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Psychological Factors of Athletes and Preference for Competition Against Opponents Who Differ in Relative Standing

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Psychological Factors of Athletes and Preference for Competition Against Opponents Who

Differ in Relative Standing

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Abstract

Sports and competition are a large part of most cultures across the globe and their popularity only appears to be increasing. Athletic competition is increasingly becoming more about winning, results, and performance and much less about having fun. Professional athletes are no longer the only competitors facing extreme pressure to perform. Collegiate athletes and youth athletes are expected to perform at their best to earn titles for their program or scholarships to universities. Although it is becoming more common for athletes to speak about their personal struggles regarding mental health and performance anxiety, there is little to no change in the physical and emotional demands being placed on these people. The researcher of the current study was interested in understanding why some athletes are better able to manage the pressure to perform than are others. There were 87 participants (66 varsity athletes, 11 club athletes, and 10 who chose not to disclose their status) involved in the study. The present research was a correlational design in which participants were asked to complete several measures to assess their levels of locus of control, perfectionism, competitiveness, and various personality traits. The researcher posited 10 hypotheses and all but one of the hypotheses were not supported by the results. The one significant result was found between the WCMP subscale Motivation for High Performance and Choice of Opponent ($p < .05$). Nonetheless, significance was found between other psychological factors that provide important information for the researcher's analysis. Additionally, after the initial correlational analysis was run the researcher decided to conduct several post-hoc analyses. A 2-way ANOVA was conducted on Gender and Athlete Status, as the Quasi-Independent Variables and Choice of Opponent as the Dependent Variable. There was a significant univariate finding for athlete status $p = .034$, a marginally significant univariate finding for gender, $p = .054$, and a non-significant interaction effect for athlete status

and gender, $p = .865$. The results demonstrate that athletes preferred an opponent of higher

caliber than did non-varsity athletes and male participants had a slightly higher preference than

did female participants to compete against a higher caliber opponent. A 2-Way MANOVA was

administered on Gender and Athlete Status, as the Quasi-Independent Variables and the three

WCMP subscales as the Dependent Variables. For Athlete Status, the Wilks Lambda was

significant $p < .001$. The Wilks Lambda was not significant for Gender and there were no

significant multivariate findings. For Athlete Status, univariate findings revealed a significant

effect for WCMP subscales Importance of Winning $p < .001$ and Motivation for High

Performance $p < .001$. No significant univariate findings were observed regarding Gender. A

significant interaction for Athlete Status and Gender on WCMP subscale Importance of Winning

was identified $p = .026$. Lastly, simple effects follow up tests show a significant difference

between male and female athletes on the WCMP subscale Importance of Winning $p < .05$ but no

significant difference between male and female non-varsity athletes. The results of this study are

significant as they can provide coaches with a better understanding of their players' mindset

regarding an important competition.

Keywords: psychological factors, athlete status, choice of opponent, gender, sports

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Competitive organized sports exist worldwide. Sport in and of itself is a contest and no matter the game, the goal remains the same; to win. Despite the fact that having fun is imperative for "initiating and sustaining sport involvement" (Bengoechea et al., 2004, p. 197), many athletes, particularly collegiate athletes, are struggling to manage the stresses that accompany sports (Whitehead & Senecal, 2020). The pressure on student athletes not only to perform well, but also to consistently play at the highest level and achieve positive results, while simultaneously remaining in good academic standing, has increased in recent decades (Rongen et al., 2021). With the progressively demanding environment surrounding all sports comes a rise in not only physical challenges, but also mental struggles (Fletcher & Sarkar, 2012; Gould et al., 1993).

Competing in sports has the power to enhance physical and mental well-being, provide an opportunity to learn new skills, engage with a diverse group of people, and test your abilities. Unfortunately, participating in sports does not always result in positive experiences or success. Furthermore, success is not a guarantee that an athlete will have a positive experience (Gould et al., 1993). For example, a study involving elite figure skaters reveals that after winning a national title the skaters felt a higher degree of pressure to perform well at the next event than prior to earning their championship status (Gould et al., 1993). Conversely, elite athletes also go through periods in which they underperform known as "performance slumps." These slumps have been found to cause anxiety as well (Brown et al., 2019).

As mentioned previously, college athletes face pressure to perform on the playing field as well as in the classroom (Chiou et al., 2020; Lu et al., 2016). When a person is asked to complete

a task that challenges their skill, a natural stress response is produced (Bar-Or et al., 1996).

People deal with challenges in different ways. Some rise to the occasion, whereas others

succumb to the pressure. When confronted with a stressful situation such as an important game,

some athletes use the pressure as motivation to play their best whereas others begin to doubt their

ability. This phenomenon can be understood through the lens of the Theory of Challenge and

Threat States in Athletes (TCTSA), which posits "that stress can be both adaptive and

maladaptive for skilled athletic performance" (Meijen et al., 2020, para. 2). According to this

model, the way in which a situation is perceived by an athlete as either a threat or a challenge can

completely influence their play (Meijen et al., 2020). Perception, however, is not the only

psychological factor that can impact performance (Burke et al., 2006).

Locus of control

In order to better understand how specific athletes deal with the perception of a threat or

the stress of a game, it is crucial to examine the specific psychological factors that an athlete

possesses. The first psychological factor that is relevant to the current research is the concept of

locus of control. According to Bang et al. (2019, p. 21), "If individuals base their successes and

failures on their own efforts and factors within their control, they have an internal locus of

control." On the other hand, "when individuals believe that their successes and failures happen

due to outside influences such as luck, chance, or powerful others, they have an external locus of

control" (Bang et al., 2019, p. 21). In other words, individuals with high levels of internal locus

of control consider themselves to be in control of their own fate whereas those with an external

locus of control believe that their future is out of their control (Bang et al., 2019; Rotter, 1954).

This concept is instrumental to understanding human behavior because it helps expose what

factors motivate individuals to engage in behaviors. Locus of control has been examined in many

different contexts, the first being in relation to academic achievement (Bang et al., 2019; Hrbackova et al., 2012; Pires-Yfantouda & Evangeli, 2012; Rinn et al., 2014). Research has shown that when a student has a high internal locus of control it has a positive effect not only on their academic performance, but also on their overall engagement in class (Bang et al., 2019; Shepherd et al., 2006;). As Bang et al (2019, p. 21) explained in their study, "students with a strong internal locus of control would be willing to take action to receive better grades because they believe their accomplishments are controlled by their own efforts and work." Additionally, "because individuals with an internal locus of control expect their specific behaviors to be rewarded, they exert greater academic effort and feel proud of themselves for attaining the reward" (Bang et al., 2019, p. 21). This finding is useful as it exposes a potential cycle of success for individuals with high internal locus of control. When positive emotional experiences are correlated with experiencing success, individuals with high internal locus of control will feel more driven to repeat their actions in order to continue having favorable outcomes compared to those who do not possess high internal locus of control (Bang et al., 2019; Mali, 2013). Furthermore, research has shown that "students who score high on internal locus of control have better learning and academic performance than those with external locus of control" (Bang et al., 2019, p. 21). It is clear from the literature that having an internal locus of control is more heavily connected to having a strong academic performance than is having an external locus of control (Bang et al., 2019). While it is valuable to understand the relationship between locus of control and academic performance, one aim of the current research is to investigate how locus of control and athletic performance are intertwined.

As the previous research indicated, individuals with high internal locus of control believe their academic performance is a direct result of their own actions. Thus, it would be reasonable

to suspect athletes with an internal locus of control view their athletic performance as a direct

result of their own preparation and training. On the other hand, it would be sensible to expect

that athletes with an external locus of control would view their performance as a result of

external factors such as luck or chance (Fresson et al., 2017). Research has shown that in general

individuals with an internal locus of control experience better outcomes than do those with an

external locus of control (Fresson et al., 2017). Furthermore, according to Lefcourt (2014),

individuals with an internal locus of control tend to cope with stress and pressure better than do

those who have a more external locus of control. That finding is crucial for the current research

as it provides some insight regarding why certain athletes may manage adversity better than do

others. Studies have shown that when an athlete is exposed to a stressful situation, "a higher

physiological stress response is predicted by a higher level of external control (Szabo, Chang, &

Chancellor-Freeland, 2015)" (Fresson et al., 2017, p. 915). Additionally, people who express

more of an internal locus of control express less trait anxiety and are more likely to employ

problem-focused coping strategies (Fresson et al., 2017). Since problem-focused coping

strategies are considered to be the most useful, it is reasonable to infer that individuals with an

internal locus of control will not only manage the stress better than those with an external locus

of control, but they also will confront the stressor by dealing with it directly (Fresson et al.,

2017). In contrast, individuals with low levels of internal locus of control are more susceptible to

the pressure and seem to perform worse in various areas (Fresson et al., 2017).

     In a study conducted by Filipiak and Lubianka (2020), a correlation was revealed

between young people practicing team sports and having an internal locus of control. This

finding is relevant to the current research as it will investigate athletes on team sports such as

basketball, soccer, field-hockey, volleyball, ice hockey, and lacrosse. Having successful team

performance is dependent on having individual players take responsibility for their performance and work ethic. Filipiak and Lubianka (2020, p. 48) explained that, an athlete who has an internal locus of control believes their behavior directly influences the outcome they experience, set higher goals for themselves, make independent decisions while also taking responsibility for their consequences, and lastly when they experience failure they seek fault in themselves rather than their surroundings. A team composed of individuals with high internal locus of control would believe that their successes and failures are direct results of their own game attitude, effort, and focus, rather than attributing the outcomes to external factors. In contrast, athletes with an external locus of control view their life experiences as results of external factors outside of their own control and attribute failure with unfortunate circumstances that are not connected to them (Filipiak & Lubianka, 2020, p. 48). Hence, a team composed of individuals with an external locus of control is likely to view their losses as out of their control and thus, not take the actions necessary to improve in order to achieve future success (Filipiak & Lubianka, 2020).

Interestingly, the study conducted by Filipiak and Lubianka (2020) also revealed that the more advanced the level of sport an athlete participates in, the higher the levels of internal locus of control that athlete expresses. While it is true that athletes with an internal locus of control perceive a direct relationship between their actions and the outcome, it is important to note that in sport, there is no guarantee that one's performance will result in the desired outcome (Filipiak & Lubianka, 2020). In other words, as Filipiak and Lubianka (2020) express, "Sport training does not immediately and does not always lead to expected results, despite long and exhausting practice" (p. 49). Furthermore, a sustained disconnect between level of effort in sport and the ensuing results might lead to an athlete feeling a lack of control over their ability to influence the course of events (Filipiak and Lubianka, 2020, p. 49) Thus, if an athlete with a strong internal

locus of control continuously does not reap the rewards of their hard work, it may result in a shift in their mindset. Conversely, however, if an individual with an external locus of control regularly experiences success, it is less likely that they would undergo a shift in mentality. The present study will seek to uncover a relationship between locus of control and an athlete's preference of the win-loss record of a competitor.

Big Five Personality

Additionally, the present study will examine the BIG Five Personality traits – Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN). The topic of investigating the role of personality in human behavior has been prominent in the literature since Ancient Greece (Roberts & Woodman, 2017). Early research on the importance of personality in sport seemed to suggest personality could account for up to 45% of the variance in performance (Roberts & Woodman, 2017). However, the research was riddled with issues such as a lack of theoretical rationale, flaws within the methodology, as well as a failure to control for Type I errors (Roberts & Woodman, 2017). Between the 1930s and 1960s, there was a shortage of research conducted on sport and exercise psychology (Allen, 2013). Nonetheless, there was a plethora of studies during this period of time that focused on personality (Allen, 2013). For example, researchers ran descriptive studies investigating personality profiles of successful athletes and also analyzed the personality differences between athletes and non-athletes – all of which were important contributions to the field (Allen, 2013).

Recent research has revealed important correlations between athletic performance and personality traits (Piedmont et al., 1999). One study that investigated the predictive applicability of the Big Five personality traits for athletic performance in collegiate athletes revealed that conscientiousness (positively) and neuroticism (negatively) independently predicted game

performance (Piedmont et al., 1999). This finding was unsurprising since conscientiousness is consistently associated with high quality work performance (Barrick et al., 2001). A comprehensive review of personality and sport revealed a connection between elite athletes possessing higher levels of extraversion and being more emotionally stable than was true of recreational athletes (Allen et al., 2013). In that same vein, a study conducted by Allen et al. (2011) found that athletes competing at the national level demonstrated low levels of neuroticism and high levels of conscientiousness as well as agreeableness, in comparison to athletes who competed at regional or state levels. Interestingly, data suggest that athletes who are more extraverted outperform those that are more introverted when an audience is present, however, that finding is not consistent when no audience is present (Allen et al., 2013).

Not only do the data show trends in the personality traits that comprise an athlete versus a non-athlete, but there are also trends that have been observed between female and male athletes (Flemings, 1934; Williams, 1980). For example, women tend to express higher levels of neuroticism, extraversion, agreeableness, and conscientiousness than do men (Allen, 2013). Furthermore, research shows that female athletes display personality traits that are more in line with men than with other females who are non-athletes (Flemings, 1934; Williams, 1980). Studies have also been conducted that investigate the personality traits underpinning successful teams in comparison to less successful teams (Peeters et al., 2006). The results of a meta-analysis involving 527 teams found that team performance was positively correlated with average team levels of agreeableness as well as conscientiousness, while greater within-team variability in those same factors was negatively correlated to team performance (Bell, 2007; Peeters et al., 2006).

There are a plethora of reasons why examining how personality traits are related to sport is important. For example, uncovering which personality traits are correlated with better or worse performance is significant not only theoretically but also in practice (Roberts & Woodman, 2017). If it were possible to predict whether a certain individual with specific personality traits would perform better than another individual it would enable directors, managers, mentors, coaches, and practitioners to strategize better and optimize individual as well as team performance (Roberts & Woodman, 2017). Furthermore, learning more about personality and its relevance to sport can help coaches identify which of their athletes may need extra support during challenging points during their season (Allen, 2013). Also, it is advantageous to use the Big Five as a tool for understanding how an athlete might respond to pressure (Roberts & Woodman, 2017). Research analyzing how personality traits are connected to an individual's response to experiencing pressure has routinely revealed that athletes with high levels of conscientiousness report using approach- and problem-focused coping strategies more regularly than do athletes with high levels of neuroticism, who tend to use more avoidant styles of coping (Roberts & Woodman, 2017).

According to a study conducted by Zhang et al. (2019) that investigated the relationship between the Big Five personality traits and self-control in boxers, self-control appears to be fundamental for achieving optimal performance. The researchers found that there was a significant, negative correlation between neuroticism and both self-efficacy as well as self-control (Zhang et al., 2019). As aforementioned, self-control was found to be an important factor for achieving peak performance, hence the negative relationship between self-control and neuroticism might have theoretical implications such as neuroticism negatively affecting performance. Other important results emerged such as openness, conscientiousness,

agreeableness, and extraversion being positively correlated with self-control (Zhang et al., 2019). It has been observed that one's self-control is shaped by their levels of self-efficacy (Vera et al., 2004). Interestingly, research suggests that the higher an athlete's self-efficacy, the better their performance (Vancouver et al., 2002). For example, in a study conducted by Earley and Lituchy (1991), they found that even when an athlete demonstrates excellent skills and motivation to win, lacking high levels of self-efficacy can result in them being less likely to achieve success. Additionally, it has been found that neuroticism has a substantial negative predictive effect on self-efficacy of athletes (specifically basketball players), while extraversion and conscientiousness, on the other hand, have considerable positive predictive effects. Self-efficacy and self-control are not only seemingly intertwined, but are both important factors for fostering a successful performance (Zhang et al., 2019). Self-control has also been linked with an

individual's ability to adapt to their environment (Andrei et al., 2014; Coyne & Wright, 2014). The present study will continue to investigate the importance of personality traits and their relationship to athletic performance.

Perfectionism

The next psychological factor that will be analyzed in the current study is perfectionism. Perfectionism is typically conceptualized as the "disposition to regard anything short of perfection as unacceptable" (Stoll et al., 2008, p. 3). However, scientific research has revealed a new perception of this psychological element. According to Stoll et al. (2008, p. 3), perfectionism can be viewed as a multi-dimensional personality trait "that is characterized by striving for flawlessness and the setting of excessively high standards for performance accompanied by tendencies for overly critical evaluations of one's behavior and an over-sensitivity to mistakes." This constant drive that people have to experience success has the

power to influence performance (Stoll et al., 2008). Researchers have more recently debated whether perfectionism tends to enhance or hinder performance specifically in regard to sport (Stoll et al., 2008). For example, some believe that perfectionism is a characteristic that builds Olympic champions, whereas others view it as a maladaptive quality that cripples performance (Anshel & Mansouri, 2005; Flett & Hewitt, 2005; Gould et al., 2002).

Although in the past perfectionism has only been considered a one-dimensional construct, it has more recently been broken down into two subcategories that aid in understanding its effects on performance (Frost et al., 1993). The first form of perfectionism is considered 'positive striving perfectionism' and is characterized by the "facets of perfectionism that relate to perfectionistic strivings such as having high personal standards, setting exacting standards for one's performance, and striving for excellence" (Stoll et al., 2008, p. 3).This dimension of perfectionism has been correlated with strong academic performance (Frost et al., 1993). Athletes who display a positive-striving form of perfectionism tend to have very high, yet practical, self-expectations, and set ambitious, yet feasible goals for themselves (Anshel & Mansouri, 2005). This type of athlete also typically has an internal locus of control – attributing the results they experience directly to their actions (Anshel & Mansouri, 2005). This tendency to attribute performance with effort is what also leads this type of athlete to view failures as "a need to improve future performance rather than as a manifestation of low ability" (Stoll et al., 2008, p. 3). Having an outlook in which the emphasis is placed on the ability to improve rather than on self-doubt facilitates a much healthier mindset (Anshel & Mansouri, 2005).

The second form of perfectionism is considered 'self-critical perfectionism' and "captures those facets of perfectionism that relate to critical self-evaluations of one's performance, concern over mistakes, and feelings of discrepancy between expectations and

results" (Stoll et al., 2008, p. 4). Studies have demonstrated a correlation between self-critical perfectionism and several debilitating traits such as depression, anxiety, and stress (Stoll et al., 2008). In a study conducted by Anshel and Mansouri (2005), the researchers examined the influence perfectionism had on motor performance in response to negative feedback. The results revealed that athletes who set excessively high standards, were overly critical, and were anxious in achievement situations tended to experience a deterioration in performance after being given negative feedback. In short, athletes who demonstrated features of self-critical perfectionism suffered a drop in performance (Anshel & Mansouri, 2005).

Differentiating between the two forms of perfectionism helps to shed light on some of the findings from previous studies. When the literature has described a link between perfectionism and poor performance, it tends to be aspects of self-critical perfectionism related to negative outcomes rather than elements of positive striving perfectionism (Stoll et al., 2008, p. 4). In contrast, features connected with the positive striving dimension have exposed relationships with positive characteristics and successful outcomes (Stoll et al., 2008). Hence, it is imperative to carefully investigate the relationship between perfectionism and performance as it is complex.

A study conducted by Flett and Hewitt (2005) exposed an association between perfectionism and increased levels of competitive anxiety. However, when analyzed more closely the researchers realized that only when a person expressed intense concern over mistakes and negative reactions to errors was there a relationship with competitive anxiety (Flett & Hewitt, 2005). In other words, only specific features of perfectionism were connected to expressing competitive anxiety. Moreover, setting personal goals and aiming for perfection were negatively correlated with competitive anxiety and self-confidence (Stoll et al., 2008). Moreover, Stoll et al. (2008), found that athletes who seek perfection but are not worried about making errors have

lower anxiety levels and higher confidence levels. This combination of positive striving

perfectionism and little concern over mistakes is associated with athletes experiencing higher

performance (Stoll et al., 2008). Hence, Stoll et al. (2008) concluded that only athletes who

express a self-critical form of perfectionism may endure a negative interference with their

performance. On the other hand, athletes who convey a positive-striving form of perfectionism

have the potential to boost their performance (Stoll et al., 2008). Interestingly, research suggests

that athletes demonstrate an increase in perfectionism levels with respect to sport more so than

with academics or life in general (Stoll et al., 2008). However, there is room for more

investigation on this association between the various forms of perfectionism and performance as

there is a dearth of studies on this topic (Anshel & Mansouri, 2005; Stoll et al., 2008).

Competitiveness

The final psychological factor that will be assessed is competitiveness. This factor is

considered essential for winning and has been connected with enhanced athletic performance

(Hellandsig, E. T. 1998; Jones et al., 2001). The concept of competitiveness is somewhat

arbitrary and can be defined as both enjoying the process of winning and appreciating the

performance that it takes to experience success (Franken et al., 1994). People who are motivated

by the desire to experience winning would be considered to have an outcome motivation versus

someone who is more motivated to experience the high performance associated with competition

would have process motivation (Franken et al., 1994).

In a study conducted by Jones et al. (2001), researchers examined the difference between

sport-related psychological factors in Division I varsity athletes versus novice athletes. The two

main psychological factors that were evaluated were self-confidence and competitive orientation

(Jones et al., 2001). The researchers divided self-confidence into two categories – trait and state

(Jones et al., 2001). The trait strain can be defined as the self-confidence an athlete typically holds whereas state self-confidence is the self-confidence an athlete exhibits based on the environment (Jones et al., 2001). In other words, an athlete who demonstrates more trait-like self-confidence is, in general, more consistently self-confident as it is a reflection of their disposition rather than the situation. The psychological factor of competitive orientation was designed to expose whether an athlete achieves satisfaction more from winning a contest or simply from performing well in their sport (Jones et al., 2001). Research has shown that trait self-confidence and both performance and outcome orientations were connected with higher athletic performance (Jones et al., 2001). However, Jones' et al (2001) study revealed that collegiate female athletes reported being more competitive than collegiate male athletes, while novice male athletes reported being more competitive than novice female athletes. The researchers note that while this finding might expose true differences between athletes, there is also a chance that the deviation was a product of a small sample size (Jones et al., 2001).

The way in which competitiveness is perceived varies across cultures (Franken et al., 1994). In North America, competitiveness has been associated with a variety of positive outcomes (Franken et al., 1994). For example, it is believed that the pathway to success is paved in the locker room (Franken et al., 1994). However, North American culture has also taught athletes to view one another as rivals rather than competitive partners resulting in hostility and aggression being seen as acceptable in the sports arena (Franken et al., 1994). This negative attitude towards other athletes can become problematic in a team sport environment where there are more athletes on a team than available positions. For example, in a sport such as soccer where there are 11 players allowed on the field per team and a roster size of 20 or more, competition between teammates can emerge resulting in an unhealthy team culture. This

relationship between players from the same group competing for a spot in the lineup by a coach characterizes the concept of intrateam competitiveness (Passos et al., 2016). According to Passos et al. (2016), there are a variety of situational factors such as performance standards or the number of competitors involved in a collective system that can affect the way an athlete demonstrates competitive behaviors. An athlete's competitive behaviors can be expressed in different manners (Passos et al., 2016). For example, an athlete might display their competitive nature against their own teammates while competing for limited positions or they may display their competitiveness against players from the opposing team (Passos et al., 2016). According to Passos et al. (2016), creating an atmosphere with both intra-team competition (competition between players from the same group) and inter-team competition (competition between players from different groups), are both key factors for enhancing athletic performance. The present study involves student-athletes from team sports rather than individual sports and thus cannot investigate differences in demonstrated levels of competitiveness. However, the current study has the potential to uncover important relationships between levels of competitiveness and preference of opponent, other personality factors, as well as OCD levels.

The Present Study

The present study is focused on how the various aforementioned psychological factors are related to an athlete's preference of opponent. In other words, the researchers are interested in understanding why one athlete may prefer to compete against an opponent of higher relative standing while another athlete may prefer to compete against an opponent of lower or equivalent relative standing. The present study takes inspiration from the Schippers and Van Lange (2006) experiment where the experimenters investigated the importance of superstitious rituals in elite athletes. The goal of the study was to observe whether the level of importance of a specific

match was related to an elite athlete's decision to perform their pre-game ritual (Schippers & Van Lange, 2006). The procedure incorporated six vignettes that required participants to imagine a specific match and then the experimenters manipulated the fictitious opponent's relative standing and importance of the specific game. Similarly, the present study will require participants to imagine whether or not they would prefer to compete against an opponent who differs in relative standing based on their confidence in their current team. The researchers have identified 10 hypotheses for the present study and they are as follows:

- There will be a positive relationship between agreeableness and the number of games won by an opponent;

- There will be a positive relationship between openness and the number of games won by an opponent;

- There will be a positive relationship between conscientiousness and the number of games won by an opponent;

- There will be a positive relationship between extraversion and the number of games won by an opponent;

- There will be a negative relationship between neuroticism and the number of games won by an opponent;

- There will be a positive relationship between internal locus of control and the number of games won by an opponent;

- There will be a negative relationship between external locus of control and the number of games won by an opponent.

- There will be a positive relationship between positive striving perfectionism and the number of games won by an opponent.

- There will be a negative relationship between self-critical perfectionism and the number of games won by an opponent.

- There will be a positive relationship between all three subscales from the WMCP scale (Franken, 1990) scores and the number of games won by an opponent.

Method

Research Design

The study was conducted via Qualtrics and is a correlational design with quasi-independent variables.

Participants

Participants were Connecticut College Varsity and Club student-athletes from various team sports such as Men's and Women's Basketball, Men's and Women's Soccer, Men's and Women's Ice Hockey, Men's and Women's Lacrosse, Women's Field Hockey, and Women's Volleyball. The study was sent to 257 Connecticut College varsity student-athletes, Connecticut College Club athletes, as well as friends and family members. The Qualtrics link was opened by 178 people. There were 87 participants (66 Varsity athletes, 11 Club athletes, and 10 who chose not to disclose their status) who completed the survey. Seven participants missed one scale in its entirety and two participants missed two scales in their entirety and thus, were excluded from any analysis conducted on those measures. However, these participants were retained for other analyses because they selected a choice of opponent.

Measures

The Frost Multidimensional Perfectionism Scale.

Previous studies conducted on perfectionism and performance suggested a positive relationship between performance and positive striving perfectionism (Anshel & Mansouri, 2005; Stoll et al., 2008), whereas self-critical perfectionism, on the other hand, was related to poorer performance. The Frost Multidimensional Perfectionism Scale (FMPS; see Appendix A) was used to analyze perfectionism levels.

The FMPS is a 35-question self-report questionnaire and measures perfectionism through four sub-categories: concern over errors and fears about actions, excessive worries with parents' expectations and judgment, excessively high individual standards and distress with precision, order and organization. The items are scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alpha for this measure in the literature demonstrates a high internal consistency ($\alpha = .83$) (Frost et al., 1990). In this study, the FMPS Concern Over Mistakes subscale consisted of 13 items ($\alpha = .866$), the Parental Expectations subscale consisted of nine items ($\alpha = .882$), the Personal Standards subscale consisted of six items ($\alpha = .795$), and the Precision subscale consisted of six items ($\alpha = .941$).

The Levenson's Locus of Control scale.

Previous research conducted on locus of control and its relationship with performance suggested that an internal locus of control was related to higher performance (Fresson et al., 2017), whereas an external locus of control was related to lower performance (Fresson et al., 2017). Levenson's Locus of Control scale (see Appendix B) was used to evaluate the participants' levels of locus of control. The 24-item scale consists of three, 8- item sections. The three subscales are used to measure belief in chance or fate expectancies as different from a powerful others orientation. The items are scored on a 6-point Likert scale ranging from -3 (strongly disagree) to 3 (strongly agree). Without specifying the value, the literature suggests that

the measure has a moderately high Cronbach's alpha (Levenson, 1972). In this study, The LLOC

Chance subscale consisted of seven items ($\alpha = .755$), the LLOC Powerful Others subscale

consisted of seven items ($\alpha = .793$), and the LLOC Internal subscale consisted of four items ($\alpha = .658$).

The Big Five Inventory

The literature suggested that there were relationships between several of the Big Five

Personality traits such as agreeableness, openness, conscientiousness, and extraversion with

enhanced performance (Allen et al., 2013; Roberts & Woodman, 2017; Zhang et al., 2019).

However, previous research pointed to a negative relationship between the Big Five factor

neuroticism and optimal performance (Allen et al., 2013; Roberts & Woodman, 2017; Zhang et

al., 2019). The Big Five Inventory (see Appendix C) was used to measure the participants' levels

of the Big Five personality traits.

The Big Five Inventory is a self-report measure that consists of 44 items. Items are scored

on a 5-point Likert scale ranging from 1 (Disagree strongly) to 5 (Agree strongly). The BFI

measures the Big Five dimensions : Openness, Conscientiousness, Extraversion, Agreeableness,

and Neuroticism (OCEAN) (John et al., 1991). In this study, the Extraversion subscale consisted

of seven items ($\alpha = .891$), the Agreeableness subscale consisted of eight items ($\alpha = .749$), the

Conscientiousness subscale consisted of nine items ($\alpha = .795$), the Neuroticism subscale

consisted of eight items ($\alpha = .780$), and the Openness subscale consisted of nine items ($\alpha = .763$).

Competitiveness

The literature on competitiveness and its related factors has revealed a positive

relationship with performance (Jones et al., 2001). The Competitiveness Index (see Appendix G)

was used to assess an athlete's preference of opponent based on relative standing of wins and

losses. It consists of 11 items ranging from 1 (0 wins and 10 losses) to 11 (10 wins and 0 losses). Additionally, there was an open ended comment section that asked the athlete to provide a rationale for their choice of opponent.

The Winning, Competitiveness, Mastery, and Persistence Scale (Franken, 1990: see Appendix I) was used to evaluate an athlete's levels of competitiveness as it relates to sport. The 19-item scale is divided into three subsections: Motivation for High Performance Scale, Motivation for New Learning Scale, and Importance of Winning Scale. The measures are rated on a 5 point-scale ranging from "Not at all like me" to "Very much like me". In this study, the WCMP Motivation for High Performance subscale consisted of three items (α = .768), the Motivation for New Learning subscale consisted of nine items (α = .823), and the Importance of Winning subscale consisted of six items (α = .783).

Demographic Items

Items assessing participants' gender, race, age, class year, collegiate sport level, and specific sports team were included for analyses (see Appendix F).

Procedure

Participants from the following Connecticut College men's and women's varsity athletics teams (basketball, field hockey, ice hockey, lacrosse, soccer, squash, and volleyball) were recruited to participate in the current study. Using the CamelAthletics team pages (www.camelathletics.com) , I gathered the emails of the various athletes on the teams to be solicited. Varsity subjects were sent an email containing the Qualtrics survey link (see Appendix H). Club athletes were recruited to participate in the study by communicating with the Director of Student Life at Connecticut College since the club team rosters are not available online. In

order to increase the number of participants, club athletes had the opportunity to be entered into a raffle to win a gift card of varying amounts to a local coffee shop. Club athletes were sent a separate email from the Director of Student Life at Connecticut College in order to encourage participation (see Appendix J). The funding for this gift-card raffle was secured through an application to the Connecticut College Psychology Department. Information regarding the raffle was included in the email that was sent to the club athletes. Additionally, friends and family members who were or had been competitive athletes were directly sent the survey. Each participant was informed that they were participating in a study about their preference of opponent in sport. They were then asked to provide informed consent (see Appendix D). The participants were randomly presented with the following scales: The 35-question self-report Frost Multidimensional Scale Perfectionism Scale (FMSP) (see Appendix A), the 24-item Levenson's Locus of Control Scale (LLOC) (see Appendix B), The Big Five Inventory (BFI) (see Appendix C), the Competitiveness Index (see Appendix G) along with a rationale for their selection in an open-ended comment section, and the Winning, Competitiveness, Mastery, and Persistence Scale (WCMP) (See Appendix I). Finally, the participant was prompted to complete the demographics section (see Appendix F). The entire survey took approximately 30 minutes to complete.

Results

The aim of this study was to investigate the competitiveness of athletics, specifically the characteristics of athletes who choose to compete against opponents of different caliber. In order to investigate this connection, the researcher conducted a study on the relationship between an athlete's choice of opponent and a number of psychological factors –locus of control, Big Five personality traits, perfectionism, and competitiveness.

In order to assess the aforementioned hypotheses, a series of correlational analyses were conducted using the statistical software SPSS. Unfortunately, all but one of the formal hypotheses were not supported by the results. The one significant result was found between the WCMP subscale Motivation for High Performance and Choice of Opponent ($p = .231$). Nonetheless, significance was found between other psychological factors that provide important information for the researcher's analyses.

Additionally, after the initial correlational analysis was run the researcher decided to conduct several post-hoc analyses on gender and athlete status. A 2-Way ANOVA was conducted on Gender and Athlete Status, as the Quasi-Independent variables and Choice of Opponent as the Dependent Variable. Further, a 2-way MANOVA was run between Gender and Athlete Status as the Quasi-Independent variables and the three subscales of the WCMP as the dependent variables. Lastly, in order to evaluate the relationship between the participant's choice of opponent and their written explanation for their opponent selection, a content analysis was conducted, followed by a Chi-Square analysis.

Table 1 presents the distribution of participants' choice of opponent based on team record. In order to evaluate the competitiveness levels of each participant, they were asked to select one singular opponent that they would most like to compete against in a significant match. There were 11 options for choice of opponent ranging from Team 1 with a record of zero wins and ten losses to Team 11 with a record of 11 wins and zero losses (see Table 1).

Table 1

Distribution of Participants' Choice of Opponent Based on Team Record

Team	1	2	3	4	5	6	7	8	9	10	11

Frequency	5	1	1	5	1	8	6	8	8	10	28
Valid %	6.2	1.2	1.2	6.2	1.2	9.9	7.4	9.9	9.9	12.3	34.6

$N = 81$

Table 2 presents the correlational analyses for the Choice of Opponent and the WCMP, LLOC, BFI, and FMPS. The Importance of Winning, Motivation for Learning, and Motivation for High Performance variables are the three subscales of the WCMP. Results indicated significance between the WCMP subscale Importance of Winning and Powerful Others ($p <$ .001), WCMP subscale Importance of Winning and the Frost Multidimensional Perfectionism Subscale (Parental Expectations) ($p <$ .001), WCMP subscale Importance of Winning and the Frost Multidimensional Perfectionism Subscale (Concern over Mistakes) ($p <$ .001), and WCMP subscale Importance of Winning and Motivation for High Performance ($p <$ .001). A significant negative correlation was found between the WCMP subscale Importance of Winning and Agreeableness ($p <$ .001). Significance was found between the WCMP subscale Motivation for Learning and Conscientiousness ($p <$ .05), WCMP subscale Motivation for Learning and WCMP subscale Motivation for High Performance ($p <$ .05), WCMP subscale Motivation for Learning and the Frost Multidimensional Perfectionism Subscale (Personal Standards) ($p <$ .001), and WCMP subscale Motivation for Learning and the Frost Multidimensional Perfectionism Subscale (Precision) ($p <$ .001). Additionally, significance was found between the WCMP subscale Motivation for High Performance and the Frost Multidimensional Perfectionism Subscale (Personal Standards) ($p <$.05), WCMP subscale Motivation for High Performance and WCMP subscale Motivation for Learning ($p <$ .05), WCMP subscale Motivation for High

Performance and Opponent (p <.05), and WCMP subscale Motivation for High Performance and

WCMP subscale Importance of Winning (p < .001) (see Table 2).

Table 2

Correlations Between the WCMP Sub-scales and the, LLOC, BFI, the FMPS, and Choice of

Opponent

Variable	Importance of Winning	Motivation for Learning	Motivation for High Performance
LLOC			
Internal	.106	.118	.113
Powerful Others	.336**	-.209	.073
Chance	.181	-.233	-.184
BFI			
Openness	-.129	.207	-.034
Neuroticism	.083	-.065	-.113
Conscientiousness	-.166	.234*	-.001
Agreeableness	-.402**	.173	-.192
Extraversion	.153	.126	.035
FMPS			
Personal Standards	.154	.366**	.315**
Precision	-.081	.252*	-.010
Parental Expectations	.538**	-.083	.137
Concern Over Mistakes	.427**	-.128	.187
Opponent	.185	.198	.231*

Variable	Importance of Winning	Motivation for Learning	Motivation for High Performance
WCMP			
Motivation for learning	-.003	1	.223*
Motivation for high performance	.494**	.223*	1
Importance of Winning	1	-.003	.494**

*p <.05. **p <.001.

FMPS = Frost Multidimensional Perfectionism Scale; BFI = Big Five Inventory; LLOC =
Levenson's Locus of Control Scale; WCMP = Winning, Competitiveness, Mastery, and
Performance Scale

Table 3 presents the correlations between the *LLOC* and the *WCMP, BFI, FMPS, and Choice of*
Opponent. The correlational analysis revealed a significant negative correlation between LLOC
subscale Internal locus of control and Neuroticism (*p* < .05), LLOC subscale Internal locus of
control and LLOC subscale Powerful Others (*p* < .001), LLOC subscale Internal locus of control
and LLOC subscale Chance (*p* < .001), and LLOC subscale Internal locus of control and the
Frost Multidimensional Perfectionism Subscale (Concern over Mistakes) (*p* < .05) . Significance
was found between LLOC subscale Internal locus of control and Agreeableness (*p* < .001) as
well as Extraversion (*p* < .001). The analysis indicated a significant negative correlation between
LLOC subscale Powerful Others and Neuroticism (*p* < .001), Agreeableness (*p* < .001),
Extraversion (*p* < .05), and LLOC subscale Internal locus of control (*p* < .001). Significance was
found between the LLOC subscale Powerful Others and the Frost Multidimensional
Perfectionism Subscale (Parental Expectations) (*p* <.001), LLOC subscale Powerful Others and
the Frost Multidimensional Perfectionism Subscale (Concern over Mistakes) (*p* <.001), as well

as LLOC subscale Powerful Others and LLOC subscale Chance ($p < .001$). A significant

negative correlation was found between LLOC subscale Chance and Conscientiousness ($p < .05$)

LLOC subscale Chance and Agreeableness ($p < .001$). Additionally, significance was found

between the LLOC subscale Chance and the Frost Multidimensional Perfectionism Subscale

(Concern over Mistakes) ($p < .001$) as well as LLOC subscale Chance and the LLOC subscale

Powerful Others ($p <.001$) (see Table 3).

Table 3

Correlations between LLOC, WCMP, BFI, FMPS, and Choice of Opponent

Variable	LLOC Internal	LLOC Powerful Others	LLOC Chance
BFI			
Openness	-.153	-.008	.031
Neuroticism	-.226*	-.387**	.478**
Conscientiousness	.177	-.080	-.286*
Agreeableness	.292**	-.309**	-.311**
(Table continues)			
Extraversion	.304**	-.237*	- .161
FMPS			
Personal Standards	.178	.110	-.161
Precision	.180	-.118	-.091
Parental Expectations	-.083	.398**	.199
Concern over Mistakes	-.237*	.595**	.421**
Opponent	.113	-.097	-.143

Variable	LLOC Internal	LLOC Powerful Others	LLOC Chance
LLOC			
Internal	1	-.317**	-.473**
Powerful Others	-.317**	1	.634**
Chance	-.473**	.634**	1

*$p <.05$. **$p <.001$.

FMPS = Frost Multidimensional Perfectionism Scale; BFI = Big Five Inventory; LLOC = Levenson's Locus of Control Scale; WCMP = Winning, Competitiveness, Mastery, and Performance Scale

Table 4 presents correlations between the BFI, WCMP, FMPS, LLOC, and Choice of Opponent. The correlational analysis revealed a significant negative correlation between Extraversion and Neuroticism ($p < .05$). The correlational analysis indicated significance between Extraversion and Agreeableness ($p < .001$). A significant negative correlation was found between Agreeableness and the Frost Multidimensional Perfectionism Subscale (Concern over Mistakes) ($p < .001$) as well as Agreeableness and Neuroticism ($p < .001$). A significant correlation was found between Agreeableness and Conscientiousness ($p < .05$). Significance was found between Conscientiousness and Agreeableness ($p < .05$), Conscientiousness and the Frost Multidimensional Perfectionism Subscale (Personal Standards) ($p < .001$), as well as Conscientiousness and the Frost Multidimensional Perfectionism Subscale (Precision) ($p < .001$). A significant negative correlation was found between Conscientiousness and the Frost Multidimensional Perfectionism Subscale (Concern over Mistakes) ($p < .001$). Additionally, significance was found between Neuroticism and the Frost Multidimensional Perfectionism

Subscale (Concern over Mistakes) ($p < .001$). Lastly, a significant negative correlation was found between Neuroticism and Extraversion ($p < .05$), as well as Neuroticism and Agreeableness ($p < .001$). See Table 4.

Table 4

Correlations Between the BFI, FMPS, and Choice of Opponent

Variable	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
FMPS					
P. Standards	.131	.043	.485**	.071	.228*
Precision	-.112	.166	.617**	.168	.028
Parental Exp.	-.025	-.296**	-.059	.143	.073
C.O Mistakes	-.146	-.393**	-.221*	.417**	-.070
Opponent	-.034	-.065	-.011	-.081	.174
BFI					
Extraversion	1	.359**	.055	-.262*	.111
Agreeableness	.359**	1	.231*	-.321**	.171
Conscientiousness	.055	.231*	1	-1.00	.133
Neuroticism	-.262*	-.321**	-1.00	1	-.145
Openness	.111	.171	.133	-.145	1

*$p <.05$. **$p <.001$.

FMPS = Frost Multidimensional Perfectionism Scale; BFI = Big Five Inventory; LLOC =Levenson's Locus of Control Scale; WCMP = Winning, Competitiveness, Mastery, and Performance Scale

Table 5 presents the correlations between the FMPS, BFI, LLOC, WCMP, and Choice of Opponent. The correlational analysis revealed significance between the Frost Multidimensional Perfectionism Scale (FMPS) and Neuroticism ($p < .001$). A significant negative correlation was

found between the FMPS and Agreeableness ($p < .001$). Additionally, a significant correlation was found between the FMPS and LLOC factor Chance ($p < .05$), FMPS and LLOC subscale Powerful Others ($p < .001$), FMPS and WCMP subscale Motivation for High Performance ($p < .05$), as well as FMPS and the WCMP subscale Importance of Winning ($p < .001$). See Table 5.

Table 5

Correlations Between the FMPS and Choice of Opponent

Variable	Personal Standards	Precision	Parental Expectations	Concern Over Mistakes
Opponent	.161	-.004	.173	.022
FMPS				
Personal Standards	1	.305**	.231*	.228*
Precision	.305**	1	-.077	-.079
Parental Exp.	.231*	-.077	1	.549**
C.O Mistakes	.228*	-.079	.549**	1

*$p <.05$. **$p <.001$.

FMPS = Frost Multidimensional Perfectionism Scale; BFI = Big Five Inventory; LLOC =Levenson's Locus of Control Scale; WCMP = Winning, Competitiveness, Mastery, and Performance Scale

Choice of Opponent and Participant Response Type

A Chi-Square analysis was conducted on the choice of opponent and the type of response the participant provided in the content analysis. Choice of opponent was condensed into three categories : Teams 1-4 were collapsed into one category, Teams 5-7 were collapsed into a second category, and Teams 8-11 were collapsed into a third category. The response types were also organized into new variables based on the participant's rationale for their choice in opponent. Three major themes emerged from participants' responses. Two raters categorized the responses and the percent agreement between raters was 73.33%. The themes and new variables are as follows : (1) The participant wants to win the game and cares about the caliber of the opponent; (2) The participant wants to win the game and does not care about the caliber of the opponent; (3) The participant wants to beat the best opponent to become the best at their sport. The Chi Square was significant, X^2 (4, $N = 74$) = 57.15, $p < .001$. In Table 6 (see below), the horizontal percentages reflect the distribution of themes within the three groups. See the participants' written responses in Appendix K.

Table 6

Frequencies and Percentages of Participant Response Type by Choice of Opponent Chi Square Analysis

	Participant Response Type					
	Theme 1		Theme 2		Theme 3	
	n	%	*n*	%	*n*	%
Choice of Opponent						
Group 1 (Teams 1-4)	5	41.6	7	58.3	0	0

	Participant Response Type					
	Theme 1		Theme 2		Theme 3	
Group 2 (Teams 5-7)	13	100.0	0	0	0	0
Group 3 (Teams 8-11)	21	42.9	0	0	28	57.1

N = 74

Analyses Related to Gender and Athlete Status

No specific hypotheses related to gender were formulated prior to collecting data. The researcher decided to further explore the data by doing post hoc analyses related to gender.

An ANOVA was conducted on Gender and Athlete Status, as the Quasi-Independent variables and Choice of Opponent as the dependent variable. There was a significant finding for athlete status $F(1,69) = 4.65$, $p = .034$. There was a marginally significant finding for gender $F(1,69) = 3.85$, $p = .054$. Lastly, there was a non-significant interaction effect for athlete status by gender $F(1,69) = .03$, $p = .865$. These main effects demonstrate that athletes preferred a tougher opponent than did non-athletes, and that men tend to want a tougher opponent than did women (see Table 7 for means and standard deviations).

Table 7

Means and Standard Deviations of Athlete Status and Gender on Choice of Opponent

Choice of Opponent

	Athlete		Non-Athlete	
	n = 62		*n* = 11	
	M	*SD*	*M*	*SD*
	8.80	2.94	6.45	2.81

	Men		Women	
	n = 35		*n* = 38	
M	*SD*		*M*	*SD*
9.43	2.92		7.53	2.84

Choice of opponent loss-win record ranges from 0-11

A MANOVA was conducted on athlete status and gender as the quasi-independent variables and the three sub-scales of the WCMP as the dependent variables, because these sub-scales measure aspects of competitiveness. For Athlete Status, the Wilks's Lambda finding was significant, Wilks's Lambda = .661, $F(3, 65) = 11.11$, $p < .001$. For Gender, it was not significant, Wilks's Lambda = .990, $F(3, 65) = .210$, $p = .889$. Nor was there a significant multivariate interaction effect, Wilks's Lambda = .924, $F(3, 65) = 1.79$, $p = .158$.

For Athlete Status, univariate findings revealed a significant effect for Importance of Winning, $F(1, 67) = 17.29$, $p < .001$ and Motivation for High Performance, $F(1, 67) = 28.38$, $p < .001$; but not for Motivation for Learning, $F(1, 67) = .271$, $p = .605$. There were no significant univariate findings for Gender on the three dependent variables. There was a significant interaction effect for Athlete Status and Gender on the Importance of Winning $F(1,67) = 5.16$, $p = .026$. See Table 8 for means and standard deviations. See Table 9 for F values and levels of significance. Simple effects follow up tests show a significant difference between Male and Female athletes on the WCMP factor Importance of Winning $F(1,67) = 4.68$, $p < .05$. However,

there was no significant difference between Male and Female non-athletes on the WCMP factor

Importance of Winning $F(1,67) = 2.47 \ p > .05$

Table 8

Means and Standard Deviations for Athlete Status and Gender in Relation to the WCMP

	Athlete				Non-Athlete			
	Male		Female		Male		Female	
	$n = 30$		$n = 30$		$n = 4$		$n = 7$	
	M	SD	M	SD	M	SD	M	SD
Importance of Winning	13.37	2.25	11.93	2.92	7.75	0.96	10.29	2.81
Motivation for Learning	25.47	2.29	25.13	2.08	25.50	1.00	25.86	2.19
Motivation for High Performance	11.30	1.02	10.90	1.37	8.75	0.96	9.00	1.53

Scale ranges : Importance of Winning 3-12, Motivation for Learning 9-27, Motivation for High Performance 6-18

Table 9

The F Values and Levels of Significance for Athlete Status and Gender on the WCMP

	$F(1,67)$	p
Athlete Status		
Importance of Winning	17.29	< .001
Motivation for Learning	0.27	.61
Motivation for High Performance	28.38	< .001
Gender		
Importance of Winning	0.40	.53
Motivation for Learning	0.00	.99
Motivation for High Performance	0.03	.86
Athlete Status x Gender		
Importance of Winning	5.16	.03
Motivation for Learning	0.23	.64
Motivation for High Performance	0.61	.44

Ethical Issues

There were no ethical issues in this research

Discussion

The researcher of the present study was interested in understanding how psychological factors related to an athlete's level of performance, as reflected in the choice of an opponent. It was thought that athletes with higher levels of competitiveness would be more inclined to choose to compete against an opponent of higher quality compared to those with those who expressed

levels of lower competitiveness . Although some athletes enjoy athletic events because of the potential to experience positive results, many elite athletes also find joy simply from the process of competing at a high level. In other words, while winning is fun, performing and competing to the best of one's abilities is what energizes athletes about sport (Franken et al., 1994). Additionally, winning might feel more rewarding if it is against a more challenging opponent. Beating an opponent who is of lesser caliber might be beneficial for seeding/rankings, but it might not be constructive for encouraging individual growth. For athletes who have process motivation rather than outcome motivation, their goal is to perform at their peak. On the other hand, athletes with outcome motivation are inspired by achieving high results.

Out of the 10 hypotheses that the researcher postulated, only one was supported by the correlational analysis. The correlational analysis revealed a significant relationship between the Winning, Competitiveness, Motivation, and Performance (WCMP) subscale Motivation for High Performance and participant's choice of opponent. The four items that make up this scale are as follows: 1. *I tend to work harder when I am competing against other people*, 2. *I like situations in which there is a winner,* 3. *I like competitive situations and* 4. *I like the feeling I get from winning.* These items are phrased in a way that communicates a desire to experience individual success. The items focus on how an individual might feel about work ethic, competition, and the emotional reaction a person potentially achieves from experiencing success. The WCMP subscale Importance of Winning, on the other hand, consists of six items, and no significance was found between this subscale and the participant's choice of opponent. At first, this result was surprising to the researcher as this subscale seemed to be directly related to a participant's competitiveness levels and choice of opponent. However, the specific items that make up this scale place a heavy emphasis on using winning as a means of getting ahead rather than as a tool

for reaching positive outcomes. The following 6-items are the composition of the WCMP

subscale Importance of Winning : 1. *The most important thing is to win*, 2. *I get upset when other*

people win, 3. *In our society it is the winner who gets ahead*, 4. *In order to get ahead it is*

important that you be viewed as a winner, 5. *I think it is important to win,* and 6. *I sometimes*

bend the rules in order to win. These items, while relevant to winning, are not focused on

competition within the athletic arena. The emphasis is being placed on superiority levels rather

than athletic accomplishments. These items connect winning with dominance on a societal level.

For example, as Item 3 states "In our society it is the winner who gets ahead." The definition of

winner, in this situation, is somewhat ambiguous. Is the winner in this context someone who has

won the athletic event? If so, a win in an athletic match does not always symbolize progress. The

winner of a game might have had a positive outcome but might not have improved technically or

tactically from the match. Athletes who are focused on individual improvement might not

consider that item to be of high importance because it emphasizes winning rather than individual

advancement. Additionally, while athletes of the highest caliber want to win, they want to do so

because they are deserving of the outcome, not because their opponent was at a disadvantage.

Thus, Item 6, which suggests that bending the rules is acceptable if it means an individual will

obtain a positive result, will not resonate with athletes of strong character. Putting in hard work

to become better at your craft can result in feelings of empowerment. Beating an opponent who

was not given the same resources as you were for experiencing success does not result in the

same feelings of achievement as being victorious against an opponent of equal or higher

competence. With that in mind, Item 2, which insinuates an athlete will be upset if someone else

is successful also might not sit well with an athlete of high caliber. This item does not highlight

the importance of individual accomplishments but rather focuses on the results someone else

experiences. For an athlete who defines their success by their own personal growth, someone else's success will not, and should not, affect them on an emotional level. Lastly, Item 1, which states that "The most important thing is to win" conveys the message that the only thing that is of significance is winning. However, athletes want to win while also wanting to become the best version of themselves. The numerical outcome of a game does not always reveal the better competitor. Unlucky events can lead to fluke goals. A team might have the majority of the possession but be unable to convert their scoring opportunities into goals or points. Winning is one indicator of success but it is not the *only* indicator.

Lastly, the WCMP Motivation for Learning was also not significantly related to the participant's choice of opponent. The items that make up this subscale are as follows: 1. I like to learn about new things, 2. I like situations that challenge me to learn and develop, 3. I enjoy the feeling I get from mastering a new skill, 4. I like to develop as many skills as I can, 5. I like to perform to the best of my ability, 6. I like to do a job to the best of my ability, 7. I like the feeling I get when I have successfully met a difficult challenge, 8. I like to develop my skills to their fullest potential and 9. I am inclined to take on difficult tasks. As aforementioned, many elite athletes are not solely outcome oriented but are process oriented. At first the non-significant relationship between this subscale and choice of opponent was unexpected. However, after examining the specific items on the scale, it became clear to the researcher that the language being used might not have had the expected effect on the participants. Items 2, 5, 6, 7, 8, and arguably 9 are framed in a way that should resonate with competitive athletes who are process motivated. The items connect positive emotions with individual processes whereas Items 1, 3, and 4 are expressed in a manner that does not seem relevant to sports. These three items focus on learning "new" skills rather than perfecting an existing skill. Although amateur athletes might

enjoy developing a broad range of athletic skills or testing out a variety of sports, most elite

athletes are single-sport athletes. Youth sports are becoming more focused on directing athletes

to collegiate or professional levels and are less focused on simply being recreational activities.

With that in mind, the majority of participants who completed this survey most likely have been

refining their skills in one sport for the better part of their athletic career. Hence, Items 1, 3, and

4 most likely did not resonate with participants as greatly as did other items on the scale.

Aside from the non-significant relationship between the WCMP subscales and participant

choice of opponent, there were also no significant relationships found between the four Frost

Multidimensional Perfectionism Subscales (FMPS). Not always are elite athletes perfectionists,

but research has suggested a correlation between athletes who are positive striving perfectionists

and enhanced performance (Anshel & Mansouri, 2005; Stoll et al., 2008). Additionally,

researchers have observed a negative relationship between the self-critical strain of perfectionism

and athletic performance (Anshel & Mansouri, 2005; Stoll et al., 2008). However, similar to the

technical issues regarding the phrasing of items in the WCMP, there appear to have been

comparable problems with the items on the FMPS subscales. The four subscales were created to

examine an individual's concerns over mistakes and doubts about actions, parental expectations

and evaluation, precision, order and organization, and excessively high personal standards. The

FMPS was intended for use in assessing individuals with body image concerns, anorexia, OCD,

and other anxiety related disorders. Items on the scale that focus on being a neat, organized

person may not necessarily apply to individuals who are perfectionists in the athletic arena.

Similarly, items that make up the subscale focused on concern over mistakes and doubts about

actions place a heavy emphasis on being a failure if one is not completely successful. Athletes

who express perfectionist qualities tend to be hyper-focused on performance and extremely

self-critical of their work. However, many elite athletes are less focused on being viewed as a failure and more concerned with underperforming resulting in unsatisfactory results. While it was unsurprising that significant relationships were found between the aforementioned subscales and opponent choice, it was noteworthy that there was a non-significant relationship between the subscale focused on excessively high personal standards. The items that made up this subscale were centered around high individual performance and thus, seemed particularly relevant to the present study. There were a few items on this scale that were related to other people's achievements that might not have resonated with participants who are more focused on their own personal development. In sum, while the scale was added to this study in order to evaluate the participant's levels of perfectionism, it might not have been adequate to measure athletic perfectionist qualities.

The Big Five Inventory was included in the current study to investigate whether specific personality characteristics were related to an athlete's preference of opponent. The data from the study showed no significant correlations between personality factors and opponent choice. However, there was a significant negative relationship between the BFI personality factor Agreeableness and the WCMP subscale Importance of Winning $p < .001$. This result demonstrates that a person with higher levels of agreeableness is less concerned with winning than is someone with lower levels of agreeableness. Someone who is high in agreeableness might be less affected by an unsatisfactory result than would be true for someone lower in agreeableness. It is possible that this inverse relationship between agreeableness and the importance of winning indicates that an athlete with high levels of agreeableness might be less competitive than someone with lower levels of agreeableness.

Other significant results were found between BFI personality factor conscientiousness and the WCMP subscale Motivation for Learning. Previous research demonstrated relationships between conscientiousness and high quality work performance (Barrick et al., 2001). It is likely that a person who scores high on conscientiousness might also be someone who is interested in learning new skills. This type of person might be more process oriented rather than outcome oriented and could be a beneficial player to have on a roster for a variety of reasons. For example, according to Fletcher and Sarkar (2013), the most successful teams are those high in team resilience. These teams are comprised of individuals who want to work hard for one another, know how to manage unexpected obstacles, and have caring intra-team relationships (Fletcher & Sarkar, 2013). Individuals with high levels of conscientiousness have important qualities that make them good team players. Additionally, their desire to master skills and complete their work diligently is what would make them an asset to an athletic team. While the present study was interested in uncovering what psychological factors were related to an individual athlete's preference of opponent and levels of competitiveness, this correlation between motivation for learning and conscientiousness might have important practical implications. Conscientious individuals would be helpful to have on a team because they would push the level of play in practice. Their desire to learn new things, master new skills, and create positive relationships with their teammates could lead to positive team outcomes.

Although the researcher was surprised by the non-significant results between BFI personality traits and participant choice of opponent, there might be some explanation for this occurrence. The literature suggests that there are specific personality traits correlated with higher performance, however, the current study did not directly measure performance. While it would have been interesting to measure an athlete's personality traits prior to a game in order to

evaluate their subsequent performance, both timing and logistical limitations made that

procedure impractical. Hence, the researcher chose to measure participant choice of opponent as

an alternative to real athletic performance. The difference between supposed performance and

real performance might account for the lack of significant results. Nevertheless, the data from the

present study can provide coaches with valuable insight on the psychological make-up of their

team, allowing them to better choose line-ups and recruits.

Although the correlational analysis did not reveal any significant relationships between

Levenson's Locus of Control Scale (LLOC) and participant choice of opponent, there were other

important findings with this scale. A significant relationship was observed between LLOC

subscale Powerful Others and the WCMP subscale Importance of Winning. If an individual

scores high on the LLOC subscale Powerful Others, it suggests there is predilection toward an

external locus of control. Having an external locus of control is characterized by attributing

successes and failures to people outside of oneself. In other words, an individual with an external

locus of control does not view themselves as the key determinant of their own fate. Hence, if

there is a positive correlation between an external locus of control and the importance of

winning, it is possible that many of the participants believed the outcome of an athletic event was

not entirely within their control. While in some senses it is true that the outcome of a competition

cannot be completely regulated by an individual athlete, it is also not completely unregulated by

an individual athlete. If coaches were aware of the way their athletes perceived their ability to

control the outcome of a game, they might be able to better prepare their players mentally for

competition.

In general, however, the lack of significant findings related to LLOC subscales might

have also been a result of scale content. Similar to the content related issues with both the FMPS

and WCMP scales, the items that make-up the LLOC scale are phrased in a manner that might

not have resonated with participants. Several of the items from each of the subscales reference

friendship or relationships. The focus of the present study involved athletes as the participants

and research suggests that individuals who compete on athletic teams tend to be more outgoing

and extroverted (Bäckmand et al., 2001). Additionally, studies have shown a positive correlation

between individuals with high levels of extraversion and their ability to develop friendships

(Harris & Vazire, 2016). With that in mind, athletes participating in this survey might not have

felt as though the scale items focusing on control over friendships were pertinent to them.

      The one significant result was a positive correlation between WCMP subscale Motivation

for High Performance and participant choice of opponent. Since the researcher had hypothesized

that this relationship would be supported by the data, it was not particularly surprising.

Nonetheless, the significant result provides helpful information to the field of Sport Psychology

for a few reasons. This result demonstrates that participants are motivated to select an opponent

based on the way that they perceive it will impact their athletic performance. Many of the

participants provided insightful rationale for their selection of opponent, citing high performance

as their main justification (refer to Appendix K). Despite the fact that three main themes emerged

from the content analysis, all three of them were focused on performance goals. Certain

participants were interested in competing against a quality opponent because they wanted to play

a competitive match and believed that their performance would be enhanced by playing an

opponent of high caliber. Other participants selected an opponent of lower stature because they

wanted a guaranteed win. Lastly, a large number of participants selected to compete against the

best team in order to become the best team. In other words, they wanted to "beat the best to be

the best." There was a significant trend in the participants' responses to link choice of opponent

with perceived performance. While this significant finding could be beneficial for providing coaches with insight on how to better motivate their players, it could also provide sport psychologists with valuable information on how to manage performance anxiety. For example, if athletes are primarily concerned with their performance and are particularly nervous about competing against a specific opponent, a sport psychologist might be able to use that information to provide their client with more useful stress reducing tools. Understanding the root of a stressor allows for more accurate advice to be given. Ultimately, if the source of stress is coming from an external factor, an athlete should be given skills to help them focus on how to control their own behaviors to enhance or determine performance.

Aside from the correlational analysis conducted to evaluate the hypotheses, the researcher also ran several post-hoc analyses to evaluate several relevant factors related to participation in sports, specifically athlete status and gender. An ANOVA was conducted on Gender and Athlete Status, as the quasi-independent variables and Choice of Opponent as the dependent variable. The results demonstrated that athletes preferred tougher opponents than did non-varsity athletes and that men tended to prefer a tougher opponent than did women. While there were no hypotheses that directly addressed the post-hoc analyses, the difference between athlete and non-varsity athlete preference of opponent is in line with what the researcher aimed to examine in this study. The researcher's main argument regarding the present study was that the more competitive an individual, the more they would prefer an opponent of higher caliber. It was assumed that a varsity athlete would be more competitive in nature than their non-varsity athlete counterparts. This result potentially confirms that expectation.

The result, which showed that men preferred a more challenging opponent than did women, however, was more unexpected to the researcher. Since all participants were athletes to

some extent (84.9% of participants were varsity athletes and 15.1% of participants were

non-varsity or club athletes) it can be inferred that male participants of some athlete status

preferred more challenging opponents than did their female counterparts. This result was

particularly interesting because previous research conducted by Jones et al. (2001), revealed that

collegiate female athletes reported being more competitive than did collegiate male athletes.

However, the data from the present study directly contradicts this finding. One likely reason for

this difference in results might be a product of the difference in the participant pool. The

participants from the Jones et al. (2001) study were Division I athletes whereas the participants

from the current study were all DIII athletes. A college or university that has Division I athletics

tends to be larger and have more money allocated to their athletic departments whereas Division

III colleges or universities are typically smaller and have a smaller athletics budget. These

distinctions usually result in more accomplished athletes attending colleges or universities with

Division I athletics. Hence, it is possible that these DI athletes have a slightly different

psychological composition than do DIII athletes. On the other hand, many DIII institutions are

strong academically and attract a well-rounded student-athlete who is both academically and

athletically gifted. Thus, no concrete conclusions can be determined from the divergence

between the current study and the Jones et al. (2001) study. Nonetheless, this result is

informative. If male participants of some athletic level do prefer a tougher opponent than do

female participants of some athletic level, coaches might benefit from adjusting their technique

based on whether their team is composed of men or women. For example, a coach who is

working with men might want to stress the high skill level of an opponent when attempting to

motivate their team for an important game, whereas a coach working with women might opt for

a different approach in order to experience superior results.

The researcher also was interested in observing whether there were specific differences between Athlete Status and Gender on the three WCMP subscales. Hence, a MANOVA was conducted on athlete status and gender as the quasi-independent variables and the three sub-scales of the WCMP as the dependent variables, because these sub-scales measure aspects of competitiveness. The results of this analysis revealed a significant effect for Athlete Status on the WCMP subscale Importance of Winning as well as the WCMP subscale Motivation for High Performance. Varsity athletes scored higher than non-varsity athletes on both the WCMP subscale Importance of Winning as well as the WCMP subscale Motivation for High Performance. These two subscales focus predominantly on ambition in regard to winning and performance. The WCMP subscale Motivation for Learning, on the other hand, concentrates on an individual's desire to improve their skills in a more general sense. It is possible that athletes felt a stronger connection to the items from both the WCMP subscale Importance of Winning and Motivation for High Performance than they did to the items on the Motivation for Learning. As highly competitive people, these participants might value winning and high performance more so than they regard learning new skills. Non-varsity athletes, on the other hand, might simply appreciate improving their abilities more than they value the outcome of an athletic event. Additionally, a non-varsity athlete might be perfectly satisfied knowing that they have developed their skills and not necessarily focus on performing at the highest level.

The MANOVA also revealed a significant interaction between athlete status and gender on the WCMP subscale Importance of Winning, with male and female athletes differing on this scale (with males higher) whereas male and female non-varsity athletes did not significantly differ. This result provides some insight on how male varsity athletes might differ in their perspective on competition from female varsity athletes. The items on the WCMP subscale

Importance of Winning heavily emphasize competition in a selfish form. The items revolve around the individual experiencing success with a somewhat cutthroat tone. Male athletes' competitiveness levels might derive from a more self-centered point of view than is true of female athletes. In some ways, this finding is not surprising. Male and female sports tend to manifest themselves in different forms. For example, in soccer, the men's game tends to be fast paced and more individualized whereas the women's game tends to be slower and more team oriented. Male soccer players are more inclined to take on opponents in 1v1 battles than is true for women soccer players. This difference might stem from the difference in encouragement they receive from their coaching staff. Female soccer players are typically taught to share the ball and criticized more heavily for a failed attempt at a 1v1 battle than are male soccer players (Pappalardo et al., 2021). Research conducted on the difference between men's soccer and women's soccer has shown that in the women's game, more players from the same team touch the ball than in the men's game (Pappalardo et al., 2021). In short, male soccer players exhibit more individualistic skills than do female soccer players. Even more broadly speaking, men are encouraged to be self-centered in the business world than are women (Eckel & Grossman, 1998). According to Eckel and Grossman (1998), women are more socially-oriented (selfless) while men are more individually-oriented (selfish). Hence, the results from the MANOVA showing that male athletes score higher on the WCMP subscale Importance of Winning than do women athletes is in line with the literature. No significant differences were found between male and female athletes on either of the other two WCMP subscales.

Future Directions

This study revealed that although sports exist world-wide, the motivation behind competing varies from athlete to athlete. The results from this study can help better inform

coaches on the mindset that their athletes might hold regarding competition. Additionally, the

results have the potential to provide professionals in the field of Sport Psychology with some

insight on how to better assist their clients. An athlete who is more motivated to experience

positive results might have different stressors than an athlete who is motivated to perform their

best. While this study contributed new information on how the perception of an opponent can

influence perceived performance, more research is needed on this topic. Future studies should

attempt to evaluate an athlete's psychological factors in relation to athletic performance in a

more objective manner. Analyzing the psychological composition of an athlete prior to

competition and then evaluating their subsequent performance based on game statistics or

professional judgment could provide interesting information for the field of Sport Psychology.

Additionally, there were limitations to the present study. The vast majority of participants were

members of the Connecticut College community. Future studies should incorporate a more

diverse group of athletes (both diverse in race/ethnicity as well as collegiate athletic level DI,

DII, and DII) into their research for more accurate results. Lastly, the lack of distribution in

choice of opponent might be a justification for the lack of significant findings. The vast majority

of participants selected an opponent of higher caliber (84% of participants selected Team 6 or

better). In some senses, this heavily skewed distribution is similar to a ceiling effect. While there

might have been personality differences in participants who selected Team 11 versus participants

who selected Team 1, they are more challenging to identify with the ceiling effect. It is worth

considering whether participants felt more inclined to select an opponent of higher caliber

because it is the "correct" selection. In other words, participants might have preferred competing

against an opponent with a worse record but because that selection would have been judged less

respectable, they felt pressured to select a better opponent. It would be valuable to conduct this

study in other countries or to incorporate participants from a more diverse set of cultures to see if there are cultural differences in participant preference of opponent. American culture might influence participant choice of opponent because it is deemed more honorable to compete against a better opponent than it is to compete against a lesser one.

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    150–163. https://doi.org/10.1037/hum0000138

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    relationship between big five and self-control in boxers: A mediating model. *Frontiers in*

    Psychology, *10*. https://doi.org/10.3389/fpsyg.2019.01690

Appendix A
Frost Multidimensional Perfectionism Scale (FMPS)
5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree)

Items:

My parents set very high standards for me

Organization is very important to me

As a child, I was punished for doing things less than perfectly

If I do not set the highest standards for myself, I am likely to end up a second rate person.

My parents never tried to understand my mistakes

It is important to me that I be thoroughly competent in what I do

I am a neat person

I try to be an organized person

If I fail at work/school, I am a failure as a person

I should be upset if I make a mistake

My parents wanted me to be the best at everything

I set higher goals than most people

If someone does a task at work/school better than I do, then I feel as if I failed the whole task

If I fail partly, it is as bad as being a complete failure

Only outstanding performance is good enough in my family

I am very good at focusing my efforts on attaining a goal

Even when I do something very carefully, I often feel that it is not quite right

I hate being less than the best at things

I have extremely high goals

My parents expect excellence from me

People will probably think less of me if I make a mistake

I never feel that I can meet my parents' expectations

If I do not do as well as other people, it means I am an inferior being

Other people seem to accept lower standards from themselves than I do

If I do not do well all the time, people will not respect me

My parents have always had higher expectations for my future than I have

I try to be a neat person

I usually have doubts about the simple everyday things that I do

Neatness is very important to me

I expect higher performance in my daily tasks than most people

I am an organized person

I tend to get behind in my work because I repeat things over and over

It takes me a long time to do something "right"

The fewer mistakes I make, the more people will like me

I never feel that I can meet my parents' standards

Appendix B
Levenson's Locus of Control Scale (LLOC)
6-point Likert scale ranging from -3 (strongly disagree) to 3 (strongly agree)

Items:
Chance
7. When I get what I want, it's usually because I'm lucky.

10. I have often found that what is going to happen will happen.

24. It's chiefly a matter of fate whether or not I have a few friends or many friends.

14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.

16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.

6. Often there is no chance of protecting my personal interests from bad luck .

2. To a great extent my life is controlled by accidental happenings.

Powerful others
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.

11. My life is chiefly controlled by powerful others.

3. I feel like what happens in my life is mostly determined by powerful people.

8. Even if I were a good leader, I would not be made a leader unless I play up to those in positions of power.

22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me

13. People like myself have very little chance of protecting our personal interests when they conflict with those of powerful other people.

15. Getting what I want means I have to please those people above me

Internal
19. I am usually able to protect my personal interests.

5. When I make plans, I am almost certain to make them work.

18. I can pretty much determine what will happen in my life.

21. When I get what I want, it's usually because I worked hard for it.

23. My life is determined by my own actions.

9. How many friends I have depends on how nice a person I am.

1. Whether or not I get to be a leader depends mostly on my ability.

Appendix C
Big Five Inventory (BFI)
5-point Likert scale ranging from 1 (Disagree strongly) to 5 (Agree strongly)

Items:
I am someone who…
Is talkative

Tends to find fault with others

Does a thorough job

Is depressed, blue

Is original, comes up with new ideas

Is reserved

Is helpful and unselfish with others

Can be somewhat careless

Is relaxed, handles stress well.

Is curious about many different things

Is full of energy

Starts quarrels with others

Is a reliable worker

Can be tense

Is ingenious, a deep thinker

Generates a lot of enthusiasm

Has a forgiving nature

Tends to be disorganized

Worries a lot

Has an active imagination

Tends to be quiet

Is generally trusting

Tends to be lazy

Is emotionally stable, not easily upset

Is inventive

Has an assertive personality

Can be cold and aloof

Perseveres until the task is finished

Can be moody

Values artistic, aesthetic experiences

Is sometimes shy, inhibited

Is considerate and kind to almost everyone

Does things efficiently

Remains calm in tense situations

Prefers work that is routine

Is outgoing, sociable

Is sometimes rude to others

Makes plans and follows through with them

Gets nervous easily

Likes to reflect, play with ideas

Has few artistic interests

Likes to cooperate with others

Is easily distracted

Is sophisticated in art, music, or literature

Appendix D

Informed Consent

Principal Investigators (PI): Emily Lorry
Study Title: Psychological Factors of Athletes and Preference for Competition Against
Opponents Who Differ in Relative Standing
Address: Bill Hall
Connecticut College
270 Mohegan Avenue
New London, CT 06320

We are asking you to choose whether or not to volunteer in the research described below. The text below provides key information that may help you to make this decision.

Why is this research being done and what is involved?

The purpose of the study is to better understand how psychological factors are related to an athlete's preference of opponent .

You will be asked to complete several surveys regarding your levels of perfectionism, locus of control, Big Five Personality Traits, and OCD behaviors.

You are also being asked to consent to publication of the study results as long as the identity of all participants is protected (here the data are anonymous, that is, no identifying information is collected).

This study should take from 30 minutes.

It is anticipated that about 250 people will be involved in this study.

Do I have to participate?

Participation in this research study is completely voluntary and you are free to withdraw from the research at any time by closing your browser window.

There is no penalty for withdrawing from the study. Your decision to volunteer for this study will not affect your current or future relationship with Connecticut College.

What are the risks and benefits?

We do not anticipate any risks to participating in this research other than those encountered in everyday life.

There are no direct benefits to you, however we hope this research will improve our understanding of the psychological factors related to an athlete's preference of opponent, which may be related to practical benefits in a variety of applied domains.

Data Security

These data are being collected anonymously and therefore no identifying information will be included in any report involving the data collected. In addition, we will keep the data as secure as possible.

Whom can I talk to if I have questions or concerns?

If you have any questions or concerns about this research, you can contact Professor Zakriski, Acting Chair of the CC IRB, at alzak@conncoll.edu

Statement of Consent

If you have read the above information, consent to take part in the study, and are at least 18 years of age, please click the submit button below to confirm your consent. This research is considered Exempt from further Connecticut College IRB review under Exemption 2 (that includes Survey research) of the Code of Federal Regulations (45 CFR 46.104(d)(2).

To access a copy of the informed consent, please download the following file:

(you will put your uploaded informed consent document here)

Appendix E

Debriefing Statement

First of all, thank you for participating in this research dealing with the psychological factors that relate to an athlete's preference of opponent. In this research, we are investigating the connection between an athlete's psychological factors and preference of opponents in sport. You were asked to complete a number of scales that measure aspects of personality including perfectionism, locus of control, and openness to experience, among others. The study was sent to athletes from Connecticut College who compete on Varsity level team sports.

While there has been a plethora of research conducted on singular psychological factors and athletic as well as academic performance, none have investigated the psychological makeup of an athlete who prefers to compete against a specific level of opponent. This research will advance our understanding of what type of athlete prefers to compete against an opponent who is of differing rank.

If you have any questions or concerns about the manner in which this study was conducted, please contact the IRB Acting Chairperson Audrey Zakriski,   alzak@conncoll.edu

If you are interested in this topic and want to read the literature in this area, you might enjoy the following articles:

Atkinson, M. (2019). *Sport, mental illness, and sociology* (M. Atkinson (Ed.)). Emerald Publishing.

Roberts, R., & Woodman, T. (2017). Personality and performance: Moving beyond the Big 5. *Current Opinion in Psychology*, *16*, 104–108. https://doi.org/10.1016/j.copsyc.2017.03.033

You may also contact Emily Lorry at elorry@conncoll.edu for additional resources.

Appendix F

Demographics Questionnaire

Instructions: Please complete the following demographic information.

Age: _____

Gender: _____

Class Year: _____

Race/Ethnicity: _____

Are you a varsity athlete: yes.   no

Sports Team (Optional) _____

Appendix G
Competitiveness Index

Instructions: Please select the opponent that you would most like to compete against based on their current record (wins and losses). As an example, 0-10 means 0 wins and 10 losses.

- 1 (0-10)

- 2 (1-9)

- 3 (2-8)

- 4 (3-7)

- 5 (4-6)

- 6 (5-5)

- 7 (6-4)

- 8 (7-3)

- 9 (8-2)

- 10 (9-1)

- 11 (10-0)

Please provide a rationale for your selection of opponent on the Competitiveness Index in the

space provided below.

Appendix H

Email to Connecticut College Varsity Athletes

Hi,

My name is Emily Lorry and I am a current senior on the Women's Soccer Team at Connecticut College. I am a psychology major conducting research for my honors thesis investigating the psychological factors of athletes and their preference for competition against opponents who differ in relative standing. It would be extremely helpful to my project if you would fill out the following questionnaire (INSERT QUALTRICS LINK).

Thank you!

Emily Lorry

Appendix I

Winning, Competitiveness, Mastery, and Persistence Scale (WCMP)

Scale ranging from "Not at all like me" to "Very much like me"

Items:

Motivation for High Performance Scale

1. I tend to work harder when I am competing against other people.

2. I like situations in which there is a winner.

3. I like competitive situations.

4. I like the feeling I get from winning.

Motivation for New Learning Scale

1. I like to learn about new things.

2. I like situations that challenge me to learn and develop.

3. I enjoy the feeling I get from mastering a new skill.

4. I like to develop as many skills as I can.

5. I like to perform to the best of my ability.

6. I like to do a job to the best of my ability.

7. I like the feeling I get when I have successfully met a difficult challenge.

8. I like to develop my skills to their fullest potential.

9. I am inclined to take on difficult tasks.

Importance of Winning Scale

1. The most important thing is to win.

2. I get upset when other people win.

3. In our society it is the winner who gets ahead.

4. In order to get ahead it is important that you be viewed as a winner.

5. I think it is important to win.

6. I sometimes bend the rules in order to win.

Appendix J

Email to Connecticut College Club Athletes

Opportunity to win $ and help a classmate with research Inbox ×

Rachel Loughran   Thu, Feb 3, 1:53 PM

to Brielle, Leah, Emma-Sofia, Amelia, Jake, Tether, Alexis, Evelyn, Chase, Alex, Richard, Kelley, Luci, Lara, Haley, Liam, Justin, Alexa, Caleb, Makena, Jocelyn, Elena, Brendan, T

Hi all, I just got the following email from Emily Lorry '22, requesting help from club sport athletes. Please distribute to your teams in case they are interested!

See below--

Hi,

My name is Emily Lorry and I am a current senior on the Women's Soccer Team at Connecticut College. I am a psychology major conducting research for my honors thesis investigating the psychological factors of athletes and their preference for competition against opponents who differ in relative standing. It would be extremely helpful to my project if you would fill out the following questionnaire. A link to a google form will allow you to enter into a raffle for a chance to win 1 of 10 $10 Starbucks or blue camel gift cards. Your survey responses will remain anonymous even if you choose to enter the raffle:

https://conncoll.co1.qualtrics.com/jfe/form/SV_9ZxmRAdhqlJiKbk

https://docs.google.com/forms/d/e/1FAIpQLSf-x3_NghXDOQaOYSWk6tYag8WJb97rJW5CKNn7Fd-usTeccA/viewform?usp=sf_link

Thanks!

--
Rachel Loughran
Assistant Director of Outdoor Leadership and Club Sports
Connecticut College
She/Her/Hers
Office: Cro 221
Phone: 860-439-2813
RLoughran@conncoll.edu

Appendix K

Content Analysis

1. After the season that my team had I have confidence that we would rise to the occasion against a high caliber opponent. I would not want to play someone lesser than us (since we might stoop to their level) but I also would not want to play a team who has yet to lose. A team with a record of 8-2 would push my team to play our best but would not be out of reach to beat.

2. 7-3, a good team but still has faults and can be beaten

3. Playing a team that has a perfect record is mentally far more intimidating that a team that has even one or two losses. However, a team that is 8-2 is still very good so it would mean more to beat them than to beat a team that has lost most of their games.

4. I want to best chance to win so I would want a team with a losing record. I wouldn't want 0-10 because those teams can give you weird plays and can make it difficult to play against. Also a team that is 0-10 has nothing to lose and often play that way. So I would pick 3-7 because they are good enough to win 3 games but not so good that they are having a losing season.

5. I would want to play the team that is undefeated for the chance to beat the best. If you beat the best team then you are automatically in the conversation for being the best team. And even if you lose, so did everyone else.

6. I would choose a team with a majority of wins, because that game would be more of a challenge and if I win, then it is more satisfying than beating a team with only losses or a majority of losses.

7. I chose this team because without knowing what capabilities my team has I want to set us up for success. I chose a team that had enough wins to be competitive but not overpower us so that we remain focused and play to our level but still have better odds.

8. Because it wouldn't be an extremely difficult game but would still feel good if we win because it isn't a given. You would have to try but it would be fun because you probably won't get crushed.

9. While an opponent with only losses might initially seem like the advantageous choice, in my experience, those teams have an ability to drag down not only the skill of their

opponent but the energy and morale as well. With a team with a 5-5 record, they have skill, but they are often unable to finish the job. The Game will be exciting and competitive, but if my team has that extra amount of drive and energy, it should be an enthusiastic win.

10. I want to work hard but I want them to be a good, solid team, however I want them to have loses to know that we can beat them. I like the game to be fun and intense. I dont like when an important game is a complete shut out on either side, so that is why I didn't pick the best or the worst.

11. Want them to be good but I want to make sure I win

12. If this were a regular season game, sometimes you need a tune up game where you play a team that is 0-10 in order to allow for guys to rest and recover and let some of the guys who don't play as much get some time. Yet if this were a championship game you would want to play someone who's gonna make it a game and force you to prepare and compete so you don't come out flat expecting to roll the other team, coming in as an underdog that's not too far behind can give added drive and motivation.

13. It would feel very rewarding to win against a team with a strong record. They might even go into the match over confident that they can easily win. But they also know what it feels like to lose some games which would motivate them to win and be a strong opponent. I'd want to play a team where the game would be competitive and not too easy.

14. I like a tough opponent that will make me better but also an opportunity to confidently use my skills and score!

15. I would want to play Team 11 the most because playing against the best teams can only make you better, but playing every single team would help our team learn what we can do better vs what our strengths are. It also helps us train our minds to go into any game with the same exact mindset as opposed to going in cocky that we will win just based on wins and losses. It's important to be humble in all situations.

16. I like to challenge myself against strong team.

17. I want to be challenged enough so that difficulty is faced but the ability to persevere is possible.

18. I would like to play against an undefeated team rather than a team that hasn't won a game because if we win the game or play really well, it's because we have proved to ourselves

that we're a good team and have the ability to play really well together, rather than winning because the other team isn't as good. It makes me feel more accomplished and more deserving of a win when the win comes from someone who wanted it more and a win that came from determination instead of an easy win.

19. They have a winning record so it will be good competition and a fun team to compete against.

20. I'd want to play a 5-5 team because although they are .500 they aren't going to be as hungry as a team who is below that record. No one wants they're team to have a losing record so they'll probably play harder.

21. A good team but beatable. Competing against them would be competitive and a good game.

22. Meant to only select team 11, beat the best to be the best.

23. I would choose to play against the person with the best record because it would be great to beat them but if I lose I can learn and come back and beat them next time.

24. I am most likely to win against the team with the worst record.

25. A 10-0 record means that that opponent is at the top of their sport. In order to be the best, you must beat the best, so I would most like to play an opponent who is at the top of their level.

26. I want a challenge but it's also nice to see (on paper) they are beatable.

27. I would want to play against team 8 because they haven't won every single game which shows me other teams have been able to beat them and it can definitely happen, but I would want to be challenged greatly so if my team were to win we would know we worked for it and it would be rewarding.

28. Unpredictability within their record, but the odds are still not on their side

29. I chose an opponent with an equal number of wins and losses because I believe that this type of opponent can win or lose depending upon the day, their teal makeup, their opponent and other variables. I believe I would have a challenging game against a team that has equal wins and losses.

30. I like facing challenging teams.

31. Compete against the best

32. I chose team 1 because with the worst record we are more likely to win.

33. I would want to play against this team because their record indicates that they're highly competitive, however, they are not impossible to beat. This would give me confidence that they ARE beatable and that if we won it would be a big deal since they are a winning team.

34. In an important match, I would like to win. I would want to play the opponent with a 3-7 record because with that record there is a larger chance I would win but with some wins under their belt, hopefully the match would still be competitive

35. 6 and 4 means the team has a solid record but is still not a powerhouse, meaning there's a good chance of having an equitable but challenging game.

36. I want someone who is the best. To be the best you have to beat the best. It also matters what skill I'm at, I consider this 10-0 person to be in something I truly care about so that's why I chose them.

37. If this opponent has won and lost 5 matches each, it will be the most similar to me coming in with 0-0. In this way I'm hoping that the match will be fair because we are coming in with the same mentality towards the game.

38. I want to be challenged by the best and see how I stack up.

39. Their record is really good- which means the soccer will be really fun to play against.

40. Strong opponent with identifiable weakness presents a highly competitive challenge and gives me confidence that I can outperform

41. Would choose 10-0, have to beat the best to be the best.

42. I have a tendency to perform at the level of my competition so I've always been able to step my game up in important situations. Choosing the team with 1 loss is important though because their weakness has been found and exploited once before so I would go into this situation confident that I would be able to do so as well. Also, it's not nearly as satisfying to play a "big game" that ends up being a blowout.

43. I don't want to just steamroll someone because the challenge is part of the fun. On the other hand I'd be intimidated by someone who hasn't lost at all so it's good to know that they can be beat.

44. This opponent shows they will give me a challenge but that they are not unstoppable.

45. I like winning but I don't get enjoyment out of winning from a team that doesn't stand a chance

46. It would really depend on my record/skill level. I don't like to be an underdog, but I also don't like an easy win. Therefore, a 50/50 chance would put it up to a battle of skill.

47. I chose 4-6 because I would feel that my team has a bit of an advantage over them to give us a bit of a cushion, but not too much of a cushion that we would let our guards down. Playing a team like this would give me the opportunity to take risks and play with confidence and allow me to develop my playing skills and maneuvers.

48. Not knowing my record this is a safe bet to give my team an opportunity to play a strong team but not have it be a blow out

49. They're really tough but I've got at least a small chance

50. I would choose 6-4 so I still feel like I have a good shot at winning but it's also a respectable win. The other team has a winning record so a win reflects even better on me. Also if I were to lose, it's not as embarrassing because at least the other team is obviously competent, as they have a winning record.

51. Team 11 bc they are the best and would make you get better

52. It is the easiest win. May not be the most fun game but it has the highest probability of winning if your record is better than theirs. It also depends how good the team you are on is. If my team is really good I would pick I higher winning team fit better competition but if I am on a bad team who does not win a lot o would want the easiest team to guarantee a win

53. I like a competitive game. If team 11 was chosen I would be crushed, if team 1 was chosen I would not be challenged.

54. Gotta beat the best to be the best

55. have to beat the best to be the best

56. Challenge.

57. I would choose the 0-10 team because if it's an important game there's no room for error and I have to win

58. To be the best, you have to beat the best.

59. I play a position where you get more action the better the opponent is. It's also more satisfying beefing a tough opponent than an easy one and more fun.

60. To be the best you gotta beat the best.

61. - competitive team but doable and challenging but high reward if there is success

62. Nothing to lose if you win you give them their first loss

63. Why not? If one is putting in the work and is doing the best of their ability, why not that be challenged. You are either successful and feel good beating the challenge, or you lose, and learn from it and move on. Either way, playing the hardest team can always be a valuable experience.

64. The 0-10 team has nothing to lose so they may be more likely to pull off on upset, so the 1-9 or even 2-8 team would be better

65. Team 8 (7-3) I would want to play a team that has a good record so that we can have a good game and quality competition. They have still lost a few games so they are clearly not impossible (for lack of better term) to beat. It would also feel like more of an accomplishment to beat them.

66. I tend to play up to my competition, when I play teams better or as good as us those tend to be my best games because I want to beat the top teams and prove to everyone we can play with them.

67. I would would want to chose this one because I enjoy playing a team who you know you have a chance against but also know that you are going to have to put in the work to win (wouldn't let me unselect but i chose 5-5)

68. I want to see how I would do against the best competition.

69. Beating them would make you the best

70. The feeling of beating a better team is far more enjoyable than beating a worse team.

71. I want to play a competitive game but also a little padding to know what a loss feels like.

72. I would want to compete against the best opponent because if my team wins, then we're the best, and if we lose then we competed as best we could against a great opponent

73. An important match, to me, is one that has playoff indications or can determine a champion and just based off easy statistics, our team would have the best chance of winning against a team that has not won at all. The game would be less competitive, which stinks, but those are our best odds.

74. I want to be challenged. If the team is 8-2 they aren't going to be perceived as unbeatable by members of the team. The game should be a good one and a win will feel that much better than against a lower ranked opponent.

75. Because playing the best opponent is a good gauge of how one will match up against

others.