In line with these philosophic world views, the motivation to maintain harmony is so strong in collectivistic cultures such as Japan that in conflict situations, Japanese are more concerned in maintaining interpersonal harmony compared to their American counterparts who are concerned with seeking justice (Ohbuchi et al., 1999). Thus, American participants' motivation to seek justice could be driving the greater disparities in side-taking and emotionally empathic outcomes. Following the same line of reasoning, the motivation to maintain interpersonal harmony may lead East Asians to avoid siding with one party and also result in less distinct empathic responses between friends. It is possible that taking a side in the conflict risks exacerbating the conflict. If the friends are distinguished as victim and perpetrator in the current context then American participants may opt to empathize and side

with the perceived victim as a means to obtain justice for this person¹². However, more research is needed to gather support for either argument. One way to test the effect of dialectical thinking directly would be to associate the extent to which observers consider each friend's argument as true with side-taking and empathic outcomes. Similarly, the association between conflict resolution motivations pertaining to seeking justice and interpersonal harmony with both side-taking and empathic outcomes could also be tested to support an interpersonal harmony theoretical framework.

Two types of mediation models were examined to explore the link between cultural group, side-taking decision making and affective reactions. On the one hand, the side-taking decision could explain cultural differences in affective reactions relating to empathy as suggested by Breithaupt (2012). On the other hand, the SMH theoretical account would suggest that affective reactions could explain the cultural differences in the side-taking decision itself.

¹² With two questions victim/perpetrator perception for each friend was assessed in the current study on 7-point Likert scales (-3 = victim to 3 = perpetrator) to which an absolute difference score between each of the victim/perpetrator perception scores for each friend of was computed. Greater difference scores reflect distinguishing the two friends as victim and perpetrator to a greater degree. An independent-samples t-test was conducted to test for cultural differences on these scores and revealed that American participants distinguished the two friends in terms of victim and perpetrator to a greater degree $t(289) = -2.51, p = .01, (M = 2.69, SD = 2.13)$ compared to Japanese participants ($M = 2.05, SD = 2.06$), $d = .31$. This finding demonstrates that American participants distinguished friends and victim and perpetrator to a greater degree compared to Japanese participants which in turn may have motivated Americans to seek justice.

Supporting Breithaupt (2012), side-taking partially mediated the relationship between cultural group and empathic concern, and fully mediated the relationship between cultural group and personal distress. Similar to the findings presented above, this finding could provide support that cultural differences in empathic emotions in conflict situations are likely to be shaped by cultural differences in dialectical thinking. Alternatively, these findings could also be explained by cultural differences in motivations relating to conflict resolution. As stated above, more research would need to be conducted to determine which interpretation accounts for the variability in side-taking and empathic outcomes presented in this study.

Interestingly, empathic concern mediated the relationship between cultural group and side-taking, but not personal distress. Although the two mediators together did mediate cultural differences in side-taking this effect is driven by empathic concern. One possible explanation for this finding refers to the underlying motivations associated with the different affective reactions of empathic concern and personal distress. Empathic concern tends to be an altruistically motivated emotional response whereas personal distress tends to be more egoistically motivated (e.g., Batson, 1987, Eisenberg & Strayer, 1987; Eisenberg, 2000). If an individual perceives a target as a victim and feels empathic concern for this perceived victim then past research would suggest that s/he would be altruistically motivated to side with the target (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983; Toi & Batson, 1982). Indubitably, the same side-taking judgment could also be made by someone who is egoistically motivated to side with the victim. However, research would suggest that someone who is egoistically motivated is likely to side with someone in order to alleviate their own personal distress and in fact may avoid the distressing situation altogether if escaping the situation is easy to achieve (e.g., Batson et al., 1981; Batson et al., 1983; Toi & Batson, 1982). Undoubtedly, support for this argument would require that participants perceived one target as victim and the other as

perpetrator¹³. Future research could manipulate conditions that are associated with underlying motivations relating to empathic concern and personal distress. For example, a study that examines side-taking, empathic concern and personal distress while manipulating the ease or difficulty of an escape from a particularly distressing situation such as an intense conflict between two people (see Batson et al., 1981; Batson et al., 1983; Toi & Batson, 1982) would be a suitable test to examine the influence of underlying motivations in side-taking judgments. In situations in which escape is difficult then affective reactions of personal distress may also explain cultural differences in side-taking.

Taking the three mediational models together, it becomes difficult to disentangle the explanatory relationships between cultural group, side-taking and empathic reactions. The results from this study support the idea that the side-taking decision itself is a factor in explaining cultural differences in empathic responses. However, there is also support that a SMH in which emotion influences the side-taking decision explains the cultural differences in side-taking. It is possible in real-world situations that there is a dynamic exchange between the cognitive process, i.e., side-taking, and affective reactions. However, future studies would need to manipulate side-taking and empathy to provide further insight into the pattern of this exchange.

¹³ Identifying the participants that distinguished targets as victims and perpetrators ($n_{US} = 84$; $n_{JP} = 113$), and conducting a mediation analysis with cultural group as the predictor, siding with the victim as the criterion and both empathic concern and personal distress feelings felt for the victim as mediators revealed an identical pattern presented in the main body; empathic concern responses for the victim mediated the cultural differences in siding for the victim. The same analysis could not be conducted with perpetrator siding as the criterion as there were no cultural differences in siding with the perpetrator.

These findings synergize with results from the preceding studies. Empathic concern mediated cultural differences in donating behavior in Study 4, and empathic concern in the current study also mediated cultural differences in side-taking. Although side-taking is not a pro-social behavior it is potentially a precursor to a pro-social behaviour (e.g., siding and supporting with a perceived victim). These findings also illustrate that culture affects empathy in many types of situations. In preceding studies I have shown that cultural groups differ in empathy in response to observing someone suffering physical and social pain. The current study demonstrates that cultural background affects empathy when there are multiple targets in the situation. Furthermore, this study represents the first to examine cultural differences in empathy in three-person situations. Future work could examine behavioural outcomes in conflict situations such as an individual's conflict resolution style whereupon we may see the impact of these cultural differences in side-taking and empathic affective reactions.

In sum, these novel findings demonstrate a possible link between dialectical thinking strategies and/or motivations in conflict situations and empathic affective outcomes, extending our understanding of the relationship between culture and empathy. In addition, the research findings contribute to the literature examining empathy in multi-person situations. Research on empathy typically uses one-to-one situations and very little research has examined empathy in situations with multiple targets. However, it is important to consider these types of situations as real-world social interactions often present us with encounters containing multiple targets, each of whom could be a source that can influence our empathic responses.

Table 6.1
 Mean (SD) Differential and Summed Scores for all Empathic Outcome Measures for
 American and Japanese Cultural Groups

	American	Japanese
	M (SD)	M (SD)
Differential empathic concern	1.03 (1.11)	.59 (.59)
Differential personal distress	.93 (1.08)	.69 (.74)
Summed empathic concern	4.85 (1.78)	3.92 (1.35)
Summed personal distress	5.91 (2.12)	5.16 (1.90)
Side-taking	2.89 (2.19)	1.88 (2.07)

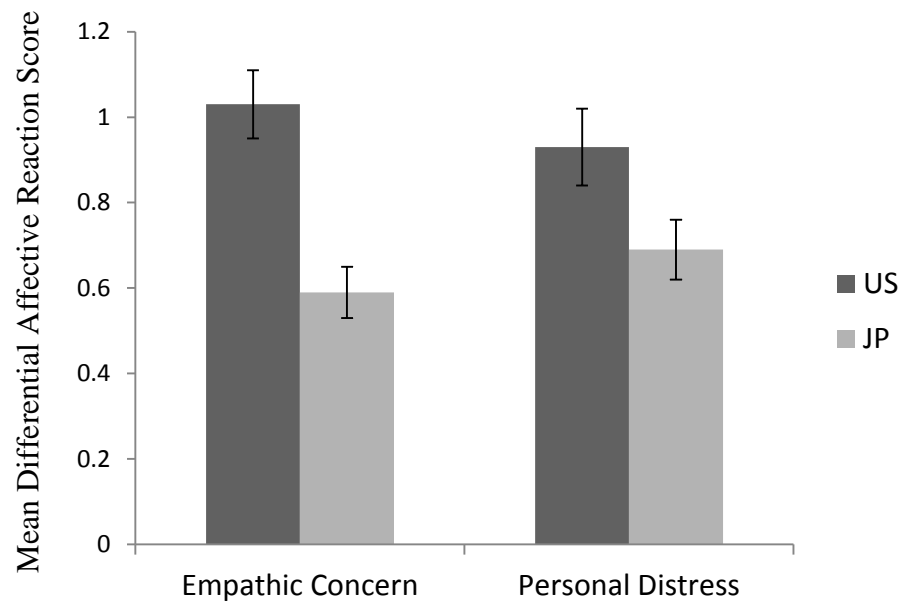


Figure 6.1. The interaction between cultural group and empathic outcomes. Error bars represent standard errors.

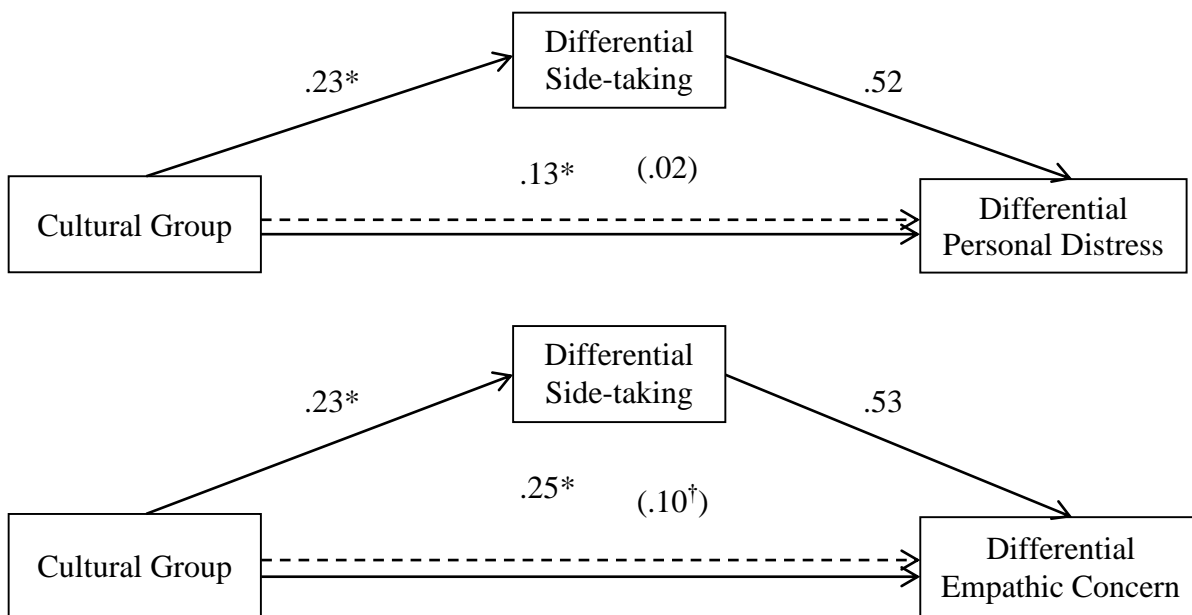


Figure 6.2. Mediating role of differential side-taking between cultural group and each empathic outcome. Standardized regression coefficients for the relationship between cultural group and each empathic outcome as mediated by side-taking. The standardized regression coefficient between cultural group and each empathic outcome, controlling differential side-taking is in parentheses.

* $p < .05$ † $p < .06$.

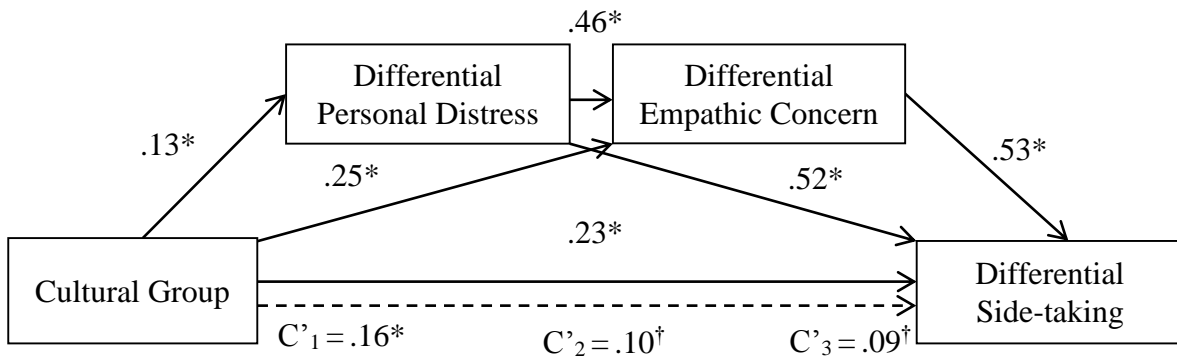


Figure 6.3. Mediating role of differential personal distress and differential empathic concern between cultural group and differential side-taking. Standardized regression coefficients for the relationship between cultural group and differential side-taking as mediated by each empathic outcome. In addition, the standardized regression coefficient between cultural group and differential side-taking, controlling for differential personal distress (C'_1), controlling for differential empathic concern (C'_2) and controlling for both empathic outcomes (C'_3).

* $p < .05$ † $p < .06$.

CHAPTER SEVEN

General Discussion and Future Directions

The results from the set of studies presented in the previous chapters can be summarized as follows. First, findings revealed cultural differences in affective empathy in response to observing physical and social pain and cultural differences in cognitive empathy (empathic accuracy) in response to observing social pain. Second, dispositional emotional expressivity moderated the relationship between culture and empathic concern with greater emotional expressivity predicting greater empathic concern in British individuals. Third, empathic concern partially mediated cultural differences in the pro-social behaviour of charity donating. Fourth, findings revealed cultural differences in disparities in affective empathy and side-taking between two friends that were engaged in an intense disagreement. Moreover, findings revealed that the cultural differences in side-taking were fully explained by cultural differences in empathic concern, and cultural differences in personal distress/empathic concern were fully/partially explained by cultural differences in side-taking. Finally, across all studies, findings that concerned the moderating role of culture in the relationship between dispositional empathy and empathic outcomes were mixed.

The experimental studies in Chapters Two and Three presented findings demonstrating cultural differences in self-reported negative affect in response to observing physical (Chapter Two) and social pain (Chapter Three) with British participants reporting greater negative affect compared to East Asian participants. It should be noted that there were no cultural differences in affect rating in the study presented in Chapter Four. However, subtitles were introduced into the methodology of this study and it was speculated that observing each video target, attending to subtitles and providing an affect rating response simultaneously may have demanded too many cognitive faculties from participants. Thus, it is possible that affect rating responses were influenced if participants were concentrating

more on understanding the video targets and less on their own affective states. Concerning physiological indices of empathy, the findings presented in Chapters Two and Three demonstrated no cultural differences in empathy using heart rate. This finding follows other research in the literature that shows cultural similarities in autonomic responses (Soto et al., 2005; Tsai et al., 2002; Tsai & Levenson, 1997; Tsai et al., 2006). British participants also reported greater empathic concern in response to observing social pain (Chapters Three and Four) and in response to a victim suffering from disease (Chapter Five) compared to East Asian participants. East Asian participants, however, were more empathically accurate compared to British participants (Chapters Three and Four). Importantly, the cultural differences in empathic concern and empathic accuracy were not accounted for by an in-group advantage (Chapter Four) which converges with research on cross-cultural in-group advantage effect (e.g., Ma-Kellams & Blascovich, 2012; Soto & Levenson, 2009).

Furthermore, comprehension of the video targets also did not account for these cultural differences (Chapter Four). In line with other research (see Cassels et al., 2010; Trommsdorff et al., 2007), Japanese participants reported greater personal distress compared to American participants (Chapter Four). Notably, these results contrast the affect rating responses that were presented in previous studies. There are three explanations for this potential discrepancy. First, although personal distress and the negative affect responses measured by the rating dial in previous studies are very similar indices of empathy, it is possible that the affect rating measure used in the studies presented in Chapters Two, Three and Four does not reflect a pure personal distress emotional response, but taps a general emotional arousal response that can encapsulate a combination of different negative emotions (e.g., anger, frustration, sadness). Thus, perhaps personal distress is a specific emotional response that Japanese participants express to a greater degree compared to American participants. Second, as outlined in Chapter Five, the discrepancy between personal distress

and affect rating findings may be explained by East Asian sample demographics. The majority of participants in the East Asian samples in studies presented in Chapters Two, Three and Four were not of Japanese origin whereas the participants recruited in Chapter Five study were Japanese nationals exclusively. Third, the discrepancy could be explained by the specifics of the interview transcript used in Chapter 5 that might have influenced East Asians' personal distress. The interview transcript contained references to the sufferer's family that described the impact of her suffering to her family. Easterners have the tendency to attend to the relations between objects (people in this case) to a greater degree (Kitayama, et al., 2003; Masuda & Nisbett, 2001; Nisbett, 2001, 2003), are more sensitive to contextual cues (e.g., Ji, et al., 2000; Masuda, et al., 2008; Nisbett, 2003) and responsive to salient situational information (Masuda & Kitayama, 2004; Norenzayan, et al., 2002). Thus, it is possible that the relational consequences highlighted in this interview transcript may have been more salient to Easterners compared to Westerners and accounted for the greater personal distress evident in the Japanese participants. In addition to the cultural differences in affective empathy, results from Chapter Five also demonstrated that cultural differences in empathic concern mediated the cultural differences in charity donation, investigated as an example of pro-social behavior.

Results from Chapter Six demonstrated cultural differences in side-taking and emotions of empathy (empathic concern and personal distress). In this study, participants' empathic responses for two separate targets was assessed, thus this study is unique in both the context of this thesis and in the empathy literature as empathic outcomes are interpreted as the difference in affective empathy between the two friends, as opposed to the level of affective empathy felt in response to the targets. American individuals, compared to Japanese individuals, were more likely to side and empathize with one friend over the other, and report greater emotional empathy overall in response to the intense disagreement.

Importantly, side-taking mediated the cultural differences in personal distress, and partially mediated the cultural differences in empathic concern. Furthermore, empathic concern mediated cultural differences in side-taking.

In each study I also examined the moderating role of cultural group in the relationship between dispositional empathy and empathic outcomes. Findings concerning dispositional empathy were mixed as the associations between dispositional empathy and empathic outcomes failed to show a consistent pattern across all studies. In Chapter Two, there were weak associations between dispositional empathy and affect ratings in both cultural groups. It was speculated that these weak associations emerged because of the incongruence between the dispositional measures of empathy, which typically convey emotionally distressing situations, and the empathic outcomes which were in response to physical pain. In fact, there were weak associations between dispositional empathy and affect rating scores in every study. Consistent patterns that did emerge were evident in studies presented in Chapters Three and Five in which greater dispositional empathic concern predicted greater self-reported empathic concern in both cultural groups. In addition, in both cultural groups, greater dispositional empathic concern predicted greater personal distress in studies presented in both Chapters Three (as measured by heart rate) and Five. Other relationships that were somewhat consistent across studies were the relationships between dispositional perspective taking and empathic outcomes in Westerners (Chapters Four and Five). Dispositional perspective taking was negatively associated with empathic accuracy in the British group in Chapter Four's study, but positively associated with empathic concern in the American group in Chapter Five's study.

In the introduction of this thesis I raised a number of unresolved issues within the limited body of research investigating culture and empathy. The studies presented within the main body of this thesis aimed to address these issues.

The generalizability of culture's influence on empathy to different situations

One unresolved issue in the literature concerned the generalizability of culture's influence on empathy to different situations. There are few studies investigating cultural differences in empathy and not all contextualize empathic responses. For example, Cassels et al. (2010) assessed dispositional empathy, a decontextualized measure of empathy (i.e., the measure is not in response to any stimuli) in East Asian, American, and Asian-American individuals. In addition, de Greck et al. (2011) asked respondents to intentionally empathize with targets displaying angry facial expressions (deGreck et al., 2012). Although, de Greck et al. (2011) assessed empathy in response to stimuli, the instruction to intentionally empathize with an angry face may have felt unnatural as there was no context provided for why the target is angry. The only studies that examined the link between culture and empathy in response to truly contextualized situations were conducted by Trommsdorff et al. (2007), Soto and Levenson (2009), Xu et al. (2009) and Ma-Kellams and Blascovich (2012). In these studies, empathic responses were assessed in response to the suffering of another person and thus their respondents had a reason to legitimately empathize with the target.

The studies presented in the empirical chapters of this thesis aimed to address the issue concerning the generalizability of culture's influence on empathy to other situations by investigating the extent to which culture influences empathy in situations containing physical pain (Chapter Two), social pain (Chapters Three and Four), the pain in response to someone suffering from a disease (Chapter Five) and conflict situations (Chapter Six); thus, empathic outcomes were in response to a legitimate situation designed to induce an empathic response. Considering all studies together, I have demonstrated that empathic responses vary as a function of cultural background in a variety of situations.

Undoubtedly, the types of situations covered by myself and other researchers are not exhaustive. For example, as humans we don't just empathize with the negative feelings of others, but also empathize with another's joyful feelings which may also be influenced by our cultural background. Thus, future research should examine the effect of culture in other sets of situations involving empathy for positive situations. Nonetheless, the findings presented in each study here add to the body of literature by showing that the effect of culture in empathy is generally consistent across a wide array of situations. Importantly, studies show that culture plays a role in different indices of empathy, which addresses the second unresolved issue in the literature, namely, the limited scope of empathic indices assessed in response to the same type of stimuli.

The limited scope of empathic indices in cross-cultural studies

Previous research examining the link between culture and empathy has typically measured one type of empathic response. For example, Cassels et al. (2010) assessed dispositional empathy, which although assesses cognitive and affective components of empathy, suffers from the fact that these measures are not in response to any form of stimuli, as mentioned above. Trommsdorff et al. (2007) used observational methods to measure children's (Germany, Israel, Malaysian and Indonesian) emotional reactions (self-focused distress [i.e., personal distress], other-focused distress and empathic concern) for an adult play partner who was responding to a sad event (balloon popping); therefore, although informative, this study measures affective indices of empathy only. Other research has focused on the cognitive components of empathy using empathic accuracy methodologies (e.g., Soto & Levenson, 2009; Ma-Kellams & Blascovich, 2012). In this line of research, the researchers focused on the correspondence between targets' own reported emotions and the respondents' inference of the targets emotion. Therefore, although this line of research has

been informative, this research suffers by only measuring cognitive components of empathy and reveals little of the influence of culture in affective empathy. Finally, research has examined empathy cross-culturally at the neural level using fMRI methods (e.g., de Greck et al., 2011; Xu et al., 2009). In these studies, researchers examined areas that have typically been associated with empathy such as the anterior insula (Fan et al., 2011; Jabbi et al., 2007; Singer et al., 2004), anterior cingulate cortex (Blair et al., 1999; Carr et al., 2003; de Greck, et al., 2011) and inferior frontal gyrus (Carr et al., 2003; de Greck et al., 2011; Kaplan & Iacoboni, 2006). In addition to these regions, de Greck et al., (2011) assessed regions in the brain that have been shown to relate to emotional regulation (i.e., dorsolateral prefrontal cortex [DLPFC]), and regions shown to be associated with understanding of the social intentions of others (i.e. temporo-parietal junction). Research that examines empathy in the brain typically focuses on empathic mechanisms, such emotional regulation or perspective taking systems, as opposed to empathic outcomes relating to cognitive empathy (i.e., judgments of another's emotions) and affective empathy (one's own emotional reaction in response to observing another's emotional reaction). Thus, neurological measures of empathy examine a different aspect of the empathy phenomenon, the mechanisms, and not empathic outcomes per se.

In Chapters Three and Four, I examined both affective and cognitive components of empathy in response to the same situation. These results add to the limited body of research by simultaneously demonstrating cultural differences in affective and cognitive empathy in response to the same situation. Across all studies, the trending result appears to be that Westerners use affective processes to empathize with others, specifically empathic concern, whereas Easterners appear to use cognitive empathic mechanisms to understand the thoughts and feelings of others. It is important to simultaneously examine affective and cognitive components of empathy because deficits or proficiencies in a specific aspect can lead to

different behavioural outcomes. For example, Shamay-Tsoory, Harari, Szepsenwol, and Levkovitz (2007) demonstrated elevated levels of affective empathy but impaired cognitive empathy in patients with bipolar disorder. Although, patients' planning behaviour was preserved, deficits in cognitive empathy were related to poorer cognitive flexibility. In a recent study, Huang and Su (2014) demonstrated differing relationships between cognitive empathy and peer acceptance as a function of gender. For males, the researchers reported a positive relationship between cognitive empathy and the extent to which the participant was liked by his classmates, whereas for females, the researchers reported a positive relationship between cognitive empathy and the participant's social impact amongst her classmates. There were no relationships between affective empathy and peer acceptance outcomes. Thus, both components of empathy should be examined in order to develop a more coherent understanding of the phenomenon.

The behavioural consequences of cultural differences in empathy

A third unresolved issue in the literature concerned the behavioural consequences of the cultural differences in empathy. To my knowledge, the study by Trommsdorff et al. (2007) is the only one to examine the association between empathy and prosocial behaviour cross-culturally. In addition to observing the children's emotional reactions in response to an adult play partner experiencing a sad event, Trommsdorff et al. (2007) also observed the extent to which children helped the play partner. They found a positive relationship between affective empathy and prosocial behaviours of helping in all cultural groups except Malaysian children.

In Chapter Six I reported a study that adds to the literature by demonstrating that cultural differences in empathic concern mediated the cultural differences in one type of prosocial behavior (i.e., charity donating) in an adult sample. Demonstrating the prosocial

behavioural consequences underlines the importance in understanding the relationship between culture and empathy. However, these findings only apply to one type of prosocial behaviour and thus the mediating role of empathic concern may not apply to other types of behaviours. Future work should test the generalizability of this effect in other types of prosocial behaviour.

Explanations of cultural differences in empathy

A fourth unresolved issue in past studies concerns explanations for any observed cultural differences in empathy. Thus far, there have been few attempts and mostly speculations to explain cultural differences in empathy.

For example de Greck et al. (2011) recruited Chinese and Germans and examined empathic responses using fMRI. As briefly described above, de Greck et al. (2011) asked participants to intentionally empathize with familiar faces displaying angry expressions, familiar faces displaying neutral expressions and unfamiliar faces displaying neutral expressions. Although, the researchers did not report any cultural differences to areas typically associated with empathy, they did demonstrate stronger hemodynamic responses among Chinese participants compared to German participants when intentionally empathizing with a familiar face displaying anger in a region linked to emotional regulation strategies, the DLPFC (e.g., Ochsner, Bunge, Gross, & Gabrieli, 2002; Ochsner & Gross, 2005). These results suggest that the greater DLPFC activity evident in the Chinese group reflects greater emotional regulation of anger emotions. Although speculative, the researchers proposed two reasons for the cultural differences in DLPFC activity: 1) that East Asian individuals are relatively more afraid to be over-aroused by negative emotions, thereby the need to regulate negative emotions more, and 2) that East Asians have more of a

motivation to maintain harmony by suppressing anger emotions compared to American individuals.

As described earlier, Cassels et al. (2010) recruited East Asian, American and bicultural Asian-American individuals and examined their dispositional empathy using Davis' (1980) IRI. They found that while American respondents reported greater dispositional empathic concern, East Asian respondents reported greater personal distress. As empathic concern and personal distress are typically associated with an other-oriented and self-oriented response respectively (Batson, et al.1987; Davis, 1980; Eisenberg & Strayer, 1987; Eisenberg, 2000) their results suggest that Americans would be more other-oriented compared to East Asians. Although speculative, they explain their findings in terms of child rearing practices. Western Mothers have the tendency to encourage their children to regulate their emotions whereas Eastern mothers have the tendency to comfort their children (Friedmeier & Trommsdorff, 1999). Thus, individuals in an East Asian cultural context might inhibit empathic concern by increasing emotions of personal distress.

Trommsdorff et al. (2007) used observational methods to measure children's (Germany, Israel, Malaysian and Indonesian) emotional reactions (personal distress and empathic concern) to an adult play partner responding to a sad event; East Asian children reported higher levels of personal distress compared to Western children. Trommsdorff et al. (2007) speculated that the greater over-arousal in personal distress responses in the East Asian cultural group could be due to culturally-based differences in "shyness" with adults, but do not actually test this assertion.

Ma-Kellams and Blascovich (2012) represents the only study to attempt to understand why cultural groups would differ in their empathic accuracy. They revealed that target affiliation (friend vs. stranger) moderates cultural differences in empathic accuracy by demonstrating that East Asians are more empathically accurate for friends, whereas

Westerners are more empathically accurate for strangers. This finding is in line with other research demonstrating that compared to European Americans, East Asians tend to view strangers as out-group members and whose general welfare is of no consequence (Guan, Park, & Lee, 2009), and exhibit less rapport with strangers (Chen, DeSouza, Chen, & Wang, 2006; Chen, Hastings, Rubin, Chen, Cen, & Stewart, 1998). Importantly, although the researchers were unable to fully explain cultural differences in empathic accuracy with a self-construal theoretical framework, they do demonstrate that a more relational self (i.e. interdependent) predicted greater empathic accuracy for positive emotions in the East Asian cultural group, but not the Western cultural group, regardless of the target affiliation.

In the present studies, I postulated that emotional expressivity would explain cultural differences in empathy. There were no cultural differences in emotional expressivity thus the conditions required to run mediation analyses were not fulfilled. However, cross-cultural differences in the relationships between emotional expressivity and empathic outcomes (empathic concern and empathic accuracy) were observed. In response to these relationships, I explored emotional expressivity as a potential moderator between culture and empathic outcomes and demonstrated that emotional expressivity moderated cultural differences in empathic concern; greater emotional expressivity related to greater empathic concern in the British group (Chapter Four). However, this relationship did not translate to the Chinese group. Therefore, emotional expressivity explains the variation in empathic responses for Westerners, but does not explain cultural differences in empathy.

Chapter Six used an alternative approach to examine emotional empathy and explored a potential explanation in dialectic thinking for any potential cultural differences. The study protocol required participants to recall a time when two friends were engaged in an intense disagreement with one another and report their emotional empathy and side-taking judgments for each of the friends in question. Results demonstrated cultural differences in empathic

concern and personal distress; American individuals reported greater empathic concern and personal distress for one friend over the other. In addition, American individuals sided to a greater degree with one friend over the other compared to Japanese individuals. On one hand, these findings could be reflecting cultural differences in dialectical thinking strategies. Peng and Nisbett (1999) suggested that one consequence in cultural differences of dialectical thinking in social interactions is that East Asians might be less likely to take sides in conflict situations compared to Westerners. The findings support this argument if side-taking is considered a proxy for dialectical thinking. On the other hand, these findings could reflect underlying motivations relating to conflict resolution. As noted in the introduction, Confucian principles emphasize the importance of maintaining interpersonal harmony (Lin, 1936; Munro, 1985). In line with these philosophic world views, the motivation to maintain harmony is so strong in collectivistic cultures such as Japan that in conflict situations, Japanese are more concerned in maintaining interpersonal harmony compared to their American counterparts who are concerned with seeking justice (Ohbuchi et al., 1999). Thus, American participants' motivation to seek justice could be driving the greater disparities in side-taking and emotionally empathic outcomes between friends. Following the same line of reasoning, the motivation to maintain interpersonal harmony may lead East Asians to avoid siding with one party and result in less distinct empathic responses between friends. These results add to the limited body of research by attempting to explain cultural differences in empathy from an emotional expressivity theoretical framework. In addition, investigating empathy by using a three-person conflict situation has highlighted two possible mechanisms that could potentially shape empathy. It should be noted that the findings in response to a three-person conflict situation do not explain cultural differences in empathy. However, the findings have revealed a promising line of research with novel methods that could potentially explain cultural differences in empathy and which should be explored in future research.

Dispositional empathy and empathic outcomes

The relationship between empathy and empathic outcomes (e.g., prosocial behaviours) is well documented in the literature (e.g., Davis, 1983; Litvack-Miller et al., 1997), however these studies recruited Western participants and it is unknown if the relationship would be observed in other cultural groups. Therefore, a fifth unresolved issue in the literature concerned the moderating role of culture in the relationship between dispositional empathy and empathic outcomes/prosocial behaviour. It is also well documented that Westerners' personality traits exhibit the tendency to remain more stable, and to be generally more predictive of their behaviour in a variety of situations (Chiu & Hong, 1999; Hong, et al. 2001; Choi, et al. 1999). However, Easterners' personality and attitudes exhibit the tendency as more changeable compared to their Western counterparts (Chiu & Hong, 1999; Hong, et al. 2001; Choi, et al. 1999) and adjust their behavior to fit the surrounding environment (Morling, et al., 2002; Kanagawa, et al., 2001). Thus, dispositional empathy may not be a useful tool to predict empathic outcomes and behaviours in an Eastern cultural context. In each chapter I examined the association between dispositional empathy and empathic outcomes with a focus on the moderating role of cultural group and as described above, findings were mixed.

In sum, there were no unique relationships reported between dispositional empathy and empathic outcomes in East Asian groups; relationships were either observed in the British cultural group only, or both cultural groups. The results add to the literature by demonstrating that dispositional empathy is useful in predicting empathy in Western cultural groups, however, dispositional empathy is not as consistently useful in predicting empathy in East Asian cultural groups.

Theoretical frameworks

Four theoretical frameworks were proposed that could explain potential cultural differences in empathy. First, cultural differences in self-construals (i.e., independence and interdependence) might suggest that interdependent East Asians would demonstrate greater affective empathy and empathic accuracy compared to independent Westerners. This assertion is proposed following research showing that East Asians tend to pay greater attention to others' needs, desires and goals (e.g., Yamagishi, 1988), have their own feelings, thoughts, and needs closely linked to others' feelings, thoughts, and needs (e.g., Kitayama, et al., 2000; Mesquita & Karasawa, 2002; Uchida, et al., 2004), and perceive their own self as an extension to that of others who are important to them (e.g., Cousins, 1989; Heine, 2001; Kanagawa, et al., 2001). Second, cultural differences in emotional expressivity might suggest that compared to relatively more expressive Westerners (see Gross & John, 2003; Ekman, 1972; Friesen, 1972; Matsumoto & Kupperbusch, 2001), East Asians might exhibit less personal distress and empathic concern in response to others' negative emotional states. Third, cultural differences in values of interpersonal harmony might suggest that East Asians, who are typically raised to endorse such values from a younger age compared to Westerners (Rothbaum & Rusk, 2011), would be more empathically accurate, as a greater understanding of another's emotional state would assist behaviour in ways that maintain interpersonal harmony. In addition, research that shows that Japanese are more concerned in maintaining interpersonal harmony compared to their American counterparts, who are more concerned with seeking justice (Ohbuchi, et al., 1999), might suggest that affective empathic responses may be attenuated in East Asians compared to Westerners in three-person conflict situations as attenuating ones emotionally empathic responses could likely be a valid strategy to maintain interpersonal harmony between all parties involved in the conflict. Following the same line of reasoning, Westerners might be more emotionally involved in order to obtain

their goal of justice. Fourth, cultural differences in cognitive styles, specifically in reference to cultural differences in dialectical thinking, might suggest that Easterners would be less likely to take sides in a conflict scenario and moreover, be less likely to empathize with a single target as East Asians would be more tolerant of contradictory arguments (Peng & Nisbett, 1999). In line with this assertion, Westerners might be more likely to pick a side and exhibit greater empathic concern for the target they have sided with in order to reconcile the contradictory arguments.

Findings from the set of studies presented in the empirical chapters can be somewhat interpreted to support a self-construal theoretical framework. As outlined above, it was expected that Easterners would report more affective empathy compared to Westerners, however, in the majority of studies this was not the case; Westerners reported greater empathic concern compared to Easterners. The exception and the only evidence concerning affective empathy to support this theoretical framework was presented in Chapter Five in which Japanese individuals reported greater personal distress compared to American individuals. As East Asians perceive their own self as an extension to that of others who are important to them (e.g., Cousins, 1989; Heine, 2001; Kanagawa, et al., 2001), it is possible that East Asian individuals' own emotional response reflected the target's emotions to a greater degree compared to Westerners. This is highly speculative, however, as this line of reasoning falls under the caveat that first, East Asian individuals perceived the target as one who is important to them, and second, that the distress of that target and respondent were in fact equal. Thus, self-construal theory does little to explain affective empathy in the studies reported in the previous chapters. However, empathic accuracy was in line with predictions following this theoretical framework; East Asians were more empathically accurate compared to Westerners.

As mentioned before, dispositional emotional expressivity moderated British individuals' empathic concern in the study presented in Chapter 4. Thus, emotional expressivity is moderately responsible for shaping empathic responses in one cultural group; however, this theory does not fully explain cultural differences in affective empathy. It was proposed that a more direct and contextualized measure of emotional expressivity (e.g., facial expressions), as opposed to a dispositional assessment of emotional expressivity (e.g. BEQ), that would measure an individual's emotional expression during the empathic experience might be a more effective way to test and garner support for this theoretical framework.

Although not conclusive, findings from the study presented in Chapter 6 possibly implicate both interpersonal harmony and the cognitive styles theoretical frameworks. Side-taking was used as a proxy for dialectical thinking following suggestions by Peng and Nisbett (1999) who proposed that East Asians would be less likely to take sides due to their tolerance of contradictory arguments between two people. There was evidence that East Asian individuals were less likely to take sides and were less likely to empathize with one friend over the other compared to American individuals which could support this theoretical framework. However, cultural differences in underlying motivations that possibly drive empathy in conflict situations could also account for the cultural differences. As mentioned before, Japanese are more concerned in maintaining interpersonal harmony compared to their American counterparts who are concerned with seeking justice (Ohbuchi et al., 1999). If a distinction between friends, in terms of victim and perpetrator, is defined by an individual then this distinction may trigger motivations in Westerners to seek justice for the victim. In supplementary analyses, I showed that American individuals distinguished the two friends as victim and perpetrator to a greater degree compared to Japanese individuals. Consequently, American individuals may have empathized with the perceived victim with an underlying motivation to bring the conflict to a just resolution, whereas Japanese individuals may

comparably empathize less with the victim as they have a motivation to maintain harmony between all parties involved. These findings therefore could be interpreted from an interpersonal harmony theoretical account.

Although the evidence presented in Chapter Six is compelling, more research is needed to examine to what extent the cultural differences in motivations in conflict situations and the attention to contradictory arguments can explain cultural differences in affective empathy. In addition, this research would benefit by examining cognitive components of empathy. We might find that Easterners would be more accurate in inferring the perpetrators emotions compared to Westerners, whereas Westerners, focused more on the victim, might be comparatively more accurate at inferring the victim's emotions.

Conclusion

The research embodied in this thesis has demonstrated that culture does indeed shape empathy by showing how Eastern and Western cultures differ in their empathic abilities. Although one should be wary of adopting a bicultural perspective in conducting cross-cultural research (see Bond & Smith, 1996), limiting the investigation of empathy to Eastern and Western cultural groups enables one to draw from a wealth of theoretical and empirical research to guide hypotheses. It is possible that culture could influence affective and cognitive empathy in novel ways that have not been covered in this thesis which could be revealed by examining other cultural groups. Regardless, even by examining empathy in two cultural groups I believe that no culture is better or worse than any other regarding their empathic abilities; we simply empathize in a manner defined by the cultural context in order to fit into the cultural context itself. It is an adaptive response. Undoubtedly, we do not always empathize in a manner determined by the cultural context; there is individual variation in which an individual will behave in ways that are not endorsed by the cultural

context. However, behaving in ways that do not reflect the cultural context could be maladaptive. Lu (2006) has suggested a “cultural fit” proposition in which the discrepancy between the societal culture (i.e., the cultural context) and the individual culture (i.e., the level an individual participates in the values and behaviours defined by the cultural context) has repercussions on an individual’s subjective wellbeing. Lu (2006) suggests that an individual whose behaviors are congruent with the cultural context are likely to have smoother interactions with the social environment, whereas an individual whose behaviour is incongruent with the cultural context could lead to poorer social interactions and in turn, diminish subjective wellbeing. It is possible that the cultural context informs us how to appropriately empathize with others. Empathizing in the manner endorsed by the cultural context would enable smoother interactions and thus enhance an individual’s overall fit with the cultural context. To disobey cultural rules that dictate how we should empathize with one and other could lead to poorer subjective wellbeing and possibly risk rejection and ostracism from other cultural members. It would likely be a maladaptive practice of empathy.

These studies do not inform us on the causal relationship between culture and empathy, in fact, to my knowledge there is no study that has examined the causal role of culture in empathy. One popular and robust technique to examine the causal role of culture in psychological outcomes is to prime the culture-relevant content, goals and cognitive styles and compare outcome measures following the prime against suitable control conditions (Oyserman & Lee, 2008). Thus, research using this type of technique could prime a cultural mindset and examine empathic outcomes against a control condition. In addition, research could also prime empathy styles (affective vs. cognitive) and examine social interactions in different cultural contexts that either do or do not endorse the primed style of empathy. Outcome variables, such as subjective wellbeing, might differ as a function of the congruency between the empathy prime and the empathy style endorsed by the cultural context. Clearly,

more research is needed to develop our understanding of the association and causal relationship between culture and empathy.

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