Cultural Variations in Self-assessments in Athletes: Towards the Development of a Culturally Grounded Approach in Sports Psychology

by

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Abstract

To achieve success in sports, athletes must motivate themselves by positively viewing themselves (self-enhancement) and objectively analyzing their weaknesses to improve their performance (self-improvement). Sports psychologists have assumed that this process is universal. However, cultural psychologists have revealed that prevalent motivations differ across cultures. North Americans tend to view themselves positively, whereas East Asians are likely to see themselves more objectively. These tendencies are bolstered by culturally shared implicit theories of one's abilities and self-construals: North Americans tend to believe that their abilities are fixed and stable and have an independent self-construal, whereas East Asians tend to think that their abilities are changeable and improvable and have an interdependent self-construal. If these cultural variations are applicable to athletes, this line of research will contribute to applied settings in sports by encouraging sports psychologists to create culturally fit interventions. As such, the current studies examined cultural variations in the motivations of athletes by selectively focusing on team and open-skill sports. Overall, the current studies revealed cultural variations in athletes' motivation regarding their attention to positive and negative information about the self, the implicit theories of their abilities, and self-construals. As such, we suggest culturally fine-tuned interventions for athletes.

Keywords: cultural variation, motivation, self-enhancement, self-improvement, independence vs. interdependence view of self, implicit theory

Preface

This thesis is an original work by Yuto Yasuda. This series of research received ethics approval from the University of Alberta Research Ethics Board, Project Name “self-appraisals in sport settings,” “Cultural differences in implicit theory,” and “self-appraisals and standard settings in sport settings,” No. Pro00115156, Pro00114593, and Pro00105108, October 29, 2021, February 2, 2022, and December 15, 2020.

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CHAPTER 1

General Introduction

Introduction

To achieve expertise in specific skills, top performers spend more than 10,000 hours engaging in their activity (Ericsson et al., 1993), and athletes are not an exception to this principle. The amount of practice accounts for 18% of sports performance (Macnamara et al., 2014). To constantly and actively engage in sports, athletes must sustain their motivation, which is defined as internal processes that give behaviours strength, purpose, and endurance (Reeve, 2018; Vink et al., 2015). Without maintaining their motivation, athletes will fail to consistently engage in sports and, in the worst case, will end up ceasing to play the sport and drop out (Back et al., 2022). To help athletes maintain their motivation, sports psychologists have developed intervention programs such as goal setting, imagery techniques, and breathing techniques, some of which have been effective to some extent (see Raabe et al., 2019).

However, the majority of intervention programs have been one-size-fits-all because of the general theoretical assumptions regarding psychological universals: general psychologists rely on the assumption that people universally share core mental characteristics across cultures, and they do not considerably focus on substantial cross-cultural differences in psychological processes, including cognition, motivation, emotions, and behaviours (Mashreghi, 2020). This assumption may induce sports psychologists to pay little attention to socio-cultural factors that may contribute to substantial systematic differences in psychological processes (see Kamphoff et al., 2010; Schinke et al., 2012). Even though the current interventions in sports psychology have shown to be effective to some degree (Lochbaum et al., 2022), it is critical to consider the socio-cultural factors that might substantially shape athletes' mindsets and improve upon the interventions.

In response to this situation in sports psychology, some sports psychologists have focused on the effect of culture, a shared meaning system, on athletes' psychological processes under the name of cultural sports psychology (Miller, 1999; Schinke & Hanrahan, 2009; Schinke et al., 2019; Ryba & Wright, 2005; Quartiroli et al., 2021). Cultural sports psychologists have attempted to reveal how cultural discourses and practices constitute athletes' personal meanings and experiences and, consequently, their psychological skills and well-being in sports settings (Ryba, 2017). For example, Blodgett et al. (2017) showed how ethnicity, religion, and race constitute African boxers' mentality. Also, Schinke and Hanrahan (2009) revealed the importance of habits, history, and norms for athletes' identity with different cultural backgrounds. As such, the growing area of cultural sport psychology has revealed the athletes' interaction with sociocultural environment for individual athletes' experiences.

The current studies attempt to expand this assertion by empirically examining the effect of culturally specific narratives on psychological processes by utilizing a theoretical framework from another school of psychology, cultural psychology. According to cultural psychology, people's psychological processes are shaped by their worldview, historically developed and sustained sets of meaning systems, associated thinking, and behavioural patterns (Cohen & Kitayama, 2020; Markus & Kitayama, 2010; Varnum et al., 2010). Regarding motivational differences, positively viewing self was assumed to be psychologically universal across cultures, but the results in East Asian cultures did not advocate this tendency and revealed that East Asians are likely to assess themselves more objectively (Heine & Hamamura, 2007). Following these findings in cultural psychology, it is reasonable to assume that cultural variations in motivation are observable among culturally diverse athletes. This motivational difference is specifically critical in athletes as athletes need to objectively assess their performance to decide

where to improve, but positively viewing one's self is also important to feel competent at playing the sport. For this purpose, the current studies focused on two types of motivation—self-enhancement and self-improvement—and examined how North American and East Asian athletes sustain their motivation to engage in sports activities. Moreover, the current studies attempted to reveal potential explanatory factors of this cultural variation in motivation by focusing on athletes' culturally dominant beliefs about their abilities (whether individuals believe that their abilities are malleable or fixed) and self-construal, which is how people define the self. North Americans tend to be immersed in social environments where entity theory is emphasized. Also, North Americans are likely to define oneself separate from others and are expected to rely on themselves. These factors may support North Americans in attending to their positive characteristics. On the other hand, the social environment in East Asia emphasizes effort and persistence. Also, East Asians tend to define oneself based on their social connections with others. In East Asian cultures, people tend to fulfill their social responsibilities. These factors may guide people to objectively assess themselves. The following sections explain two motivations, the cultural variations between them, and potential factors that explain these cultural variations in detail.

Two Complementary Motivations Related to Self

In motivation research, scholars share the idea that individuals use two motivation types to evaluate themselves: self-enhancement and self-improvement (Chang, 2008; Sedikides & Strube, 1997). Individuals attempt to positively view themselves with self-enhancement motivation, and they also try to objectively assess their performance to improve their performance with self-improvement motivation. These two motivation types are culturally and

situationally dynamic (Sedikides & Strube, 1997). The following sections explain each concept and how culture and situations affect how people use each of these motivation types.

Self-enhancement—Motivation to Positively View the Self

The concept of self-enhancement has been assumed to be a fundamental human need (e.g., Greenwald, 1980; Harter, 1990; Steele, 1988). Accumulative empirical evidence has corroborated this assertion. People tend to think that they are better than average (called the better-than-average effect: Alicke et al., 1995; Benoît et al., 2015; Zell et al., 2020), and one's self-evaluation is likely to be higher than their evaluation from others (S. Heine & K. Renshaw, 2002). Lastly, people tend to attribute success to internal factors, whereas they attribute failures to external factors, which illustrates that people attempt to maintain a positive view of the self by taking credit for positive outcomes (called the self-serving bias: Allen et al., 2020; Mezulis et al., 2004; Miller & Ross, 1975). Scholars in sports psychology have shown that athletes are no exception to this tendency. For instance, athletes attribute their success to internal factors, whereas they attribute their failures to external factors, showing a self-enhancement bias in self-judgement (Allen et al., 2020). This self-enhancement tendency predicts positive outcomes in sports settings. For example, having a favourable self-view predicts athletes' level of commitment to sports (deJonge et al., 2019), high confidence (Fogarty et al., 2016) and even high objective performance (Marsh et al., 2007). These positive effects of self-enhancement are shared and understood among coaches and athletes. Both coaches and athletes believe that viewing the self positively and as highly competent in the sport they play is an essential component of high performance (Kajtna & Barić, 2009; Rogers et al., 2020).

Self-improvement-Motivation to View Negative Sides of the Self

Self-enhancement could be one of many factors contributing to an athlete's success. However, it is also important to consider that individuals motivate themselves by objectively assessing their weaknesses to improve their overall performance (self-improvement; Sedikides, 1999). Usually, self-improvement motivation is realized when people compare themselves with other competitors whose performance is higher and identify the discrepancy in their abilities and skills or when they compare their actual self with their ideal self, and then make efforts to minimize this discrepancy (Heine & Lehman, 1999; Sedikides, 1999). After the identification of this discrepancy, people make efforts to minimize it, and eventually, the quality of their performance rises (Sedikides & Strube, 1997). In sports psychology, scholars discuss that self-improvement motivation is another indispensable motivation for athletes to sophisticate and stabilize their skills and to show high performance (Warburton et al., 2021).

Cultural Variations in Motivation

As aforementioned, both self-enhancement and self-improvement play pivotal roles in allowing athletes to show high performance, and these two motivations are complementary (Sedikides & Strube, 1997); that is, people may be motivated both by enhancing their strengths and by objectively seeing themselves. However, each individual does not have the two motivations to the same degree, and previous research has revealed that situational factors elicit individuals to use one motivation over the other (Chang, 2008; Schönthaler et al., 2022). Regarding sports settings, competitive athletes strive to improve their skills and performance during practices, and they attempt to show high performance at games (Vignadelli et al., 2018). Thus, the amount of the two motivations may be systematically different between practice and games, whereby athletes are motivated to improve their skills and performance (self-improvement) at practices, but they try to positively view themselves to perform well (self-

enhancement) at games. In alignment with this line of research, cultural psychologists have also questioned whether the magnitude of these motivations is the same across cultures and have revealed the effect of culture on motivation by using various methodologies (Heine & Hamamura, 2007; Heine & Renshaw, 2002; Kitayama et al., 1997).

On the one hand, in North American cultures, the self-enhancement tendency is widespread and robust. The convergent empirical evidence has shown that North Americans believe that they are better than average, have high optimism for their future, and think their current self is close to their ideal self (Heine & Hamamura, 2007; Heine & Lehman, 1995; Heine & Lehman, 1999), all of which are evidence of a positive view of the self in North American cultures. Also, once they receive negative information about themselves, they seek out other positive information about themselves so that they can compensate for the negative self-relevant information (Heine, Kitayama, & Lehman, 2001). Furthermore, a meta-analysis, one of the most reliable statistical methods, corroborated this empirical evidence, showing the significance of self-enhancement tendency in North American cultures (Heine & Hamamura, 2007).

In contrast, this tendency is significantly attenuated in East Asian cultures, and instead, East Asians show a self-improvement tendency. Previous research indeed revealed that East Asians show a large discrepancy between their ideal and actual self (Heine & Lehman, 1995), which indicates that they critically assess themselves. Also, East Asians readily accept negative self-relevant information rather than negating it and attempt to improve their negative attributes rather than maintaining their positive attributes (Heine, Lehman, Markus, et al., 1999; Heine, Kitayama, & Lehman, 2001; Lo et al., 2011). Lastly, the results of the meta-analysis conducted by Heine and Hamamura (2007) supported this evidence, revealing that East Asians' self-

enhancement tendency is attenuated. These cultural variations indicate that the amount that individuals use these two motivations is culturally dependent.

Implicit Belief of Abilities Supporting the Cultural Variations in Motivation

The aforementioned cultural variation in motivation is supported by a culturally shared implicit belief in one's abilities (Heine, Kitayama, Lehman, Takata, et al., 2001). That is, culturally varied motivations are influenced by how individuals in each culture implicitly conceptualize their abilities. According to implicit theory (Dweck, 1999), people have two naïve implicit beliefs about their abilities: entity theory and incremental theory[1]. Individuals who dominantly have entity theory believe that their abilities are fixed and unchangeable. In contrast, individuals who predominantly have incremental theory believe that their abilities are malleable and controllable. Since this theory emerged in the 1990s, cultural psychologists have revealed that cultural variations in motivation (self-enhancement vs. self-improvement) are bolstered by implicit theory which is culturally dominant and shared among people in each culture (Heine, Kitayama, Lehman, Takata, et al., 2001).

In North American cultures, entity theory can be reinforced in many ways, which affects the North American self-enhancement tendency rather than self-improvement (Heine, Kitayama, Lehman, Takata, et al., 2001). For example, American teachers and parents emphasize that one's inherent ability leads to positive academic outcomes more than making efforts for academic

[1] Originally, incremental theory and entity theory were assumed to be mutually exclusive (Dweck & Leggett, 1988). However, empirical evidence showed a weak or moderate negative correlation between them in sports contexts (r = -.15, -.26, - .43 from Biddle et al., 2003; Danthony et al., 2019; and Wang et al., 2009, respectively), which indicates that they are not mutually exclusive. In line with the assertion of the previous study (Biddle et al., 2003), these two concepts are assumed to be distinctive concepts in the present studies.

achievement (Stevenson & Stigler, 1991). Also, the university entrance exams in the U.S. are believed to tap into basic skills and aptitudes that are difficult to amend with effort (Heine, Kitayama, Lehman, Takata, et al., 2001). As North Americans tend to have entity theory, people attempt to actualize their successful potential and self-advancement by relying on the unique and positive traits that they currently have, which they believe are stable, innate, and fixed over time (Dweck et al., 1995; Heine, Kitayama, Lehman, Takata, et al., 2001; Rattan et al., 2012).

In contrast, East Asian's self-improvement tendency can be accounted for by incremental theory, the belief that ability is malleable (Dweck et al., 1995; Heine, Kitayama, Lehman, Takata, et al., 2001). People in East Asia attempt to improve their insufficient aspects in an environment where effort is emphasized. For instance, Japanese parents believe that effort is a vital contributor to academic achievement (Stevenson & Stigler, 1991). The education system also reinforces incremental theory. According to Heine, Kitayama, Lehman, Takata, et al. (2001), Japanese university entrance exams highlight the mastery of detailed knowledge. Thus, one's exam performance can be improved with effort. By being immersed in such an environment, individuals in East Asia tend to have incremental theory. Supported by this culturally dominant incremental theory, where the negative aspects of the self as well as the positive aspects are malleable, East Asians are likely to assess their performance objectively to improve their performance (Heine, Kitayama, Lehman, Takata, et al., 2001).

To summarize, it is reasoned that North Americans maintain a self-enhancement motivation under the notion that their abilities do not change over time, and they selectively rely on unshakeable and fixed strengths and ignore their weaknesses. On the other hand, East Asians strive to improve themselves under the belief that their positive and negative aspects are uniformly malleable and changeable.

Self-Construal Supporting the Cultural Variations in Motivation

Furthermore, a plethora of empirical studies has revealed that the substantial cultural differences in one's motivation between North American and East Asians are also strongly associated with their culturally shared self-construals (Heine & Hamamura, 2007; Heine & Lehman, 1997; Kitayama et al., 1997). A self-construal is defined as how people define the self, and it is associated with people's philosophical backgrounds about the world and is refined and stabilized through their practices coming from historical and religious factors (Heine & Hamamura, 2007; Heine & Lehman, 1997; Kitayama et al., 1997). This culturally varied self-construal considerably impacts motivation in each culture (Heine & Hamamura, 2007).

In North American cultures, an independent self-construal (i.e., defining the self as mentally separate from others) has been dominantly shared among individuals over centuries and has been stabilized through their daily cultural practices (Markus & Kitayama, 1991, 2010), and such an independent self-construal is associated with their analytics and object-oriented reasoning processes (Masuda, 2017; Masuda et al., 2019; Nisbett, 2003; Nisbett et al., 2001). The characteristics of an independent self-construal are compatible with a self-enhancement tendency (Heine & Hamamura, 2007; Heine & Lehman, 1997; Kitayama et al., 1997). Under the logic of an independent self-construal, people generally share the idea that individuals are separate beings. In such cultures, people are expected to actualize themselves by maintaining autonomy and achieving personal goals, and as such, it is culturally important to be self-reliant (Markus & Kitayama, 1991; Varnum et al., 2010). To be self-reliant and achieve their personal goals, individuals attempt to find current unique and positive attributes furnished inside themselves (such as their intelligence, ability, and talent) to rely on (Markus & Kitayama, 1991). As such, they tend to have self-enhancement motivation in which they are motivated to find

positive characteristics of themselves and to view themselves as competent beings in order to be self-reliant (Falk & Heine, 2015; Heine & Hamamura, 2007; Heine & Lehman, 1999).

In contrast, in East Asian countries such as Japan, China, and South Korea, people historically developed another type of self-construal based on the amalgamation of three major sets of philosophical trends—Confucianism, Buddhism, and Taoism (Masuda, 2017; Masuda et al., 2019; Nisbett, 2003; Nisbett et al., 2001). The essence of these major philosophies has been shared among people in East Asia over centuries and stabilized through their daily interactions with people, even among contemporary members of these societies (Imada, 2012). Under the logic of an interdependent self-construal, individuals define themselves as interdependent beings and exist in relationships with others who strongly associate with them based on group goals (Markus & Kitayama, 1991). People become familiar with viewing themselves as beings embedded in their social relationships, and individuals are often considered to be seen as a part of society (Markus & Kitayama, 1991; Varnum et al., 2010). Thus, social connection, social harmony, and relatedness with others are valued (Markus & Kitayama, 1991; Varnum et al., 2010). As such, maintaining a good relationship with others and fulfilling socially expected roles are considered to be some of the major life tasks required to socially actualize themselves (Heine, Lehman, Markus, et al., 1999; Markus & Kitayama, 1991). As accomplishing social roles and meeting the standards of others' expectations are some of the characteristics emphasized in this culture, individuals are accustomed to being motivated to fulfill their socially expected roles by objectively analyzing their performance and identifying their insufficient skills, attributes, and characteristics to improve them, which are comparable with self-improvement motivation (Heine, Kitayama, & Lehman, 2001; Heine & Hamamura, 2007; Heine & Lehman, 1999; Kitayama et al., 1997; Takata, 2003; Tsai et al., 2015).

In sum, self-construals are associated with motivation types. North Americans are likely to have an independent self-construal, with which they tend to enhance themselves to be self-reliant. On the other hand, East Asians tend to have an interdependent self-construal. In this culture, they tend to have a self-improvement tendency to fulfill their responsibilities.

The Current Studies

The purpose of the studies presented in this dissertation was to examine whether the cultural variations in motivation were observable even among athletes who sustain their motivation for success in their sport. Specifically, Study 1 explored whether North American athletes enhance themselves by selectively paying attention to their positive characteristics rather than their negative characteristics and whether this tendency is attenuated in East Asian athletes, who culturally share a self-improvement tendency. Study 2 attempted to examine a potential mechanism of the cultural variations in motivation in athletes by focusing on culturally dominant implicit theory. Study 3 further scrutinized this issue while examining whether culturally shared motivation patterns change across specific situations (i.e., practices and games) and further attempted to identify whether the culturally dominant self-construal (independence vs. interdependence) also plays an important role in cultural variations in motivation. The current studies did not investigate the relationship between culture, implicit theory, self-construal, and motivation. Instead, the current studies examined the mediational effect of implicit theory and self-construal on the relationship between culture and motivation. However, the potential relationship between culture, implicit theory, self-construal, and motivation will be discussed in the discussion section. The following section explains how each variable was measured and how we created measures for some variables.

CHAPTER 2

Methodology

This section explains how each variable in Study 1, 2, and 3 was operationalized in detail.

Measures for Motivation

In the current studies, we measured self-improvement and self-enhancement motivation in athletes by recording their self-assessments as athletes. Self-assessment is critical to obtain a high performance (Castillo, 2022). However, if the ways of assessing the self are culturally different, the ways individuals strive to show high performance may culturally differ. If athletes show a self-enhancement tendency, they should retrieve and pay attention to their positive characteristics more than their negative characteristics. In contrast, if athletes have a self-improvement tendency, they will equally retrieve and pay attention to their positive and negative characteristics. To examine the cultural variations in self-assessments from a motivational perspective, the current studies examined the number of characteristics (strengths and weaknesses) that the participants listed and the attention they paid to their strengths and weaknesses.

Measure for Implicit Theory

As no questionnaire that measures implicit theory of strengths and weaknesses exists, we created question items to measure implicit theory for strengths and weaknesses based on the definition of each theory. Incremental theory is defined as the implicit belief that abilities are malleable and controllable, whereas entity theory is defined as the implicit belief that abilities are fixed and uncontrollable (Dweck & Leggett, 1988). Following the definition of incremental theory and entity theory, we created items to measure implicit theory as it pertains to athletes' strengths and weaknesses. To measure incremental theory as it relates to one's strengths and weaknesses, the participants listed their strengths and weaknesses as an athlete and rated the

extent to which they believe that their strengths and weaknesses are malleable with a Likert Scale from 1 (1: not changeable at all) to 7 (extremely changeable). The same method was applied to measure entity theory (1: not fixed at all to 7: extremely fixed). Then, the incremental theory and entity theory scores for all the characteristics were averaged.

Self-Construal (Independence vs. Interdependence)

In study 3, self-construal was measured to examine if one's self-construal explains cultural variations in motivation. Self-construal was measured by the questionnaire created by Kim et al. (2003). The construct validity of the questionnaire was confirmed by Kim et al. (2003). Also, the reliability of the questionnaire was confirmed in Japan and Canada (Lee et al., 2023: Canadians; Cronbach's alpha = .79 for independence, Cronbach's alpha = .73 for interdependence, Japanese; Cronbach's alpha = .79 for independence, Cronbach's alpha = .81 for interdependence). More detailed information is mentioned in Study 3.

Situations

Furthermore, in Study 3, we differentiated the situations in which the participants attend to their strengths and weaknesses: non-competitive and competitive situations. Sports consist of practices and games, and practices are expected to be seen as an opportunity to improve one's skills, whereas games represent competitive situations. Some research revealed motivational differences across these situations (Takata, 2003). Thus, the current studies examined whether self-enhancement and self-improvement are situationally different as well as different across cultures.

Target Sports

In the current studies, we targeted athletes that partake in three types of team and open-skilled sports to test the generalizability of our results across various sports. Sports can be classified as team sports where athletes play as a group (e.g., hockey, handball, volleyball) and individual sports where athletes individually compete (e.g., weightlifting, wrestling, boxing). Another classification is closed-skills (i.e., sports in which the sporting environment is highly consistent, predictable, and self-paced [e.g., archery, golf, swimming]) vs. open-skills sports (i.e., sports in which players are required to react in a dynamically changing, unpredictable, and externally paced environment [e.g., soccer, rugby, basketball]: Wang et al., 2013). This time, we selectively focused on team and open-skills sports to minimize potential confounding factors that may distort our attempt to reveal the systematic cultural variations in motivation. As such, Study 1 collected data from soccer players, Study 2 collected data from basketball players, and Study 3 collected data from rugby players. By collecting data from athletes that partake in three different sports, which are all team and open-skills sports, we attempt to generalize the results of the current studies.

Two Cultures

We collected data from Canadian athletes as representatives of North American culture and Japanese athletes as representatives of East Asian culture as previous studies revealed cultural variations in psychological processes including cognition, emotion, motivation, and behaviours between North Americans and East Asians (Cohen & Kitayama, 2020; Masuda & Nisbett, 2001; Masuda et al., 2008). In all studies, all participants self-identified as Canadians or Japanese respectively. The industrialization levels between these two countries are similar (e.g., they are both G7 societies). Also, based on the country rankings in the International Association of Football Federation (FIFA), World Rugby, and International Basketball Federation (FIBA) in

July 2023, soccer (men: Japan [20th] vs. Canada [45th]; women: Japan [11th] vs. Canada [7th]), rugby (men: Japan [10th] vs. Canada [23rd]; women: Japan [11th] vs. Canada [4th]), and basketball (men: Japan [36th] vs. Canada [15th]; women: Japan [9th] vs. Canada [5th]), respectively, are at similar competitive levels in both Canada and Japan. Thus, Canada and Japan are appropriate countries to examine systematic cultural differences while minimizing confounding factors.

CHAPTER 3

Cultural Variations in Self-enhancement and Self-improvement in Sports Settings

Study 1 examined cultural variations in motivation by comparing North American and East Asian athletes' motivation. To explore this cultural variation, we selected a group of athletes from each culture, Canadian and Japanese, who were active soccer players and asked them to (1) list their strengths and weaknesses as athletes and (2) rate the extent to which they allocate their attention to each of their strengths and weaknesses. In alignment with previous findings in cultural psychology (Heine, Kitayama, & Lehman, 2001), Canadian athletes were hypothesized to list and pay attention to their strengths significantly more than their weaknesses due to the North American's self-enhancement tendency. In contrast, the Japanese athletes were hypothesized to list and pay attention to their strengths more than weaknesses but to a lesser degree than the Canadian athletes or even equally list them due to East Asians' self-improvement tendency.

Methods

Participants

Intercollegiate (varsity) student-soccer players (N = 135, 45.7% females) from Canada (n = 58, [48.3% females], *M*age = 20.00, *SD* = 2.27) and Japan (n = 77, [45.4% females], *M*age = 20.16, *SD* = 1.03) agreed to participate in this study by providing informed consent.

The Canadian participants were recruited from six soccer teams from Canadian universities (Mount Royal University, Trinity Western University, University of Alberta, University of British Columbia), and the Japanese participants were recruited from five soccer teams (Chukyo University, Kyoto Tachibana University, Kwansei Gakuin University, Seisen University). To make the competitive level consistent, soccer teams in Division 1 and 2 in the Kansai and Tokai areas were selected, which are two of the top university leagues in Japan. We

excluded 15 participants due to incomplete submissions and disagreements with sharing data at the end of the survey. Subsequently, we targeted 135 participants for the final analysis. The expected sample size was calculated by using G power, and a total sample size of 135 was confirmed to be sufficient to conduct a 2-ways mixed factorial ANOVA (f = .25, α = .05, 1-β = .80), which justified the sample size of the current study. By completing this study, the participants received a CAD 10 Amazon gift card (JPY 1000 for Japanese participants) as an honorarium.

Materials

All the study materials were presented online via Qualtrics. These materials were first devised in English and translated into Japanese. Then, the back-translation procedure (Brislin, 1970) was applied. Modifications were made if necessary.

Participants' Subjective Perception of Their Strengths and Weaknesses

We devised a measure that examines participants' subjective perception of their strengths and weaknesses, which is similar to Lo et al. (2011). Specifically, the current study measured two variables: the number of strengths and weaknesses the participants listed and the attention to the strengths and weaknesses that they listed. To measure strengths as an athlete, the participants were asked the following question which starts with "When you are asked to analyze yourself as a soccer player freely, what are your major strengths?**"** They were provided with fifteen blank lines and freely listed their perceived strengths as a soccer player. Their weaknesses were asked in an identical way. After, they were asked to assess to what extent they paid attention to each of their strengths and weaknesses with the following question: "How much do you pay attention to the performance you selected during practices and games?" with a Likert scale ranging from 0

(don't pay attention at all) to 10 (pay attention the most). Then, the average of their scores of their attention to their strengths and weaknesses was calculated.

Analysis

The number of strengths and weaknesses was counted based on how many strengths and weaknesses the participants listed. For example, one participant listed double transition moments and attacking header as their weaknesses and listed their passing ability, tactical understanding, and crossing as their strengths. In this case, the number of weaknesses and strengths was two and three, respectively. Then, the difference score between their strengths and weaknesses was calculated by subtracting the number of weaknesses from that of their strengths. Also, the attention to their weaknesses and strengths was averaged. For example, the previous participant's attention to each weakness was 5 and 3 out of 10, respectively, whereas their attention to each strength was 9, 7, and 8 out of 10, respectively. In this case, the average attention to weaknesses was 4, whereas that of their strengths was 7. Then, a *t*-test was conducted to examine whether the difference score of the number of strengths and weaknesses was culturally different and if the difference score was significantly different from zero, with higher scores indicating self-enhancement whereas lower scores indicated self-improvement. Additionally, a 2-way mixed factorial ANOVA was conducted to explore attention to strengths and weaknesses across cultures.

Procedure

Upon signing up for the online survey, the participants were asked to answer a set of questionnaires in a quiet place where they could maintain focus on the task (e.g., at home). Once they agreed to participate by signing the consent form, they answered questions assessing their

demographic information, including their soccer position, age, and sex. Following that, they listed their strengths and weaknesses as a soccer player and rated the extent to which they pay attention to each of their strengths and weaknesses. At the end of the session, they were directed to the debriefing section, where they were provided with a written description of the purpose of the study.

Results

The Difference Score of the Number of Strengths vs. Weaknesses

To investigate the cultural variations in the difference score of strengths and weaknesses, the number of weaknesses they listed was subtracted from the number of strengths. The results indicated that the scores of the Canadian participants ($M = 2.02$, $SD = 2.24$) were significantly higher than the scores of the Japanese ($M = 0.21$, $SD = 2.18$), $t(133) = 4.71$, $p < .001$, $d = 0.82$ (Figure 1). Also, the difference score of the Canadians was significantly different from zero $t(57) = 6.85$, $p < .001$, $d = 0.90$, whereas the difference score of the Japanese was not significantly different from zero $t(76) = 0.84$, $p = .41$, $d = 0.10$. These results showed that the Canadians demonstrated a higher self-enhancement tendency than the Japanese.

Attention to Strengths and Weaknesses

Next, cultural variations in attention to characteristics were analyzed by conducting a 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) mixed factorial ANOVA (Figure 2). The main effect of culture was marginally significant, $F(1, 133) = 3.55$, $p = .06$, $\eta_p^2 = .03$. The Japanese paid more attention to their characteristics ($M = 6.90$, $SD = 1.51$) than the Canadians ($M = 6.40$, $SD = 1.57$). The main effect of characteristics was also significant, $F(1, 133) = 4.01$, $p < .05$, $\eta_p^2 = .03$. The results showed that in general, the participants paid

more attention to their strengths (M = 6.94, SD = 2.46) than weaknesses (M = 6.44, SD = 1.98). There was no interaction effect between culture and characteristics, F (1, 133) = 1.96, p = .16, η_p^2 = .02. To further capture detailed cultural variations in attention allocation strategies, however, planned t-tests were conducted. The results showed that the Canadians paid more attention to their strengths (M = 6.87, SD = 2.42) than their weaknesses (M = 5.93, SD = 1.94), t(57) = 2.35, $p < .05$, d = 0.43, whereas the Japanese showed no significant difference in attention to their strengths (M = 6.99, SD = 2.50) and weaknesses (M = 6.82, SD = 1.93), t(76) = 0.45, p = .66, d = 0.08. Additionally, the Canadians paid less attention to their weaknesses (M = 5.93, SD = 1.94) than the Japanese (M = 6.82, SD = 1.93), t(133) = 2.31, $p < .05$, d = 0.46, whereas the attention paid to their strengths was not significantly different between the two cultures (Canadians: M = 6.87, SD = 2.42; Japanese: M = 6.99, SD = 2.49), t(133) = 0.30, p = .77, d = 0.05.

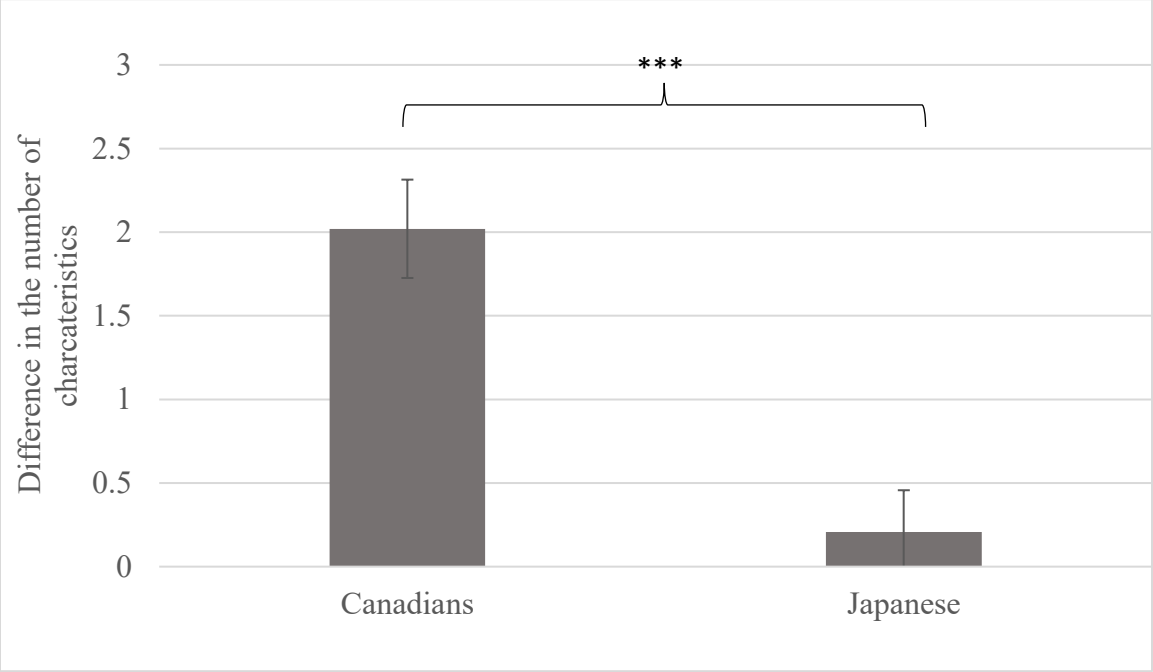
Discussion

By targeting a popular group-oriented sport in Canada and Japan, Study 1 demonstrated cultural differences in motivation between soccer players from two distinct cultural groups. In alignment with our hypotheses, the Canadian soccer players listed strengths more than weaknesses and attended to their strengths more than their weaknesses. Consistent with previous cross-cultural research, the Canadian soccer players exhibited a self-enhancement tendency, the notion of which is commonly shared among North American cultures (Heine & Hamamura, 2007; Kitayama et al., 1997). On the other hand, the Japanese soccer players listed an equal number of strengths and weaknesses. They also equally attended to their strengths and weaknesses. Congruent with previous cross-cultural findings, the Japanese soccer players exhibited a self-improvement tendency, the notion of which is commonly shared among East Asian cultures (Hamamura & Heine, 2008; Heine, Kitayama, & Lehman, 2001). The profound

cultural differences in motivation in athletes found in this study are evident and garner further investigation. Specifically, the next two studies attempted to identify what factors explain these cultural variations.

Figure 1.

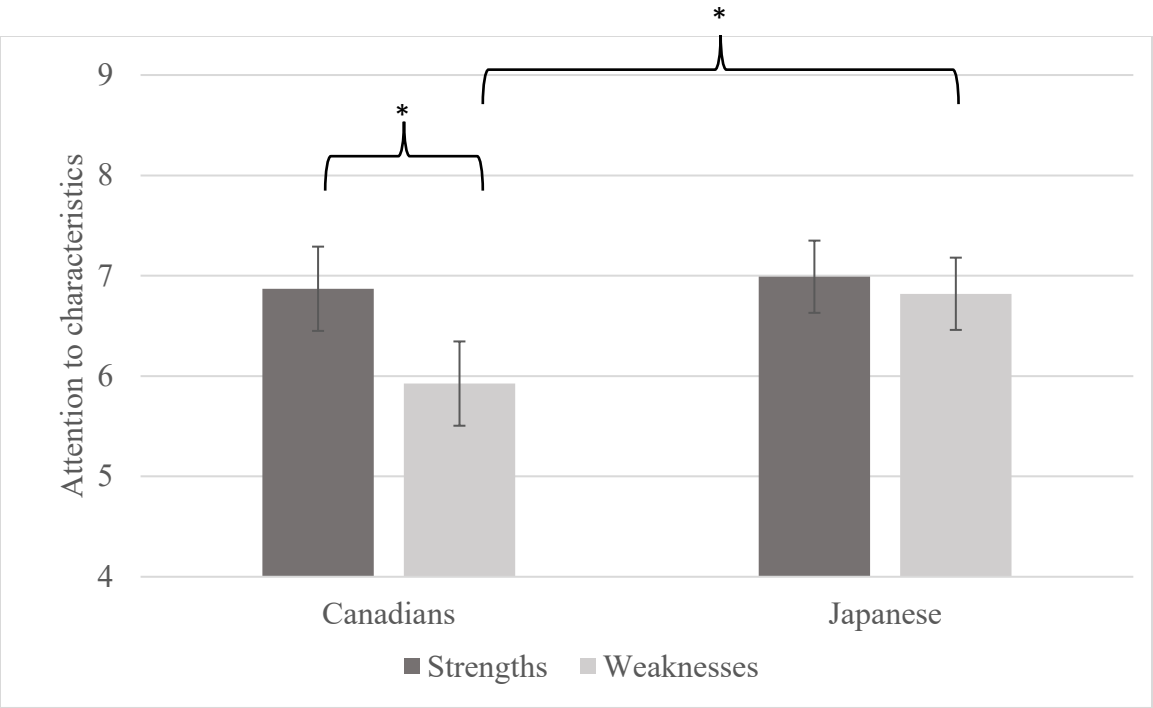
Cultural Variations in the Difference in the Number of Strengths vs. Weaknesses



*** $p < .001$.

Figure 2.

Attention to Strengths and Weaknesses by Canadians and Japanese Athletes



* $p < .05$.

CHAPTER 4

One Potential Mechanism of Cultural Variations in Motivation

The purpose of Study 2 was to investigate a potential mechanism of the cultural variations in motivation that Study 1 uncovered. Study 1 revealed that the differences in attention to strengths and weaknesses are culturally varied between Canadian and Japanese athletes. Canadians pay more attention to their strengths than to their weaknesses. Based on the concepts of implicit theories about one's abilities (Biddle et al., 2003; Dweck & Leggett, 1998), we assumed that this tendency might be supported by the entity theory when perceiving one's strengths more than their weaknesses; the Canadians may rely on their stable and fixed strengths, and this belief leads North Americans to ignore their weaknesses. In contrast, the results of Study 1 indicated that the athletes in Japan did not show a significant difference in attention to their strengths and weaknesses. This tendency may be highlighted by the overall low entity theory and high incremental theory of the Japanese athletes; they may attempt to achieve their imposed roles within a team by believing that both their strengths and weaknesses are malleable and improvable (incremental theory) rather than fixed and stable (entity theory). Overall, we hypothesized that cultural variations in entity theory with regard to strengths and weaknesses exist.

Methods

Participants

A total of 147 (Canadians = 65, *M*age = 20.77, *SD* = 3.49; Japanese = 82, *M*age = 19.96, *SD* = 0.97) competitive basketball players participated in this study. Three male teams (n = 38) and four female teams (n = 44) participated in this study in Japan (Japan Women's College of Physical Education, Tokai University, Tokyo Healthcare University, University of Tsukuba, Waseda University), whereas five male teams (n = 19) and ten female teams (n = 46) participated in the study in Canada (Carleton University, Lakehead University, Laurentian University, Mount

Royal University, Ryerson University, St. Francis Xavier University, Trinity Western University, University of Alberta, University of British Columbia, University of Calgary, University of Guelph, University of Ottawa, University of Northern British Columbia, University of Saskatchewan, University of Windsor, York University). To equalize the competitive level across cultures as much as we could, the same criteria as Study 1 were utilized. We excluded 16 participants due to incomplete submissions and disagreements with sharing data at the end of the survey. Subsequently, we targeted 147 participants for the final analysis. A G power analysis was conducted, and a total sample size of 147 participants was confirmed to be sufficient (f = .25, α = .05, 1-β = .80), which justified the sample size of the current study. By completing the study, the participants received a CAD 10 Amazon gift card (JPY 1000 for Japanese participants) as an honorarium.

Materials

All the study materials were presented online via Qualtrics. These materials were first devised in English and translated into Japanese. Then, the back-translation procedure (Brislin, 1970) was applied. Modifications were made if necessary.

Participants' Implicit Theory of Their Strengths and Weaknesses

The participants answered a survey that was similar to the one used in Study 1. This study measured two variables: the number of strengths and weaknesses that the participants listed and the extent of implicit theory for each of their strengths and weaknesses. To measure their strengths and weaknesses as an athlete, the participants were provided with fifteen blank lines and freely listed their perceived strengths and weaknesses as a basketball player. In Study 2, to measure incremental theory of abilities they listed, they rated the extent to which they

believe that their strengths and weaknesses are malleable by answering the following question: "How much do you think the qualities of each performance you listed are changeable?" They answered with a Likert Scale ranging from 1 (1: not changeable at all) to 7 (extremely changeable). The same procedure was applied to measure entity theory (1: not fixed at all to 7: extremely fixed) with the question, "How much do you think the qualities of each performance you listed are innately fixed?" Then, the scores of incremental theory and entity theory for all the characteristics were averaged.

Analysis

The number of strengths and weaknesses were counted based on how many strengths and weaknesses the participants listed. For example, one participant listed contested layups and dribbling moments as their weaknesses and listed offensive rebounding, free throws, three-point shooting, and individual defence as their strengths. In this case, the number of weaknesses and strengths was two and four, respectively. Then, the difference score between their strengths and weaknesses was calculated by subtracting the number of weaknesses from that of their strengths. Also, the score of incremental theory for each weakness was 5 and 7, respectively, whereas that of entity theory was 3 and 1, respectively. In this case, the average score of incremental theory was 6, while that of entity theory was 2. The scores of incremental and entity theories in strengths were calculated in an identical way. Then, a *t*-test was conducted to examine whether the difference score of the number of strengths and weaknesses was culturally different and if the difference score was significantly different from zero with higher scores indicating self-enhancement whereas lower scores indicated self-improvement. Then, a 2-way mixed factorial ANOVA was conducted for implicit theory of strengths and weaknesses across cultures. We were also planning to conduct a mediation analysis to examine how implicit theory explains the

relationship between culture and the difference score of the numbers of strengths and weaknesses, which indicates if individuals have a self-enhancement or self-improvement tendency. However, the cultural difference in implicit theory was not large, so we did not proceed with this analysis.

Procedure

Upon signing up for the online survey, the participants were asked to answer a set of questionnaires in a quiet place where they could maintain focus on the task (e.g., at home). Once they agreed by signing the consent form, they listed their strengths and weaknesses as a basketball player and rated them in terms of the extent to which they believe their strengths and weaknesses are malleable and fixed. At the end of the session, they answered questions assessing their demographic information and were directed to the debriefing section, where they were informed of the purpose of the study.

Results

The Difference score of the Number of Strengths vs. Weaknesses

To investigate the cultural variations in the difference score of strengths and weaknesses, the number of weaknesses that the participants listed was subtracted from the number of strengths listed. The results indicated that the scores of the Canadians ($M = 1.42$, $SD = 1.98$) were higher than the scores of the Japanese ($M = 0.56$, $SD = 2.03$), $t(145) = 2.56$, $p < .05$, $d = 0.43$ (Figure 3). Also, the difference score in both cultures was significantly different from zero for the Canadians, $t(64) = 5.75$, $p < .001$, $d = 0.71$ and for the Japanese, $t(81) = 2.51$, $p < .05$, $d = 0.28$. These results showed that the Canadians showed a higher self-enhancement tendency than the Japanese.

Implicit Theory in Strengths and Weaknesses

Next, cultural variations in implicit theory in strengths and weaknesses were analyzed. As our main scope was to investigate whether the degree of entity theory in strengths and weaknesses varies across cultures, a 2 (characteristics: strengths vs. weaknesses) x 2 (implicit theory: incremental theory vs. entity theory) mixed factorial ANOVA was conducted within each culture. Regarding the Canadians, the main effect of implicit theory was significant, F (1, 63) = 157.01, $p < .001$, $\eta_p^2 = .71$. Incremental theory ($M = 5.56$, $SD = 0.96$) was higher than entity theory ($M = 3.30$, $SD = 1.19$). Also, there was a significant main effect of characteristics, F (1, 63) = 4.77, $p < .05$, $\eta_p^2 = .07$. Overall, the scores of implicit theories (both incremental theory and entity theory) in strengths ($M = 4.66$, $SD = 0.90$) were higher than weaknesses ($M = 4.49$, $SD = 0.80$). Lastly, the interaction effect of characteristics and implicit theory was significant, F (1, 63) = 7.07, $p < .05$, $\eta_p^2 = .10$. The results of subsequent t-tests showed that incremental theory in strengths ($M = 5.80$, $SD = 1.10$) was higher than entity theory in strengths ($M = 3.52$, $SD = 1.56$), $t(63) = 9.11$, $p < .001$, $d = 1.13$. Similarily, incremental theory in weaknesses ($M = 5.94$, $SD = 1.12$) was higher than entity theory in weaknesses ($M = 3.04$, $SD = 1.34$), $t(63) = 12.40$, $p < .001$, $d = 1.55$. These results showed that Canadians dominantly have incremental theory over entity theory both in strengths and weaknesses. Moreover, entity theory in strengths ($M = 3.56$, $SD = 1.54$) was higher than entity theory in weaknesses ($M = 3.04$, $SD = 1.34$), $t(63) = 3.21$, $p < .01$, $d = 0.41$ (Figure 4).

Regarding the Japanese athletes, these results showed that there is only a significant main effect of implicit theory, F (1, 81) = 83.87, $p < .001$, $\eta_p^2 = .51$. Incremental theory ($M = 5.36$, $SD = 1.32$) was higher than entity theory ($M = 3.12$, $SD = 1.51$). Similar to the Canadian participants, the Japanese held incremental theory over entity theory both in their strengths and

weaknesses. On the other hand, there was no significant main effect of characteristics, F (1, 81) = .22, p = .64, η_p^2 = .00, or interaction effect between implicit theory and characteristics, F (1, 81) = 2.20, p = .14, η_p^2 = .03 (Figure 5). These results indicate that Japanese athletes overall have incremental theory in their strengths and weaknesses.

The results demonstrate that regardless of culture, athletes have incremental theory over entity theory. However, cultural differences emerged in the degree of entity theory. The Canadians showed higher entity theory in strengths than in weaknesses, whereas the Japanese did not show significant differences in degree of entity theory.

Discussion

By collecting data from basketball players, Study 2 continued to demonstrate cultural differences between athletes from two distinct cultural groups. Firstly, basketball players in both cultures listed their strengths more than their weaknesses. However, this tendency was amplified more in the Canadians than the Japanese. This result indicates that Canadian basketball players assess themselves in favourable ways, which is a characteristic of a self-enhancement tendency. In contrast, this self-enhancement tendency was attenuated in the Japanese athletes, which showed that the Japanese assessed themselves more in a balanced way compared to Canadians. Nevertheless, the Japanese basketball players listed their strengths more than their weaknesses, which is inconsistent with the results of Study 1. Basketball is played by a relatively small number of players (5 vs. 5) compared with soccer (11 vs. 11). With such a limited number of players in basketball, individual performance may be highlighted, and basketball players may need to believe that they are highly competent to play basketball. This difference in the number of athletes required to play the sport may have caused the inconsistent results in Study 1 and 2.

Yet, the difference score of their strengths compared with weaknesses was weaker in the Japanese than the Canadians, which implies that the effect of culture is still robust.

Moreover, cultural variations emerged in terms of the degree of entity theory between strengths and weaknesses. The Canadians showed higher entity theory in their strengths than their weaknesses, whereas the Japanese did not show a significant difference between strengths and weaknesses in entity theory. These results corroborate the assertions of previous studies, which posited that North Americans' positive self-view is underlined by the belief that their strengths are fixed, stable, and unchangeable, whereas East Asians hold incremental theory in their abilities to accomplish their social roles (Dweck et al., 1995; Heine, Kitayama, Lehman, Takata, et al., 2001).

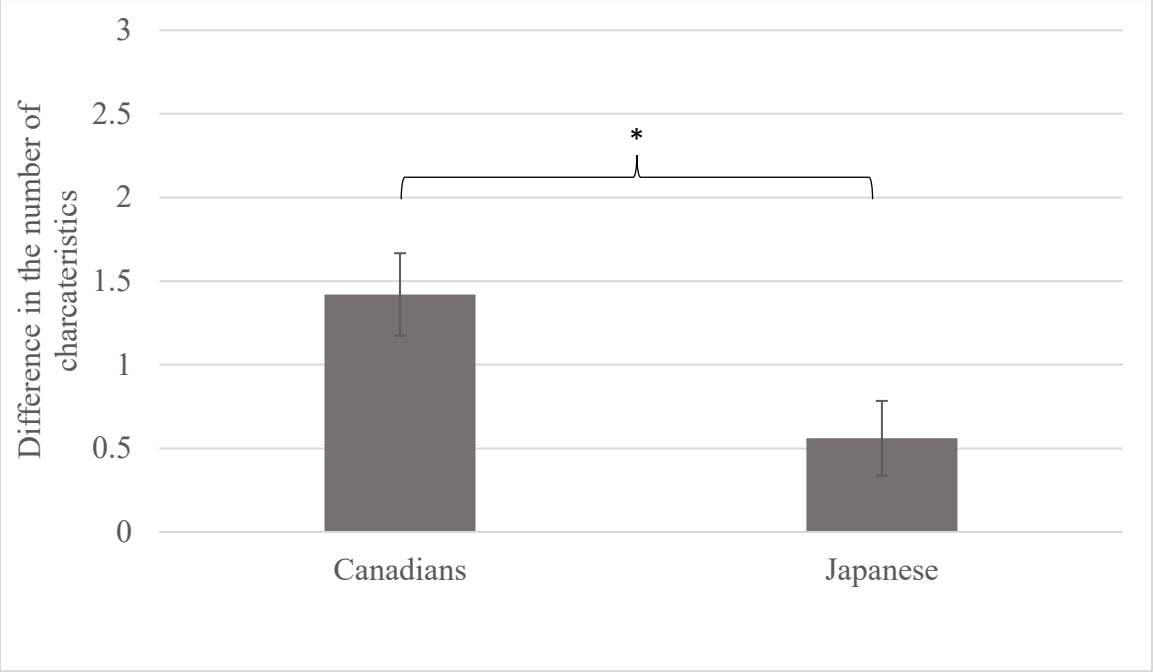
Regarding the degree of incremental theory across cultures, both Canadian and Japanese basketball players think that both their strengths and weaknesses are equally malleable. This indicates that athletes universally hold high incremental theory in their strengths and weaknesses to show high performance. This result is different from the assertation of the previous literature, which posits that North Americans are likely to have entity theory, whereas East Asians tend to have incremental theory (Dweck et al., 1995; Heine, Kitayama, Lehman, Takata, et al., 2001). Competitive sports have their own norms such as tirelessness, persistence, and hard work, all of which are characteristics of incremental theory. Indeed, athletes are assumed to practice under the belief that they can increase the quality of their ability. Thus, the characteristics of the target population (e.g., norms in sports) may be worth considering in future research on implicit theory.

Even though the degree of entity theory in strengths and weaknesses was culturally different, this difference may not be sufficient to explain the cultural variation in motivation as

this difference was not so robust nor large. The next chapter investigated how self-construal explains the cultural variations in motivation.

Figure 3.

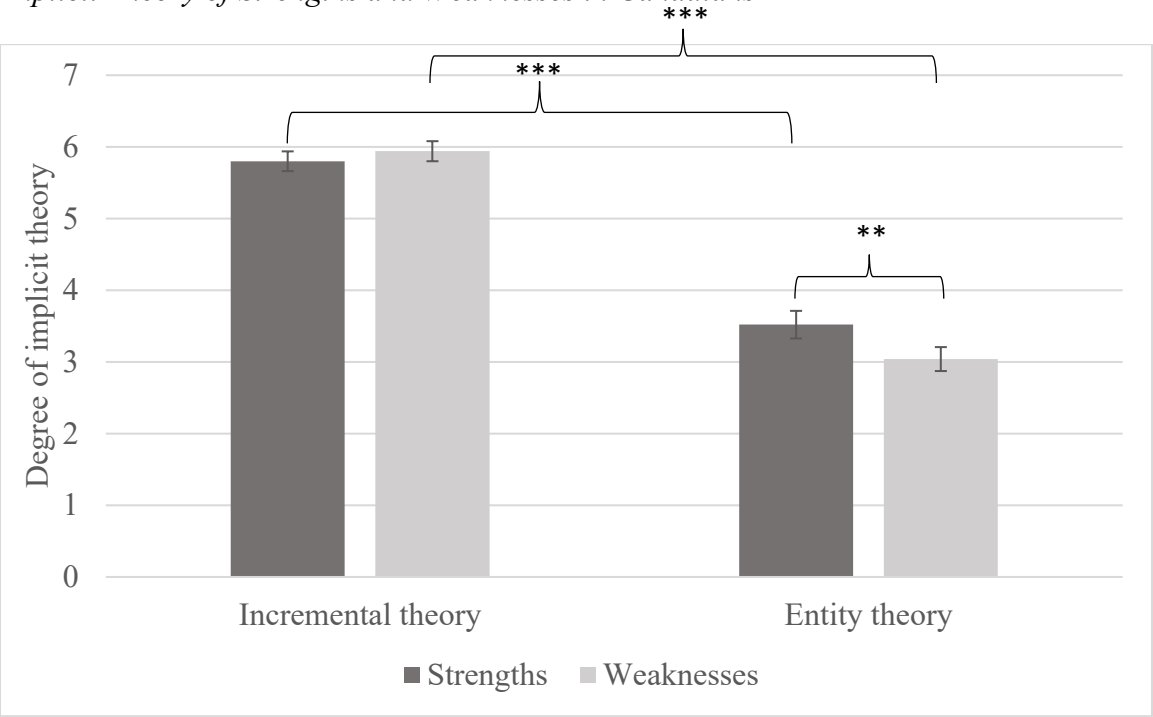
Cultural Variations in the Difference in the Number of Strengths vs. Weaknesses



Note. * $p < .05$.

Figure 4.

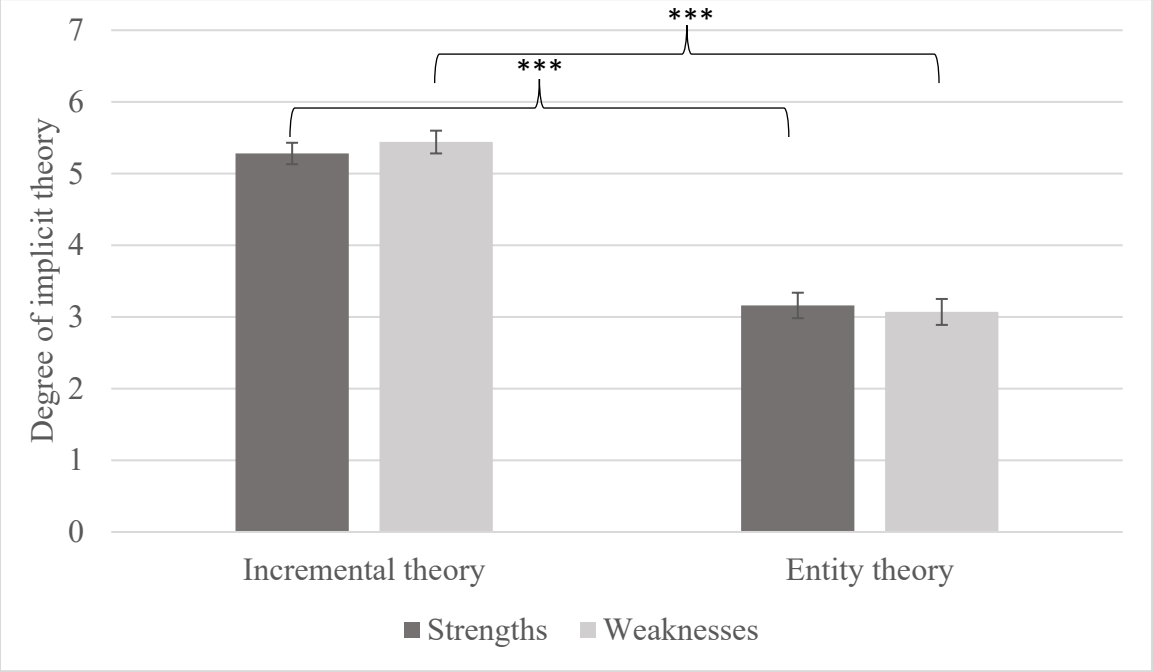
Implicit Theory of Strengths and Weaknesses in Canadians



Note. ** < .01, *** $p < .001$.

Figure 5.

Implicit Theory of Strengths and Weaknesses in Japanese



Note. *** $p < .001$.

CHAPTER 5

Cultural Variations in Self-enhancement and Self-improvement in Specific Situations and Another Explanatory Factor of the Cultural Variation

The purpose of Study 3 is to replicate the findings of Study 1 and 2, and further scrutinize how athletes attend to their perceived strengths and weaknesses across situations (i.e., practices vs. games). Also, Study 3 attempted to confirm the generalizability of the findings from Study 1 and 2 to athletes from a different team and open-skills sport, rugby. In addition to the above investigations, Study 3 measured the participants' self-construals (independence vs. interdependence) to explore if the culturally dominant self-construal shared by each cultural group could be an explanatory factor in understanding the cultural variations in their motivation.

Study 3 differentiated the situation into practices and games. In East Asia, effort is rewarded in many situations, whereas there are many situations where innate abilities and aptitudes are believed to be evaluated in North America (Heine, Kitayama, Lehman, Takata et al., 2001). As such, processes may be emphasized in Japan, while outcomes may be highlighted in Canada. In sports settings, processes are emphasized at practice, whereas importance is more geared towards outcomes at games. Suppose this is the case. In study 1, Japanese may have automatically assumed practice situations while Canadians may have imagined game situations when they rated their attention to their strengths and weaknesses. To confirm this speculation, Study 3 differentiated the situations.

Specifically, regarding game situations, Takata (2003) revealed that even Japanese show a self-enhancement tendency in competitive contexts. Thus, following the logic of Takata (2003), athletes in both cultures were hypothesized to self-enhance at games—one of the most competitive moments when they play sports—by paying more attention to their strengths than their weaknesses. Thus, we did not expect strong cultural variations in the attention that athletes pay to their strengths and weaknesses during games.

In contrast, practices were expected to be universally seen as opportunities to improve one's skills. As such, we hypothesized that during practices, athletes in both cultures similarly pay attention to their strengths and weaknesses in a balanced way to enhance their strengths while improving their weaknesses to show high performance at games.

These hypotheses seemingly differ from the results of Study 1. However, as aforementioned, in Study 1, the Japanese and Canadians may have automatically imagined different situations. When the participants in Study 1 rated their attention to their strengths and weaknesses, the Japanese might have imagined practice situations, where they have more chances to improve their skills than games due to their self-improvement motivation. On the other hand, Canadians, who tend to have a self-enhancement motivation, may have imagined game situations, which are more important to show their strengths compared with practices.

Next, we also investigated whether and how, if any, athletes differentiate the amount of attention allocated to their strengths between practices and games. Regarding attention to strengths, the Canadian self-enhancement tendency was hypothesized to be demonstrated by the higher amount of attention paid to their strengths during games than at practices. The Japanese were hypothesized to show the same patterns as the Canadians due to their self-enhancement tendency in competitive situations. Regarding attention to weaknesses, the Canadians were hypothesized to selectively decrease their attention to their weaknesses from practices to games due to their culturally dominant self-enhancement tendency. In contrast, the Japanese were hypothesized to maintain their attention to their weaknesses to confirm that they have improved their weaknesses, which is a characteristic of a self-improvement tendency. To explore this cultural variation, the scores of the attention that they paid at practices were subtracted from the

attention that they paid at games. By doing so, we analyzed how athletes in each culture change their attention allocation from practices to games.

Finally, we measured self-construals to explore whether the above cultural variation is explained by the athletes' culturally dominant self-construal. Previous findings have shown that cultural variations in motivation stem from culturally dominant self-construals: independence vs. interdependence (Heine & Hamamura, 2007; Heine & Renshaw, 2002). The North American self-enhancement tendency is derived from their independent self-construal, while the East Asian self-improvement tendency arises from their interdependent self-construal. In the current study, it was hypothesized that the difference in attention to weaknesses between practices and games would be explained by the athletes' culturally dominant self-construal.

Methods

Participants

A total of 155 (Canadians = 66, *M*age = 20.32, *SD* = 1.89; Japanese = 89, *M*age = 20.16, *SD* = 1.24) competitive rugby players participated in this study. Two male teams (n = 44) and three female teams (n = 45) participated in this study in Japan (Fukuoka University, Nippon Sport Science University, Outemon Gakuin University, Rissho University, Waseda University), while three male teams (n = 27) and three female teams (n = 39) participated in this study in Canada (Dalhousie University, McMaster University, University of Alberta, University of British Columbia, University of Ottawa, University of Victoria, University of Waterloo). To equalize the competitive level across cultures as much as possible, the same criteria as Study 1 were utilized. We excluded 7 participants due to incomplete submissions and disagreements with sharing data at the end of the survey. Subsequently, we targeted 155 participants for the final

analysis. The expected sample size was calculated by using G power, and a total sample size of 155 participants was confirmed to be sufficient (f = .25, α = .05, 1-β = .80), which justified the sample size of the current study. By completing the study, the participants received a CAD 10 Amazon gift card (JPY 1000 for Japanese participants) as an honorarium.

Materials

All the study materials were presented online via Qualtrics. These materials were first devised in English and translated into Japanese. Then, the back-translation procedure (Brislin, 1970) was applied. Modifications were made if necessary.

Participants' Subjective Perception of Their Strengths and Weaknesses

In the same manner as Study 1, this study measured two variables: the number of strengths and weaknesses that the participants listed and the attention they paid to the strengths and weaknesses that they listed. To measure their strengths and weaknesses as an athlete, the participants were provided with fifteen blank lines and freely listed their perceived strengths and weaknesses as a rugby player. In Study 3, instead of assessing their allocation strategy in general, we asked the participants to indicate their attention paid to their strengths and weaknesses during practices and games. Specifically, they were asked to assess to what extent they paid attention to each of their strengths and weaknesses with the following question: "How much do you pay attention to the performance you selected during practices?" with a Likert scale ranging from 0 (don't pay attention at all) to 10 (pay attention the most). We asked participants how they pay attention to their strengths and weaknesses during games in the same manner by replacing the word "practices" with "games." As participants could be sensitive to our hypotheses, the order of

attention at games and practices was counterbalanced regarding which situation participants rated first.

The Independence vs. Interdependence Scale

The participants also answered a self-construal questionnaire created by Kim et al. (2003). The questionnaire comprises independence and interdependence subscales with a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The independence subscale includes 13 items, such as "I enjoy being unique and different from others in many respects." The interdependence subscale consists of 10 items, such as "I am careful to maintain harmony in my group." Higher scores in each subscale indicate higher independence and interdependence, respectively. All scores of each subscale were averaged, and the independence and interdependence scores were calculated. Kim et al. (2003) showed that the questionnaire has high reliability (Cronbach's alpha = .79 for independence, Cronbach's alpha = .74 for interdependence). In the current study, the reliability of the independence subscale was in an acceptable range (Cronbach's alpha = .64 for Canadians, Cronbach's alpha = .69 for Japanese). Similarly, the reliability of the interdependence subscale for the Japanese was also in an acceptable range (Cronbach's alpha = .64), but the reliability of the interdependence subscale for the Canadians did not meet the reliability criteria (Cronbach's alpha = .48). Thus, we deleted items which had a low correlation with other items (items 7, 8, and 10). As a result, the Cronbach's alpha value increased to .55.

Analysis

The number of strengths and weaknesses were counted based on how many strengths and weaknesses the participants listed, and the difference score between strengths and weaknesses

was calculated in an identical way to the method used for Study 1 and 2. Then, a *t*-test was conducted to examine if the values were different across cultures and to investigate whether the difference score was significantly different from zero. Regarding the attention paid to strengths and weaknesses at practices and games, the attention scores were calculated in an identical way to the method used in Study 1 for each situation (practices and games). Then, a 3-way (culture vs. characteristics vs. situation) mixed factorial ANOVA was conducted to determine the attention paid to strengths and weaknesses at practices and games across cultures. Also, we examined how attention to strengths and weaknesses was different between practices and games in each culture. To explore this difference, the scores of the attention paid to strengths at practices were subtracted from the scores of the attention paid to strengths at games; positive scores indicate that attention is higher at games compared with attention at practices, whereas negative scores denote that attention is lower at games than attention at practices. This procedure was conducted to determine the attention paid to weaknesses as well. Lastly, a mediation analysis was conducted to analyze how self-construals can explain the relationship between culture and attention at practices and games.

Procedure

Upon signing up for the online survey, the participants were asked to answer a set of questionnaires in a quiet place where they could maintain focus on the task (e.g., at home). Once they agreed by signing the consent form, they listed their strengths and weaknesses as a rugby player and rated the extent to which they pay attention to each of their strengths and weaknesses at practices and games. Then, they answered the independence vs. interdependence questionnaire (Kim et al., 2003). At the end of the session, they answered questions assessing their

demographic information and were directed to the debriefing section, where they were informed of the purpose of the study.

Results

Descriptive Analysis

A descriptive analysis for self-construals was conducted. A *t*-test was also conducted to examine if each score was culturally different. Both independence and interdependence were significantly higher in Canada (independence: $M = 5.65$, $SD = 0.53$, interdependence: $M = 4.75$, $SD = 0.60$) than in Japan (independence: $M = 4.75$, $SD = 0.61$, interdependence: $M = 4.86$, $SD = 0.59$), $t = 9.59$, $p < .001$, $d = 0.58$ for independence, $t = 3.08$, $p < .01$, $d = 0.59$ for interdependence. However, the Canadians were more independent-oriented than the Japanese, $t = 4.88$, $p < .001$, $d = 0.77$. All analyses are shown in Table 1.

The Difference Score of the Number of Strengths vs. Weaknesses

To investigate the cultural variation in the difference score of strengths and weaknesses, the number of weaknesses that the participants listed was subtracted from the number of strengths listed. The results indicated that the scores of the Canadians ($M = 0.56$, $SD = 1.86$) were not significantly higher than the scores of the Japanese ($M = 0.20$, $SD = 1.86$), $t(153) = 1.18$, $p = .24$, $d = 0.19$ (Figure 6). However, the scores of the Canadians were significantly different from 0, $t(65) = 2.45$, $p < .05$, $d = 0.30$, while the scores of the Japanese were not significantly different from 0, $t(88) = 1.03$, $p = .31$, $d = 0.11$. These results showed that the Canadians showed a higher self-enhancement tendency than the Japanese. Overall, these results replicated the results of Study 1 and 2.

Attention to Strengths and Weaknesses at Practices and Games

The order of attention at games and at games was randomized. Thus, the effect of order was included to examine cultural variations in the allocation of attention to strengths and weaknesses across situations. A 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) x 2 (situation: practices vs. games) x 2 (order: attention at practices first vs. attention at games first) mixed factorial ANOVA was conducted. The main effect and interaction effects of the order of attention were not significant. Thus, a 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) x 2 (situation: practices vs. games) mixed factorial ANOVA was conducted. The main effect of characteristics was significant, F (1, 153) = 7.96, p < .01, η_p^2 = .05. The results showed that attention to strengths (M = 6.85, SD = 1.92) was higher than attention to weaknesses (M = 6.35, SD = 1.38). The interaction effect between situations and characteristics was also significant, F (1, 153) = 39.02, p < .001, η_p^2 = .20. Thus, planned t-tests were conducted. Firstly, the attention paid to strengths at practices (M = 6.56, SD = 2.03) was lower than the attention paid to strengths at games (M = 7.13, SD = 2.17), t(154) = 4.21, p < .001, d = 0.34. In contrast, the attention paid to weaknesses at practices (M = 6.58, SD = 1.87) was higher than the attention paid to weaknesses at games (M = 6.13, SD = 1.97), t(154) = 3.29, p < .001, d = 0.26. In addition, the attention paid to weaknesses at games (M = 6.13, SD = 1.97) was lower than the attention paid to strengths at games (M = 7.13, SD = 2.17), t(154) = 4.83, p < .001, d = 0.39. Lastly, there was a significant effect between culture, characteristics, and situation, F (1, 153) = 7.03, p < .01, η_p^2 = .04. Thus, a 2-way ANOVA (culture x characteristics) was conducted for each situation.

Game Settings

A 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) mixed ANOVA was conducted on the allocation of attention to strengths and weaknesses at

games. The results demonstrated that the main effect of culture was marginally significant, F (1, 153) = 3.77, p = .05, η_p^2 = .02. The Japanese paid more attention to their strengths and weaknesses altogether (M = 6.84, SD = 1.75) than Canadians (M = 6.34, SD = 1.38). The main effect of characteristics was also significant, F (1, 153) = 27.94, p < .001, η_p^2 = .15. The results showed that attention to strengths (M = 7.13, SD = 1.97) was higher than attention to weaknesses (M = 6.13, SD = 1.97). The interaction effect was also significant, F (1, 153) = 7.47, p <. 01, η_p^2 = .05. Thus, planned t-tests were conducted (Figure 7). Firstly, the Canadians showed greater attention to their strengths (M = 7.16, SD = 1.96) than their weaknesses (M = 5.51, SD = 1.83), t(65) = 5.15, p < .001, d = 0.63. The Japanese showed the same pattern as their Canadian counterparts; the Japanese paid more attention to their strengths (M = 7.11, SD = 2.32) than their weaknesses (M = 6.58, SD = 1.96), t(88) = 2.00, p < .05, d = 0.21. These results overall supported our hypotheses regarding a universal self-enhancement tendency at games. More importantly, the Canadians showed less attention to their weaknesses (M = 5.51, SD = 1.83) compared to the Japanese (M = 6.58, SD = 1.96), t(153) = 3.00, p < .01, d = 0.56, indicating that cultural variations lingered in the amount of attention paid to their weaknesses at games: even in game settings, the Japanese paid attention to their weaknesses more than the Canadians.

Practice Settings

A 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) mixed factorial ANOVA was conducted on the allocation of attention to strengths and weaknesses at practices (Figure 8). The results indicated that there was no significance in the main effects of culture, F (1, 153) = 1.92, p = .17, η_p^2 = .01, characteristics, F (1, 153) = 0.00, p = .99, η_p^2 = .00, and the interaction effect between them, F (1, 153) = 0.22, p = .22, η_p^2 = .00. The results of planned t-tests also did not show significance within each culture (Canadians: t(65)

= .32, p = .75, d = 0.04; Japanese: $t(88)$ = .34, p = .73, d = 0.04) and across cultures (strengths: $t(153)$ = 0.62, p = .27, d = 0.10; weaknesses: $t(153)$ = 1.24, p = .11, d = 0.23). Consistent with our expectations, these results indicate that there are no cultural variations in their attention to strengths and weaknesses at practices.

Changes in Motivation between Practices and Games

As the results demonstrated cultural variations in attention at games, assuming that the cultural variations in motivation existed in addition to the clearly observable cultural similarities, we further scrutinized how attention to strengths and weaknesses changes between practices and games. To analyze this difference, the scores of the attention paid at practices were subtracted from their counterparts at games. That is, positive scores indicate that attention is higher at games compared with attention at practices, whereas negative scores indicate that attention is lower at games than their counterparts at practices. Then, a 2 (culture: Canadians vs. Japanese) x 2 (characteristics: strengths vs. weaknesses) ANOVA was conducted (Figure 9). The results showed that the main effect of culture was not significant, F (1, 153) = 0.78, p = .38, η_p^2 = .01, whereas the main effect of characteristics was significant, F (1, 153) = 39.00, p < .001, η_p^2 = .20. The strength scores (M = 0.57, SD = 1.68) were higher than the weakness scores (M = -0.45, SD = 1.70). Lastly, the interaction effect of culture and characteristics was also significant, F (1, 153) = 7.04, p < .01, η_p^2 = .04. The results of subsequent planned t-tests showed that the Canadians showed lower scores on their attention to weaknesses (M = -0.82, SD = 1.84) than their scores on their attention to strengths (M = 0.73, SD = 1.74), $t(65)$ = 5.30, p <. 001, d = 0.65. The Japanese also demonstrated the same pattern, but the difference in scores was attenuated: the scores of their attention to their weaknesses (M = -0.17, SD = 1.55) were lower than those of their strengths (M = 0.45, SD = 1.64), $t(88)$ = 3.02, p < .01, d = 0.32. In addition to the similarity,

there were significant cultural differences: the Canadians showed significantly lower scores (M = -0.82, SD = 1.84) when it came to attending to their weaknesses than their Japanese counterparts (M = -0.17, SD = 1.55), $t(153) = 2.74$, $p < .01$, $d = 0.47$.

Furthermore, to examine whether each score is significantly different from zero, meaning there is no significant change between attention to strengths and weaknesses in games vs. practices, t-tests were conducted. Regarding strengths, both the scores of the Canadians, $t(65) = 3.63$, $p < .01$, $d = 0.42$, and Japanese, $t(88) = 2.59$, $p < .05$, $d = 0.28$, were significantly different from zero. On the other hand, regarding weaknesses, the results demonstrated that the scores of the Canadians were significantly different from zero, $t(65) = 3.60$, $p < .001$, $d = 0.45$, while the scores of the Japanese were not significantly different from zero, $t(88) = 1.06$, $p = .29$, $d = 0.11$. These results indicate that the Canadians significantly decreased the level of attention paid to their weaknesses from practices to games, whereas the Japanese maintained their level of attention to their weaknesses between practices and games, suggesting that their motivations are constant and fit with their self-improvement tendency.

Mediation Analysis

As cultural differences were observed in terms of the attention paid to weaknesses between practices and games, a mediation analysis was conducted to examine how the culturally dominant self-construal plays an important role in mediating the relationship between culture and the difference in attention paid to weaknesses between practices and games (Figure 10). The athletes' culturally dominant self-construal was calculated by subtracting their interdependence scores from their independence scores. That is, positive scores signify a more independent-oriented self-construal, while negative scores signify a more interdependent-oriented self-

construal. To examine the mediation, PROCESS Macro was utilized (Model 4). The mediation analyses were conducted with 5000 bootstrapping procedures (Preacher & Hayes, 2008).

The results showed that culture significantly predicted the dominant self-construal (i.e., the Canadians showed a stronger independent-orientated self-construal than the Japanese), $b = .74$, $p < .001$. Then, the dominant self-construal negatively predicted the difference in attention paid to weaknesses between practices and games (i.e., the more independent-oriented the players were, the less attention they paid to their weaknesses at games compared to practices), $b = -.28$, $p < .001$. The total effect and indirect effect were also significant (total effect: $b = -.38$, $p < .001$; indirect effect: $b = -.21$, $p < .01$), while the direct effect was not significant. This demonstrates that the dominant self-construal mediated the relationship between culture and the differences in attention paid to weaknesses between practices and games.

Discussion

By collecting data from athletes that partake in a different sport, rugby, Study 3 continued to demonstrate cultural differences in motivation between athletes from two distinct cultural groups. In alignment with our hypothesis, the Canadian rugby players listed their strengths more than their weaknesses, while the Japanese rugby players listed their strengths and weaknesses in a balanced way. Thus, the results of Study 1 were replicated. However, the cultural differences were attenuated compared with the results of Study 1. Similar to the difference in Study 1 and 2 results, team size may have affected this difference across studies. Rugby requires 15 players per team while soccer and basketball need 11 and 5 players per team, respectively. This difference in the total number of players may make the rugby players emphasize team roles and responsibilities more than their individual performance, and the players may strive to fulfill their given roles, which is aligned with an interdependent self-construal, which may eventually lead to

a self-improvement tendency. This assertion cannot go beyond speculation, and thus, future research should explore how sport types affect athletes' motivation types.

Furthermore, in alignment with our hypotheses, both the Canadian and Japanese rugby players allocated an equal amount of attention to their strengths and weaknesses at practices. This indicated that athletes universally perceive that practices are opportunities to objectively assess and improve their performance. Additionally, rugby players in both cultures paid more attention to their strengths than weaknesses at games, which indicates that rugby players similarly focus on their strengths in a competitive setting to succeed in game settings. Most importantly, cultural variations emerged regarding the change in attention to weaknesses between practices and games. The Canadians showed higher attention to weaknesses at practices than games, whereas the Japanese maintained their attention to their weaknesses, and this cultural variation was mediated by the culturally dominant self-construal: independence and interdependence. These results imply that the different psychological processes that the Canadian and Japanese athletes experienced during games can be explained by their culturally dominant self-construals.

Table 1.

Descriptive Analysis for Self-construal

	Canadians		Japanese				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Independence	5.65	0.53	4.75	0.61	9.59	< .001	0.58
Interdependence	5.16	0.60	4.86	0.59	3.08	.002	0.59
Independence-Interdependence	0.49	0.82	-0.11	0.72	4.88	< .001	0.77

Figure 6.

Cultural Variations in the Difference in the Number of Strengths vs. Weaknesses

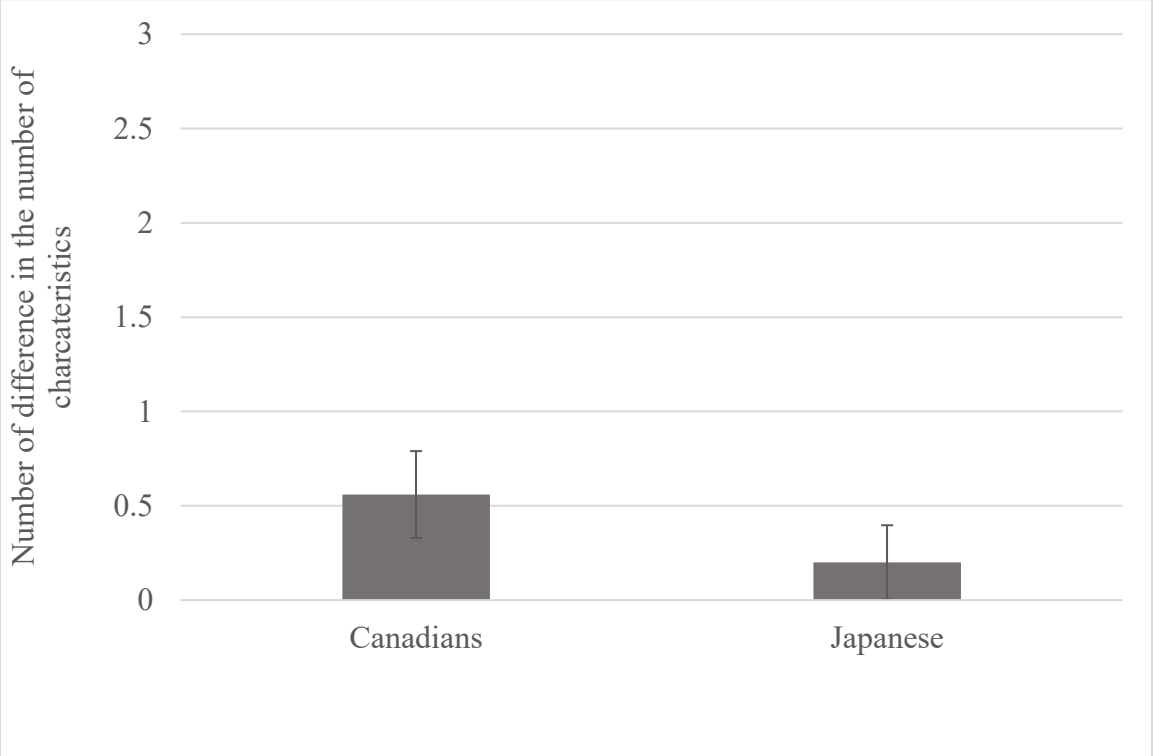
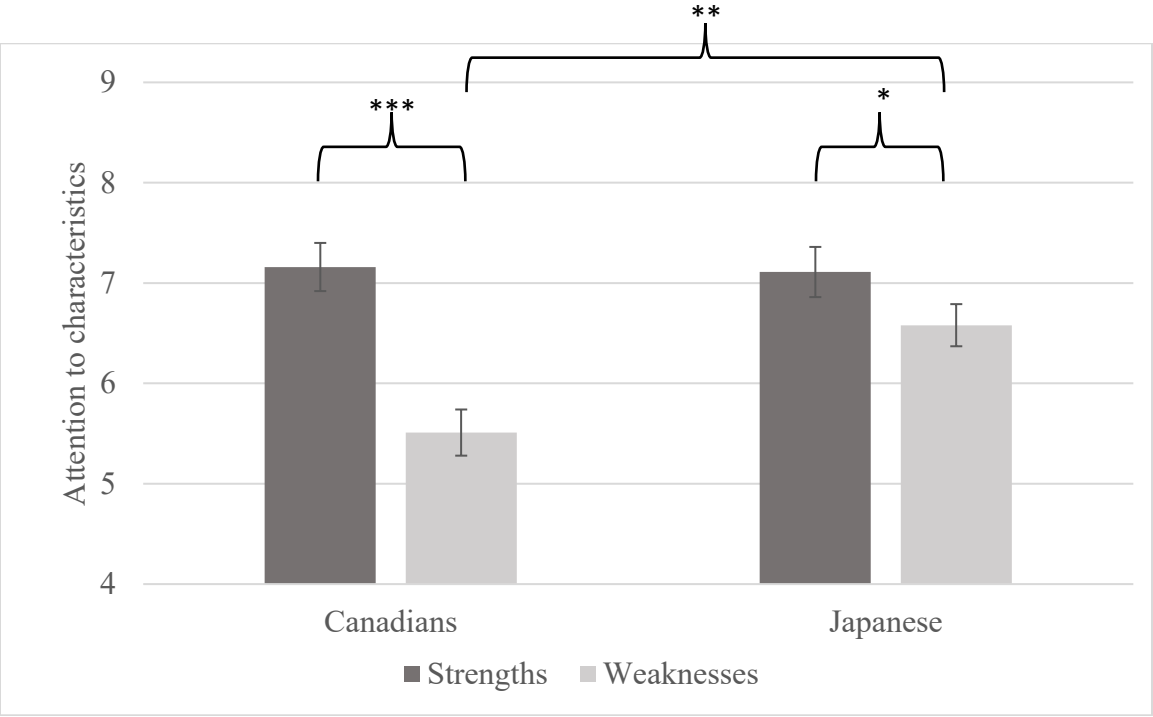


Figure 7.

Attention to Strengths and Weaknesses of Canadians and Japanese at Games



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

Figure 8.

Attention to Strengths and Weaknesses of Canadians and Japanese at Practices

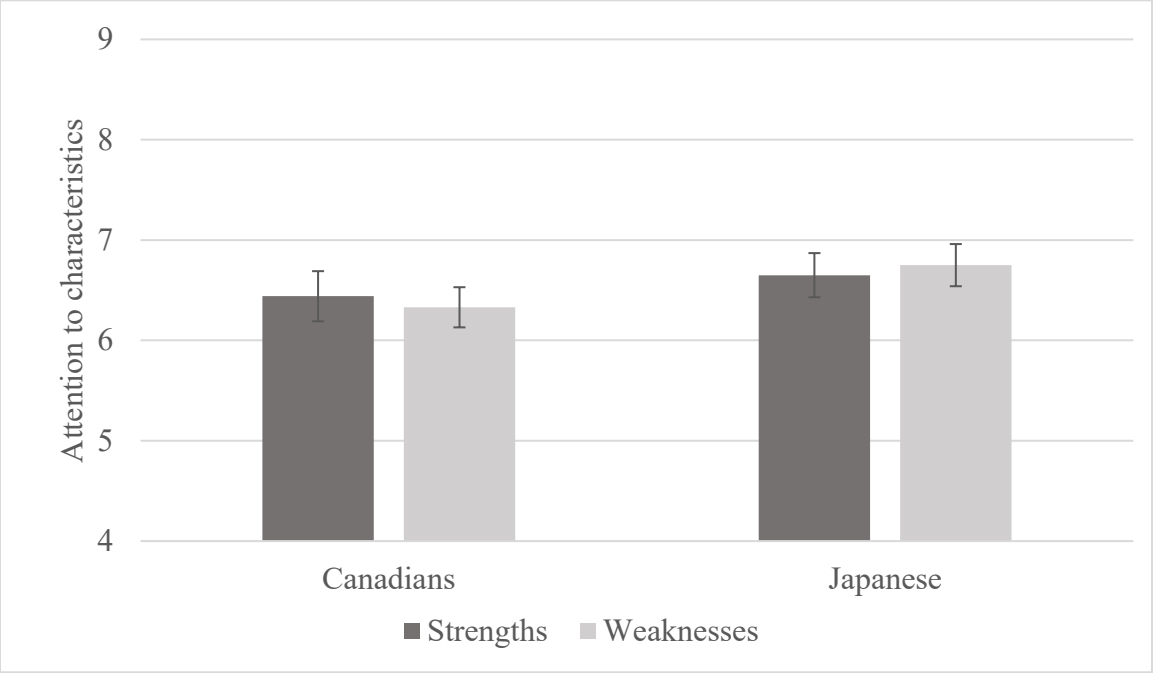
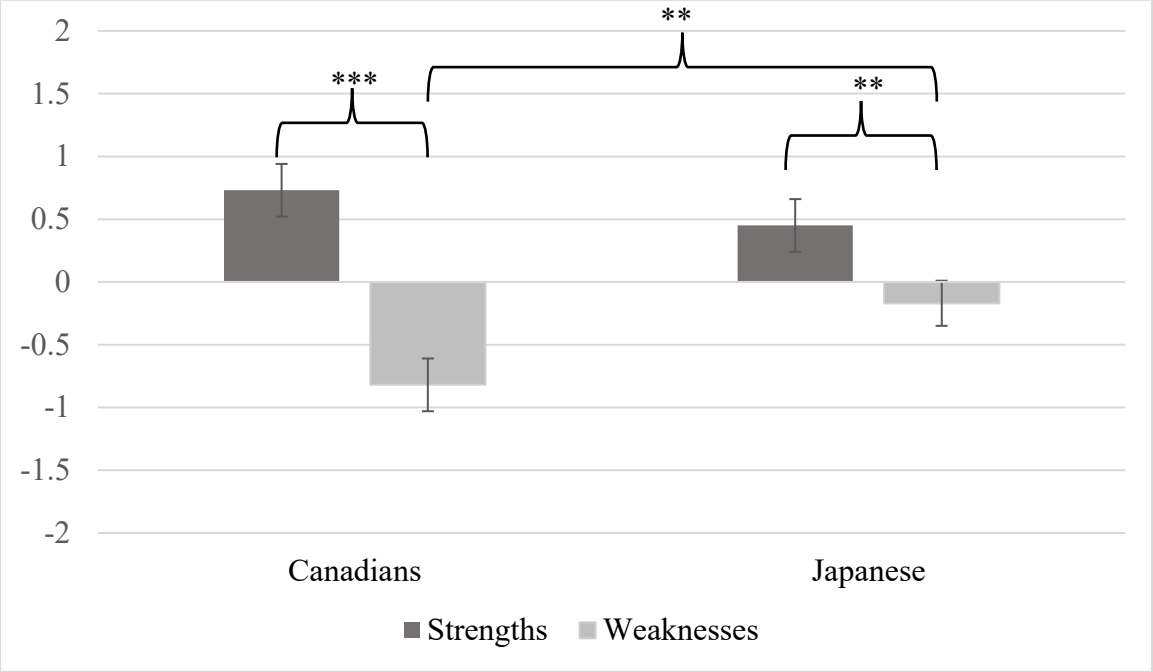


Figure 9.

Difference in Attention between Practices and Games

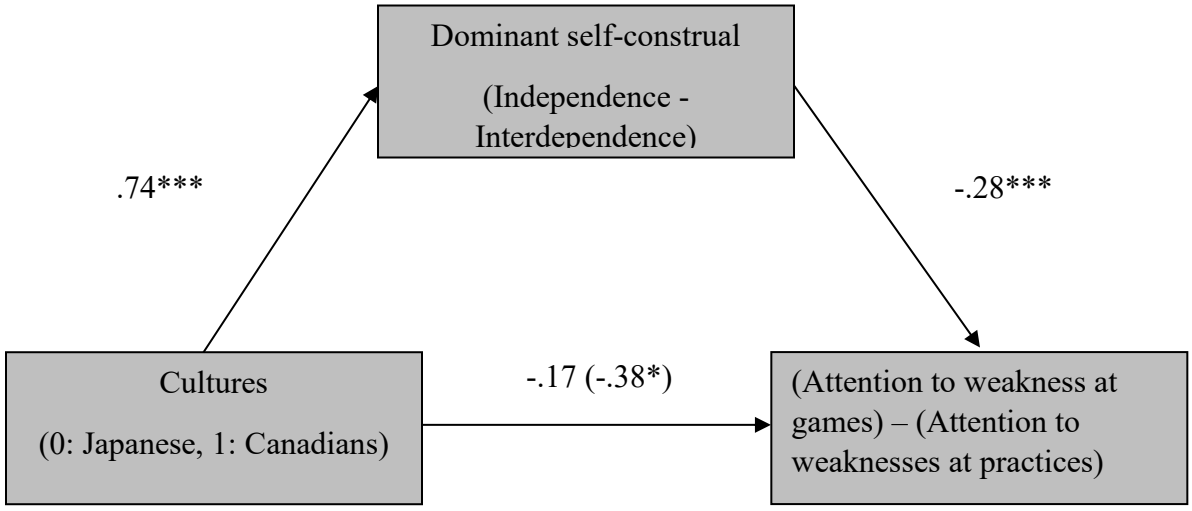


Note. The x-axis indicates two cultural groups (Canadians vs. Japanese), while the y-axis shows the difference in attention to weaknesses between practices and games. Positive values indicate that the participants increased their attention to the characteristics from practices to games, whereas negative values mean that the participants decreased their attention to the characteristics from practices to games.

** $p < .01$, *** $p < .001$.

Figure 10.

Mediation Analysis for Culture, Dominant Self-construal, and Difference in Attention to Weaknesses between Practices and Games.



Note. This figure explains the results of a mediation analysis between culture, dominant self-construal, and the difference in attention to weaknesses between games and practices. Standardized regression coefficients are reported. The number inside the brackets is the total effect. The number outside the brackets is the direct effect. The indirect effect was significant (b = -.21, $p < .01$).

$^{*}p < .05$, $^{***}p < .001$.

CHAPTER 6

General Discussion

Athletes across cultures are required to maintain motivation to achieve high performance, as high motivation lets athletes commit to their sports (Pulido et al., 2018). However, we propose that the type of motivation required to achieve high performance may differ based on the findings in cultural psychology. In the current studies, we investigated cultural variations in motivation and potential explanatory factors for the relationship between culture and motivation. This section details 1) cultural similarities between Canadians and Japanese athletes, 2) cultural variations between Canadians and Japanese athletes, 3) potential mediators of self-construal and implicit theory, 4) implications, and 5) limitations.

Psychological Similarities between Canadians and Japanese

The current studies revealed psychological similarities between Canadian and Japanese athletes. The results showing the motivational similarities in Study 3 imply that in sports, practices necessitate athletes to allocate equal attention to their strengths and weaknesses while they pay more attention to their strengths than weaknesses at games. These results are surprising as cross-cultural research has consistently revealed self-enhancement in Canadians and self-improvement in Japanese (Heine & Hamamura, 2007; S. J. Heine & K. Renshaw, 2002; Kitayama et al., 1997). These results may be attributed to the characteristics of sports. At practices, athletes may be expected to equally try to improve their weaknesses while enhancing their strengths to ensure they have achieved high performance. On the other hand, games universally require athletes to pay more attention to their strengths, which suggests that athletes across cultures need to recall their strengths so that they are ready to play well. Scholars in cultural psychology call for more studies to investigate when and how people use self-enhancement and self-improvement (Cai et al., 2010). The results of the current studies offer an

answer to these questions by showing evidence of a self-improvement tendency at practices and a self-enhancement tendency at games across cultures.

Also, Study 2 revealed that athletes across cultures use a high amount of incremental theory when assessing their strengths and weaknesses, which indicates that athletes strive to show high performance by holding high incremental theory when perceiving their skills. This is also inconsistent with the findings of previous research (Heine, Kitayama, Lehman, Takata, et al., 2001). Taking the results of Study 2 and Study 3 together, players in both cultures may pay attention to their strengths and weaknesses to the same degree by believing that both of these characteristics are malleable and controllable to show high performance at games, while they pay attention to their strengths in order to gain confidence and thus prepare themselves for upcoming games, which is a critical factor for high performance in sports settings (Lochbaum & Sherburn et al., 2022; Lochbaum & Stoner et al., 2022).

Cultural Variations in Motivation between Canadians and Japanese

Despite some cultural similarities, the present studies also revealed some cultural differences. The current studies demonstrated that, when asked to list their characteristics, Canadian soccer, rugby, and basketball players consistently retrieved their strengths more than their weaknesses and thus showed a self-enhancement tendency. In contrast, the Japanese soccer, rugby, and basketball players attenuated this tendency, showing a balanced view that represents less of a self-enhancement tendency. Also, Study 1 showed that the Canadian soccer players paid more attention to their strengths than weaknesses, while the Japanese soccer players paid attention to their strengths and weaknesses in a balanced way. Furthermore, in Study 3, the Canadian athletes selectively ignored their weaknesses at games compared to practices, whereas

the Japanese athletes maintained their attention to their weaknesses at games and practices. These results corroborated with the previous findings on motivation where scholars measured one's attention bias by using the degree of the better-than-average effect (Hamamura et al., 2007) and self-serving bias (Kashima & Triandis, 1986; Mezulis et al., 2004), and we further applied this line of research by using two measures that we devised based on different methodologies from previous research.

Implicit Theory Supporting Cultural Variations in Motivation

We also found cultural variations in the amount of entity theory between the Canadians and Japanese. In particular, the Canadians exhibited an inclination towards entity theory when assessing their strengths compared with their weaknesses. On the other hand, the Japanese participants displayed low entity theory levels not only in relation to their strengths but also their weaknesses. This result is aligned with previous research (Heine, Kitayama, Lehman, Takata, et al., 2001). However, the differences were not so large, and the athletes in both cultures predominantly had incremental theory. As aforementioned in the discussion of Study 2, sports may also have their own culture of hard work, effort, and persistence. We collected data from competitive university athletes who have survived and thrived in such a sports culture. This effect of sports culture may override the effect of ethnic culture, which attenuates the degree of entity theory in North American cultures. To test this assertation, it is suggested to compare athletes and non-athletes across cultures.

Self-construal Supporting Cultural Variations in Motivation

Another possible variable that could explain the cross-cultural differences in motivation is cross-cultural differences in self-construals. Some compelling evidence for this argument was

revealed in Study 3. In this study, the Canadians were more independent-oriented than the Japanese, which is consistent with previous research (Lee et al., 2023; Markus & Kitayama, 1991). Moreover, the difference in attention to their weaknesses between practices and games was mediated by their self-construal (independence vs. interdependence). In independent cultures, individuals emphasize their autonomy and self-reliance. They believe that personal success is derived from capitalizing on their strengths and positive attributes rather than dwelling on their weaknesses. They acknowledge that individuals are mentally separate, meaning that focusing on their positive aspects allows them to maximize their potential within their own individual pursuits and goals. This emphasis on self-enhancement and leveraging strengths aligns with the independent self-construal prevalent in North American cultures.

In contrast, Japanese culture is characterized by a strong emphasis on interdependence, which leads Japanese athletes to pay attention to their weaknesses during practice and games. In interdependent cultures, individuals define themselves based on their interpersonal connections with others. Motivated by this self-construal, people culturally share a belief that one must objectively assess one's performance in order to fulfill their social roles. In sports contexts, particularly in team sports, athletes from interdependent cultures may exert great effort to fulfill their roles within their teams. By taking on these responsibilities within the teams, they may perceive themselves as performing well.

Implications

Our findings that cultural variations in motivation in athletes exist yield several implications. Specifically, this line of research encompasses significant implications for a) sports psychologists and b) coaches.

Implications in Academic Fields

To the best of the author's knowledge, these results are the first quantitative evidence of cultural differences in athletes' self-view. Sports psychologists typically assume that athletes' psychological processes are generally similar, and therefore, researchers in sports psychology strive to devise a universally applicable training framework. However, the importance of cultural awareness (i.e., awareness of the cultural characteristics of both the clients and the self: Schinke & Moore, 2011) on athletes has been addressed by several scholars in sports psychology who emphasize the globalization of sports (Kamphoff et al., 2010; Ryba, 2017; Schinke et al., 2019; Schinke et al., 2012). Currently, professional team sports clubs are eager to obtain highly talented players from all over the world (Borges et al., 2022). This current international trend results in multicultural teams; thus, coaches must understand and respect the players' cultural backgrounds, as the motivation of players with different cultural backgrounds may systematically differ. In addition to motivation, cultural psychologists have revealed cultural variations in stress coping, cognition, and emotion (Cohen & Kitayama, 2020), all of which are related to performance enhancement and mental health maintenance. To further understand different cultural worldviews, future researchers are recommended to extend this line of cross-cultural research in sports settings.

Implications in Applied Fields

Our series of studies also offer significant implications in applied settings. Specifically, the current paper has the potential to provide coaches and players with effective intervention training schemes to ensure high performance during practices, where athletes effortfully improve their skills, and games, where they maximize their performance to compete with the opponent team. For example, in North American cultures, a well-established intervention scheme is the

strength-based approach, in which players are instructed to focus on their strengths to boost their confidence, increase their self-esteem, and eventually enhance their performance, and it has been heavily utilized by practitioners called Mental Performance Consultants (Ludlam et al., 2016; Wagstaff & Leach, 2015). The current studies imply that this intervention scheme may be underscored by the self-enhancement tendency and entity theory when perceiving one's strengths commonly accepted by North American cultures. By being recurrently exposed to the ideas of self-enhancement and entity theory in strengths, North American athletes may exhibit psychological readiness by selectively ignoring their weaknesses. In contrast, the results indicating a self-improvement tendency and high incremental theory in the Japanese athletes' responses suggest that, for East Asians, developing and applying an alternative intervention program may be more effective and further facilitate their performance. More specifically, Japanese athletes may feel psychologically ready to play a game by reflecting on the improvement in their weaknesses, as there was no difference in the attention to their weaknesses between practices and games. Overall, by demonstrating potential differences in basic psychological processes, notably motivation in sports settings, the current studies contribute to further advancing the discussion on culturally fit applications of particular training programs.

Limitations and Future Directions

Even though the current studies have important implications in academic and applied fields, the studies are not without limitations. Firstly, although we considered culturally shared self-construals and implicit theory as potential explanatory factors for the cultural variations in motivation, we did not examine the relationship between these factors. Nevertheless, Kitayama et al. (2009) proposed that a culturally shared self-construal is the superordinate concept relative to other culturally specific psychological processes and is referred to as a cultural mandate,

which is an ideal state that is sanctioned by a given culture. Should this assertion be accurate, North Americans in independent cultures may attempt to be self-reliant and pay attention to their stable strengths. On the other hand, East Asians in interdependent cultures may strive to fulfill their social roles, and thus do not employ entity theory when perceiving their abilities. Nevertheless, as Study 2 demonstrated, this cultural variation in entity theory is not likely to be related to motivation in athletes. Future research is recommended to measure self-construals and implicit theory in strengths and weaknesses across cultures to examine how these two variables are related across cultures.

Another important limitation of these studies is related to the participants. The current studies selectively collected data from soccer, rugby, and basketball players, which are three representatives of team and open-skills sports common in both Canada and Japan, and they successfully demonstrated substantial cultural variations in athletes' way of balancing self-enhancing vs. self-improvement motivations. However, as aforementioned, sports can be classified as team vs. individual sports or closed-skills vs. open-skills sports, and the current studies did not identify whether the findings of the current studies are generalizable to other sports domains (i.e., team closed-skills, individual closed-skills, and team-closed skills sports). Indeed, there were some differences across studies in terms of the degree of cross-cultural differences in motivation. We speculated that some of those cross-study differences might be related to the sport in question (e.g., how many players were on the team, etc.). Although the issue is beyond the scope of the current studies, future research is suggested to test the similarities and differences in motivation between these sport types to identify the boundary conditions of the current findings and to confirm whether the cultural variations are observed in all athletes regardless of sports type, or if there are any substantial differences in motivation

across different types of sports. For example, athletes in individual sports may need to rely on their abilities and skills regardless of culture as they do not have teammates to rely on. Such self-reliance may be associated with a self-enhancement motivation. As such, future research is suggested to investigate the interactions between sport types and culture.

Another important limitation is the differences in the result patterns across studies. Even though the results of the studies indicated that the Canadians listed their strengths more than their weaknesses while this tendency was attenuated in the Japanese, the results of Study 2 were not consistent with those of Study 1 and Study 3. Specifically, in Study 1 and 3, the Japanese listed their strengths and weaknesses in a balanced way, while they listed their strengths more than their weaknesses in Study 2. As mentioned, another factor that may have caused the inconsistent results is the number of players required in the sport. Basketball is played by a relatively small number of players (5 vs. 5) compared with soccer (11 vs. 11) and rugby (15 vs. 15). In such a small number of required players, individuals may be emphasized more than the team. Thus, basketball players may need to believe that they are highly competent to play basketball. This structural difference may have also caused the inconsistent results in Study 2. Future research is suggested to conduct cross-cultural research that considers the effect of the structural difference and further investigates how culture and sports structures affect players' motivation together. The inconsistent results can be explained by the trend of contemporary Westernized coaching styles in Japan as well. Due to the globalization of the sports environment, Japanese coaches have increasing opportunities to learn Western coaching styles. Additionally, empirical evidence has revealed that coaching styles affect athletes' motivation (O'Neil & Hodge, 2020). Taken together, some Japanese coaches who are strongly influenced by Western coaching styles may emphasize enhancing players' strengths rather than improving their weaknesses. In teams with

such coaches, the players may focus on their strengths more than their weaknesses. In the current studies, the number of teams was too small to analyze the data at the group level, so this assertion was not tested.

Conclusion

The current studies examined cultural variations in motivation (self-enhancement vs. self-improvement) in athletes and implicit theories of abilities and self-construals as potential explanatory factors, opening a discussion on cultural differences in the field of sports psychology. The results indicate that self-construals were highly likely to explain the cultural differences in motivation, whereas implicit theory was not likely to explain the differences. These findings have important implications in the field of sports psychology and in applied settings. Along this line of investigation, we maintain that future research should continue to explore the possibility of cultural variations in other psychological processes within sports settings (e.g., stress, emotion) to achieve sports psychology's purpose of performance enhancement (Gross et al., 2018). As such, the current study suggests that researchers and practitioners in sports psychology investigate cultural variations in athletes and create culturally fit interventions to support athletes' motivation. A further line of research on cultural psychology in sports settings is suggested to investigate how athletes across cultures attempt to enhance their performance.

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