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The Use of Humor in Intercollegiate Varsity Sport

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Philosophy
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Abstract

Three separate studies examined the use of humor in intercollegiate varsity sport. The first explored, via focus groups, *who*, *what*, *where*, *when*, and *why* humor is used. The second examined, via multilevel modeling, how athletes' perceptions of cohesion (measured via the Group Environment Questionnaire; Carron et al., 1985) related to the styles of humor (measured via a modified version of the Martin et al. (2003) Humor Styles Questionnaire), used by athletes, teams, and head coaches. The third investigated, via multilevel modeling, how the styles of humor used by athletes and head coaches related to athletes' liking of the head coach, via select items from the Coach Evaluation Questionnaire (Rushall & Witznak, 1985). Results showed that humor use was ubiquitous and associated with positive and negative outcomes. The results of Study 1 showed that humor was used to achieve the positive outcomes of enhanced sport relationships, coping, and performance. Within sport relationships, the results from Study 2 and 3 showed that athletes' and coaches' use of positive styles of humor (i.e., *affiliative* and *self-enhancing*) were generally related to athletes' increased perceptions of team cohesion and liking of the head coach. With regard to negative outcomes, the results of Study 1 showed that if humor use was excessive, ill-timed, and/or negative (i.e. *aggressive* or *self-defeating*), it could result in damaged relationships, distressed individuals, and reduced performance. Studies 2 and 3 also showed that athletes' use of *self-defeating humor* was associated with decreased athlete perceptions of task cohesion and liking of the head coach, whereas head coaches' use of *self-defeating humor* was associated with decreased athlete perceptions of social cohesion. These results align with Martin's (2007) conceptualization of humor as a social skill such that its use, when in the right amount, at an ideal time, and with the optimal style, can have numerous potential benefits. This dissertation was also the first to note potential detrimental outcomes associated with the use of humor in intercollegiate varsity sport; thus several recommendations for both coaches and athletes were advanced to maximize the benefits of its use.

Keywords

Humor, humor styles, athletes, coaches, intercollegiate varsity sport, focus groups, multilevel modeling, cohesion, liking

Summary for Lay Audience

Humor occurs in all areas of life, including sport, and can be used in four different styles. The first, *affiliative humor*, is used to share funny stories and laugh with others to enhance relationships. The second, *self-enhancing humor*, is used to feel better during difficult moments and cope with challenges. The third, *aggressive humor*, is used sarcastically, and may be mean-spirited, to put others down and make oneself feel better. The fourth, *self-defeating humor*, is used to put oneself down to make others feel better. The present dissertation includes three studies that were conducted to fill gaps in the literature regarding the use of humor—and the four styles mentioned above—in intercollegiate varsity sport. Results from Study 1, which consisted of 10 focus groups conducted with 31 intercollegiate varsity athletes from eight sports, showed that all four styles of humor were used by a range of individuals, in multiple locations, and at various times. Athletes noted that the reasons for humor use included enhancing relationships, increasing performance, and coping with challenges. Athletes also indicated, however, if humor was used excessively, at the wrong time, and/or in the wrong style, it could damage relationships, decrease performance, and distress individuals. The results from Study 2, conducted with 278 athletes and 36 coaches from intercollegiate teams in four sports across Canada, showed that the use of affiliative and self-enhancing humor was related to increased team cohesion, whereas the use of self-defeating humor was related to decreased cohesion. Within the same population, the results of Study 3 showed that athletes' use of affiliative and self-enhancing humor, as well as head coaches' use of affiliative humor, were related to increased liking of the head coach by athletes. Conversely, athletes' use of self-defeating humor was related to decreased liking of the head coach. Previous research has illustrated only positive outcomes associated with the use of humor in intercollegiate varsity sport; thus, the findings in this dissertation regarding the potential negative consequences are particularly valuable. If used appropriately, humor may help intercollegiate varsity sport teams enhance coping, improve relationships, and laugh their way to a championship.

Co-Authorship Statement

The work contained herein was conducted by the author under the supervision of Dr. Shauna Burke.

Chapter 2 (Study 1)

Dr. Craig Hall helped with data analysis and editing.

Chapter 3 and 4 (Studies 2 and 3)

Dr. Rod Martin helped with study conceptualization, data collection, data analysis, and editing.

Dr. Andrew Johnson helped with data analysis and editing.

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Table of Contents

Abstract.....	ii
Summary for Lay Audience.....	iv
Co-Authorship Statement.....	v
Acknowledgments.....	vi
Table of Contents.....	viii
List of Tables.....	xii
List of Figures.....	xiv
List of Appendices.....	xv
Chapter 1.....	1
1 Introduction.....	1
1.1 Humor.....	1
1.2 Humor in sport.....	4
1.3 The present dissertation.....	9
1.4 References.....	11
Chapter 2.....	15
2 Study 1: The use of humor in intercollegiate varsity sport: Who, what, when, where, and why.....	15
2.1 Introduction.....	15
2.2 Methods.....	20
2.2.1 Participants.....	20
2.2.2 Procedure.....	20
2.3 Results.....	24
2.3.1 When.....	24
2.3.2 Where.....	27

2.3.3	Who.....	27
2.3.4	What.....	31
2.3.5	Why.....	33
2.3.6	Consequences of excessive, ill-timed or negative humor.....	36
2.4	Discussion.....	39
2.4.1	Limitations, conclusions, and applied recommendations.....	43
2.5	References.....	46
Chapter 3	50
3	Study 2: Humor styles and team cohesion in intercollegiate varsity sport.....	50
3.1	Introduction.....	50
3.1.1	The current study.....	52
3.2	Method.....	53
3.2.1	Participants.....	53
3.2.2	Measures.....	55
3.2.3	Procedure.....	57
3.2.4	Data analyses.....	58
3.3	Results.....	59
3.3.1	Descriptive statistics.....	59
3.3.2	Multilevel modeling analyses.....	65
3.4	Discussion.....	66
3.4.1	Limitations and future directions.....	71
3.4.2	Concluding remarks.....	72
3.5	References.....	73
Chapter 4	78

4	Study 3: Styles of humor used by athletes and head coaches and athletes' liking of the head coach	78
4.1	Introduction.....	78
4.1.1	The present study	80
4.2	Method	81
4.2.1	Participants.....	81
4.2.2	Measures	82
4.2.3	Procedure	83
4.2.4	Data analyses	84
4.3	Results.....	85
4.3.1	Descriptive statistics	85
4.3.2	Correlational analyses.....	85
4.3.3	Multilevel modeling analyses	91
4.4	Discussion.....	93
4.4.1	Limitations and future directions	98
4.4.2	Conclusion	99
4.5	References.....	100
	Chapter 5.....	104
5	Discussion	104
5.1	Positive outcomes associated with the use of humor.....	105
5.2	Negative outcomes associated with the use of humor	108
5.3	Limitations and future research	109
5.4	Concluding remarks and applied recommendations.....	111
5.5	References.....	114
	Appendices.....	117

Curriculum Vitae 158

List of Tables

Table 1. Styles of humor* assessed via the Humor Styles Questionnaire (HSQ; Martin et al. 2003)	17
Table 2. Participant demographics for athletes ($n = 278$; $M_{\text{age}} = 20.05$ years, $SD = 2.89$) and head coaches ($n = 36$; $M_{\text{age}} = 42.68$ years, $SD = 11.08$)	54
Table 3. Descriptive statistics for athletes' ($n = 278$; 76% female) and head coaches' ($n = 36$; 75% male) styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and athletes' perceptions of team cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)	60
Table 4. Bivariate Pearson correlations for humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and athletes' perceptions of team cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)	61
Table 5. Multilevel models showing significant predictors for each subscale of cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)	63
Table 6. Descriptive statistics separated by gender for athletes' ($n = 278$; 76% female) and head coaches' ($n = 36$; 75% male) styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and select questions related to humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985)	86
Table 7. Bivariate Pearson correlations for humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and select questions related to humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985)	88

Table 8. Pearson correlations for athletes' ($n = 278$; 76% female) responses to select questions around humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985) and styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al. 2003) – Modified for Sport - Athlete Version, and head coaches' ($n = 36$; 75% male) styles of humor as measured by the HSQ - Modified for Sport - Coach Version..... 89

Table 9. Multilevel models showing significant predictors for each successive model of liking the head coach* 92

List of Figures

Figure 1. Athletes' ($n = 31$) perceptions of "When" humor is used in intercollegiate sport.....	25
Figure 2. Athletes' ($n = 31$) perceptions of "Where" humor is used in intercollegiate sport.....	28
Figure 3. Athletes' ($n = 31$) perceptions of "Who" uses humor in intercollegiate sport	29
Figure 4. Athletes' ($n = 31$) perceptions of "What" humor is used in intercollegiate sport ...	32
Figure 5. Athletes' ($n = 31$) perceptions of "Why" humor is used in intercollegiate sport	34
Figure 6. Athletes' ($n = 31$) perceptions of the negative consequences associated with excessive, ill-timed, or negative humor use in intercollegiate sport.....	38

List of Appendices

Appendix A. Ethics Approval Notice for Study 1	117
Appendix B. Letter of Information and Consent Form for Study 1.....	118
Appendix C. Focus Group Guide.....	121
Appendix D. The Humor Styles Questionnaire (Martin et al., 2003) (Modified for Sport – Athletes Version)	123
Appendix E. The Humor Styles Questionnaire (Martin et al., 2003) (Modified for Sport – Coaches Version)	126
Appendix F. The Group Environment Questionnaire (Carron et al., 1985)	129
Appendix G. Script for Initial Email to Head Coaches	133
Appendix H. Script for Email to Head Coaches After Agreeing to Participate	134
Appendix I. Script for Email that Head Coaches Forwarded to Assistant Coaches	135
Appendix J. Script for Email that Head Coaches Forwarded to Athletes.....	136
Appendix K. Script for Reminder Email to Head Coaches	137
Appendix L. Script for Reminder Email for Head Coaches to Forward to Assistant Coaches	138
Appendix M. Script for Reminder Email for Head Coaches to Forward to Athletes	139
Appendix N. Letter of Information for Head Coaches	140
Appendix O. Letter of Information for Assistant Coaches	143
Appendix P. Demographic Information and Basic Humor Questions for Head Coaches	146

Appendix Q. Demographic Information and Basic Humor Questions for Assistant Coaches	148
Appendix R. Letter of Information for Athletes	150
Appendix S. Demographic Information, General Humor Questions, and Select Items from the Coach Evaluation Questionnaire (CEQ: Rushall & Wiznak, 1985) for Athletes	153
Appendix T. Ethics Approval Notice for Study 2 and 3.....	157

Chapter 1

1 Introduction

Humor occurs in virtually all areas of human existence (Martin, 2007), and sport may be a particularly fertile domain for its use (Snyder, 1991). To understand how humor is used in sport, we must first understand humor more generally.

1.1 Humor

There are many definitions of humor. For example, the Penguin Concise English Dictionary (2002) defines humor as “1a) a comic or amusing quality. b) things that are intended to be comic or amusing; wit. 2) a state of mind.” (p. 431). In the academic literature, Martin (2007) extended this definition, suggesting that humor is social in nature, requires cognitive processing, involves an emotional component (e.g., mirth), and has a behavioral response such as laughter. These aspects of humor, both independently as well as in concert, have led to a plethora of research in the area. For example, Martin (2007), in his textbook on the psychology of humor, identified various social, cognitive, and emotional aspects related to the use of humor as a coping mechanism. With regard to the social aspect of humor, Henman (2001) found that prisoners of war in Vietnam tended to use humor with each other, rather than alone, to cope after a stressful experience (e.g., being interrogated by their guards). In reference to the cognitive aspect of humor, the incongruity that is inherent in humor has been found to enable a person to reappraise a situation from a less stressful perspective, thus enhancing coping (Martin, 2007). For example, joking about a particularly challenging event (e.g., a test) may help an individual to reframe the situation as more playful and fun, and therefore less stressful (Martin, 2007). Lastly, insofar as the emotional aspect of humor is concerned, Cann, Calhoun, and Nance (2000) concluded that the positive emotions emanating from humorous situations can combat feelings of depression and anger, which were experimentally triggered through the viewing of an unpleasant video by college students.

A growing and overarching avenue of humor research has emanated from the work of Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003). Specifically, these authors developed and

tested the Humor Styles Questionnaire (HSQ) to differentiate between beneficial and harmful forms of humor and their potential impact on various psychological indices among a large and diverse sample of participants ($N = 1,195$; age range = 14-87 years; 61% female). In the development of this widely utilized tool, Martin et al. classified humor into four distinct styles: (1) *self-enhancing humor*, which reflects the “tendency to maintain a humorous outlook on life ... [and is used] in emotion regulation and coping”; (2) *affiliative humor*, which is the “tendency to joke around with others, say witty things, tell amusing stories, [and is used to] laugh with others and amuse others”; (3) *aggressive humor*, which is the tendency toward “sarcasm, teasing ... [and is used] to criticize or manipulate others ... [or is the] compulsive expression of humor without regard for the effects on others”; and (4) *self-defeating humor*, which is the tendency to use humor in an “excessively self-disparaging and ingratiating way, to allow oneself to be the butt of others’ jokes and to use humor as a form of defensive denial to hide underlying negative feelings” (pp. 70-71). Overall, Martin et al. found that positive styles of humor (i.e., affiliative and self-enhancing) were positively and significantly related to measures of social intimacy, self-esteem, and psychological well-being, and negatively (and significantly) related to measures of state-trait anxiety and depression among the individuals included in their study. Conversely, self-defeating humor—one of the negative styles of humor identified by Martin et al.—was negatively (and significantly) related to intimacy, social support satisfaction, self-esteem, and psychological well-being, and positively (and significantly) related to hostility, aggression, psychiatric symptoms, state-trait anxiety, and depression. Aggressive humor, the remaining negative style of humor, was positively related to hostility and aggression, and did not show any significant negative associations.

The HSQ has been used to assess humor in a wide range of contexts and setting. A search of the PsychINFO database in December 2019 revealed 900 studies that included a reference to either humor styles, the humor styles questionnaire, or the HSQ. For example, one study showed that Taiwanese married couples tended to share humor styles such that a spouse’s aggressive and self-defeating humor scores predicted similar levels of negative humor in their partner (Tsai, Wu, Chang, & Chen, 2019). Similarly, affiliative and self-enhancing humor have been shown to positively mediate the relationship between emotional intelligence and life satisfaction among Chinese university students, whereas self-defeating and aggressive humor negatively mediated

the relationship (Huang & Lee, 2019). Further, while providing psychological therapy in Israel, therapists' use of aggressive humor negatively predicted clients' symptom changes over a year of treatment (Yonatan-Leus, Tishby, Shefler, & Wiseman, 2018).

Within the realm of psychology, the results of a meta-analysis conducted by Mendiburo-Seguel, Páez, and Martínez-Sánchez (2015; $n = 15$ studies) examining the relations between the HSQ and the Big Five Personality traits (i.e., neuroticism, extraversion, agreeableness, conscientiousness, openness to experience) showed that affiliative humor was strongly positively associated with extraversion, and to a lesser extent agreeableness and openness to experience. Affiliative humor was also negatively associated with neuroticism. Self-enhancing humor was positively related to all the traits except neuroticism, with which it was negatively associated. Aggressive humor was positively associated with extraversion and neuroticism, whereas it was negatively related to agreeableness, conscientiousness, and openness to experience. Finally, self-defeating humor was positively related to neuroticism, and negatively related to agreeableness, extraversion, and conscientiousness. Similarly, the results of a meta-analysis conducted by Schneider, Voracek, and Tran (2018; $n = 36$ studies) showed that self-enhancing and affiliative humor were positively associated with measures of mental health (i.e., self-esteem, life satisfaction, and optimism), whereas aggressive humor was unrelated and self-defeating humor was negatively related.

It should be noted that the HSQ is based on a personality-trait model of humor suggesting that individual scores on each factor should remain relatively stable over time (Martin, 2007). Given the associations between different humor styles and positive and negative outcomes, Martin (2007) recommended that determining whether a person's use of humor could be changed should be investigated. Although little research has answered this question directly, Crawford and Caltabiano (2011) showed that an 8-week humor education program significantly enhanced participants' (i.e., 37 females and 18 males from the local community) self-efficacy, optimism, positive affect, and perceptions of control, and significantly decreased their perceived stress, anxiety, and depression when compared to control and social interaction groups. This leaves open to further research the possibility that people may be able to alter their use of humor to achieve positive outcomes and reduce negative ones.

Together, the studies mentioned above represent a small portion of the knowledge base involving the HSQ. However, they do provide clear and striking examples of the positive outcomes associated with self-enhancing and affiliative humor, and the neutral and/or negative outcomes associated with aggressive and self-defeating humor. As such, it is clear that research examining humor must account for potential differences in the styles of humor used, ideally via the HSQ, in order to accurately investigate associations between humor and various outcomes.

1.2 Humor in sport

A considerable amount of research has examined the use of humor in sport, although many of these studies did not conceptualize humor using the HSQ; thus, they did not examine or assess the use of the four distinct humor styles in a sport context. Despite not accounting for different styles of humor, this research provided the base upon which future studies utilizing the HSQ were designed and conducted. For example, in 1991, Snyder published a seminal paper on the sociology of humor in sport. In his commentary, Snyder listed several common examples related to the functions of humor in sport groups, including bringing groups together, enhancing the sense of ‘group versus others’, and raising morale during difficult situations. These themes fit roughly with the findings from the general humor literature mentioned above, suggesting that humor plays an important role in relationships and in coping with challenges.

Another important study in the general area of humor in sport was conducted by Palmer (1993), who examined the use of humor among recreational male floor hockey players ($n = 80$) in Newfoundland, Canada. Results showed that younger players (i.e., those in their late teens and early twenties) had significantly fewer games involving humorous overaggression (as measured by systematic observations of aggressive acts combined with body language that implied a humorous intent) than older athletes (i.e., those in their late twenties through to their early forties). Younger players also had significantly more games that involved anger (physical gestures, verbal statements or facial expressions that displayed strong displeasure) or neutral overaggression (behaviors that appeared to threaten or create harmful physical contact above accepted norms but were not accompanied by signs of anger) than did older athletes. Of interest, Palmer observed anecdotally that incidents of humorous overaggression occurred more often between competitors with large differences in skill whereas anger and neutral overaggression

appeared to be more common between players of similar skill levels. As such, Palmer proposed that humor may have been used as a sign of friendly competition between players with greater skill differences, in contrast to the more serious competition (often involving anger or aggression) that took place between players of similar skill levels. In turn, this helped to maintain cordial and friendly relationships between players of all skill levels (Palmer, 1993).

A more direct link between the use of humor and interpersonal relations was demonstrated by Burke, Petersen, and Nix (1995). Specifically, the authors examined the relationship between female high school volleyball players' ($n = 51$) perceptions of their head coaches' sense of humor and how much they: (a) liked the coach; and (b) thought the coach was effective, as measured by various items from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985). The results showed positive correlations between athletes' perceptions of the coaches' sense of humor and liking of the coach as well as the players' perceived ability of the coach. A positive association was also found for players' liking of the coach and the perceived ability/effectiveness of the coach. More recently, the results of a study of sport psychologists ($n = 55$) revealed that humor use was noted as an important tool for building relationships with athletes (Pack, Hemmings, Winter, & Arvinen-Barrow, 2018).

Similar to findings observed in the general humor literature, research in sport has shown that humor can help athletes cope with a variety of stressful challenges. Gaudreau, Blondin, and Lapierre (2002) were the first to examine the potential humor-stress association in sport in their investigation of coping mechanisms used before, during, and after an elite youth golf tournament. Specifically, the authors examined the relationship between male golfers' ($n = 62$) coping mechanisms and outcomes such as positive and negative affect, as well as exploring performance-goal discrepancy (PGD; whether an athlete played better or worse than his goal for the day) as a possible moderator or mediator. The results showed that if a player had a high PGD (i.e., he played worse than expected), he appeared to continue to use humor throughout the competition. Given that a player who performs worse than expected would presumably feel unhappy about doing so (i.e., have post-competition negative affect), the authors hypothesized that a relationship would exist between athletes having a high PGD and post-competition negative affect; this was not supported. This study provides initial evidence to support the

conclusion that humor use may buffer some of the potentially negative and possibly even stressful consequences of participation in competitive sport. Similarly, a qualitative study conducted by Tamminen and Crocker (2013) cited the use of humor, generally, as one of multiple themes related to interpersonal emotional regulation within a team of female curlers ($n = 4$). In essence, the curlers were found to use humor with one another to regulate their emotions at critical moments leading up to and/or during competitive events. Finally, in a case study by Johnson, Kennta, Ivarsson, Alvmymren, and Karlsson (2016), which examined a 49-year-old female ultrarunner during a 10-week continental run, it was noted that humor was perceived as helpful in coping with difficult situations during the run. In the athlete's words, "humor was probably also a way to handle or master the situation" (p. 79; Johnson et al., 2016).

As noted above, the HSQ—and thus, a focus on the four styles of humor—has only been utilized in a handful of studies that have investigated the use of humor in sport. In 2013, Sullivan explored intra-team dynamics in an examination of the relationship between the use of humor styles and satisfaction of athletes ($n = 148$) on recreational sport teams. Results showed that *positive humor*, as measured by a modified version of the HSQ (Sullivan & Dithurbide, 2007), was the only significant predictor of athletes' satisfaction with team task contributions (e.g., "*I am satisfied with the guidance I receive from my teammates*", p. 346) and team integration (e.g., "*I am satisfied with the degree to which teammates share the same goal*", p. 346).

With the exception of one other study that has utilized the HSQ, an area that has received limited attention is the use of humor in intercollegiate varsity sport. The National Collegiate Athletic Association (NCAA), which is the largest governing body for intercollegiate athletics in America, defines intercollegiate varsity sport as:

...a sport that has been accorded that status by the institution's president or chancellor or committee responsible for intercollegiate athletics policy and satisfies the following conditions: 1) it is a sport that is administered by the department of intercollegiate athletics, 2) it is a sport for which the eligibility of the student-athletes is reviewed and certified by a staff member designated by the institution's president or chancellor or committee responsible for intercollegiate athletics policy, and 3) it is a sport in which qualified participants receive the institution's official varsity awards ("NCAA Emerging Sports for Women Process Guide," n.d.).

Similarly, intercollegiate sport has been defined as “a sport played at the collegiate level for which eligibility requirements for participation by a student-athlete are established by a national association for the promotion or regulation of collegiate athletes” (“Oregon Laws,” n.d.). Further, the term varsity has been defined as “the starting team in a sport at college or university” (“Vocabulary,” n.d.). Although such succinct definitions as offered by the NCAA could not be found for the national governing bodies for intercollegiate athletics in Canada (i.e., U Sport and the Canadian Collegiate Athletic Association), common themes were generally noted on their websites (e.g., student-athletes must meet certain eligibility criteria). A combination and extension of these definitions was used for the purposes of the current dissertation, such that intercollegiate varsity sport was defined as *a team that participates in intercollegiate competitions and consists of student-athletes who must meet specific eligibility requirements and are the only representatives of their university or college in a particular sport which is governed by a provincial or national association.*

Only three published studies and one dissertation have included populations and/or teams that would meet the abovementioned definition for an intercollegiate varsity sport (i.e., Giacobbi et al., 2004; Grisaffe, Blom, & Burke, 2003; Hester, 2010; Nicholls, Polman, Levy, Taylor, and Coble, 2007). Building on the use of humor for coping in sport, Giacobbi et al. (2004) explored, through group and individual interviews, the sources of stress among and coping strategies used by first-year female NCAA swimmers ($n = 5$). Their results showed that humor was mentioned, amongst other variables, as a primary coping response for the stressors associated with the transition to university athletics (i.e., training intensity, interpersonal relationships, academics, being away from home, high performance expectations). As one athlete noted with regard to a particularly difficult and intense portion of her training schedule, “...it helped a lot to see humor and then you realize it’s not the biggest deal in the world” (p. 12; Giacobbi et al., 2004). Similarly, Nicholls et al. (2007) examined sources of stress, coping mechanisms, and coping effectiveness in a sample of undergraduate athletes in the United Kingdom ($n = 749$), 202 of which would meet the proposed definition of intercollegiate varsity athletes mentioned above. The results for these intercollegiate varsity athletes revealed that humor was identified as an emotion-focused coping strategy used approximately 4% of the time. Interestingly, this was the highest frequency when compared to athletes in other levels of

competition (i.e., 2.3% for club, 1.3% for county, 0% for national/international). When comparing the effectiveness of coping strategies, however, humor was identified as an effective coping mechanism for university athletes, with club level athletes rating it slightly less effective, and county athletes rating it as slightly more effective. Within the university athlete population, humor was rated as the third most effective emotion-focused coping technique behind positive orientation and positive self-talk.

Building on the use of humor for interpersonal relations in sport, Grisaffe et al. (2003) examined how NCAA male ($n = 20$) and female ($n = 13$) soccer players' perceptions of their head and assistant coaches' sense of humor were related to their liking of that coach, as measured by select items from the CEQ. The results showed that athletes' perceptions of their head and assistant coaches' senses of humor were related to their liking of that coach, with the relationship found to be stronger for female athletes than for male athletes, and only for head coaches (not for assistant coaches). It is important to note that the gender of the head and assistant coaches was not considered in this study. In 2010, Hester published a doctoral dissertation at the University of North Carolina at Greensboro which examined how athletes' styles of humor, as measured by the HSQ, were related to NCAA basketball players' ($n = 79$) perceptions of team cohesion. Hester measured athletes' perceptions of cohesion using the Group Environment Questionnaire (GEQ: Carron, Widmeyer, & Brawley, 1985), which was developed to assess cohesion based on athletes' perceptions of group integration (GI) and individual attractions to the group (ATG) from both task (T) and social (S) perspectives. As such, there are four subscales of the GEQ: Group Integration-Task (GI-T), Group Integration-Social (GI-S), Individual Attractions to the Group-Task (ATG-T), and Individual Attractions to the Group-Social (ATG-S). Numerous correlates of cohesion have been examined in sport using the GEQ, including leadership (e.g., coaching behaviors; Gardner, Shields, Bredemeier, & Bostrom, 1996), personal (e.g., athletes' cognitions; Spink, Nickel, Wilson, & Odnokon, 2010), environmental (e.g., team size; Widmeyer, Brawley, & Carron, 1990), and team factors (e.g., performance; Carron, Colman, Wheeler, & Stevens, 2002). In short, the results of Hester's dissertation showed that affiliative humor was positively correlated with ATG-T, GI-T, and GI-S. Similarly, there was a positive correlation between self-enhancing humor and GI-S.

Together, the aforementioned studies support the general conclusion that there are relationships between the use of humor and several important outcomes in intercollegiate varsity sport. However, given the limited number and scope of the studies noted above, these results must be confirmed and expanded.

1.3 The present dissertation

Given the relative dearth of research in the area of humor and sport within an intercollegiate setting, and specifically research that has used the HSQ, the overarching purpose of this dissertation was to examine the use of humor in intercollegiate varsity sport. To that end, three separate studies were undertaken and are presented hereafter in distinct chapters as part of the Integrated Article format. Specifically, in Study 1 (Chapter 2), we sought to describe, qualitatively through the use of focus groups and content analysis, the 5 Ws (*who*, *what*, *when*, *where*, and *why*) of humor use in a range intercollegiate varsity sports from the perspective of student athletes. Given that humor is a "fundamentally ... social phenomenon" (Martin, 2007, p. 5), focus groups were chosen to elicit a discussion of shared humorous events (Brown, 1999) and as an efficient way to gather information on a broad topic (Thomas & Nelson 1996) particular to athletes (Munroe-Chandler, 2005). In addition, the aim of content analysis "is to attain a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories describing the phenomenon" (Elo & Kyngäs, 2008, p. 108). Therefore, inductive and deductive content analyses were used to analyze the focus group transcripts. Results pertaining to the five Ws provide a rich description of humor use in intercollegiate varsity sport, which generated numerous applied recommendations (e.g., *who* should use humor, *what* kind of humor should be used, *when* and *where* it should be used, and *why* humor should be used) and may also serve as the foundation of future research in this area.

Study 2 (Chapter 3) includes an examination, carried out via multilevel modeling (MLM), of the relationships between the humor styles used by coaches and athletes from a range of intercollegiate interacting sport teams with athletes' perceptions of team cohesion. Burke, Davies, and Carron (2014) recommended the use of MLM when examining the correlates of cohesion as it accounts for the non-independence of the typical participant pool (e.g., athletes within teams). Thus, MLM was used and the results showed that athletes' and head coaches' use

of positive styles of humor were positively related to cohesion, whereas self-defeating humor was negatively related to cohesion.

In Study 3 (Chapter 4), the relationships between the humor styles used by coaches and athletes and athletes' liking of their head coach were examined. Again, given the nested structure of the data (i.e., athletes within teams with the same head coach), MLM was selected as the appropriate analysis technique (Hox, 2010). Briefly, the results of Study 3 showed head coaches' use of affiliative humor as well as athletes' use of self-enhancing humor were positively related to athletes' liking of the head coach, whereas athletes' use of self-defeating humor was negatively related to athletes' liking of the head coach.

Together, the findings of all three studies presented in this dissertation will expand and contribute meaningfully to the knowledge base regarding the use of humor in intercollegiate varsity sport. Specifically, valuable and detailed information regarding the use of humor is provided in Study 1 (i.e., the 5 Ws), whereas Studies 2 and 3 provide specific information regarding its overall association with team cohesion and the relationships between athletes and head coaches. Not only will these findings provide researchers in sport psychology with a plethora of future research avenues, it will also enable coaches and athletes to better use humor to accomplish positive outcomes in their sporting endeavors.

1.4 References

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Chapter 2

2 Study 1: The use of humor in intercollegiate varsity sport: Who, what, when, where, and why

2.1 Introduction

Researchers in the field of psychology have explored the use, definitions, and effects of humor in a range of different settings. For example, in the domain of education, Abel (2002) reported that university students who had a high sense of humor, measured via the Multidimensional Sense of Humor Scale (Thorson & Powell, 1993), were better able to cope with and reappraise everyday stressful events as less stressful than those who had a low sense of humor. Subsequently, Wanzer, Frymier, and Irwin (2010) studied the use of humor by university professors as a teaching aid with undergraduate students, and showed that related humor (i.e., a form of instructional humor appropriate in content and related to the material to be learned) was positively related to student learning outcomes. Further, in the workplace environment, a meta-analysis conducted by Mesmer-Magnus, Glew, and Viswesvaran (2012) revealed that the use of positive humor among employees (i.e., between co-workers as well as by a supervisor or leader) provided several benefits including enhanced workplace performance and group cohesion.

Similar to the populations described above, athletes are required and expected to foster and promote team cohesion to learn and improve upon relevant skills and strategies, and to cope with numerous stressors (e.g., Carron, Bray, & Eys, 2002; Hanton, Fletcher, & Coughlan, 2005). Thus, humor may play a multifaceted and complex role in sport. Indeed, stressors and their related coping mechanisms may be a particularly important area of study for athletes. Nicholls, Polman, Levy, Taylor, and Colbery (2007) identified 20 specific stressors reported by athletes from five individual and four team sports, the most common of which were noted by 60-70% of participants across sports (i.e., injury, performance). Numerous studies have shown that athletes use humor as a coping mechanism in relation to such stressors (e.g., Gaudreau, Blondin, & Lapierre, 2002; Giacobbi et al., 2004; Johnson, Kentta, Ivarsson, Alvmyren, & Karlsson, 2016; Nicholls et al., 2007; Niefer, McDonough, & Kowalski, 2010). For example, a qualitative study that examined female athletes' transition to first-year university revealed that humor use was a primary coping response against the associated stressors (Giacobbi et al., 2004). More generally,

Nicholls et al. (2007) identified humor use as one of many coping behaviors utilized by a wide sample of athletes, including those in intercollegiate varsity sports.

In addition to coping with challenges, athletes are required to engage in and develop numerous relationships within their sport. Given the integral role that the coaching staff plays in the success and functioning of sport teams, research has examined the relationship between coaches' use of humor and athlete outcomes (e.g., 'liking' of the coach by athletes; Burke, Peterson, & Nix 1995; Grisaffe, Blom, & Burke, 2003). For example, Grisaffe et al. (2003) showed that for NCAA Division 1 soccer players, there was a positive and significant relationship between players' perceptions of their coach's sense of humor and likeability.

Beyond their coaches, athletes must also form constructive relationships with other athletes on their team (i.e., team cohesion). In an examination of cohesion and humor use, Hester's (2010) doctoral dissertation demonstrated a positive relationship between the use of certain styles of humor and various components of team cohesion in male basketball players from six institutions. The use and measurement of different styles of cohesion in Hester's study were derived from a 2 x 2 conceptualization (see Table 1) and resulting Humor Styles Questionnaire (HSQ) developed by Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003). The aim of this model was to distinguish the styles of humor that were associated with positive outcomes such as psychological well-being (i.e., self-enhancing and affiliative humor; Martin et al., 2003) from those associated with neutral (i.e., aggressive humor) or negative (i.e., self-defeating humor) outcomes such as depression (Martin et al., 2003). Hester (2010) found that the use of *affiliative humor* was significantly related to attraction to the team from a task perspective, and a sense that the team was integrated from both task and social perspectives. Similarly, the use of *self-enhancing humor* was significantly related to a sense that the team was integrated from a social perspective.

Table 1. Styles of humor* assessed via the Humor Styles Questionnaire (HSQ; Martin et al. 2003)

Humor Dimension	Positive	Negative
Self	Self-Enhancing Humor: tendency to maintain a humorous outlook on life even when alone; use of humor to cope with stress and/or to enhance mood	Aggressive Humor: tendency to use humor that is disparaging or offensive, and/or to demean or manipulate others; use of humor to ridicule; compulsive expression of humor even when inappropriate
Interpersonal	Affiliative Humor: tendency to share and enjoy humor and laughter with others; use of humor to tell jokes and funny stories, to amuse others, and to make others laugh	Self-Defeating Humor: tendency to use humor that is demeaning to oneself; excessive use of self-disparaging humor; laughing with others when being ridiculed or put down; use of humor to hide one's feelings from self and others

*Note. Definitions adapted from Martin, Puhlik-Doris, Larsen, Gray, & Weir (2003)

Together, the abovementioned literature provides support for the conclusion that a relationship exists between humor and a multitude of sport-related outcomes (e.g., cohesion, likeability of coaches, coping with stressful or challenging situations). To date, however, only three published studies and one dissertation have examined the use of humor within an intercollegiate varsity sport setting (i.e., Giacobbi et al., 2004; Grisaffe et al., 2003; Hester, 2010; Nicholls et al., 2007). Although the existing research conducted in intercollegiate varsity sport sheds some light on *who* is using humor (i.e., head coaches, assistant coaches, and athletes; Grisaffe et al., 2003; Hester, 2010), *what* type of humor is used by athletes (e.g., self-enhancing and affiliative humor, Hester, 2010), as well as *why* it is used (e.g., coping with stress, Giacobbi et al., 2004; Nicholls et al., 2007), research into *where and when* it is used is lacking. In addition, the research into *who*, *what* and *why* has been primarily quantitative (Grisaffe et al., 2003; Hester, 2010), with only two qualitative studies reporting *why* humor was used briefly, as one of many findings (Giacobbi et al., 2004; Nicholls et al., 2007). Thus, there is a limited understanding of the *who*, *what*, *when*, *where*, and *why* of humor use in intercollegiate varsity sport.

A four Ws paradigm (i.e., *what*, *where*, *when*, and *why*) has been used previously in descriptive research of psychological concepts in intercollegiate sport (self-talk; Hardy, Gammage, & Hall, 2001; imagery; Munroe, Giacobbi, Hall, & Weinberg, 2000). Given that humor use by multiple stakeholders (e.g., athletes and coaches) is likely to have important effects (e.g., cohesion) the fifth W (*who*) was added for the purpose of the current study. This five Ws paradigm allows for a broad exploration and description of humor use in intercollegiate varsity sport, capable of producing a plethora of future research areas while also providing the depth of information required to generate specific applied recommendations (e.g., *why* humor should be used, *who* should use it, *when* and *where* it should be used, and *what* kind of humor should be used). Although it is likely that some of the Ws of humor use in the general sporting domain (e.g., *why* = reducing negative affect; Gaudreau et al., 2002) will apply to intercollegiate varsity sport, this has yet to be confirmed. Given the numerous potential benefits, including confirming previous findings, discovering new research areas, and creating applied recommendations, this topic warrants further investigation. Further, as discussed by Tracy (2010) in her recommendations of criteria for excellent qualitative research, this topic is relevant, timely,

significant, and interesting given the ever-evolving quest for new tools, such as humor, to enhance athletes' and coaches' experiences. This may be particularly important in sport given the possible relationships among humor, coping, cohesion, and likeability (e.g., Giacobbi et al., 2004, Hester, 2010, & Grisaffe et al., 2003).

Given that the current research question focuses on humor, defined as a "fundamentally ...social phenomenon" (Martin, 2007, p. 5), homogeneous focus groups (i.e., athletes from the same sport and team and of the same gender) were deemed an appropriate qualitative methodology as the common experiences of the participants were assumed to support the elicitation of greater communication, discussion of topics, and memory of shared humorous events (Brown, 1999). In addition, focus groups allow a researcher to gather information from several people on a broad topic in one session (Thomas & Nelson, 1996), representing an efficient way to explore the vast and unique knowledge base of athletes (Munroe-Chandler, 2005). They are also used to capture, effectively and efficiently, the multitude of stories and experiences that can emerge via group discussions that might not otherwise be mentioned in one-on-one interviews (Brown, 1999). Furthermore, given the subjective nature of humor use and appreciation (Martin, 2007), focus groups allow participants to confirm or deny whether an incident was humorous from multiple perspectives. In essence, the use of focus groups in the current study allowed for teammates to discuss humor (including humorous stories) with unique individual perspectives on shared experiences, debates around appreciation and purpose, and additional substantiating examples providing detailed insights into *who*, *what*, *where*, *when*, and *why* humor was used. We believe this methodological approach aligns with our research goals and partially fulfills the meaningful coherence criteria (i.e., "the study achieves what it purports to be about [and] uses methods and procedures that fits its stated goals" p. 840) suggested for excellent qualitative research by Tracy (2010). Therefore, the purpose of the present study was to explore, using focus group methodology, the 5 Ws (*who*, *what*, *where*, *when*, and *why*) of humor use in intercollegiate varsity sport from the perspective of athletes in a variety of university-level sports.

2.2 Methods

2.2.1 Participants

The participants were a criterion sample of 31 (17 female) intercollegiate athletes with a mean age of 20.71 years ($SD = 1.3$). A total of 10 teams were represented from interacting and co-acting sports including golf (male and female teams), wrestling (male and female teams), volleyball (male team), figure skating (female team), soccer (male team), rugby (female team), baseball (male team) and swimming (female team). Three athletes were in their first year on the team, seven were in their second year, eight were in their third year, 12 were in their fourth year, and one was in their fifth year. Once institutional ethics approval was received from the host institution (i.e., Research Ethics Board # 102225; see Appendix A), participants were recruited via targeted snowball sampling in which the lead researcher emailed individual athletes at a single large university in Canada and asked them to recruit fellow members from their team. All potential athletes were informed that they would be asked to share their perceptions of humor use in sport, including humorous sport stories, with their teammates in a focus group setting, and thus must be comfortable doing so.

2.2.2 Procedure

2.2.2.1 Focus Groups.

A semi-structured focus group guide was created using Patton's (2014) approach whereby the researchers specified the topics to be covered but allowed for freedom to add, eliminate, or modify topics as well as change the direction of the discussion as participants' responses dictated (see Appendix C). In total, 10 focus groups were held, consisting of 2-4 athletes of the same self-reported gender and sport (i.e., a homogeneous participant group) in each session. The aim was to have a minimum of four athletes per group, but this was not always possible given the small size of some teams (e.g., a golf team having 8 players in total). The focus groups were scheduled at a time that was convenient for participants and were held in a university meeting room. The lead researcher moderated each focus group, was previously known to at least one member of each group (and often known to multiple members), and had experience as an intercollegiate varsity athlete. The familiarity and common experiences served

to increase the rapport between the moderator and group members, allowing for a level of comfort that facilitated the discussion of humorous stories. The moderator also took steps, including eliciting feedback from all participants and limiting tangential discussions, to reduce the chances of groupthink (Morgan, 1996), which has been noted as a potential challenge in the conduct of homogeneous focus groups (Brown, 1999). It should be noted that due to the snowball sampling technique used, the participants in each focus group were very familiar with each other, and were of similar age and status (i.e., veteran) in most cases; thus the possibility of potential power dynamics influencing the study results appeared to be low. Each focus group lasted between 40 and 80 minutes (average length = 60 minutes) and was digitally recorded and transcribed verbatim.

At the start of each focus group session, participants were provided with the letter of information and consent statement to read and sign (see Appendix B). The moderator then delivered (verbally) an introductory statement to participants regarding the rationale for the study, issues of confidentiality, and the reasons for audio recording the discussion. Basic demographic questions (e.g., sport, years on current team) were then asked verbally before moving into the conversation on humor in intercollegiate sport. The moderator initiated this discussion by asking the athletes what their definitions of humor were, both in everyday life and in sport. Then, the athletes were asked to discuss as a group how and if they had witnessed or used humor in the following situations: during practice (i.e., the time from when the athletes arrived at the practice venue until they left), pre-competition (i.e., the time from the day before competition until the start of competition), competition (i.e., the time when the athlete or their team members were competing), and post-competition (i.e., the time from when the results of competition were known until the team disbanded). These time periods were established and defined based on the qualitative study conducted by Munroe et al., (2000) in which 4 Ws (*when, where, why, and what*) were explored regarding athletes' use of imagery.

As the athletes discussed their use of humor during the defined time periods, the moderator used probing questions to clarify and elaborate upon the athletes' responses (Patton, 2014). Specific probes included questions about the content and timing of humor, how funny the humorous situation was perceived to be (quality of humor), how often it occurred, where and in what situation(s) it occurred, why it occurred, and what styles of humor were used. When

discussing the styles of humor, the definitions advanced by Martin et al. (2003) were shared verbally with the athletes to help them delineate between *self-enhancing*, *self-defeating*, *aggressive*, and *affiliative* forms of humor. This almost always occurred during the discussion of the first time period (i.e., during practice) when specific and relevant examples were shared by athletes that allowed for the introduction and description of different humor styles.

At the end of each focus group, the moderator summarized the main themes discussed. Participants were then asked if they agreed with this summary and were given the opportunity to clarify, expand, or change components that they disagreed with (i.e., member reflections; Tracy, 2010). They were also given the opportunity to add additional examples of humor or other general points that were not mentioned previously, before being thanked for participating and dismissed.

2.2.2.2 Data analysis.

From an epistemological perspective, the study was conducted through an objectivist lens, specifically within a post-positivist framework, where the researchers aimed to find or get as close to a “true meaning” of the topic as possible (Crotty, 1998). All qualitative data obtained via the focus groups were imported manually into NVivo (QSR International Pty Ltd. Version 10, 2012) to assist with data analysis. Due to the relatively limited research on humor use in intercollegiate varsity sport, a content analysis was conducted given that its “aim is to attain a condensed and broad description of the phenomenon, and the outcome of the analysis is concepts or categories describing the phenomenon” (Elo & Kyngäs, 2008, p. 108). Elo and Kyngäs (2008) have suggested that there are three main stages to conducting a qualitative content analysis: (1) preparation, (2) organizing, and (3) presenting. The aim of the preparation phase is for the researchers to fully immerse themselves in the data set (Elo & Kyngäs, 2008). To accomplish this, the primary investigator transcribed the focus groups verbatim and read over them multiple times to ensure a deep familiarity. The organization phase consists of inductive, deductive, or a combination of both forms of logic to analyze the data (Elo & Kyngäs, 2008). Whereas it has been suggested that deductive content analysis is best used when testing a predetermined framework, inductive content analysis has been noted to be most appropriate when limited knowledge in the field exists (Elo & Kyngäs, 2008). Both deductive and inductive content analysis were used in this study. First, deductive content analysis was used to code the raw data

into the main categories of *who*, *what*, *when*, *where*, and *why* that were predetermined based on our research question (i.e., to examine the 5 Ws of humor use in sport). Raw data that did not fit appropriately into any of the 5 W categories was put into an “other” main category for later analysis. Second, inductive content analysis was then conducted within each of the 5 W main categories, whereby the primary investigator coded the raw data into sub-categories that were organized into generic categories based on similar content. Third, inductive content analysis was conducted on the “other” main category resulting in sub-categories and generic categories based on similar content. Finally, the presenting phase of the content analysis consists of conceptual maps; in the present study these maps outlined each of the main categories, as well as the generic and sub-categories within each.

Three criteria for high-quality qualitative research outlined by Tracy (2010) pertain directly to data analysis (i.e., rich rigor, sincerity, and credibility). The theoretical constructs (e.g., the humor styles), diverse sample (i.e., 8 teams from 10 different sports), and varied contexts (i.e., practice, pre-competition, competition, and post-competition) considered and utilized in the data collection process, as well as the complex inductive and deductive content analysis used, satisfies the criteria of rich rigor. The authors attempted to be fully transparent about the methods and challenges faced (e.g., the “other” category) to fulfill the sincerity criteria. Lastly, several steps were taken to satisfy the credibility criteria. Specifically, thick description (i.e., including sufficient detail to enhance the potential for the transferability of findings to other areas or contexts; Lincoln & Guba, 1985) of data was utilized and aligned most closely to Tracy’s suggestions. Also pertaining to credibility, two steps were taken to ensure the trustworthiness of the data (Lincoln & Guba, 1985). First, peer debriefing was undertaken with a researcher with expertise in sport psychology who was not part of the research team to confirm the credibility of the data. Specifically, the first author described his understanding of the data and emerging sub-categories and generic categories, and through analytical probing the expert confirmed, from an ‘outsider’s perspective’, that the findings were reasonable (Lincoln & Guba, 1985). Second, at three stages during the data analysis (i.e., coding into sub-categories, generic categories, and main categories), the authors met and conducted an internal audit (i.e., the coding of the data was scrutinized by each author and any disagreements or uncertainties were discussed until a unanimous resolution was determined) to ensure the dependability of the data.

2.3 Results

Qualitative data from the focus groups were analyzed and are presented according to *when* humor is used, *where* it is used, *what* types of humor are used, *who* uses it, and *why* it is used. Theoretical saturation for the 5 Ws occurred after the analysis of the eighth focus group transcript (out of 10), as the ninth and tenth transcripts did not generate any novel sub- or generic categories. Figures 1 through 5 provide a visual overview of the sub-categories and generic categories identified within each main category (i.e., for each W). As noted above, during the analysis, raw data existed that did not fit within any of the pre-identified W categories, and thus were put into an “other” category. These were grouped together into sub-categories, generic categories, and eventually, based on common themes noted amongst them, into an additional main category entitled *Consequences of Excessive, Ill-Timed, or Negative Humor* (see Figure 6).

2.3.1 When

Within each of the sport-related time frames described to participants (i.e., practice, pre-competition, competition, and post-competition), a number of specific instances pertaining to *when* humor was used were identified (see Figure 1). During *practice*, the most frequently cited situation in which humor was used was when athletes were conducting sport-specific training or drills, followed by when they were warming up and cooling down. The following quote from a male athlete illustrates when his teammates might use humor during practice:

... humor in practice, usually starts off in the beginning... people start riling each other up... one of the goalies, (goalie's name), we used to chip him all the time in practice and he'd get so mad but it was the funniest thing in the world... (Participant M7)

Similarly, another male athlete noted how humor was an important part of the team's warm-up for practice:

At the start of our practices we have a goofy warm-up game called vollis, where it just gets everyone loosened up before practice...just getting guys laughing before practice is a really positive way to get some energy going into practice before it's even started. (Participant M13)

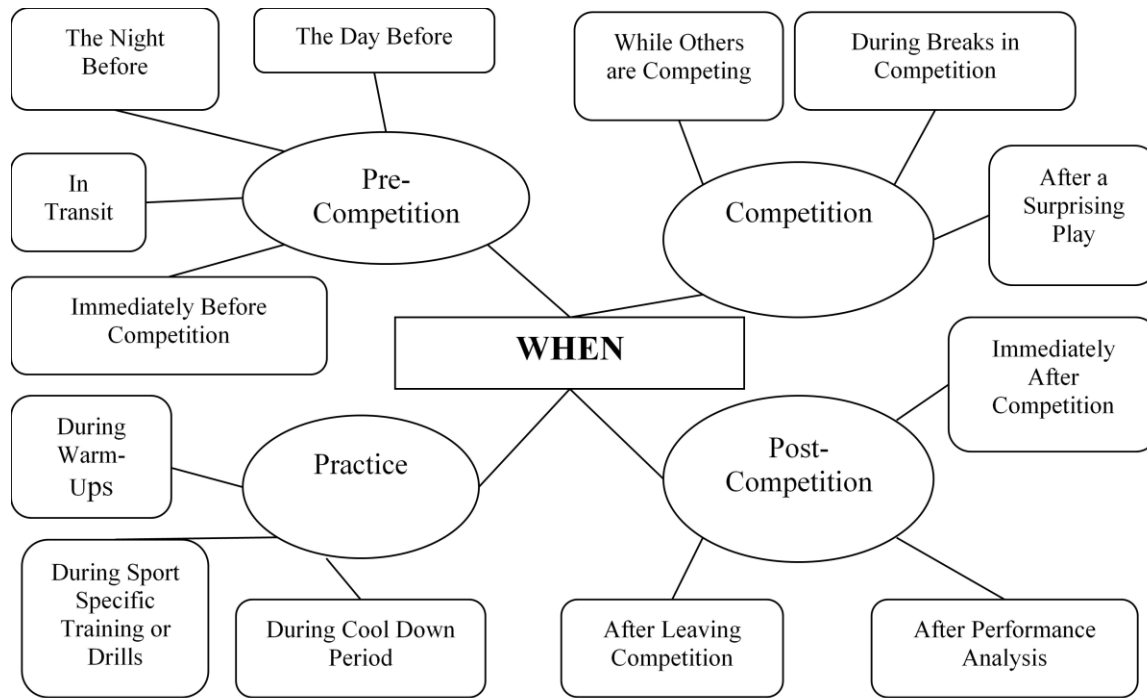


Figure 1. Athletes' ($n = 31$) perceptions of "When" humor is used in intercollegiate sport

During *pre-competition*, the most frequently cited instance of humor use was the night before competition (e.g., while at a team dinner), followed by immediately before competition, in transit to competition, and the day before competition. The following quote from a female athlete illustrates when humor is used before competitions “...then when we go out for dinner and it’s funny there and we get back to the hotel and we have a lot of fun...”. (Participant F9)

Although participants indicated that humor occurred less often *during competition* than in the other three time periods, it was noted that when it did occur, it happened most frequently during breaks in competition (e.g., time-outs, intermissions, between plays) followed by after a surprising play, and while others were competing. The following quote from a female athlete illustrates this:

I definitely believe that the day of competition is a lot more serious. Umm, I don’t really like joking too much but... if I do win a match and it went really funny...my coaches would joke like “what in the world just happened?”, “how did you just do that?”, and things like that so that makes it a lot more funny during the day and I know two years ago... [a teammate] was injured and I was a bit hurt too...for the national tournament and we were just joking about cheese sticks, the whole entire day and it’s just the stupidest humor but we just keep saying it. (Participant F7)

Finally, in the *post-competition* phase, humor was used by athletes most often immediately after the results were determined, with the caveat that it was only used if the competition results were positive, followed by after the performance was analyzed, and after leaving competition. A male athlete aptly described when humor is used post-competition and how it often depends on how the athlete performed:

I think that, if you win, and if you have a good day, humor can be used right away and it’s almost always the best time and it’s a great way to celebrate as well and to really take all the win in. After a loss, it all depends on the person...sometimes it can be used too early after a loss. (Participant M10)

2.3.2 Where

While participants indicated that humor was used in virtually every location pertaining to their sport and sport-related environments (including transportation) (see Figure 2), they noted that it was used in some places more than others. For example, in the *sporting venues* generic category, participants cited that humor occurred most frequently on the playing field, followed by the sidelines, the warm-up area, and the locker rooms. The following quote from a male athlete indicates where humor is typically used during competition “...I like to be chatty and have a laugh, whether it’s with my team or the other team...I like to talk and joke with the guys [in various locations on the playing field].” (Participant M5)

Within *non-sporting venues*, participants reported that humor occurred mostly in hotels, followed by restaurants and homes. The following quote from a female athlete depicts a typical night before a competition and where humor might occur:

...we usually stay at a hotel the night before [a competition] and we always have a team dinner, we all go out for dinner and I mean, the mood then is pretty light, nothing is like too serious then umm, and then we kind of all go back to our rooms.... You know, some girls will come together ... they’ll be laughing and joking around and others will just open their textbook and read... (Participant F4)

Finally, within the *in vehicles* generic category, participants reported that humor occurred most frequently in cars, followed by on buses, and in airplanes. A female athlete shared her sentiment about enjoying car rides with her teammates “...when we get in the car the night before a tournament [and we are] about to leave we’ll all like joke. Car rides together are so fun.” (Participant F10)

2.3.3 Who

With regard to *who* uses humor in intercollegiate sport, participants identified *athletes*, *coaches*, and *others* (e.g., officials, spectators, and family members) (see Figure 3).

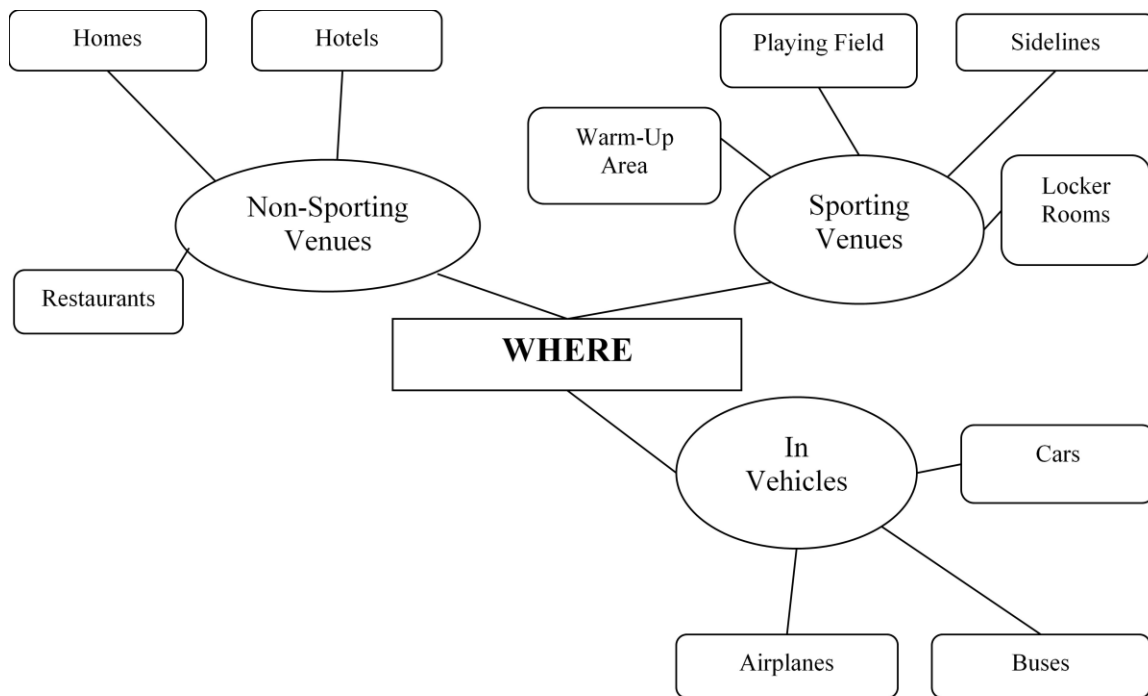


Figure 2. Athletes' ($n = 31$) perceptions of "Where" humor is used in intercollegiate sport

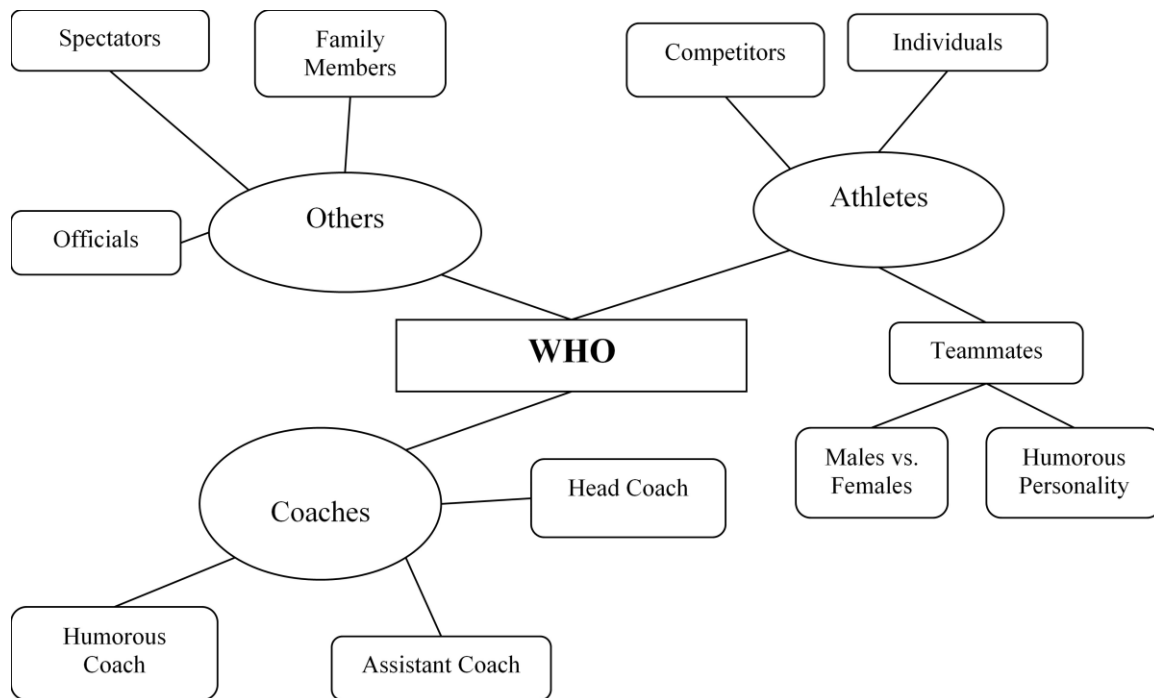


Figure 3. Athletes' ($n = 31$) perceptions of "Who" uses humor in intercollegiate sport

Within the *athletes* generic category, the individuals most frequently noted to use humor were teammates. Participants suggested that it was often the same teammates using humor regularly, and they described these individuals as having a “humorous personality”. The following quote from a male athlete outlines the perceived differences in humor use and appreciation among teammates:

Umm, sure, it always depends on the person’s personality, so, like, me coming into a game, ... I like to make a few jokes, I’m not too serious of a person so going up to a competition, I wouldn’t be strictly against making jokes but ya, there definitely are guys that would be really really serious and if you even crack a joke, they’d get mad at you. (Participant M9)

Participants also noted a difference in the use of humor by male versus female teammates. The quote below from a female athlete provides an interesting insight into the use of humor on mixed gender teams:

Well, I can totally see on our team the type of humor is different between the men and the women, for sure. It’s totally different ... the guys seem more immature with their humor and the girls are a little more encouraging with their humor but still joking around. (Participant F3)

Participants also suggested that individuals would sometimes use humor directed to themselves. This was differentiated from using humor with teammates as this was an athlete joking with themselves out loud rather than their humor being part of an interaction with another athlete. Finally, participants noted that humor was occasionally used between competitors from different teams, but this often occurred because the athletes knew each other or were friends outside of their sport.

Within the *coaches* generic category, participants cited many examples of both head and assistant coaches’ use of humor. Many athletes suggested that it was preferred when the assistant coach used more humor than the head coach. One female athlete noted the difference in the frequency of humor use by her head and assistant coaches “...our head coach, when she uses humor it's like... maybe once a practice... But then, our other assistant coach, he uses it more frequently so it has a different effect.” (Participant F11)

Multiple athletes went so far as to suggest that each team should have a humorous coach, ideally one of the assistants. One female athlete noted her general preference for the humorous assistant coach in the following sentiment:

...he'll just let you have that time to just like cool off and then he just knows, that's what I love about him, he just knows ... when to come and joke. So definitely I'd choose the car with [the humorous coach]. In the car with [the more serious head coach] I'd probably be, like, crying in a corner in the back of the car the whole time. (Participant F8)

Finally, within the *others* generic category, participants noted that spectators most often used humor, followed by family members, and officials. A male athlete noted how spectators use humor "...sometimes the fans can say some pretty funny stuff too. Ya, like usually some chants can be pretty funny..." (Participant M8)

2.3.4 What

The specific content (i.e., the *what*) of humor discussed by participants was separated broadly into *humorous topics styles* and *humor styles* (see Figure 4). With regard to the former, participants noted that sport-related humor was used most frequently, followed by non-sport content. A male athlete illustrates this duality with the following quote:

...sometimes you'll just laugh at something unrelated to sport, maybe just laughing off a bad test or something, if you're in the same class as a teammate, but I'd say we're mostly about [sport]-specific stuff, stuff that is occurring in practice...making fun of yourself or another guy for doing something stupid or [making a bad play]. (Participant M3)

The participants also confirmed that each of the *humor styles* classified by Martin et al. (2003) were used. Based on participant responses, it appeared that affiliative humor was used most often, followed closely by aggressive humor, self-enhancing humor, and self-defeating humor. The quote below, from a male athlete, reflects how aggressive humor can be used in competition:

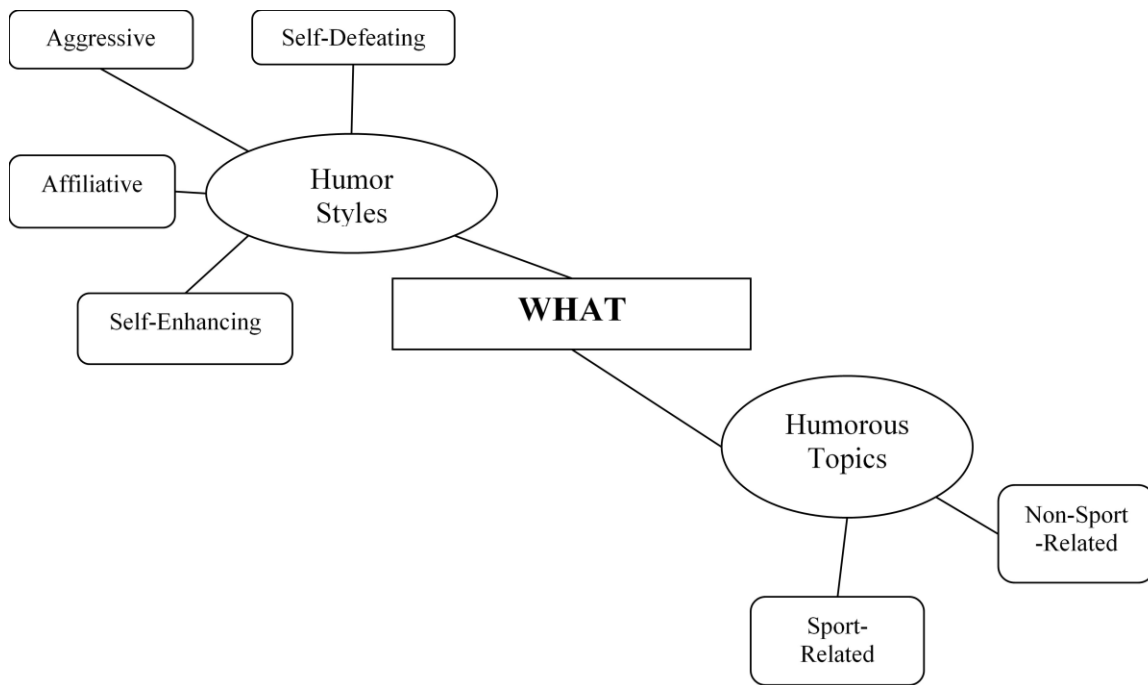


Figure 4. Athletes' ($n = 31$) perceptions of "What" humor is used in intercollegiate sport

If there's anything really in play, like someone messes it up or someone's got a stupid looking [piece of equipment], umm, the coach looks ridiculous, like I don't know, there's really no, like, if you could make it funny and clever then... your words have some daggers behind them... (Participant M6)

2.3.5 Why

Participants indicated numerous reasons for *why* humor is used in intercollegiate sport (see Figure 5). These reasons were divided into three generic categories of humor use: *coping*, *sport relationships*, and *performance*. Insofar as *coping* is concerned, some participants noted that the use of humor helped them persevere through various challenges, the most frequently noted being stress, nerves, pressure, and tension, followed by poor performance, burnout, and non-sport-related issues. The following quote from a female athlete depicts how humor can be used in practice to cope with the stress associated with training:

... of course there's always stress either to do a new move or the coaches are watching you or those kinds of things so when the coaches aren't focusing directly on you, you can have a good laugh, where you don't have to be so serious. ... I do think it is a very positive thing because it keeps me happy. (Participant F5)

To which her teammate replied "... I definitely agree...I know sometimes during scrimmages I'm so frustrated, [my teammate] is trying to joke around with me and give me encouragement and that little laugh can just make [coping in practice] that much better" (Participant F6).

Another example is illustrated in the quote below from a male athlete who discussed using humor to help a teammate cope with a poor performance:

I think that ... it can soften the mood sometimes... like soften a loss. You know, if [a teammate] loses a match and he's pretty upset about it, you know, I might say "maybe your nose got in the way" or something, I don't know, and maybe I can make him giggle and forget about it a little bit and in that way, maybe it's a good thing sometimes to distract yourself, sometimes, from what's going on. (Participant M12)

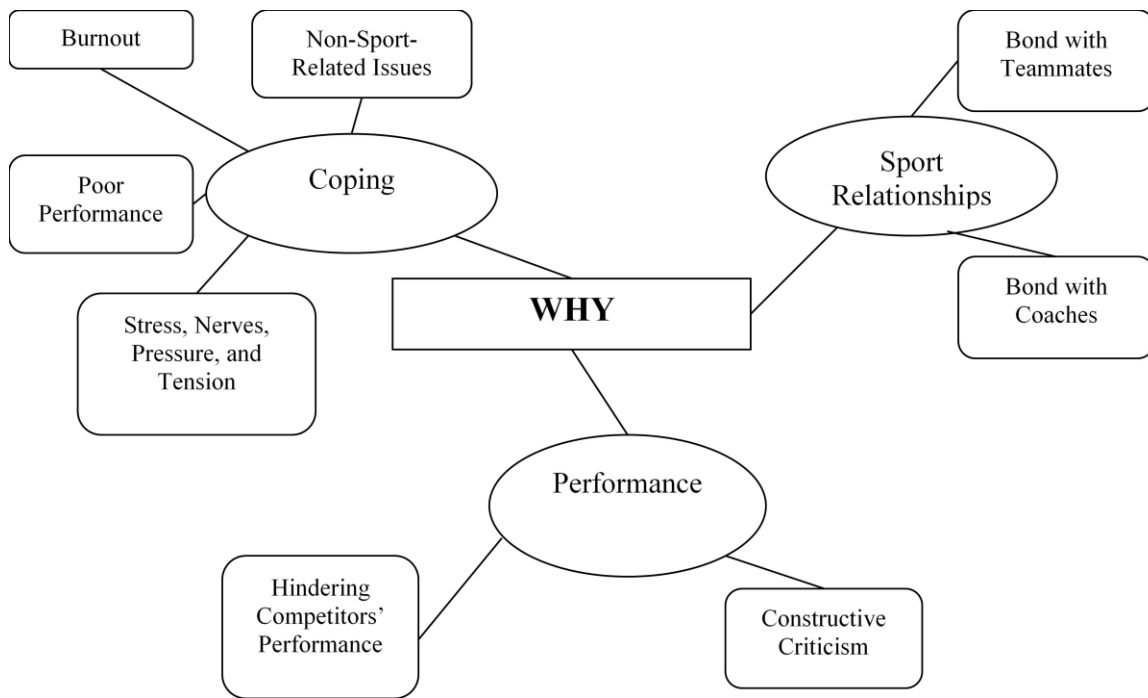


Figure 5. Athletes' ($n = 31$) perceptions of "Why" humor is used in intercollegiate sport

With regard to burnout, participants noted that the use of humor was a critical coping mechanism as it allowed them to keep things light and fun even during the particularly difficult moments in a long season. Participants also noted that humor was used to cope with non-sport-related issues such as doing poorly on an exam or having challenges with a romantic partner.

Within the generic category of *sport relationships*, participants noted that humor was most often used for bonding with teammates, followed by bonding with coaches. A quote from a male athlete indicates how coaches use humor to build relationships with athletes without detracting from their focus during practice "... [the coaches will] use humor, sometimes about completely random things, just to have fun, build their relationships with the guys... I guess it's just well-timed, so it doesn't distract from our practice" (Participant M1). A quote from a female athlete extends this idea to the entire team and outlines humor's function in relation to team bonding and performance:

I think ... we use a lot of humor to get to know each other and I feel that the better we know each other and the more, like, lighthearted we are towards each other, the better we play (Participant F14)

As illustrated by this quote from a female athlete, it was emphasized by athletes that the kind of humor an athlete uses is generally tailored to the intended recipient:

... we bond a lot during practice but it shows a lot of your personality when you're at a competition so I think that we bond in a different way kind of at [competitions], everybody's under stress, everybody's under pressure, and using humor you can kind of get to know each other more and then that way you can tailor your humor to different people.... (Participant F2)

Participants also indicated that humor was used in intercollegiate sport to enhance *performance*. A common example provided by participants was the use of aggressive humor directed at competitors to hinder their performance and/or to improve their own (and their team's) performance. The following quote from a male athlete illustrates how this might happen during competition:

Say the opposition team is like, about to take a penalty, you'd walk up to the guy about to take the [penalty shot] and say something real raunchy [that is funny to you or your teammates], right before he goes up to shoot to throw him off. (Participant M8)

Another example of using humor for enhancing performance was discussed in the form of constructive criticism from teammates or coaches. Participants noted that this kind of feedback can be difficult to give or receive and that adding humor made it easier and more effective. The following quote from a female athlete depicts a scenario in which a coach uses humor when providing constructive feedback:

...one of our coaches, umm, he makes fun of us if we're doing something bad and umm, I think that's really funny because he makes light of the situation. So if we're running a drill, he'll, like, he'll stop the drill and then he'll, umm, re-enact what we're doing but emphasize it so we look so weird that we kind of realize how stupid we're looking doing the drill wrong and then kind of like makes light of the situation and ... doesn't make us feel crappy about it but it also reinforces what we're supposed to be doing and then we fix it hopefully. (Participant F11)

Elaborating on that point about coaches her teammate then discussed how providing constructive feedback could also occur from fellow athletes:

... after one of our coaches will explain a drill and then if our captain or another teammate has something else to say, they will kind of, add humor to it or will, like, act out especially what not to do and be like "you're going to look like an idiot if you do this" and umm, we'll kind of make fun of what we've done in the past.... no one wants to look like ridiculous or funny, so we're like "ok, can't do that". (Participant F12)

2.3.6 Consequences of excessive, ill-timed or negative humor

Upon returning to the data after the results were finalized within each of the main W categories, there were multiple instances in which participants indicated a number of negative consequences associated with excessive and/or ill-timed use of humor, as well as the use of negative styles of humor (i.e., aggressive and self-defeating). Together, these represent an

additional main (“other”) category related to the use of humor in intercollegiate varsity sport (see Figure 6).

The negative consequences of humor fell within the generic categories of *damaging relationships*, *distressing individuals*, and *reducing performance*. With regard to *damaging relationships*, the most commonly cited negative consequence of humor resulted from an excessive use of humor by head coaches, which caused some athletes to take the coaches less seriously and/or to respect them less. The following sentiment provided by a female athlete illustrates this situation:

I'd say to a certain extent because obviously you don't want to be continuously joking about it because maybe I might not take [head coaches] as seriously as you should so, ... you don't want to constantly be, umm, attacked or say what you're doing wrong but you also don't want to make it seem like it's all a joke because then [head coaches] won't be taken as seriously. (Participant F13)

Participants also noted coaches might have reduced respect for an athlete if they used humor too often, and that if humor was used too soon after a loss, it could damage team cohesion.

For *distressing individuals*, the most commonly cited negative consequence was emotional; specifically, when a coach or a teammate used humor which resulted in an athlete's hurt feelings. A quote from a male athlete demonstrates that while humor use by coaches was often perceived as positive, the use of aggressive humor can create a negative experience for athletes:

...when coaches do use humor, ... it's never against you or to break your confidence, it's always to like, to get your confidence up... something funny to bring you up... but it's never putting you down and ... then if they do put you down, then sometimes that will be, like, degrading or will break your confidence and that's where I see some problems... (Participant M10)

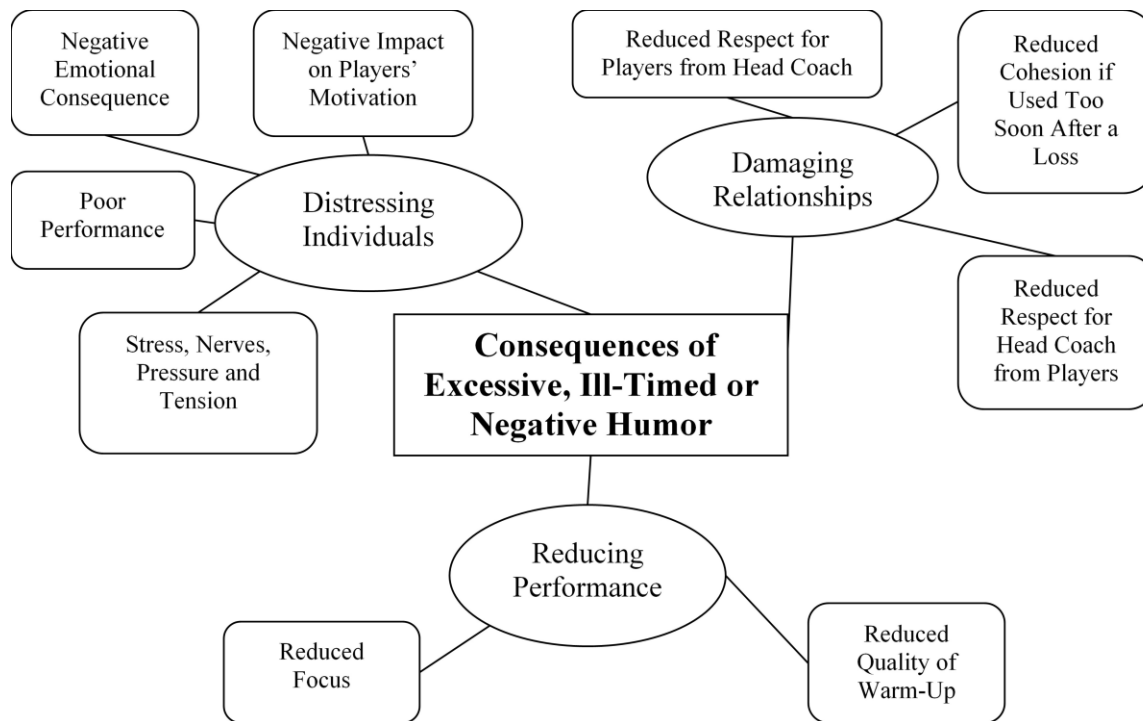


Figure 6. Athletes' ($n = 31$) perceptions of the negative consequences associated with excessive, ill-timed, or negative humor use in intercollegiate sport.

A quote from female athlete elaborates on this by commenting on how a coach's use of humor, even if it is likely intended to be positive, can have negative emotional consequences "... [the coach] said something that may have been something lighthearted but I've definitely gone to the washroom and been like "ooo why did I do that??" or "he made me feel like crap." (Participant F4)

Participants also noted that within the *reducing performance* category, reduced focus was the most common negative consequence of excessive or ill-timed humor use, followed by a reduced quality of warm-up. The following quote from a female athlete denotes how humor used immediately before competition served to reduce her focus "...I find that if someone is making me laugh before, it's just taboo. Don't make me laugh before, because then my focus isn't there anymore. So, umm, I can't laugh before a match." (Participant F8)

2.4 Discussion

The purpose of the study was to examine, via the use of focus groups conducted with 31 athletes from 8 different sports, *who*, *what*, *when*, *where*, and *why* humor is used in intercollegiate varsity sport. Our results showed that the use of humor is ubiquitous in the university varsity sport setting, as noted by athletes representing a number of different sports. More specifically, multiple styles and topics of humor (i.e., *what*) were reportedly used across multiple time periods (i.e., *when*) and locations (i.e., *where*), by people directly (e.g., players, coaches) as well as indirectly (e.g., fans, referees) involved in the sport (i.e., *who*). As to *why* humor is used in sport, athletes reported that it was associated with improvements in three specific areas: coping, performance, and sport relationships. A number of negative consequences associated with excessive, ill-timed or negative types of humor were also reported by participants, including reduced focus and reduced respect for coaches, among others.

One significant contribution that emanates from this research and that warrants additional discussion is the "other" category; that is, the negative consequences associated with excessive, ill-timed, or negative styles of humor (i.e., distressing individuals, damaging relationships, and reducing performance). While interesting, the possibility that humor can have negative consequences is not new. In fact, Martin et al. (2003) noted that previous conceptualizations of

humor did not distinguish between beneficial and harmful styles, which served as a basis for the creation of the HSQ. However, previous studies which examined humor in intercollegiate varsity sport (i.e., Giacobbi et al., 2004; Grisaffe et al., 2003; Hester, 2010; Nicholls et al., 2007) all identified only positive associations (e.g., enhanced coping, increased likeability of coaches, and greater team cohesion). This highlights the importance of the methodology utilized in the current study as well as the applied significance of these results for coaches and athletes in intercollegiate varsity sport.

Similar to the results in the current study, Ronglan and Aggerholm (2014) concluded that the timing of humor used by coaches was critical to achieving positive outcomes (e.g., strengthening bonds with and between athletes), implying that there may be potential negative consequences if humor use is ill-timed. Indeed, in the present study we found that there were perceived negative consequences related to both frequency and timing of humor use, particularly for head coaches, and that both are important considerations for avoiding negative consequences (e.g., damaging relationships). One possible solution to this challenge comes from athletes' apparent preference for humor use by an assistant coach in comparison to a head coach in the present study. This might mean that head coaches who have a naturally 'humorous personality' might have to self-regulate the types and frequency of humor they use. On the other hand, if an assistant coach is not naturally humorous, they might benefit from going beyond their comfort zone in their attempts to use humor for the benefit of the team. Indeed, the role of the assistant as the 'humorous coach' might allow the head coach to retain credibility and a focus on the task (e.g., practicing or competing well), while maintaining appropriate amounts and styles of humor to be experienced within the sport environment. This conclusion also aligns with literature concerning roles within the field of group dynamics, which suggests that the ideal combination is when a head coach is a task specialist and an assistant is a social specialist (e.g., Carron & Eys, 2012). Taken together, these findings highlight the need for coaches, especially head coaches, to be cautious when using humor, as ill-timed, excessive, or negative styles could lead to negative consequences as perceived by athletes (e.g., damaging relationships, distressing individuals, and reducing performance).

In addition to implications for coaches, the abovementioned caution, based on the results of the current study, also extends to athletes. For example, it was noted by athletes in the current study that if humor was used too soon after a loss it could reduce team cohesion. Interestingly, one coach in Ronglan and Aggerholm (2014) noted an experience where some athletes used humor immediately before a match, which caused reduced focus and strain amongst the team as some players viewed it as inappropriate. Thus, athletes must also be aware of the possible negative consequences associated with humor use that is ill-timed, excessive, or of a negative style.

The second significant contribution of the current study that warrants further discussion is that participants noted that one reason *why* humor was used was to enhance coping in challenging sport-related situations, ranging from burnout to poor performance. Nichols et al. (2007) has shown that humor was noted as a coping mechanism by a wide sample of athletes, although the frequency of its use was low (i.e., ranging from 0% for national/international level athletes to 4% for university level athletes). The findings from the present study lend to the suggestion that humor use may be more widespread within intercollegiate varsity sport as it was noted in every sport and across a wide range of situations. Building further on the Nichols et al. (2007) study, the current study identified humor as a coping mechanism for specific stressors (i.e., burnout, stress, nerves, pressure, tension, poor performance). This finding lends some support to the results of a study conducted by Gaudreau et al. (2002), who suggested that humor use by an athlete who is performing more poorly than expected might help to insulate them from the negative affective state that would typically occur. Similarly, a case study by Johnson et al. (2016) that detailed an ultra-runner's experience during a continental run, noted that humor was instrumental in the runner's ability to cope with difficulties. Specifically, the athlete made jokes with her competitors that a particularly challenging part of the journey (i.e. a mountain range) simply did not exist, which helped her to "...master the situation" (p. 79). From a theoretical perspective, the incongruity that is often a critical part of humor can be used by individuals to reframe stressful situations in a less threatening way and thus potentially enhance coping (Martin, 2007). Similarly, it is well-known that the physiological responses associated with humor and laughter can help to decrease stress and anxiety (e.g., Colom, Alcover, Sanchez-Curto, & Zararte-Osuna, 2011; Szabo, 2003).

In the present study, athletes described humor use for coping purposes in the context of *social interactions* with teammates and/or coaches, which can have a positive effect on psychological well-being (see Berscheid & Reis, 1998 for a review of the connection between social relationships and psychological well-being). As noted above, research conducted in a multitude of areas has examined the connections between humor, social relationships, and coping. Martin (2007) has suggested that humor occurs more in social interactions, especially when it is focused on coping. Interestingly, Henman (2001) found that prisoners of war in Vietnam did not typically use humor as a means of coping when alone, but instead tended to joke or use humorous communications during or after a stressful experience. Given that measures of humor have been positively correlated with measures of interpersonal trust (e.g., Hampes, 1999), intimacy (e.g., Hampes, 1992), and empathy (e.g., Hampes, 2001), it would follow that humor could be used to initiate, maintain, and strengthen social relationships in sport settings.

The third significant contribution that warrants additional discussion—and one that is related to the findings discussed above—is that athletes noted that humor was used was to form successful relationships and enhance cohesion between teammates, as well as between players and coaches (i.e., the *why*). As a general concept in sport, group cohesion is defined as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). Team cohesion is an important variable in sport because it has a consistent and strong relationship with many important outcomes including performance (e.g., Carron, Colman, Wheeler, & Stevens, 2002). The results of the current study support the conclusion that a relationship exists between humor (depending on the style[s] used) and team cohesion in sport. Hester (2010) found such a relationship in basketball, and the participants in the current study noted that it also exists in their sports. Furthermore, the use of humor was noted as critical in establishing and maintaining relationships amongst athletes, and between coaches and athletes by elite Scandanvian coaches (Ronglan & Aggerholm, 2014), as well as within a European soccer club (Edwards & Jones, 2018).

From a theoretical perspective, Martin (2007) has suggested that humor can enhance social relationships through a number of avenues (e.g., self-disclosure, social probing,

establishing a group identity, enhancing interpersonal attraction, enhancing feelings of intimacy). As noted above, the results of the current study suggest that the sharing of humor by coaches and athletes may be one important variable in the creation and maintenance of social bonds. This is particularly interesting given that when many sport teams form, they are a collection of relative strangers. Interestingly, Fraley and Aron (2004) found that a shared humorous experience between same-sex stranger pairs while trying to complete a task resulted in increased feelings of closeness and attraction to the other person. Our findings suggest that players with a 'humorous personality' might help to catalyze these kinds of shared humorous experiences and thus play a critical role in the use of humor on sport teams, especially towards developing relationships. Indeed, group dynamics researchers have noted that athletes perceived the informal role of 'comedian' or 'clown' as beneficial within sport teams (Cope, Eys, Beauchamp, Schinke, & Bosselut, 2011). Furthermore, coaches have noted the critical role that a team clown can play in establishing a positive group dynamic (Ronglan & Aggerholm, 2014). As such, the use of humor in sport settings might be particularly important in the development and promotion of team cohesion, and ultimately, in the success of the team.

2.4.1 Limitations, conclusions, and applied recommendations

The current study has a number of strengths and limitations. A major strength of the study is the diversity of the sports that were represented (i.e., four interacting and four co-acting sports), which serves to enhance the transferability of the findings and the depth (and validity) of the knowledge gathered through the qualitative methodology. The main limitation of the present study relates to the fact that all intercollegiate sports in Canada involve a team component; that is, even the individual sports of figure skating, golf, wrestling, and swimming are performed in teams. As such, some of the findings from our study, particularly those surrounding social relationships, may not be applicable or transferrable to these sports at individual (i.e., non-intercollegiate) levels of competition. A second limitation was the snowball sampling technique used to recruit participants. Given that athletes were recruited to participate in a study concerning the use of humor in sport, it is possible that athletes with more humorous personalities were drawn to the study; as such the results may be less transferable to athletes with less humorous personalities.

Within the limitations of the current study, a number of conclusions are justified. First, humor is ubiquitous in intercollegiate sport as it appears to be used by everyone involved, at all possible times and locations, covering multiple styles and topics with a range of purposes. Second, athletes identified that the three main reasons for the use of humor in intercollegiate varsity sport were to enhance: (1) performance; (2) sport relationships; and (3) coping. Finally, humor use was indicated as having beneficial as well as detrimental effects depending on how it was used and interpreted by both coaches and athletes. Specifically, excessive use of humor, particularly negative styles, when used by certain people (e.g., head coaches), or at the wrong time, was indicated as having deleterious effects.

Overall, the findings of this study provide preliminary, detailed information about the use of humor in intercollegiate varsity sport. A number of areas for future research ought to be considered, including potential explorations of the effect(s) of humor use by athletes and coaches on team cohesion, as well as possible reasons for a humor-cohesion relationship (e.g., increased liking of coaches). Martin (2007) has suggested that humor can be considered a social skill; that is, an individual who uses more adaptive styles of humor (i.e., affiliative and self-enhancing) at the ‘right’ times with the ‘right’ people might be said to be socially competent with regard to humor, whereas someone who uses more maladaptive styles (i.e., self-defeating, and to a lesser extent, aggressive), or who uses humor at the ‘wrong’ times with the ‘wrong’ people, could be said to have a social deficit. It follows then, that based on previous literature as well as the current findings, a group of athletes who are socially competent in relation to humor might form a more effective team through positive relationships, improved coping, and enhanced performance.

Although future research is required to examine such postulations, athletes and coaches in intercollegiate sport should be encouraged to use affiliative humor—that is, to share jokes and communicate in positive, humorous ways—whenever appropriate, as it may strengthen relationships and ultimately enhance team cohesion and success. Although such humorous interactions are often spontaneous, teams could also go so far as to create planned humorous engagements. A specific hypothetical recommendation that stems from the 5 Ws framework of the current study would be for coaches to organize warm-ups in practice (i.e., *when*), on or near

the field of play (i.e., *where*) that would allow for athletes (i.e., *who*) to engage in sport-related positive humor (i.e., *what*) to initiate and maintain social relationships (i.e., *why*). Mainstream examples include the video of the Kansas University Men's basketball team doing the "Harlem shake" and the 2012 US Olympic swimming team's parody video of the song "Call Me Maybe" (Dimengo, 2013). In addition to interpersonal humor, coaches and athletes should also be encouraged to use positive humor individually (i.e., self-enhancing humor) as it might serve to enhance their ability to cope with the inherent challenges of sport. Finally, coaches and athletes should use aggressive and self-defeating humor with caution, as our findings suggest that the former can damage relationships and the latter can hurt individuals. Despite the potential negative consequences of humor use identified by athletes, its potential benefits appear to be numerous in the context of intercollegiate sport. In other words, the use of humor in varsity sport settings could represent a promising—and currently underutilized—key to success.

2.5 References

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Chapter 3

3 Study 2: Humor styles and team cohesion in intercollegiate varsity sport

3.1 Introduction

It has been noted that it is not always the sport teams with the most talented players that win championships, rather it is those that possess the greatest amounts of team chemistry—also referred to as *group cohesion* (Eys, Burke, & Evans, in press). Within the field of sport psychology, Carron, Widmeyer, and Brawley (1985) advanced a seminal and widely accepted definition of group cohesion in sport, referring to it as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (p. 213; Carron, Brawley, & Widmeyer, 1998). Carron et al.'s (1985) conceptualization of cohesion also led to the development of the Group Environment Questionnaire (GEQ) a measure that has been used to investigate a broad range of factors related to cohesion in sport, including environmental (e.g., team size; Widmeyer, Brawley, & Carron, 1990), personal (e.g., athletes' cognitions; Spink, Wilson, & Odnokon, 2010), leadership (e.g., coaching behaviors; Gardner, Shields, Bredemeier, & Bostrom, 1996), and team correlates (e.g., performance; Carron, Colman, Wheeler, & Stevens, 2002). The GEQ was developed to assess cohesion from athletes' perceptions of individual attractions to the group (ATG) and group integration (GI), from both social (S) and task (T) perspectives. As such, the GEQ consists of four subscales: Group Integration-Task (GI-T), Group Integration-Social (GI-S), Individual Attractions to the Group-Task (ATG-T), and Individual Attractions to the Group-Social (ATG-S).

One construct that has received relatively little research attention within the field of sport psychology is the use of *humor* by athletes and/or coaches. Given its inherently social nature, one might expect that humor would be related quite naturally to group cohesion. Outside of sport, research on humor has been extensive (e.g., Martin, 2007). For example, in a meta-analysis of humor use in the workplace ($n = 49$ studies), Mesmer-Magnus, Glew, and Viswesvaran (2012) found that *positive* humor use (i.e., humor that is intended to be or perceived as beneficial) by employees and supervisors was related to several positive outcomes including

enhanced workgroup cohesion. This distinction between positive and negative forms of humor was a pivotal moment in humor research that was formalized via the development of a conceptual model of humor advanced by Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003).

The results of Martin et al.'s (2003) research using a large, general sample of participants ($n = 1195$, aged 14-87, 61% female) confirmed a 2 x 2 model based on whether humor is used to enhance the *self* or one's relationships with others (*interpersonal*), and whether it is *positive* or *negative*. This research yielded the Humor Styles Questionnaire (HSQ; Martin et al., 2003), which assesses four styles of humor based on the conceptual model: (1) self-enhancing humor; (2) aggressive humor; (3) affiliative humor; and (4) self-defeating humor. This model addressed a significant gap in the humor literature at the time; namely, a lack of research on the relationship(s) between different humor styles and important outcomes for various populations (e.g., mental well-being; Martin et al. 2003).

In the general psychology literature, research on humor styles has shown that the use of positive humor (i.e., self-enhancing and affiliative) is related to extraversion (e.g., Mendiburo-Seguel, Páez, & Martínez-Sánchez, 2015), happiness and hardiness among university students (e.g., Yaprak, Guclu, & Durhan, 2018), well-being and social support in the workplace (e.g., Caudill & Woodzicka, 2017), and relationship quality between leaders and followers (e.g., Pundt & Herrmann, 2014). Similar factors have been found to be beneficial in sport (e.g., being extraverted, Allen, Greenlees, & Jones, 2013; happy, Vast, Young, & Thomas, 2010; having social support, Sheridan, Coffee, & Lavalley, 2014; creating quality relationships with coaches, Adie & Jowett, 2010), although they have not been examined in relation to specific humor styles used by coaches or athletes.

Within the sport domain, only two studies have included the use of the HSQ (i.e., Hester, 2010; Sullivan, 2013). Hester's dissertation in 2010 has particular relevance to the current study, as it consisted of an examination of humor and cohesion among athletes using both the HSQ and GEQ. Specifically, Hester investigated humor use by male collegiate basketball players ($n = 79$) from six post-secondary institutions in the United States. Results showed a positive correlation between affiliative humor and ATG-T ($r = .31, p < .05$), GI-T ($r = .33, p < .05$), and GI-S ($r = .25, p < .05$), as well as a positive correlation between self-enhancing humor and GI-S ($r = .23, p$

<.05). While acknowledging that future work in this area is necessary, these findings point to the presence of a relationship between humor styles and cohesion in sport. Hester's study had some limitations, however, including the fact that only male athletes on male sports teams were included. It is important to test such relationships among female athletes, as evidence suggests that there are gender differences in the use of humor generally (e.g., Wu, Lin, & Chen, 2016), and that there may be important gender differences in the correlates of humor in sport (e.g., Grisaffe, Blom, & Burke, 2003). Furthermore, Hester's study included only basketball teams, and although athletes' styles of humor were examined, coaches' styles of humor were not assessed. Lastly, Hester used traditional correlational and multiple regression analyses to examine these relationships, rather than analyses that could allow for an examination of effects at both individual and team levels, such as Multilevel Modeling (MLM).

MLM has been recommended for use when examining the correlates of cohesion specifically, as such analyses can account for the nested structure of the data (e.g., athletes within teams; Burke, Davies, & Carron, 2014). Given that people within a group/team tend to be more similar than those in different groups/teams, structural variables (i.e., aggregated data) violate the assumption of independence of observations (Hox, 2010). Traditional regression techniques are based on this assumption, which causes an increased risk of finding a spurious result (i.e., a type 1 error) when using aggregated data (Hox, 2010). To reduce this risk, MLM accounts for the non-independence of observations of structural variables (Hox, 2010). As such, it is warranted to assess appropriate regression models for hierarchical data (i.e., athletes within teams) in humor-cohesion relationships.

3.1.1 The current study

On the basis of the abovementioned gaps identified in previous research as well as the hypothesized link between humor and sport group cohesion, the purpose of the present study was to investigate, via MLM, the relationship between the styles of humor used by athletes, teams, and head coaches, and athletes' perceptions of team cohesion in intercollegiate sport. Three specific research questions were examined.

The first research question examined whether individual athlete variations in humor styles were related to individual perceptions of team cohesion. Based on previous research (i.e., Hester, 2010; Mesmer-Magnus et al., 2012), it was hypothesized that individual levels of positive styles of humor (i.e., self-enhancing and affiliative) would be positively related to perceptions of team cohesion.

The second research question examined whether variations in team aggregated humor styles were related to individual athlete perceptions of team cohesion. While it was expected that the results at the team level would be similar to those at the individual level (i.e., that the use of positive styles of humor by teams would be associated with increased athlete cohesion), no specific a priori hypotheses were advanced given that no previous research has examined this relationship.

The third research question examined whether variations in head coach's humor styles were related to individual athlete perceptions of team cohesion. Although research to date has not examined this relationship, it was again expected that positive styles of humor (i.e., affiliative and self-enhancing) would be positively related to individual perceptions of cohesion.

3.2 Method

3.2.1 Participants

Data from 278 athletes ($M_{\text{age}} = 20.05$ years, $SD = 2.89$; 74% female) and 36 head coaches ($M_{\text{age}} = 42.68$ years, $SD = 11.08$; 75% male) were included in the study. Athletes and coaches represented 36 teams from four interacting sports (i.e., curling, hockey, basketball, and volleyball), competing in 7 of 8 college and university conferences across Canada (see Table 2 for detailed participant information).

Table 2. Participant demographics for athletes ($n = 278$; $M_{\text{age}} = 20.05$ years, $SD = 2.89$) and head coaches ($n = 36$; $M_{\text{age}} = 42.68$ years, $SD = 11.08$)

Participant or team characteristic	Percentage of sample
Gender	
Females	74%
Males	26 %
Starter Status	
Starters	68%
Non-Starters	32%
Leadership Role	
Captain or assistant captain	25%
Head Coach Gender	
Male	75%
Female	25%
Sport	
Curling	12%
Hockey	14%
Volleyball	55%
Basketball	19%
University or College Status	
College team	59%
University team	41%
Intercollegiate Conference	
Atlantic university sport conference	4%
Ontario university athletics	26%
Canada west	11%
Atlantic collegiate athletic association	4%
Ontario collegiate athletic association	22%
Alberta colleges athletic conference	25%
Pacific western athletic association	8%

Some teams that were originally invited to participate were not included in the final sample. First, although track and field teams were originally invited to participate in the study, the authors decided against using their data for two reasons: 1) the teams were outliers in terms of being much larger teams (i.e., 50 and 100 athletes vs. a range of 4-23 athletes on the teams included); and 2) they consisted of numerous smaller teams (e.g., throwers, jumpers, sprinters etc.) nested within one large team, which differed from the other teams included in the study. Second, data from three additional teams were not included because only two athletes on each team participated, and the results of MLM can be skewed by groups of two.

It should also be noted that athletes were asked three open-ended questions about their humorous experiences, particularly as they pertained to their head and assistant coaches (see Appendix S for details). Head and assistant coaches were also asked open-ended questions about their humorous experiences (see Appendices P & Q for details). Very little qualitative data were obtained via these open-ended questions; thus, they were not analyzed or included in the current study. Other quantitative data were also collected as part of the demographic questions (e.g., starter vs non-starter); these were ultimately deemed unnecessary for the current study and were not included.

Of the teams that were included in the study, the average team size was 12.08 players (mode = 14, range = 4-23), with an average of 7.72 athletes per team (range = 3-23) who participated in the study. Said another way, the 36 teams that participated had a total of 435 athletes; 278 athletes participated in the study, for an overall participation percentage of 64%.

3.2.2 Measures

3.2.2.1 The Humor Styles Questionnaire (Modified for Sport - Athlete version)

For the purpose of the current study, the HSQ (Martin et al. 2003) was modified, in consultation with one of the original authors of the HSQ, to reflect a sport context and wording that was relevant for athletes (see Appendix D). For example, words such as “teammate” and “coach” were used instead of “other people” for most items. An example item used for the affiliative style of humor is, “*I don’t have to work very hard at making my coaches or teammates*

laugh—I seem to be a naturally humorous person.” Similarly, an example item for the self-enhancing style of humor is, *“If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.”* For aggressive humor, an example item is, *“If someone makes a mistake, I will often tease them about it.”* It should be noted that some items were reverse-scored. An example of a reverse-scored item for self-defeating humor is, *“I don’t often say funny things to put myself down.”*

With the exception of the above-noted adaptations, the original structure and four subscales (including the eight items per subscale) of the HSQ were retained. Participants responded on a 7-point Likert-type scale anchored by 1 (*totally disagree*) and 7 (*totally agree*), with the midpoint anchored by 4 (*neither agree nor disagree*). The eight items were then summed to provide a single score for each humor type/subscale (i.e., self-enhancing, affiliative, aggressive, self-defeating). All four subscales demonstrated acceptable levels of internal consistency with Cronbach's alpha's ranging from .77 to .81 (Martin et al. 2003). To ensure appropriate internal consistency for the modified version in the current study, Cronbach's alpha values were computed for each 8-item factor. The alpha values for self-enhancing, affiliative, aggressive, and self-defeating humor subscales were .72, .85, .65, and .78, respectively.

3.2.2.2 The Humor Styles Questionnaire (Modified for Sport - Coach version)

For the coach version of the HSQ, items were modified from the athlete version by substituting words such as “teammate” and “coaches” with “athletes” and “other coaches” to reflect wording deemed more appropriate for head coaches (see Appendix E). An example item for affiliative humor in the survey for coaches is, *“I don’t have to work very hard at making athletes or other coaches on my team laugh—I seem to be a naturally humorous person.”* With these exceptions, the overall questionnaire format and scoring remained the same as the original HSQ (Martin et al. 2003). To ensure appropriate internal consistency for the modified coach version of the HSQ, Cronbach's alpha values were computed for each 8-item factor/subscale. The alpha values for self-enhancing, affiliative, aggressive, and self-defeating humor were .73, .80, .75 and .78, respectively.

3.2.2.3 The Group Environment Questionnaire

The original version of the 18-item GEQ (Carron et al., 1985) was used in the present study (see Appendix F). Participants responded on a 9-point Likert scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). As discussed above, the GEQ assesses cohesion via four subscales: ATG-S (5 items), ATG-T (4 items), GI-S (4 items), and GI-T (5 items). An example item from the ATG-S subscale is, “*Some of my best friends are on this team.*” Some items on the GEQ are reverse scored; an example within the ATG-T subscale is, “*I’m unhappy with my team’s level of desire to win.*” For the GI-S subscale, an example item is, “*Our team would like to spend time together in the off season*”, and an example item for the GI-T subscale is, “*Our team is united in trying to reach its goals for performance.*” The final scores represent the mean responses across all items within each subscale. Previous studies have shown adequate levels of internal consistency, as demonstrated by Cronbach's alphas ranging from .63 to .81 (e.g., Brawley, Carron, & Widmeyer, 1987; Carron et al. 1985; Li & Harmer, 1996, Spink, Nickel, Wilson, & Odnokon, 2005). For the current sample, the alpha values were .59, .63, .70, and .64 for GI-T, GI-S, ATG-S and ATG-T, respectively.

3.2.3 Procedure

Senecal, Loughead, and Bloom (2008) have noted that cohesion is dynamic, fluctuating throughout a team's season. When examining the relationship between athlete satisfaction and cohesion, for example, Spink et al. (2005) collected data during the last two weeks of each team's regular season to ensure that adequate perceptions of team cohesion had been formed. Therefore, in the current study, we aimed to test team cohesion at approximately the same time within each sport's schedule (i.e., near the end of the regular season). As such, the primary researcher in the current study contacted all teams by e-mail with approximately one month remaining in their regular season. Teams (athletes and head coaches) were then asked to participate within the last three weeks of their regular season.

To recruit participants, a database was compiled from publicly available records (i.e., intercollegiate websites) consisting of 583 Canadian college and university intercollegiate sports teams that were currently competing in their regular season. The head coach of each team was contacted by the primary researcher via e-mail, with an invitation for their team to participate

(see Appendix G). If the coach agreed to invite the team to participate, three e-mails were sent to the coach; one for themselves to participate (see Appendix H), one for an assistant coach to participate (if applicable) (see Appendix I), and one to be forwarded to all athletes on the team (See Appendix J). Reminder e-mails were sent, as necessary, in approximately one-week intervals (for a maximum of two weeks) after the initial e-mail invitations were sent (see Appendices K, L, & M; for head coaches, assistant coaches, and athletes, respectively). These reminders were sent to encourage maximum participation from athletes and coaches on each team. A team reward was also used to incentivize members to complete the study before the end of the team's regular season; that is, if the head coach and an assistant coach (if applicable), as well as 75% of the players on the team, participated in the study before the team deadline, the team was entered into a draw for a \$300 gift card for a team dinner.

The e-mail invitation for the coaches contained a link to the study survey where they were presented with the letter of information for the study (see Appendices N & O; for head coaches and assistant coaches, respectively). Once the coach agreed to participate, they filled out some basic demographic questions (see Appendices P & Q; for head coaches and assistant coaches, respectively) and were then asked to complete the HSQ (Modified for Sport - Coach version). The e-mail invitation that was forwarded to athletes by their coach contained a link to the study survey, where the athlete was first presented with the letter of information for the study (see Appendix R). Once the athlete agreed to participate, they filled out some basic demographic questions (see Appendix S) and were then asked to complete the HSQ (Modified for Sport - Athlete version) and the GEQ. Completion of the questionnaires was expected to take less than 30 minutes in total. All data were stored electronically, on a secure server for subsequent analyses. Ethics approval was obtained from the appropriate university research ethics board (ethics # 105913; see Appendix T).

3.2.4 Data analyses

As noted above, MLM analyses were used to examine the relationships between the styles of humor used by athletes, teams, and head coaches, and athletes' perceptions of team cohesion. Specifically, the model building paradigm espoused by Peugh (2010) was followed. Peugh's paradigm suggests building the final model in successive stages, starting with no

predictors (i.e., the intercept only model), then adding individual effects (level 1), followed by group effects (level 2). The slopes across groups are either fixed or random (i.e., allowed to vary across groups). It is important to note that in the current study, only fixed effects were examined as the sample characteristics (i.e., number of teams, size of teams, and unequal responses per team) caused non-convergence errors when examining random effects, possibly due to low power (Hox, 2010).

Separate models were created to predict ATG-S, ATG-T, GI-S, and GI-T. The final model for each can be found in Table 5. Level 1 predictors included the four HSQ factors as well as the athlete's gender. Level 2 consisted of the directly sampled predictors of head coach's humor scores and gender, as well as the structural predictors of team's humor scores (i.e., the aggregation of the humor scores for each athlete within a team to create an average score for that team; team self-enhancing humor, team affiliative humor, team aggressive humor and team self-defeating humor). All continuous predictors were grand mean centered and categorical variables were anchored at 0, as recommended by Peugh (2010). SPSS (version 22) MIXED procedure was used for all analyses. Restricted maximum likelihood estimation methods were used as a conservative way to analyze the data set given the number of groups is less than 50 (Hox, 2010).

3.3 Results

3.3.1 Descriptive statistics

For an overview of the descriptive statistics for the four styles of humor and the four factors of cohesion, see Table 3. Affiliative humor had the highest mean score, whereas self-defeating and aggressive humor had the lowest scores for both athletes and coaches. With regard to cohesion, ATG-S and ATG-T had the highest mean cohesion scores, whereas GI-T had the lowest. For an overview of the bivariate correlations for the humor and cohesion variables, see Table 4.

Table 3. Descriptive statistics for athletes' ($n = 278$; 76% female) and head coaches' ($n = 36$; 75% male) styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and athletes' perceptions of team cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)

	Minimum	Maximum	Mean	Std. Deviation
Athlete affiliative humor	22.00	56.00	43.87	7.46
Athlete self-enhancing humor	11.00	53.00	35.48	6.87
Athlete aggressive humor	14.00	48.00	27.87	6.67
Athlete self-defeating humor	10.00	50.00	27.84	8.27
Head coach affiliative humor	17.00	56.00	42.32	7.39
Head coach self-enhancing humor	15.00	49.00	34.96	8.56
Head coach aggressive humor	8.00	39.00	24.41	7.61
Head coach self-defeating humor	13.00	48.00	25.51	7.08
Attraction to group-social	4.60	9.00	7.62	1.13
Attraction to group-task	5.00	9.00	7.63	.91
Group integration-social	4.75	9.00	7.05	1.01
Group integration-task	4.00	8.60	6.27	.75

Note. Humor style scores represent the total sum of each item and have a minimum score of 8 and a maximum score of 56. Cohesion scores represent the average of the items for each factor and have a minimum 1 and a maximum of 9. Higher scores represent greater levels of humor and cohesion.

Table 4. Bivariate Pearson correlations for humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and athletes' perceptions of team cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. A AF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. A SE	.22 ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. A AG	.14 *	.16 **	-	-	-	-	-	-	-	-	-	-	-	-	-
4. A SD	-.06	.19 **	.24 ***	-	-	-	-	-	-	-	-	-	-	-	-
5. ATG -S	.41 ***	.03	.08	-.15 *	-	-	-	-	-	-	-	-	-	-	-
6. ATG -T	.32 ***	.17 **	.00	-.19 **	.36 ***	-	-	-	-	-	-	-	-	-	-
7. GI-S	.25 ***	-.01	.07	-.15 *	.53 ***	.30 ***	-	-	-	-	-	-	-	-	-
8. GI-T	.06	.18 **	-.08	-.11	.23 ***	.23 ***	.26 ***	-	-	-	-	-	-	-	-
9. T AF	.41 ***	.08	.00	-.05	.18 **	.13 *	.28 ***	.06	-	-	-	-	-	-	-
10. T SE	.10	.33 ***	.21 ***	.07	.06	.07	.03	-.02	.24 ***	-	-	-	-	-	-
11. T AG	.00	.14 *	.50 ***	.14 *	.09	.07	.12 *	-.02	.01	.43 ***	-	-	-	-	-
12. T SD	-.06	.07	.21 ***	.34 ***	-.07	-.13 *	-.16 **	-.05	-.15 *	.21 **	.42 ***	-	-	-	-
13. H AF	.01	-.04	-.02	.04	.01	-.01	.07	.08	.02	-.11	-.06	.13 *	-	-	-
14. H SE	.03	.00	-.07	-.01	-.14 *	-.11	-.02	-.07	.07	.01	-.13 *	-.02	.33 ***	-	-
15. H AG	-.06	-.10	-.01	-.01	-.08	.02	.03	.10	-.15 *	-.29 ***	-.01	-.04	.57 ***	-.09	-
16. H SD	-.04	.02	.04	-.01	-.23 ***	-.08	-.16 **	.13 *	-.09	.05	.07	-.02	.38 ***	.24 ***	.47 ***

Note. A = Athlete; T = Team; H = Head coach; AF = Affiliative humor; SE = Self-enhancing humor; AG = Aggressive humor; SD = Self-defeating humor; ATG-S = Attractions to the group – social; ATG-T = Attractions to the group – task; GI-S = Group integration – social; GI-T = Group integration – task.

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

Table 5. Multilevel models showing significant predictors for each subscale of cohesion as measured by the Group Environment Questionnaire (GEQ; Carron et al., 1985)

Parameters	Attraction to Group – Social	Attraction to Group – Task	Group Integration – Social	Group Integration - Task
Regression coefficients (fixed effects)				
Intercept	7.69 (.18)***	7.64 (.12)***	6.76 (.19)***	6.29 (.15)***
Affiliative humor	.06 (.01)***	.04 (.01)***	.02 (.01)**	.00 (.01)
Self-enhancing humor	-.01 (.01)	.02 (.01)*	-.01 (.01)	.03 (.01)***
Aggressive humor	-.00 (.01)	-.01 (.01)	-.00 (.01)	-.01 (.01)
Self-defeating Humor	-.01 (.01)	-.02 (.01)*	-.01 (.01)	-.01 (.01)*
Individual gender (M to F)	.18 (.24)	-.08 (.16)	.16 (.24)	.16 (.20)
Team affiliative humor	-.02 (.03)	-.01 (.02)	.05 (.03)	.02 (.02)
Team self-enhancing humor	.00 (.04)	.01 (.03)	-.00 (.04)	-.05 (.03)
Team aggressive humor	.05 (.03)	.05 (.02)	.06 (.03)	-.01 (.03)
Team self-defeating humor	-.05 (.03)	-.05 (.02)	-.05 (.03)	.00 (.03)
Head coach affiliative humor	.04 (.01)*	.01 (.01)	.01 (.01)	.01 (.01)
Head coach self-enhancing humor	-.02 (.01)	-.01 (.01)	.00 (.01)	-.01 (.01)
Head coach aggressive humor	-.02 (.02)	.01 (.01)	.02 (.02)	-.01 (.01)
Head coach self-defeating humor	-.04 (.01)*	-.02 (.01)	-.04 (.02)*	.02 (.01)
Head coach gender (M to F)	-.18 (.22)	.02 (.15)	.27 (.23)	-.10 (.18)

Variance components (random effects)

Residual	.87 (.08)***	.70 (.06)***	.71 (.07)***	.46 (.04)***
Intercept	.11 (.07)	.01 (.03)	.14(.07)*	.09 (.05)
Model summary				
Deviance statistic	839.38	768.61	790.89	681.16
Number of estimated parameters	17	17	17	17
ICC	.18	.04	.27	.12

Note. No random effects for predictors were presented as all resulted in non-convergence errors.

Cohesion scores represent the average of the items for each subscale and have a minimum 1 and a maximum of 9. Higher values represent greater levels of cohesion.

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

3.3.2 Multilevel modeling analyses

3.3.2.1 Intraclass correlation

The intercept only model allows the researcher to calculate an intraclass correlation (ICC) which informs what portion of variance in the outcome variable occurs between groups (i.e., teams in the current study) compared to the total variance. As shown in Table 5, the ICC's were .18, .04, .27, and .12 for ATG-S, ATG-T, GI-S, and GI-T, respectively, which suggests that between 4% and 26% of the variance in cohesion occurred *within* teams. In essence, athletes' perceptions of cohesion tended to be more similar to those of their teammates than to athletes on other teams.

3.3.2.2 Athletes' styles of humor and athletes' perceptions of cohesion

As shown in Table 5, individual athletes' affiliative humor scores significantly predicted ATG-S, ATG-T, and GI-S cohesion scores. For example, as an athlete's affiliative humor score increased by one unit, their mean score on the ATG-S subscale of the GEQ increased by .06 units (standard error [SE] = .01). In addition, individual athletes' self-enhancing humor scores significantly predicted ATG-T and GI-T scores, and individual athletes' aggressive humor scores failed to (significantly) predict any of the four cohesion subscales. Lastly, individual athletes' self-defeating humor scores significantly predicted scores on both task subscales of the GEQ (i.e., ATG-T and GI-T); that is, as an athlete's self-defeating humor scores increased by one unit, their mean score for the ATG-T and GI-T subscales of the GEQ decreased by .02 (SE = .01) and .01 (SE = .01), respectively.

3.3.2.3 Teams' aggregated styles of humor and athletes' perceptions of cohesion

As shown in Table 5, teams' aggregated styles of humor did not predict athletes' perceptions of cohesion.

3.3.2.4 Head coaches' styles of humor and athletes' perceptions of cohesion

As shown in Table 5, head coaches' affiliative humor scores significantly predicted ATG-S scores; that is, as head coaches' affiliative humor scores increased by one unit, the cohesion scores reported by the athletes on their team increased by .04 (SE = .02). Additionally, head coaches' self-defeating humor scores significantly predicted athletes' perceptions of social cohesion (i.e., ATG-S and GI-S). For example, as head coaches' self-defeating humor scores increased by one unit, their athletes' ATG-S cohesion scores decreased by 0.4 (SE = 0.1).

3.4 Discussion

The purpose of the current study was to examine the relationship between the styles of humor used by intercollegiate athletes, teams, and head coaches (as measured by the HSQ) and athletes' perceptions of team cohesion (as measured by the GEQ). Importantly, this study was the first to include athletes', teams', and head coaches' styles of humor when examining their relationship with team cohesion. It was also the first to examine these relationships within multiple sports and through a MLM framework. The results indicate that the styles of humor used by athletes and coaches are predictive of individual athletes' perceptions of team cohesion. To further explore this conclusion, each of the three research questions and their findings are discussed below.

The first research question pertained to the relationship between the styles of humor used by athletes and their perceptions of team cohesion. The results showed that the use of positive humor (i.e., affiliative and self-enhancing) by athletes was predictive of increased perceptions of team cohesion, as hypothesized. Specifically, athletes' use of affiliative humor—that which is used to enhance relationships—was positively related to three of the four cohesion subscales (i.e., athlete-reported ATG-T, ATG-S, and GI-S). When compared to the only other study found on humor and sport team cohesion (i.e., Hester, 2010), two common relationships were found; that is, affiliative humor was positively related to ATG-T and GI-S. In contrast, Hester (2010) found that affiliative humor was positively related to GI-T, which our findings did not support. Instead, the results of the current study found that affiliative humor was positively associated with ATG-S, which might be expected given the inherently social nature of affiliative humor (Martin et al., 2003).

The current results also showed that athletes' use of self-enhancing humor was positively related to athlete perceptions of ATG-T and GI-T. The fact that self-enhancing humor was related only to the task dimensions of cohesion is interesting and perhaps not entirely surprising given that this style of humor may play less of a role in establishing relationships due to a greater focus on the self. Given that self-enhancing humor is focused on individual coping (Martin et al., 2003), it could be particularly beneficial from a task perspective—that is, in terms of performance—in intercollegiate sport. Indeed, sport performance has long been associated with self-esteem (e.g., Vealey & Chase, 2008), and more recently with optimism (Ortin-Montero, Martinez-Rodriguez, Reche-Garcia, Garces de los Fayos-Ruiz, & Gonzalez-Hernandez, 2018), both of which have been positively associated with self-enhancing humor (Schneider, Voracek, & Tran, 2018). Furthermore, it has been shown in youth sport that mid-season performance was predictive of task and social cohesion later in the season (Benson, Šiška, Eys, Priklerová, & Slepíčka, 2016). Thus, athletes who score higher on self-enhancing humor could have higher levels of self-esteem and optimism, which in turn, may be associated with enhanced performance and increased perceptions of cohesion. Although such mechanisms cannot be determined from the results of the current study, it is possible that additional variables (e.g., self-esteem, optimism, performance, etc.) might mediate the relationship between self-enhancing humor and cohesion such that the former is only associated with task components of the latter.

The results from the current study fit with Martin's (2007) conceptualization of humor as a social skill where positive styles of humor, when used with the right people at the right time, can be beneficial for the individual and the relationships among individuals. In fact, positive styles of humor have been found to be positively related to measures of social competence (Yip & Martin, 2005) and emotional intelligence (Cignac, Karatamoglou, Wee, & Palacios, 2013). Similarly, the meta-analysis by Mendiburo-Seguel et al. (2015) found that positive styles of humor were positively related to extraversion and, to a lesser extent, openness to experience. The meta-analysis also found that self-enhancing humor was negatively related to neuroticism, and affiliative humor was positively related to agreeableness. Taken together, the findings in our study along with the existing evidence in the area might suggest that athletes who use positive styles of humor might be more likely to form and maintain relationships that could enhance their perceptions of both task and social cohesion.

In the current study, athletes' self-reported use of self-defeating humor was found to be negatively related to athlete perceptions of both task dimensions of cohesion (ATG-T and GI-T). Interestingly, Hester (2010) did not find any relationships between negative styles of humor and cohesion among intercollegiate athletes, which was surprising given the negative association found with social relationships in other studies (e.g., Cann & Matson, 2014; Dyck & Holtzman, 2013; Kuiper & McHale, 2009). Indeed, the use of self-defeating humor has been associated with characteristics such as an erratic lifestyle, interpersonal manipulation, and a cynical view of human nature (Martin, Lastuk, Jeffrey, Vernon, & Veselka, 2012), as well as neuroticism (Mendiburo-Seguel et al., 2015). Given these conclusions, it is somewhat surprising that self-defeating humor did not also relate negatively to perceptions of social cohesion (ATG-S and GI-S). Similar to self-enhancing humor, there may be additional variables which mediate the relationship such that self-defeating humor is only associated with perceptions of task cohesion. The reduced levels of self-esteem and optimism associated with self-defeating humor (Schneider et al., 2018), for example, are two possibilities given their relationships with sport performance noted above (Vealey and Chase, 2008; Ortin-Montero et al., 2018). Specifically, athletes with higher levels of self-defeating humor might not perform as well as they would like, which in turn could negatively affect their perceptions of task cohesion.

The lack of any relationships observed between athletes' use of aggressive humor and their perceptions of cohesion may be due, in part, to the notion that aggressive humor has both positive and negative components (Martin, 2007). For example, a qualitative study conducted by Holmes and Marra (2002) yielded an interesting finding from a workgroup with similarities to a sports team (i.e., a factory team where the members had to work closely to be successful and the performance of individual members was easily measured). Specifically, the team used "some good natured humorous ribbing" (p.1698), which might be considered similar to aggressive humor, to point out that one member of the team was not working hard enough. Rather than causing this member to withdraw, it appeared to bring him closer to the group and motivated him to improve at his task. Similarly, Chen and Ayoun (2019) showed that the use of aggressive humor by hospitality employees was positively associated with co-worker socializing and perceptions of supervisor support for fun. These findings lend to the suggestion that aggressive humor may have positive aspects in sport that counteract its potentially negative components

(e.g., reduced social desirability; Cann & Matson, 2014), resulting in a potentially neutral relationship with athletes' perceptions of cohesion.

With regard to the second research question, the lack of an association between teams' aggregated styles of humor and athletes' perceptions of cohesion was surprising. Burke et al. (2014) recommended using MLM to examine group-level correlates of cohesion as the relationships between individuals and the group are likely reciprocal (i.e., individuals influence the group and the group influences individuals). Given that people who use positive styles of humor are better able to create and maintain social relationships (Martin, 2007), a team with more of these individuals might be presumed to be more cohesive. The most likely explanation for the lack of such relationships in the current study is low power at the team level. Maas and Hox (2005) found that MLM studies with sample sizes of less than 50 groups produced biased estimates of standard error at the group level and thus lacked statistical power. Furthermore, Hox (2010) has suggested that the more a study design deviates from having equal group sizes, the lower the power. Given that the current study had group sizes, or more precisely respondents per team, ranging from 3 to 23 (from 36 teams), we may have lacked power at the group level.

An examination of the third research question in this study found that the use of affiliative humor by head coaches was positively related to athletes' perceptions of ATG-S. Conversely, the results also showed that head coaches' use of self-defeating humor was negatively related to athletes' perceptions of ATG-S, as well as their perceptions of GI-S. The fact that these group-level relationships were significant, despite the possible low power, may be an indication that head coaches' styles of humor have a strong association with athletes' perceptions of cohesion. Indeed, Carron and Eys (2012) have highlighted coaching behaviors as an important correlate of athlete perceptions of cohesion. More specifically, multiple studies have shown that perceptions of cohesion are related to coaching behaviors such as creating a positive motivational climate (Garcia-Calvo et al., 2014; McLaren, Eys, & Murray, 2015), positive feedback and training instruction (Kim & Cruz, 2016; Murray, 2006), and transformational leadership (Bosselut et al., 2018).

Given the limited research conducted on coaches' styles of humor in sport, insights might be gained by examining the impact of humor styles used by leaders in the workplace on follower

outcomes. Positive humor used by leaders has been found to be positively associated with workgroup cohesion (Mesmer-Magnus et al., 2012), relationship quality with followers (i.e., leader-member exchange; Pundt & Herrmann, 2015), and follower well-being (Caudill & Woodzicka, 2016; Kim et al. 2016). Interestingly, the associations between leader humor and follower well-being were mediated by social support (Caudill & Woodzicka, 2016), and social distance (Kim, Lee, & Wong, 2016), again suggesting that the styles of humor used have important connections to social relationships.

Martin (2007) suggested that humor can impact social relationships in terms of initial attraction, liking, and perceived interest. The use of positive styles of humor, particularly affiliative, has been found to be positively associated with initial impressions (Kuiper & Leite, 2010), positive evaluations of a casual acquaintance (Kuiper, Aiken, & Pound, 2014), and assessments of a good sense of humor and social desirability (Cann & Matson, 2014). Conversely, negative styles, particularly self-defeating humor, were found to be negatively associated with each of these outcomes. In addition, Treger Sprecher, and Erber (2013) showed experimentally in a university setting with unacquainted participants that in initial interactions, the relationship between humor and liking was mediated by enjoyment of the interaction and perceived reciprocal liking. Further, Burke, Peterson, and Nix (1995) and Grisafe et al. (2003), despite not accounting for different styles of humor, also demonstrated a link between a coach's use of humor and athlete liking.

Given these conclusions, the finding that a head coach's use of affiliative humor was positively associated with ATG-S was not surprising considering its previously noted associations with liking, attraction, interest, relationship quality, well-being, and workgroup cohesion. Similarly, it is not surprising that a coach's use of self-defeating humor was found to be negatively related to athletes' perceptions of ATG-S and GI-S. Interestingly, Hall (2010) found that a partner's use of self-defeating humor caused embarrassment in the other partner. Thus, it may be that a head coach's use of self-defeating humor causes embarrassment in their athletes, potentially leading to reduced perceptions of social cohesion.

3.4.1 Limitations and future directions

The current study has four main limitations. The first was an inability to detect all effects of interest; that is, to examine the effects of random slopes and group-level variables given the inequality in the number of respondents per team, and the limited number of teams. Although the study had adequate power to detect fixed effects, particularly at the individual level, future studies with greater power may further illuminate group-level effects as well as cross-level interactions that may be important in the humor-cohesion relationship.

The second limitation was the self-reported nature of the humor and cohesion data. Such data are often be subject to several biases (e.g., social desirability; Van de Mortel, 2008). Future studies should include observational data or peer-reported data to corroborate these findings.

The third limitation, given the nature of correlation or regression-based research, is that we were unable to determine the direction of causality. For example, in the current study, it is unclear whether an athlete's use of affiliative humor led to enhanced perceptions of cohesion or vice versa. Experimental studies are warranted to determine the direction of causality.

The fourth limitation is one of generalizability. The sample in the current study was very specific (i.e., intercollegiate athletes and coaches in interacting sports, on single gender teams, at the end of their regular season). This limits the generalizability of the findings to other age groups, levels of competition, co-acting sports, mixed gender teams, and times throughout the regular season or playoffs.

The results and limitations of the current study create several possible future directions already mentioned regarding humor-cohesion relationships (i.e., enhanced statistical power to detect group-level and cross-level effects, observational or peer-reported data, experimental data, different population samples, mediating variables for athletes and coaches, etc). Hox (2010) has suggested that the use of group-level outcomes are often overlooked in MLM research, and thus, this may present an interesting area for future study (i.e., do teams which use higher average levels of positive styles of humor have higher average cohesion scores or conversely lower average cohesion scores with higher average levels of negative styles of humor?). Finally, there are important future directions that could be explored with head coaches including examining

direct relationships (e.g., humor styles and liking) which could mediate humor-cohesion relationships.

3.4.2 Concluding remarks

The findings presented in this paper make an important contribution to the humor literature, as to our knowledge, this study was the first to examine how the styles of humor used by athletes and coaches relate to athletes' perceptions of cohesion using MLM. The overarching conclusion is that the use of positive styles of humor (i.e., affiliative and self-enhancing) by intercollegiate athletes and coaches appears to be positively associated with individual athletes' perceptions of social and task cohesion. Conversely, the use of self-defeating humor by athletes and coaches is negatively associated with individual athletes' perceptions of social and task cohesion. Although the direction of causality is uncertain, a reasonable recommendation from an applied perspective is for athletes and coaches to use more positive styles of humor and less self-defeating humor. As future studies examine other covariates in the humor-cohesion relationship, researchers and applied practitioners will begin to understand more fully the importance of humor in relation to team cohesion, and the potential impact on team performance.

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Chapter 4

4 Study 3: Styles of humor used by athletes and head coaches and athletes' liking of the head coach

4.1 Introduction

Humor is a ubiquitous form of communication that has been found to be important in strengthening many kinds of relationships, including those between leaders and followers (Pundt & Herrmann, 2015), teachers and students (Van Praag, Stevens, & Van Houtte, 2017), and sport psychologists and athletes (Pack, Hemmings, Winter, & Arvinen-Barrow, 2018). Interestingly, in 2013, Treger, Sprecher, and Erber showed that humor use was also experimentally linked to increased *liking* of another individual in unacquainted mixed-sex dyads (as measured via responses to items such as “I liked the other person” and “I believe I would very much enjoy working with this person in an experiment”). Thus, these authors concluded that increased perceptions of liking might represent one important factor underlying the positive association between humor use and social relationships.

The association between humor use and liking has also been examined in the area of sport coaching. In 1995, Burke, Peterson, and Nix found a positive correlation between a coach's sense of humor and female high school volleyball players' perceived liking of the coach. Subsequently, Grisaffe, Blom, and Burke (2003) expanded this knowledge base by examining the association between coach's humor and liking of both head and assistant coaches among male and female university soccer players. Similar to the findings reported by Burke et al., Grisaffe et al. found a positive correlation between a coach's sense of humor and athletes' perceptions of liking the coach. Interestingly, the association was strongest for female athletes and head coaches, followed by male athletes and head coaches, and then male athletes and assistant coaches. Finally, the humor-liking relationship was weakest (albeit still statistically significant) for female athletes and assistant coaches. There was a significant gender effect, with female athletes showing a stronger correlation between humor and liking with head coaches than male athletes. Together, these studies point to an important possible link between a coach's use of humor and players liking that coach, with a potentially stronger association for female athletes.

It is important to note that the abovementioned studies (Burke et al., 1995; Grisaffe et al., 2003) had some limitations, some of which are addressed in the current study. First, athletes from only two sports (i.e., volleyball and soccer) were included in the studies. There is no a priori reason to believe that the association between coaches' sense of humor and player liking of the coach would not exist in other sports, although this warrants further investigation. Second, the gender of the coach was not considered in the previous studies. In 2009, Lorimer and Jowett found that in general, female coaches were more empathetic than male coaches, whereas female athletes were most empathetic with male coaches. Specific to humor, gender differences have also been identified in previous research. For example, when examining gender differences in adolescent Taiwanese students, males were found to use more aggressive and self-enhancing styles of humor, and were shown to be less empathetic than females (Wu, Lin, & Chen, 2016). Within the workplace, research has shown that males described as 'humorous' tend to be ascribed a higher status, while females considered to be humorous tend to be ascribed a lower status compared to their non-humorous counterparts (Evans, Slaughter, & Ellis, 2019). In the context of romantic relationships, Hall (2011) found that women who used aggressive styles of humor were more likely to embarrass their partners in social situations (as rated by their partner), whereas men who perceived their partner to be using self-defeating humor were embarrassed by them, which was not the case for women. Together, these findings suggest that there may be important gender differences in the relationships between athletes and coaches, as well as in the use and perceptions of humor styles, that require additional exploration.

A third limitation of previous research in this area (i.e., Burke et al., 1995; Grisaffe et al., 2003) is that while athletes' *perceptions* of their head coaches' sense of humor was examined in relation to athlete liking of that coach, the head coaches' self-reported *use* of humor was not taken into consideration. To that end, a fourth limitation of this previous research is that different *styles* of humor used by athletes and coaches were not considered. Seminal research conducted by Martin, Phulik-Doris, Larsen, Gray, and Weir in 2003 showed that humor is used in four conceptually unique ways with differential outcomes associated with each style. Specifically, Martin et al. created a 2 x 2 framework of humor, differentiated by whether it is used to benefit the self, either positively (*self-enhancing humor*; that is, the tendency to maintain a humorous outlook to cope with stress) or negatively (*aggressive humor*; that is, the tendency to use humor

to ridicule in disparaging or offensive ways, and/or to demean others), or whether it is used to benefit or improve interpersonal relations, again either positively (*affiliative humor*; that is, the tendency to share funny stories and tell jokes with others, and to make others laugh) or negatively (*self-defeating humor*; that is, the tendency to use excessively self-disparaging humor and laugh with others when being ridiculed or put down; Martin et al., 2003; p. 53-54). Within the context of the current study, it seems plausible that certain styles of humor used by athletes and coaches may lead to positive outcomes in a sport setting, whereas other styles may not.

The last limitation noted in terms of the research discussed above is that the correlational nature of the analyses conducted did not allow for an examination of whether one value for a variable (e.g., athletes' perceptions of head coaches' sense of humor) predicted the value for another (e.g., athletes' liking of the head coach), as would occur in a regression analysis. To examine this predictive capability, the nested structure of the data (i.e., athletes within teams) must be taken into account. Hox (2010) has shown that nested data, which violates the assumption of independent observations, can increase the chances of finding a spurious result (i.e., type 1 error rate) in traditional regression analysis, and thus, suggested that Multilevel Modelling (MLM) should be used in situations where such a data structure exists. In short, MLM is able to account for the nested structure of hierarchical data, which is particularly relevant in the context of sport where athletes' perspectives on certain variables (e.g., liking of the head coach) are more likely to be similar to their teammates rather than to athletes on different teams (i.e., violating the assumption of independent observations).

4.1.1 The present study

On the basis of the abovementioned limitations, the overall purpose of the current study was to examine the relationship between athletes' perceptions of head coaches' sense of humor, as well as the self-reported styles of humor used by coaches and athletes, with players' liking of head coaches. Coaches and athletes from a range of interacting, single-gender intercollegiate sports teams were included in the study, while accounting for the gender of both the coach and the athlete. To that end, two separate and methodologically unique research questions were posed.

The first research question examined, via correlational analyses, the relationships between: (a) athletes' perceptions of their head coaches' sense of humor and athletes' liking of the head coach; and (b) the self-reported styles of humor used by coaches and athletes and athletes' liking of the head coach. Interactions between athletes' and coaches' styles of humor and gender were also explored. The first part (a) of this research question focused on the replication of previous results. Thus, it was hypothesized that the results would be in line with previous research (Burke et al., 1995; Grisaffe et al., 2003), showing a positive correlation between athlete perceptions of a coach's sense of humor and liking of the coach. The second part of the research question (b) focused on expanding previous results by adding the coaches' gender as well as the athletes' and coaches' styles of humor to athlete-coach liking relationship. Based on the conclusions of Martin et al. (2003), it was expected that positive correlations would be found for affiliative and self-enhancing humor, whereas negative correlations would be found for aggressive and self-defeating humor.

The second research question, assessed using MLM, examined whether variations in self-reported athletes' and head coaches' styles of humor, as well as the genders of each, were predictive of athletes liking of the head coach. Similar to the first research question, it was expected that the use of positive styles of humor by athletes and head coaches (i.e., affiliative and self-enhancing humor) would be related to increased liking of the head coach, whereas the use of negative styles of humor (i.e., aggressive and self-defeating humor) would be related to decreased liking of the head coach. Insofar as gender is concerned, while it was expected that the gender of both coaches and athletes would have a significant effect, no specific a priori hypotheses were advanced given that researchers have not yet explored these relationships.

4.2 Method

4.2.1 Participants

The sample consisted of 278 athletes ($M_{\text{age}} = 20.05$ years, $SD = 2.89$; 74% female) and 36 head coaches ($M_{\text{age}} = 42.68$ years, $SD = 11.08$; 75% male) from four interacting sports (i.e., curling, hockey, basketball, and volleyball). In total, 36 teams competing in 7 of 8 university and college conferences across Canada participated in the study. Of the teams that were included in

the study, the average team size was 12.08 players (mode = 14, range = 4-23), with an average of 7.72 athletes per team (range = 3-23) who participated in the study. In other words, 278 athletes participated in the study out of a total of 435 athletes from the 36 teams that participated, for an overall completion percentage of 64%. For head coaches, the 36 who agreed to participate all completed the study. For a more detailed overview of study methods, participant information, and protocol, see Chapter 3 of this dissertation.

4.2.2 Measures

4.2.2.1 The Humor Styles Questionnaire (Modified for Sport - Athlete version)

While the original structure and four subscales of the HSQ developed by Martin et al. (2003; $n = 8$ items per subscale) were retained for the purpose of the current study, some terms were modified to reflect wording that was more appropriate for athletes (e.g., “teammates” rather than “other people”) (see Appendix D). For example, an item for the affiliative style of humor used in the modified version is, *“I laugh and joke a lot with my teammates.”* Some items in the questionnaire were reverse-scored; an example reverse-scored item for self-enhancing humor is, *“If I am feeling sad or upset because of my sport, I usually lose my sense of humor”* and a reverse-scored item for aggressive humor is, *“I never participate in laughing at others even if all my coaches or teammates are doing it.”* For self-defeating humor, an example item is, *“I will often get carried away in putting myself down if it makes my coaches, or teammates laugh.”* Participants responded using a 7-point Likert-type scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). The 8 items then summed by the researchers to provide a single score for each humor subscale/type (i.e., affiliative, self-enhancing, aggressive, self-defeating). All four subscales have previously been found to have acceptable levels of internal consistency (Cronbach's alphas ranging from .77 to .81; Martin et al., 2003). In the present study, Cronbach's alpha values for self-enhancing, affiliative, aggressive, and self-defeating humor subscales were .72, .85, .65, and .78, respectively.

4.2.2.2 The Humor Styles Questionnaire (Modified for Sport - Coach version)

For the coach version, the HSQ that was adapted for athletes (see above) was modified to reflect wording appropriate for head coaches by substituting words such as “teammates” and “coaches” with “athletes” and “other coaches” (see Appendix E). Otherwise, the HSQ scoring and format remained the same. Cronbach's alpha values were computed for each 8-item factor/sub-scale, resulting in values of .73, .80, .75 and .78 for self-enhancing, affiliative, aggressive, and self-defeating humor, respectively.

4.2.2.3 The Coach Evaluation Questionnaire (for Athletes)

Two items from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985), a measure that has been used in previous research pertaining to humor and “liking” of a coach (i.e., Burke et al., 1995; Grisaffe et al., 2003) were used in the current study (see Appendix S). Specifically, the two items were “*The head coach has a sense of a humor*”, and “*I like the head coach*”.¹ Participants responded on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

4.2.3 Procedure

The data for the current study were collected as part of a larger study (again, see Chapter 3 for a detailed account of and rationale for the procedure followed). All teams were contacted by e-mail with approximately one month remaining in their regular season and asked to complete the one-time online survey in the next three weeks.

In an effort to recruit participants, a database was compiled using information from publicly available intercollegiate webpages for 583 Canadian college and university intercollegiate sports teams that were currently competing in their regular season. The head

¹ Participants were asked additional questions about their head coaches, their assistant coaches, as well as a series of questions comparing their head and assistant coaches (see Appendix S). However, the extra questions regarding the head coaches were not relevant to the current study and due to the limited number of assistant coaches who participated in the final sample, these questions were not included in the final analyses.

coaches of these 583 teams were contacted by the primary researcher via e-mail, with an invitation for their team to participate. If the coach agreed to invite the team to participate, three e-mails were sent to the coach; one to be forwarded to all athletes on the team, one for an assistant coach (if applicable), and one for themselves. A draw for a team reward (i.e., a gift card for a team dinner) and reminder e-mails were used to encourage participation.

The e-mail invitations contained a link to the study surveys where coaches and athletes were first presented with the letter of information. Once the head coach provided online consent to participate in the study, they were asked to complete a series of basic demographic questions followed by the HSQ (Modified for Sport - Coach version). When an athlete agreed to participate (via online consent), they were also asked to complete demographic questions, followed by the two items from the CEQ and the HSQ (Modified for Sport - Athlete version). Participation in the online surveys was expected to take less than 30 minutes. All data were then stored for later analyses on a secure server. Ethics approval for this study was obtained from the relevant University Research Ethics Board (The University of Western Ontario; Ethics # 105913; see Appendix T).

4.2.4 Data analyses

Correlational analyses were used to replicate and expand on the analyses from previous studies. The framework presented by Dancey and Reidy (2017) for interpreting correlations in psychological research was used (i.e., strong correlations are $> +/- 0.7$, moderate correlations $> +/- 0.4$ but $< +/- 0.7$, and weak correlations are $< +/- 0.4$) with a focus on relationships that were moderate or strong. MLM analyses were used to examine the humor styles-liking relationships. Peugh's (2010) model building paradigm for MLM was followed starting with no predictors (i.e., the intercept-only model), then adding individual effects (Level 1), followed by group/team effects (Level 2) to create the final model.

Level 1 predictors included the four self-reported HSQ factors (*self-enhancing, affiliative, aggressive, self-defeating*) for athletes as well as their gender. Level 2 predictors were the head coaches' self-reported HSQ scores and their gender. All continuous predictors were grand mean centered and categorical variables were anchored at 0, as recommended by Peugh (2010).

The SPSS (Version 25) MIXED procedure was used for the analyses. Given the number of groups was less than 50, restricted maximum likelihood estimation methods were used as a conservative way to analyze the data set (Hox, 2010).

4.3 Results

4.3.1 Descriptive statistics

For an overview of the descriptive statistics for the four styles of humor for both athletes and head coaches, as well as the two items from the CEQ (i.e., “*The head coach has a sense of humor*” and “*I like my head coach*”), see Table 6. Affiliative humor was the highest mean score for both athletes and coaches, with female athletes and male coaches scoring the highest. Self-defeating and aggressive humor represented the lowest mean scores for athletes as well as coaches, with female athletes and male coaches scoring the lowest on each. Athletes, on average, “agreed” (i.e., scored 4 out of 5 on the Likert scale) with the two CEQ items related to coach sense of humor and liking.

4.3.2 Correlational analyses

For an overview of the bivariate Pearson correlations for the four styles of humor used by athletes and head coaches with the two CEQ items (i.e., coach sense of humor and coach liking), see Table 7. For correlations pertaining to athletes’ and head coaches’ styles of humor, along with coach sense of humor and coach liking, separated by gender, see Table 8.

4.3.2.1 Replicating previous research: Athletes’ perceptions of head coaches’ sense of humor and athletes’ liking of the coach separated by gender of the athlete

There was a significant positive correlation between the items “*The coach has a sense of humor*” and “*I like the head coach*” ($r = .63; p < .001$), which for female athletes was ($r = .66; p < .001$), and for male athletes was ($r = .54; p < .001$).

Table 6. Descriptive statistics separated by gender for athletes' ($n = 278$; 76% female) and head coaches' ($n = 36$; 75% male) styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and select questions related to humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985)

	Minimum	Maximum	Mean	Std. Deviation
Athlete affiliative humor	22.00	56.00	43.87	7.46
Males only	22.00	55.00	43.03	6.97
Females only	23.00	56.00	44.16	7.64
Athlete self-enhancing humor	11.00	53.00	35.48	6.97
Males only	11.00	50.00	35.81	6.97
Females only	19.00	53.00	35.39	6.86
Athlete aggressive humor	14.00	48.00	27.87	6.67
Males only	17.00	47.00	29.79	6.37
Females only	14.00	48.00	27.16	6.66
Athlete self-defeating humor	10.00	50.00	27.84	8.27
Males only	14.00	48.00	27.99	7.52
Females only	10.00	50.00	27.76	8.55
Head coach affiliative humor	17.00	56.00	42.32	7.39
Males only	26.00	56.00	42.81	7.05
Females only	17.00	52.00	40.76	8.23
Head coach self-enhancing humor	15.00	49.00	34.96	8.56

Males only	21.00	47.00	36.35	6.39
Females only	15.00	49.00	30.50	12.39
Head coach aggressive humor	8.00	39.00	24.41	7.61
Males only	8.00	39.00	24.27	8.43
Females only	16.00	30.00	24.85	3.96
Head coach self-defeating humor	13.00	48.00	25.51	7.08
Males only	13.00	48.00	25.48	7.35
Females only	14.00	34.00	25.61	6.20
CEQ# 12	1	5	4.05	.93
Males only	1	5	4.29	.83
Females only	1	5	3.96	.95
CEQ #14	1	5	4.12	1.03
Males only	2	5	4.21	1.02
Females only	1	5	4.09	1.04

Note. CEQ # 12 = “The head coach has a sense of humor” and CEQ # 14 = “I like the head coach.” Humor style scores represent the total sum of each item and have a minimum score of 8 and a maximum score of 56. Coach Evaluation Questionnaire (CEQ) scores have a minimum score of 1 and a maximum score of 5. Higher values represent greater levels of humor and liking.

Table 7. Bivariate Pearson correlations for humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al., 2003) – Modified for Sport - Athlete and Coach Versions, and select questions related to humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985)

Variable	1	2	3	4	5	6	7	8	9
1. Athlete affiliative humor	-	-	-	-	-	-	-	-	-
2. Athlete self-enhancing humor	.22***	-	-	-	-	-	-	-	-
3. Athlete aggressive humor	.14*	.16**	-	-	-	-	-	-	-
4. Athlete self-defeating humor	-.06	.19**	.24***	-	-	-	-	-	-
5. CEQ # 12 (“The head coach has a sense of humor”)	.16**	.13*	-.02	.04	-	-	-	-	-
6. CEQ #14 (“I like the head coach”)	.08	.12*	-.03	-.10	.63***	-	-	-	-
7. Head coach affiliative humor	.01	-.04	-.03	.04	.47***	.44***	-	-	-
8. Head coach self-enhancing humor	.03	.00	-.07	-.01	.29***	.08	.33***	-	-
9. Head coach aggressive humor	-.06	-.10	-.01	-.01	.26***	.21***	.57***	-.09	-
10. Head coach self-defeating humor	-.04	.02	.04	-.01	.30***	.15*	.38***	.24***	.47***

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

Table 8. Pearson correlations for athletes' ($n = 278$; 76% female) responses to select questions around humor and liking from the Coach Evaluation Questionnaire (CEQ; Rushall & Wiznak, 1985) and styles of humor as measured by the Humor Styles Questionnaire (HSQ; Martin et al. 2003) – Modified for Sport - Athlete Version, and head coaches' ($n = 36$; 75% male) styles of humor as measured by the HSQ - Modified for Sport - Coach Version

	CEQ #14 (“ <i>I like the head coach</i> ”)	CEQ # 14 Male head coaches only	CEQ # 14 Female head coaches only
CEQ # 12 (“<i>The head coach has a sense of humor</i>”)	.63***	.60***	.67***
Male athletes only	.54***	.49***	.87
Female athletes only	.66***	.64***	.67***
Athlete affiliative humor	.08	.07	.11
Male athletes only	-.12	-.16	.22
Female athletes only	.14*	.17*	.09
Athlete self-enhancing humor	.12*	.10	.22
Male athletes only	.10	.09	.45
Female athletes only	.13	.11	.22
Athlete aggressive humor	-.03	-.01	-.11
Male athletes only	-.08	-.05	.39
Female athletes only	-.023	.00	-.09
Athlete self-defeating humor	-.10	-.10	-.06
Male athletes only	.20	.22	.07
Female athletes only	-.19**	-.24**	-.06
Head coach affiliative humor	.44***	.36***	.59***
Male athletes only	.37**	.31*	NA
Female athletes only	.46***	.41***	.59***
Head coach self-enhancing humor	.08	-.04	.16
Male athletes only	-.29*	-.27*	NA
Female athletes only	.18*	.12	.19
Head coach aggressive humor	.21***	.22**	.27*
Male athletes only	.12	.06	NA
Female athletes only	.26***	.34***	.24
Head coach self-defeating humor	.15*	.08	.43***
Male athletes only	.06	.05	NA
Female athletes only	.19**	.09	.45***

Note. NA = Not available due to there being only one male team with a female coach

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

4.3.2.2 Extending previous research: Athletes' perceptions of head coaches' sense of humor, athletes' and coaches' styles of humor, and athletes' liking of the coach separated by gender of the athlete and the head coach

When the gender of the head coach was added, there was a significant positive correlation between the items “*The head coach has a sense of humor*” and “*I like the head coach*” for female athletes with female head coaches ($r = .67$; $p < .001$) as well as with male head coaches ($r = .64$; $p < .001$), and for male athletes with male head coaches ($r = .49$; $p < .001$). It should be noted that there was a strong positive correlation for male athletes and female head coaches ($r = .87$), which did not reach significance due to the limited participants in that category (i.e., one team of four male athletes had a female head coach).

When athletes' styles of humor were added, there was a significant positive correlation between athletes' self-enhancing humor scores and liking of the head coach for all coaches ($r = .12$; $p < .05$). There was also a significant positive correlation between female athletes' affiliative humor scores and liking of the head coach for all coaches ($r = .14$; $p < .05$) as well as for male head coaches only ($r = .17$; $p < .05$). There was a significant negative correlation between female athletes' self-defeating humor scores and liking of the head coach for all coaches ($r = -.19$; $p < .01$), and for male head coaches ($r = -.24$; $p < .01$), but not for female coaches.

When head coaches' styles of humor were considered, there was a significant positive correlation between athletes' scores for liking the head coach and head coaches' self-reported affiliative humor scores ($r = .44$; $p < .001$), aggressive humor scores ($r = .21$; $p < .001$), and self-defeating humor scores ($r = .15$; $p < .05$). Male athletes' scores for “*I like the head coach*” were positively correlated with head coaches' affiliative humor scores ($r = .37$; $p < .01$), and negatively correlated with head coaches' self-enhancing humor scores ($r = -.29$; $p < .05$). Female athletes' scores for “*I like the head coach*” were positively correlated with head coaches' affiliative humor scores ($r = .46$; $p < .001$), self-enhancing humor scores ($r = .18$; $p < .05$), aggressive humor scores ($r = .26$; $p < .001$), and self-defeating humor scores ($r = .19$; $p < .01$).

With regard to head coach gender, athletes' scores for liking of the head coach were positively correlated with male head coaches' affiliative humor scores ($r = .36$; $p < .001$), and

aggressive humor scores ($r = .22; p < .01$), and with female head coaches' affiliative humor scores ($r = .59; p < .001$), aggressive humor scores ($r = .27; p < .05$), and self-defeating humor scores ($r = .43; p < .001$). Male athletes' scores for liking of the head coach were positively correlated with male head coaches' affiliative humor scores ($r = .31; p < .05$), and negatively correlated with male head coaches' self-enhancing humor scores ($r = -.27; p < .05$). Female athletes' scores for "I like the head coach" were positively correlated with female head coaches' affiliative humor scores ($r = .59; p < .001$), and self-defeating humor scores ($r = .45; p < .001$), and with male head coaches' affiliative humor scores ($r = .41; p < .001$), and aggressive humor scores ($r = .34; p < .001$).

4.3.3 Multilevel modeling analyses

4.3.3.1 Intraclass correlation

The intercept-only model allows the researcher to calculate an intraclass correlation (ICC) which informs what portion of variance in the outcome variable occurs between groups (i.e., teams in the current study) compared to the total variance. The ICC was .47. In essence, athletes' liking of the head coach tended to be more similar to those of their teammates than to athletes on other teams.

4.3.3.2 Athletes' styles of humor and gender, and athletes' liking of the head coach

As shown in Table 9, individual athletes' affiliative humor scores significantly predicted athletes liking of the head coach. For example, as an athlete's affiliative humor score increased by one unit, their mean score for liking the head coach increased by .02 units (standard error [SE] = .01). In addition, individual athletes' self-defeating humor scores also significantly predicted liking of the head coach. As an athlete's self-defeating humor scores increased by one unit, their mean score for liking the head coach decreased by .01 (SE = .01).

Table 9. Multilevel models showing significant predictors for each successive model of liking the head coach*

Parameters	Intercept	Athlete only (Level 1)	Athlete and head coach (Levels 1 and 2)
Regression coefficients (fixed effects)			
Intercept	4.11 (.13)***	4.15 (.16)***	4.09 (.22)***
Affiliative humor		-.00 (.01)	-.00 (.01)
Self-enhancing humor		.02 (.01)**	.02 (.01)***
Aggressive humor		.00 (.01)	.00 (.01)
Self-defeating Humor		-.01 (.01)*	-.02 (.01)*
Individual gender (M to F)		-.18 (.30)	-.48 (.25)
Head coach affiliative humor			.08 (.02)***
Head coach self-enhancing humor			-.03 (.02)
Head coach aggressive humor			-.01 (.02)
Head coach self-defeating humor			.01 (.02)
Head coach gender (M to F)			.24 (.25)
Variance components (random effects)			
Residual	.61 (.06)***	.58 (.05)***	.58 (.06)***
Intercept	.54 (.16)***	.56 (.16)***	.28(.10)**
Model summary			
Deviance statistic	711.15	730.50	732.37
Number of estimated parameters	3	8	13
ICC	.47		

Note. No random effects were tested as they resulted in non-convergence errors.

*Question # 14 from the Coach Evaluation Questionnaire (“*I like the head coach*”); Rushall & Witznak, 1985). Coach Evaluation Questionnaire (CEQ) scores have a minimum score of 1 and a maximum score of 5. Higher values represent greater levels of liking.

4.3.3.3 Head coaches' styles of humor and gender, and athletes' liking the head coach

As shown in Table 9, head coaches' affiliative humor scores significantly predicted athletes liking the head coach. As head coaches' affiliative humor scores increased by one unit, athletes liking the head coach mean score increased by .08 (SE = .02).

4.4 Discussion

The purpose of the present study was to examine the relationship between athletes' perceptions of head coaches' sense of humor, as well as the self-reported styles of humor used by coaches and athletes, with players' liking of head coaches. This study was the first to examine athletes' liking of their head coaches while accounting for the gender of the coach, measuring the styles of humor used by both athletes and coaches, exploring multiple intercollegiate varsity sports, and utilizing an MLM framework.

Overall, the results showed that athletes' perceptions of their head coaches' sense of humor, the styles of humor used by athletes and coaches, as well as the gender of each, have significant relationships with athletes' liking of their head coach. A further discussion of this overall conclusion and the findings associated with each of the two research questions posed in the introduction is presented below.

With regard to the first research question which involved the correlational analyses, our findings supported our hypotheses and the results reported by Burke et al. (1995) and Grisaffe et al. (2003); namely, that a moderate significant positive correlation existed between athletes' perceptions of their head coaches' sense of humor and liking of their head coach. The results also extended those of previous studies. Specifically, when the styles of humor used by athletes and coaches as well as their gender were accounted for, there were significant moderate positive correlations found for athletes' liking of their head coach with head coaches' affiliative humor, specifically for female athletes with all coaches, as well as with male and female head coaches. Moderate and significant negative correlations were also found for all athletes' (and specifically female athletes') liking of their head coach with female coaches' use of self-defeating humor. These correlations suggest that gender may play a role in the athlete-coach liking relationship

with humor, particularly for female athletes and coaches. Furthermore, coaches' styles of humor seem to play an important role in the athlete-coach liking relationship as affiliative humor was positively correlated with liking by athletes, whereas self-defeating humor was negative correlated with liking by athletes. Together, these correlations confirm that athletes' and head coaches' styles of humor, as well as their gender, should be accounted for when examining the athlete-coach liking relationship.

With regard to the second research question, which examined whether variations in athletes' and head coaches' styles of humor, as well as the genders of each, were predictive of athletes' liking the head coach, the results of the present study suggest that MLM was indeed necessary. Specifically, the results showed that the intraclass coefficient for teams was 0.47, suggesting that 47% of total variance in athlete perceptions of coach liking occurred *within* teams. In other words, and perhaps not surprisingly, athletes' liking of their head coach tended to be more similar to those of their teammates than to athletes on other teams. Thus, if MLM was not used (and given the violation of the assumption of independent observations that would have occurred with the use of traditional regression analyses), the chances of finding a spurious result (i.e., a type 1 error) would have increased markedly (Hox, 2010). Given the need to account for the non-independent or nested structure of the data in most sport contexts and in this study in particular (i.e., when examining perceptions of athletes within teams), the use of MLM is critical.

The results of the current study showed that athletes' use of self-enhancing humor, self-defeating humor, and head coaches' use of affiliative humor were all predictive of athletes' liking of their head coach. With regard to level 1 variables (i.e., athletes' styles of humor and gender), athletes' use of self-enhancing humor was related to increased liking of the coach whereas self-defeating humor was related to decreased liking. Although these results were expected, it was somewhat surprising that the athletes' use of affiliative humor (another positive style of humor) was not positively related to liking of their head coach. Given the positive role that affiliative humor has been suggested to play in relationship building (Martin et al., 2003), one could assume that its use by athletes would lead to improved relations with their head coach, and thus, increased liking of the coach. Three possible explanations might explain (at least

partially) why athletes' use of self-enhancing and self-defeating humor were related (positively and negatively) to liking of their head coach.

First, it is possible that individual or team performance, not measured in the current study, serves as a mediating variable between athletes' styles of humor and liking of their head coach. Indeed, Brieger, Cumming, Smith, and Smoli (2015) showed that team winning percentage (i.e., performance) in youth basketball was positively related to males' evaluations of their coach (i.e., as measured by the questions "How much do you like playing for your coach?", & "What is your desire to play for this coach in the future?"). Although performance can be difficult to measure and operationalize (i.e., absolute versus relative, individual versus team), it presents an interesting and plausible explanation for the relationships between athletes' liking of their head coach with their use of self-enhancing and self-defeating humor. It is interesting to note that a similar relationship involving athletes' use of self-enhancing and self-defeating humor was found for task components of team cohesion (see Chapter 3 of this dissertation); that is, self-enhancing humor was positively related to attraction to the group and group integration from a task perspective, whereas self-defeating humor was negatively related to those same sub-types of cohesion. It is possible that performance either moderates these relationships, or the phrasing of the CEQ item "*I like the head coach*" utilized in the present study unintentionally had a task (i.e., performance) focus.

A second possible explanation for the abovementioned results is that athletes' attachment style (i.e., individual differences in the emotional ties to important social relations) is related to their use of self-enhancing and self-defeating humor as well as liking of their head coach. Jowett and Felton (2014) have suggested that examining athletes' attachment styles presents a fruitful and somewhat underexplored variable with regards to coach-athlete relationships. For example, Davis and Jowett (2010) showed that athletes' anxious attachment style was negatively associated with perceptions of relationship quality with their coach. Due to the lack of research in sport that has examined athletes' or coaches' attachment and humor styles, literature from outside of sport is of interest and may be relevant to the current study. In a study of romantic relationships for example, Cann, Norman, Welbourne, and Calhoun (2008) found that an anxious attachment style was positively related to the use of self-defeating humor and negatively related

to the use of self-enhancing humor. Further, the styles of humor, together with conflict styles, used by the romantic partners mediated the relationship between attachment styles and relationship satisfaction. Specifically, those partners with a secure attachment style (i.e., low avoidance and low anxiousness) tended to use more positive humor (i.e., self-enhancing humor) and less negative humor (i.e., self-defeating humor), which in turn was related to increased relationship satisfaction. Together, the findings presented by Cann et al. (2008) and Davis and Jowett (2010) could lend to the suggestion that athletes with an anxious attachment style might use more self-defeating humor and less self-enhancing humor, which in turn could be associated with reduced relationship quality/satisfaction with their head coach (e.g., liking).

A third possible explanation—and one that is related to the second explanation—is that athletes' personality traits (i.e., the Big Five; Costa & McCrae, 1992; John, Donahue, & Kentle, 1991) may be related to the styles of humor they use as well as liking of their head coach. In their meta-analysis of relationships between the Big Five personality traits and humor styles, Mendiburo-Seguel et al. (2015) showed that agreeableness, “a trait related to good cooperative contact with others” (p. 339), was positively related to self-enhancing humor and negatively related to self-defeating humor. Conversely, neuroticism, a trait that “strengthens the expression and experience of humor styles that question the self and undermine those that reinforce it” (p. 339), was negatively related to self-enhancing humor and positively related to self-defeating humor. In essence, athletes who use more self-enhancing humor might be considered more agreeable and less neurotic which could lead to improved relationships with and liking of their head coach. Interestingly, Noffle and Shaver (2006) also found an anxious attachment style in university students was positively predicted by neuroticism and negatively predicted by agreeableness, when measured by the Big Five Inventory (John et al., 1991). Thus, attachment styles and personality traits such as agreeableness appear to be closely related and may act, independently or in association, as a component of the relationship between athletes' styles of humor and liking of their head coach. In essence, athletes' attachment styles and personality traits, independently or in association, may influence the styles of humor used by athletes which in turn could influence liking of their head coach. Whether athletes' humor styles mediate or moderate the relationships between athletes' attachment styles and/or personality traits and liking of their head coach is unclear. It should be noted, however, that Noffle and Shaver (2006)

concluded that attachment styles were a stronger predictor of relationship quality than personality traits, and as such, may represent a more promising focus in research testing athletes' styles of humor as a mediator or moderator of the relationship with liking of their head coach.

With regard to level 2 variables (i.e., head coaches' styles of humor and gender), the results of the current study showed that head coaches' use of affiliative humor was related to increased liking by athletes. Again, this result is in line with our hypothesis given the conceptualization of affiliative humor as important for strengthening and building relationships (Martin et al., 2003) and previous research which has shown that affiliative humor is positively related to social competence (Yip & Martin, 2005), emotional intelligence (Cignac, Karatamoglou, Wee, & Palacios, 2013), and positive evaluations of a casual acquaintance (Kuiper, Aiken, & Pound, 2014). In addition, in their meta-analysis of humor styles and personality traits, Mendiburo-Seguel et al. (2015) found that affiliative humor was positively related to extraversion and, to a lesser extent, openness to experience and agreeableness, all of which may be important in building relationships. Thus, our findings are in line with previous research and show that affiliative humor may be an important component in successful relationships, particularly between athletes and coaches.

Of interest when examining the entire model (i.e., Level 1 and 2 variables together), a study of initial interactions with same-sex pairs of strangers conducted by Fraley and Aron (2004) found that a shared humorous experience was significantly related to feelings of closeness. Interestingly, this relationship was moderated such that the effect was stronger for participants who scored high for an anxious attachment style. In a similar vein, Srivastava and Beer (2005) showed that in university students, knowing that another person liked you (i.e., others' liking) was related to more positive self-evaluations, with the effect being stronger for those with an anxious attachment style. In other words, being liked by another student was associated with student's feeling better about themselves, especially for those who bond with others tentatively or anxiously. Based on these findings, it is possible that head coaches' use of affiliative humor may be particularly beneficial to athletes with an anxious attachment style. Specifically, head coaches' use of affiliative humor, with its associations with extraversion,

openness to experience, and agreeableness (Mendiburo-Seguel et al., 2015), may facilitate social interactions that could serve to enhance athletes' feelings of closeness (Fraley & Aron, 2004), perceived reciprocal liking (Treger et al., 2013), and potentially increased positive self-evaluations (Srivastava & Beer, 2005) and liking of the head coach. In short, head coaches' use of affiliative humor could help to compensate for the challenges presented by certain athletes (i.e., those with an anxious attachment style).

4.4.1 Limitations and future directions

The current study has four main limitations. The present study may have lacked statistical power as it has been suggested that studies that use MLM with sample sizes of less than 50 groups can produce biased estimates of standard error at the group level (Maas & Hox, 2005). Although the study had sufficient power to detect fixed effects, particularly at the individual level, future studies with more groups (and more equal group sizes) might further improve our understanding of the humor-liking relationship by detecting important group-level effects and cross-level interactions.

The second limitation was the self-reported nature of the humor and coach likeability data. Such data are often be subject to biases such as social desirability (Van de Mortel, 2008). Similarly, the current study examined only athletes' liking of their head coach directly (i.e., "*I like the head coach*"). Laing, Phillipson, and Lee (1966) have suggested that a deeper understanding of relationships comes from examining direct as well as meta-perceptions (e.g., "*The head coach knows I like them*"). Thus, future studies should include measures which examine direct and meta-perceptions of coach-athlete relationships (e.g., the CART-Q questionnaires; Jowett, 2009) in addition to observational data or peer-reported data to corroborate the current findings.

Third, due to the nature of the regression-based analyses conducted in the current study, we were unable to determine the direction of causality. For example, it is unclear whether an athlete's use of self-enhancing humor led to enhanced liking of their head coach, or vice versa. Experimental studies are required to determine the direction of causality.

The fourth limitation pertains to generalizability. The participants in the current study represented a specific and targeted group (i.e., intercollegiate coaches and athletes on single gender teams, in interacting sports, at the end of their regular season). This limited the generalizability of the findings to other times throughout the regular season or playoffs, mixed gender teams, co-acting sports, levels of competition, and age groups.

The limitations and results of the current study also lend to several possible future directions, several of which have been mentioned above (i.e., mediating variables, direct and meta-perceptions, observational or peer-reported data, experimental data, enhanced statistical power to detect group-level and cross-level effects, different population samples, etc.). In addition, the use of group-level outcomes are often overlooked in MLM research and may present an interesting area for future study (Hox, 2010).

4.4.2 Conclusion

The findings presented herein make an important contribution to the humor literature, as to our knowledge, this study was the first to examine how the styles of humor used by athletes and coaches predicted athletes' liking of their head coach using MLM. The overarching conclusion is that the use of self-enhancing humor by athletes and affiliative humor by head coaches in intercollegiate varsity sport appears to be positively associated with individual athletes' liking of their head coach. Conversely, the use of self-defeating humor by athletes seems to be negatively associated with liking of their head coach. Although the direction of causality is uncertain, a reasonable recommendation from an applied perspective is for athletes to use more self-enhancing humor and less self-defeating humor, and for head coaches to use more affiliative humor, to enhance athletes' liking of their head coach. Specifically, coaches could create opportunities for themselves to use affiliative humor (e.g., telling humorous sport stories) and could also measure athletes' humor styles (via the HSQ) to assess and encourage those high in self-defeating humor and low in self-enhancing humor to modify their use of those styles of humor. As future studies examine other covariates in the humor-liking relationship, researchers and applied practitioners will begin to understand more fully the importance of humor in coach-athlete relationships, and the potential impact on individual and team performance.

4.5 References

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Chapter 5

5 Discussion

The overarching purpose of this dissertation was to examine the use of humor in intercollegiate varsity sport. Together, the results of the three studies, presented separately in an integrated article format, provide valuable knowledge regarding the use of humor in sport, including potential benefits and associated recommendations for coaches and athletes.

The results of the first study (Chapter 2), explored using qualitative data collected via focus groups with 31 athletes from 8 different sports, showed that humor was used by both coaches and athletes (*who*), covered sport and non-sport topics as well as the four styles of humor outlined by Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003; *what*), occurred at all times including during, before, and after practice and competition (*when*), in virtually every possible venue (e.g., hotels, buses/cars, locker rooms, etc.; *where*), and helped to improve performance, interpersonal relationships, and coping (*why*). Athletes also noted that if humor was used in a negative style, at the wrong time, and/or in excessive amounts, there were potential negative impacts on relationships (e.g., reduced respect for the head coach), performance (e.g., via reduced focus), and individuals (e.g., negative emotions).

The results of the second and third studies (Chapters 3 and 4, respectively) built upon the conclusions from Study 1 showing that humor was indeed considered important by athletes in building and strengthening relationships in intercollegiate varsity sport. Specifically, the results of the second study, which examined (via multilevel modeling [MLM]) the relationship between athletes' and head coaches' styles of humor and athletes' perceptions of team cohesion, showed that the use of positive styles of humor by athletes (i.e., *self-enhancing and affiliative*) were generally related to increased perceptions of team cohesion, whereas athletes' self-reported use of *self-defeating humor* was related to decreased perceptions of team cohesion. Similarly, head coaches' self-reported use of *affiliative humor* was related to athletes' increased perceptions of attraction to the group – social (ATG-S) cohesion whereas the use of *self-defeating humor* by head coaches was related to decreased perceptions of social cohesion. The third study was also conducted using MLM and examined the relationship between athletes' and head coaches' styles

of humor and athletes' liking of their head coach. The results of Study 3 showed that athletes' use of *self-enhancing humor* and head coaches' use of *affiliative humor* (both positive humor styles) were related to increased liking of the head coach, whereas athletes' use of *self-defeating humor* (a negative humor style) was related to decreased liking of the head coach. The results of these three studies, in combination, appear to support the conclusion that humor is associated with numerous positive and negative outcomes in intercollegiate varsity sport. The specific outcomes associated with the use of humor by coaches and athletes, as well as the specific styles of humor used, warrant further discussion.

5.1 Positive outcomes associated with the use of humor

The idea that there are several positive outcomes associated with the use of humor is not new. As noted throughout this dissertation, in 2003, Martin et al. designed the Humor Styles Questionnaire (HSQ) to differentiate the styles of humor that are associated with positive versus negative outcomes in a range of settings. Indeed, prior to the current research, the limited literature that examined humor within the context of intercollegiate varsity sport revealed positive outcomes only. Specifically, previous research in the area showed that humor was used by athletes as a coping mechanism to mitigate athlete stress (Giacobbi et al., 2004; Nicholls et al., 2007), that the use of positive humor styles by athletes was related to increased perceptions of team cohesion (Hester, 2010), and that athletes' positive perceptions of head and assistant coaches' sense of humor were positively related to athletes' liking of their coaches (Grisaffe et al., 2003). The results of the current dissertation expand upon these previous findings by providing details from a range of intercollegiate sports into *what* athletes were using humor to cope with (i.e., non-sport issues, burnout, poor performance, stress, nerves, pressure, and tension), by showing that athletes' and head coaches' use of positive styles of humor (i.e., self-enhancing and affiliative) were related to athletes' increased perceptions of team cohesion, and by illustrating that the use of self-enhancing humor by athletes and affiliative humor by head coaches was associated with athletes' increased liking of their head coach.

The similarities in findings between the second and third studies (Chapters 3 and 4) must be noted. For example, head coaches' use of *affiliative humor* was related to increased athlete

perceptions of attraction to the group – social (ATG-S) cohesion in the second study as well as athletes' liking of the head coach in the third study. Given that coaching behaviors have been noted as an important correlate of athlete perceptions of cohesion (Carron & Eys, 2012), that humor can be used to enhance social relationships in numerous ways including increased liking (Martin, 2007), and that the use of affiliative humor by business leaders is positively associated with relationship quality with followers (e.g., Pundt & Herrmann, 2015), it seems plausible that head coaches' use of affiliative humor is related to athletes' perceptions of cohesion and liking of the head coach. One could speculate that athletes' liking of the head coach might even partially mediate the relationship between head coaches' use of affiliative humor and athletes' perceptions of ATG-S cohesion, however, this remains to be tested.

Another similarity in Studies 2 and 3 that ought to be noted is that athletes' use of *self-enhancing humor* was related to increased perceptions of the task components of cohesion (i.e., ATG-T and GI-T) in the second study, as well as to liking of the head coach in the third study. Rather than a direct mediation, as was speculated above with head coaches' use of affiliative humor, it seems more plausible that athletes' use of self-enhancing humor may be related to perceptions of task cohesion and liking of the head coach via a common third variable (for example, performance). The use of self-enhancing humor has been related to optimism and self-esteem (Schneider, Voracek, & Tran, 2018), which in turn have been associated with enhanced sport performance (Ortin-Montero, Martinez-Rodriguez, Reche-Garcia, Garces de los Fayos-Ruiz, & Gonzalez-Hernandez, 2018; Vealey & Chase, 2008). Similarly, performance has been positively related to athletes' perceptions of cohesion (e.g., Carron, Colman, Wheeler, & Stevens, 2002), and to male youth basketball players' evaluations of their coach (Breiger, Cumming, Smith, & Smoli, 2015). Thus, it is possible that athletes' use of self-enhancing humor may be related to enhanced performance, potentially via a relationship with self-esteem and optimism, which in turn could be related to increased perceptions of task cohesion as well as liking of the coach. Again, future studies are needed to examine such postulations.

In Study 1, athletes noted a perceived link between the use of humor and performance. To our knowledge, this is the first study within sport generally, and specifically within intercollegiate varsity sport, which speaks to such an association. Although athletes discussed

how *aggressive humor*, which in sports parlance is known as ‘trash talk’, could be used to inhibit opponents’ performance and thus circuitously enhance their own, the more commonly discussed example was enhanced performance through humorous feedback provided to athletes by teammates and coaches. For example, a female rugby player described how her coach would use mild teasing to give athletes constructive criticism during practice. While the coach used an aggressive style of humor in the example, the event was interpreted positively by the athlete, most likely because the technique correction was framed in a non-threatening way. Outside of sport, Martin (2007) summarized research describing teachers’ use of humor and suggested that it can be viewed as aggressive while still being positively related to perceived learning by students. Another example of aggressive humor being used to achieve a positive outcome pertains to the use of what the authors termed ‘inclusionary putdowns’ by European soccer club athletes and coaches to establish social bonds and enhance team cohesion (Edwards & Jones, 2018). Similarly, although outside of the sport domain, “some good natured humorous ribbing” (Holmes & Marra, 2002, p.1698), which might be considered similar to aggressive humor, was found to be used to indicate that one member of a factory team was not working hard enough. The authors noted that this form of humor was used to motivate the worker to perform better in his role, and to bring him closer to the group.

Given the potential positive outcomes (e.g., performance, cohesion) associated with the use of aggressive humor in other studies and by athletes in Study 1, the lack of significant relationships found in Studies 2 and 3 in this dissertation was surprising. There are several possible reasons this might have occurred. One reason, and perhaps the simplest, is that performance was not measured in either study. Another likely explanation is that aggressive humor has both positive and negative components (e.g., Martin, 2007). While athletes in Study 1 provided examples of aggressive humor being used to achieve positive outcomes, there were examples of its use being associated with negative outcomes. For example, a male wrestler noted that a coach teasing an athlete could easily hurt their feelings or reduce their confidence. Outside of sport, aggressive humor has also been associated with reduced social desirability (Cann & Matson, 2014). Together, these findings could indicate that a lack of significant relationships between aggressive humor and cohesion (Study 2) or liking of the head coach (Study 3) might be due to off-setting positive and negative outcomes resulting in an overall neutral association. The

third explanation—one that is partly related to the second—is that athletes and coaches may be using more than four styles of humor, and that aggressive humor could be split into different sub-styles. Heintz and Ruch (2019) have suggested there could be as many as nine styles of humor including one the authors termed *satire*, which has “a moral component, aiming to improve wrongdoings by criticizing them” (p. 141). Indeed, this satirical form of humor appears to be similar to many of the positive examples of aggressive humor noted by athletes in Study 1. The possibility that there are more than the four styles of humor is a relatively recent suggestion (e.g., Heintz & Ruch, 2019), and thus, must be examined further in future studies.

5.2 Negative outcomes associated with the use of humor

As noted above, previous research on humor use in intercollegiate varsity sport specifically showed that the use of humor was associated with positive outcomes only (i.e., coping; Giacobbi et al., 2004; Nicholls et al., 2007; liking of the head and assistant coaches; Grisaffe et al., 2003; team cohesion; Hester, 2010). Although Ronglan and Aggerholm (2014) noted a few incidents where the use of humor was associated with negative outcomes in elite sport, and Wolfers, File, and Schnurr (2017) showed that racial humor was used to create cliques within a German soccer team, the general humor in sport literature has also reported mainly positive outcomes associated with its use (e.g., liking of the head coach, Burke & Peterson, 1995; coping with challenges, Gaudreau, Blondin, & Lapierre, 2002; Johnson, Kentta, Ivarsson, Alvmyren, & Karlsson, 2016; Niefer, McDonough, & Kowalski, 2010; saving face and relationships; Palmer, 1993; athlete satisfaction, Sullivan, 2013; emotional regulation, Tamminen & Crocker, 2013).

Given the above, the potential negative outcomes identified by athletes in Study 1 of the present dissertation represent a valuable addition to the knowledge base in this area. This information is particularly important to the individuals (e.g., coaches, athletes, sport psychologists) who aim to apply the use of humor in sport contexts, because if it is used incorrectly, it could lead to negative outcomes or potentially diminish the positive outcomes mentioned previously. Specifically, the results from Study 1 showed that if humor was used excessively, at the wrong time, and/or in a negative style, it could lead to negative consequences including distressing individuals, damaging relationships, and reducing performance. The results from Studies 2 and 3 expanded upon the finding from the first study showing that humor use

could be associated with damaged relationships. More specifically, our results showed that athletes' use of *self-defeating humor* (a negative humor style) was negatively related to athletes' perceptions of task cohesion (ATG-T and GI-T; Study 2) and their liking of the head coach (Study 3). Similarly, the results from the second study also showed that head coaches' use of self-defeating humor was negatively related to athletes' perceptions of social cohesion (ATG-S and GI-S). As mentioned above, Martin et al. (2003) designed the HSQ to differentiate between styles of humor that may be associated with positive and negative outcomes. Therefore, it was not altogether surprising that self-defeating humor was found to be associated with negative outcomes in intercollegiate varsity sport.

Although athletes in the first study noted that positive styles of humor (i.e., self-enhancing and affiliative) could lead to negative outcomes if used excessively or at the wrong time, the negative styles (i.e., self-defeating and aggressive humor) were most consistently mentioned in relation to negative outcomes. With regard to *self-defeating humor*, there are interesting potential connections between its use and each of the generic categories identified in Study 1 as negative outcomes (i.e., damaging relationships, reducing performance, and distressing individuals). For example, as mentioned previously, the use of self-defeating humor may have damaged relationships between teammates as well as athletes and coaches (thereby impacting perceptions of team cohesion and liking of the coach), possibly through a mediating relationship with reduced performance. Furthermore, self-defeating humor was associated with partner embarrassment (Hall, 2010), which could be associated with the generic category result of distressing individuals that athletes noted in the first study. Taken together, it seems reasonable to suggest that anyone hoping to achieve positive outcomes associated with the use of humor in sport should avoid or reduce the use of self-defeating humor by both athletes and coaches.

5.3 Limitations and future research

The main limitation of the present dissertation relates to the specific samples of intercollegiate varsity athletes used, which may limit the generalizability of the results. For example, some of the findings from the first study surrounding social relationships may not be

applicable or generalizable to athletes in sports such as figure skating, golf, wrestling, and swimming at the individual level, as those sports involve a team component at the Canadian intercollegiate level. Similarly, the samples in the Studies 2 and 3 were intercollegiate athletes and coaches in interacting sports, on single gender teams, who were competing at the end of their regular season, which could limit the generalizability of the findings to other age groups, levels of competition, co-acting sports, mixed gender teams, and times throughout the regular season or playoffs.

A second limitation, as noted in Studies 2 and 3, relates to the potential lack of statistical power at the group (i.e., team) level. The inequality in the number of respondents per team (i.e., ranging from 3-23) and the limited number of teams (i.e., 36) likely led to the inability to examine and detect effects of random slopes and some group-level variables.

A third limitation, also highlighted in Studies 2 and 3, was the self-reported nature of the humor, cohesion, and coach liking data. Such data are often be subject to biases (e.g., social desirability; Van de Mortel 2008). An extension of this limitation, which pertains to the third study specifically, was that meta-perceptions of the coach-athlete relationship were not examined (e.g., "*The head coach knows I like them*"). According to the theory of interconnectedness put forth by Laing, Phillipson, and Lee (1966), an examination of such meta-perceptions could help to provide a better estimation of the true relationship between two parties

Finally, we were unable to determine the direction of causality given the correlation and regression-based research utilized in Studies 2 and 3. For example, it is unclear whether a head coach's use of affiliative humor led to enhanced athletes' perceptions of cohesion or liking, or vice versa. Thus, experimental studies are required.

The results and limitations of the current dissertation create several possible future directions. An ideal, although perhaps somewhat complex study to design and conduct, could examine all or most of these suggestions. For example, an experimental study with more than 100 teams (i.e., 50 in the control group and 50 in the experimental group) could test a head coach educational program aimed at improving the use of affiliative humor to enhance team cohesion and coach-athlete dyadic relationships (e.g., liking). The study might also include direct and meta-

perceptions of the coach-athlete relationship (i.e., using the CART-Q questionnaires; Jowett, 2009) in addition to observational data or peer-reported data, as well as examining potential mediating variables (e.g., performance, optimism, self-esteem, liking, etc.), and group level outcomes (e.g., coach liking of athletes).

5.4 Concluding remarks and applied recommendations

Within the limitations of the present study and based on the findings presented in this dissertation, the following conclusions are justified. First, the use of humor is ubiquitous in intercollegiate varsity sport and can be associated with both positive and negative outcomes. Second, the styles of humor used by coaches and athletes can play an important role in both positive and negative perceptions of team cohesion and liking of the head coach. Third, the results from the three studies are in line with Martin's (2007) conceptualization of humor as a social skill whereby its use at the right time, in the right amount of the right style, with the right people, can have numerous benefits. Conversely, if used improperly, humor can have equally negative consequences. Conceptualizing humor as a social skill (e.g., Martin, 2007), with the inherent belief in sport that skills can be modified, leads to several recommendations that are particularly relevant for coaches and athletes.

With regard to coaches, there are seven specific recommendations. First, coaches should take steps to create opportunities for humorous interactions with athletes as this may help to initiate and maintain productive relationships amongst athletes and between athletes and coaches. Specifically, coaches should aim to use *affiliative humor* (e.g., tell a funny sport-related story) as its use was found to be associated with increased levels of team cohesion as well as liking of the head coach in the present dissertation. Second, coaches should consider the creation of spaces or times in training for athletes to use humor, to build relationships as well as cope with challenges they may experience on or off the field of play. Third, coaches should learn how to use humor effectively to provide feedback to athletes, as well as to potentially allow athletes to respectfully disparage or taunt (i.e., 'trash talk') other teams as both may improve individual and team performance. Fourth, coaches could go so far as to learn to identify/assess humor (perhaps using the HSQ) and educate athletes about their humor styles so they can potentially self-censor to use

more beneficial styles and less detrimental ones. This could prove beneficial given the findings of this dissertation which have shown that those athletes with higher levels of affiliative and self-enhancing humor, and lower levels of self-defeating humor, might be able to form more cohesive teams and maintain better relationships with coaches. Fifth, head coaches should aim to use humor cautiously and pointedly as its excessive or poorly timed use can reduce players' respect for the head coach and potentially damage the relationship between the two. Sixth, head coaches might also be encouraged to partner with a humorous assistant coach, perhaps delegating this 'role' to that individual. This would allow the head coach to remain focused on the task and use humor sparingly, while the assistant coach could use humor more freely to achieve positive outcomes with and amongst athletes. Seventh, coaches should avoid the use of self-defeating humor, and use aggressive humor with caution as the former may damage athletes' perceptions of social cohesion and the latter can distress athletes; all of which could potentially lead to reduced performance, negative emotional reactions, lowered motivation, and increased tension or nerves.

With regard to athletes, there are five specific recommendations that have emanated from our findings. First, athletes should be encouraged to use self-enhancing humor and to avoid self-defeating humor, as doing so may enhance team cohesion and liking of their head coach. Second, athletes might be cautioned against using humor themselves or with certain teammates immediately before or during competition, as this may reduce their warm-up quality or overall focus, thereby negatively impacting performance. Third, athletes should be encouraged to avoid using humor excessively, at the wrong time, and/or in a negative style. Fourth, athletes should be mindful of their use of humor after a loss, as if it is used too soon it may signal to other athletes they are not as invested which could also serve to reduce team cohesion. Fifth, athletes should consider avoiding the use of self-defeating humor, and using aggressive humor with caution, as the former may damage perceptions of task cohesion and liking of their head coach, and the latter may distress teammates.

To conclude, the use of humor is an under-researched area and skill within the context of intercollegiate varsity sport, and one that could lead to multiple beneficial outcomes including enhanced performance, coping, and interpersonal relationships (i.e., team cohesion and athletes'

liking of their head coach). Although future studies are needed to confirm the exact mechanisms, and potential mediating variables, through which these outcomes are accomplished, the use of humor represents a fruitful area of focus for sport researchers as well as coaches and athletes. In short, joking and laughing, when used between the right people, at the right times, in the right places, and with the right styles, could represent an underutilized skill for creating more cohesive and ultimately more successful teams, both on and off the field.

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Appendices

Appendix A. Ethics Approval Notice for Study 1



Research Ethics

Use of Human Participants - Ethics Approval Notice

Principal Investigator: Dr. Albert Carron
 File Number: 102225
 Review Level: Delegated
 Approved Local Adult Participants: 60
 Approved Local Minor Participants: 0
 Protocol Title: An Exploratory Study into the Use of Humour in Intercollegiate Sport -18749S
 Department & Institution: Health Sciences\Kinesiology, Western University
 Sponsor:
 Ethics Approval Date: April 10, 2013 Expiry Date: December 31, 2013

Documents Reviewed & Approved & Documents Received for Information:

Document Name	Comments	Version Date
Revised Western University Protocol	Revised ethics protocol including the revised letter of information and the revised focus group guide as appendices	

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussions related to, nor vote on, such studies when they are presented to the NMREB.

The Chair of the NMREB is Dr. Riley Hinson. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.



Ethics Officer to Contact for Further Information

Grace Kelly	Janice Sutherland
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This is an official document. Please retain the original in your files.

Appendix B. Letter of Information and Consent Form for Study 1



LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: An Exploratory Study into the Use of Humor in Intercollegiate Sport

You are invited to participate in a research study conducted by Charles Fitzsimmons, a Ph.D student in Kinesiology under the supervision of Dr. Albert Carron and Dr. Shauna Burke from the faculty of Health Sciences at the University of Western Ontario. The study will examine the use of humor intercollegiate sport.

If you have any questions or concerns about the research, please feel to contact Charles Fitzsimmons via email at xxxxxxxxxxxxxxxx, Dr. Albert Carron by phone at xxxxxxxxxxxxxxxxxx or via email at xxxxxxxxxxxxxxxx, or Dr. Shauna Burke by phone at xxxxxxxxxxxxxxxxxx or via email at xxxxxxxxxxxxxxxx.

PURPOSE OF THE STUDY

The purpose of the study is to investigate the nature of humor use in intercollegiate sport.

PROCEDURES

If you agree to participate in the study, you will be asked to participate in a focus group of five people discussing the nature of humor use in competitive sport. The focus group will take place in the lab of the researchers in the school of kinesiology at Western University. The focus groups will be recorded using an audio device for transcription purposes after the discussion has concluded. The focus groups will assess your perceptions of what humor means to you, when, where, why and how humor is used within competitive sport, if there are different styles of humor used in competitive sport and whether you believe certain styles of humor may be more beneficial than others. The focus groups will last approximately 45 minutes.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks associated with this research.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study may add to the literature on the nature of humor use in sport and the styles of humor used in sport. Participants may gain some insight on how they and other use humor in different situations within competitive sport and how humor may be useful in reducing the effects of competitive stress within intercollegiate sport.

COMPENSATION FOR PARTICIPATION

There is no compensation for participation.

CONFIDENTIALITY

Any information that is obtained in connection with this study will remain completely confidential. All responses from these focus groups will be kept in strict confidence. Focus group members are asked to keep everything they hear confidential and not to discuss it outside of the meeting. However, we cannot guarantee that confidentiality will be maintained by group members. The information obtained from this study will not be used for any other purpose other than for the present research study and the communication, and presentation of the results. All data from the focus groups will be kept the locked office of the investigator. The data will be shredded upon completion of the study.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. You can choose to participate or not. You may also refuse to answer any questions that you do not want to answer and still remain in the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

Results of the study will be made available via email when requested from the authors listed below.

SUBSEQUENT USE OF DATA

Data will not be used for more than the current study.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You do not waive any legal rights by agreeing to participate. If you have questions about your rights as a research participant or the conduct of the study you may contact The Office of Research Ethics at xxxxxxxxxxxx or xxxxxxxx.

Dr. Albert Carron

School of Kinesiology
University of Western Ontario
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Phone: xxxxxxxxxxxxxxxx
xxxxxxxxxxxx

Charles Fitzsimmons, B.A. (Hons.), M.A.

School of Kinesiology
University of Western Ontario
xxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxx

Dr. Shauna Burke

School of Health Studies
University of Western Ontario
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Phone: xxxxxxxxxxxxxxxx
xxxxxxxxxxxx

Consent Statement

Title of Research: An Exploratory Study into the Use of Humor in Intercollegiate Sport

Research Investigators:

Charles Fitzsimmons (Ph.D Student)

Office: xxxxxxxx, E-mail: xxxxxxxxxxxxxx

Dr. Bert Carron

Office: xxxxxxxx, E-mail: xxxxxxxxxxxxxx

Dr. Shauna Burke

Office: xxxxxxxx, E-mail: xxxxxxxxxxxxxx

I have read the Letter of Information, have had the nature of the study explained to me, and I agree to participate. All questions have been answered to my satisfaction.

Participant's Name (Please Print)

Participant's Signature

Date

Researcher's Name (Please Print)

Researcher's Signature

Date

Appendix C. Focus Group Guide

Humor in Intercollegiate Sport Focus Group Guide

Introduction:

I am a researcher in sport psychology and am interested in understanding humor in intercollegiate sport. I want to thank you for agreeing to participate in our research. I will be asking you a series of questions specifically to do with your use and observation of humor use within your intercollegiate team or between players from different teams. If at any time you feel that you do not want to carry on with the group discussion, you may stop and leave without consequence. The information you share during this group discussion will remain strictly confidential. Focus group members are asked to keep everything that they hear confidential and not to discuss it outside of the meeting. However, we cannot guarantee that confidentiality will be maintained by the group members. The discussion should last approximately 45 minutes. I only ask a few things to aid in the process of this focus group. First, only one person should speak at a time and please speak slowly and clearly. Second, please do not start side conversation. Direct your comments to the whole group. Third, when you begin to speak, could you please state your first name and then begin your response. Fourth, I encourage everyone to participate. The purpose of this group discussion is for me to learn about your thoughts and experiences. If you agree to proceed with this discussion, then we will begin.

Opening question:

To begin, can you please tell me your name, what school you go to, what sport you play, how many years you have been on that team and what is your current status on the team (OUA starter/ second string)?

Key questions:

What does humor mean to you? What about humor in a sport context?

Describe if and/or how you use and/or how you have observed humor being used in the following situations:

- Practice
- Pre-Competition (from the evening before to just prior to competition)
- During Competition
- Post-Competition

Specific Probes Based on Athletes' Responses

- Timing of Humor
- Humor Quality (How funny it was/how it made you feel)
- Humor Frequency
- Humor Content
- Type of Humor

What situation was the humor used in?
Where did the humor occur?
Why was the humor used?
Was the humor used as a coping mechanism against stress? If so, was it effective?

Specific Probes Based on Humor Style Questionnaire Categories

Self-Enhancing
Affiliative
Aggressive
Self-Defeating

Ending question:

Moderator will provide a summary of key points raised by the focus group.

Followed by “Those are all the questions I would like to ask you about. Is there anything that we should have talked about but didn’t? Please take a moment to think about prior instances of humor and please speak openly if you have any additional thoughts you would like to add.”

Conclusion:

“That concludes our focus group. I want to thank you for sharing so much information about yourself and your experiences. I want to assure you again that this information will be treated in the strictest confidence. Thank you for your time.”

Appendix D. The Humor Styles Questionnaire (Martin et al., 2003) (Modified for Sport – Athletes Version)

Humor Styles Questionnaire - Revised for Athletes

People experience and express humor in many different ways. Below is a list of statements describing different ways in which humor might be experienced in the context of sports. Please read each statement carefully, and indicate the degree to which you agree or disagree with it in terms of team indicated in your email invitation to participate. Please respond as honestly and objectively as you can. Use the following scale:

Totally Disagree	Moderately Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Moderately Agree	Totally Agree
1	2	3	4	5	6	7

1. I usually don't laugh or joke around much with my coaches or teammates.	1	2	3	4	5	6	7
2. If I am feeling depressed in my sport, I can usually cheer myself up with humor.	1	2	3	4	5	6	7
3. If a teammate makes a mistake, I will often tease them about it.	1	2	3	4	5	6	7
4. I let teammates, or coaches laugh at me or make fun at my expense more than I should.	1	2	3	4	5	6	7
5. I don't have to work very hard at making my coaches or teammates laugh—I seem to be a naturally humorous person.	1	2	3	4	5	6	7
6. Even when I'm by myself, I'm often amused by the absurdities of my sport.	1	2	3	4	5	6	7
7. Teammates are never offended or hurt by my sense of humor.	1	2	3	4	5	6	7
8. I will often get carried away in putting myself down if it makes my coaches or, teammates laugh.	1	2	3	4	5	6	7
9. I rarely make teammates or coaches on my team laugh by telling funny stories about myself.	1	2	3	4	5	6	7
10. If I am feeling upset or unhappy I usually try to think of something funny about my sport to make myself feel better.	1	2	3	4	5	6	7
11. When telling jokes or saying funny things, I am usually not very concerned about how my coaches or teammates are taking it.	1	2	3	4	5	6	7

12. I often try to make my teammates or coaches like or accept me more by saying something funny about my own weaknesses, blunders, or faults.	1	2	3	4	5	6	7
13. I laugh and joke a lot with my teammates.	1	2	3	4	5	6	7
14. My humorous outlook on life keeps me from getting overly upset or depressed about challenges in my sport	1	2	3	4	5	6	7
15. I do not like it when coaches on my team or my teammates use humor as a way of criticizing or putting someone down.	1	2	3	4	5	6	7
16. I don't often say funny things to put myself down.	1	2	3	4	5	6	7
17. I usually don't like to tell jokes or amuse teammates or coaches on my team.	1	2	3	4	5	6	7
18. If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.	1	2	3	4	5	6	7
19. Sometimes I think of something that is so funny that I can't stop myself from saying it to my teammates, or coaches on my team, even if it is not appropriate for the situation.	1	2	3	4	5	6	7
20. I often go overboard in putting myself down when I am making jokes or trying to be funny with coaches on my team or my teammates.	1	2	3	4	5	6	7
21. I enjoy making my teammates and coaches laugh.	1	2	3	4	5	6	7
22. If I am feeling sad or upset because of my sport, I usually lose my sense of humor.	1	2	3	4	5	6	7
23. I never participate in laughing at others even if all my coaches or teammates are doing it.	1	2	3	4	5	6	7
24. When I am with my team, I often seem to be the one that other people make fun of or joke about.	1	2	3	4	5	6	7
25. I don't often joke around with my teammates and coaches.	1	2	3	4	5	6	7
26. It is my experience that thinking about some amusing aspect of a situation in my sport is often a very effective way of coping with problems.	1	2	3	4	5	6	7
27. If I don't like a coach on my team or a teammate, I often use humor or teasing to put them down.	1	2	3	4	5	6	7
28. If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest teammates don't know how I really feel.	1	2	3	4	5	6	7
29. I usually can't think of witty things to say when I'm with my teammates or coaches.	1	2	3	4	5	6	7

30. I don't need to be with my team to feel amused – I can usually find things to laugh about even when I'm by myself.	1	2	3	4	5	6	7
31. Even if something is really funny to me, I will not laugh or joke about it if a coach or teammate will be offended.	1	2	3	4	5	6	7
32. Letting teammates or coaches on my team laugh at me is my way of keeping them in good spirits.	1	2	3	4	5	6	7

Note. Items for each subscale of humor are as follows: Affiliative humor: 1*, 5, 9*, 13, 17*, 21, 25*, 29*; Self-enhancing humor: 2, 6, 10, 14, 18, 22*, 26, 30; Aggressive humor: 3, 7*, 11, 15*, 19, 23*, 27, 31*; Self-defeating humor: 4, 8, 12, 16*, 20, 24, 28, 32. Items marked with * are reverse keyed; i.e., 1=7, 2=6, 3=5, 4=4, 5=3, 6=2, 7=1. After reversing these items, all 8 items in each scale were summed to obtain scale totals.

Appendix E. The Humor Styles Questionnaire (Martin et al., 2003) (Modified for Sport – Coaches Version)

Humor Styles Questionnaire - Revised for Sports Coaches

People experience and express humor in many different ways. Below is a list of statements describing different ways in which humor might be experienced in the context of sports. Please read each statement carefully, and indicate the degree to which you agree or disagree with it, in terms of the team indicated in your email invitation to participate. Please respond as honestly and objectively as you can. Use the following scale:

Totally Disagree	Moderately Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Moderately Agree	Totally Agree
1	2	3	4	5	6	7

1. I usually don't laugh or joke around much with athletes or other coaches on my team.	1	2	3	4	5	6	7
2. If I am feeling depressed in my sport, I can usually cheer myself up with humor.	1	2	3	4	5	6	7
3. If an athlete or other coach on my team makes a mistake, I will often tease them about it.	1	2	3	4	5	6	7
4. I let athletes, or other coaches on my team laugh at me or make fun at my expense more than I should.	1	2	3	4	5	6	7
5. I don't have to work very hard at making athletes or other coaches on my team laugh—I seem to be a naturally humorous person.	1	2	3	4	5	6	7
6. Even when I'm by myself, I'm often amused by the absurdities of my sport.	1	2	3	4	5	6	7
7. Athletes or other coaches on my team are never offended or hurt by my sense of humor.	1	2	3	4	5	6	7
8. I will often get carried away in putting myself down if it makes athletes or other coaches on my team laugh.	1	2	3	4	5	6	7
9. I rarely make athletes or other coaches on my team laugh by telling funny stories about myself.	1	2	3	4	5	6	7
10. If I am feeling upset or unhappy I usually try to think of something funny about my sport to make myself feel better.	1	2	3	4	5	6	7

11. When telling jokes or saying funny things, I am usually not very concerned about how athletes or other coaches on my team are taking it.	1	2	3	4	5	6	7
12. I often try to make athletes or other coaches on my team like or accept me more by saying something funny about my own weaknesses, blunders, or faults.	1	2	3	4	5	6	7
13. I laugh and joke a lot with my athletes and other coaches on my team.	1	2	3	4	5	6	7
14. My humorous outlook on life keeps me from getting overly upset or depressed about challenges in my sport	1	2	3	4	5	6	7
15. I do not like it when athletes or other coaches on my team use humor as a way of criticizing or putting someone down.	1	2	3	4	5	6	7
16. I don't often say funny things to put myself down.	1	2	3	4	5	6	7
17. I usually don't like to tell jokes or amuse athletes or other coaches on my team.	1	2	3	4	5	6	7
18. If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.	1	2	3	4	5	6	7
19. Sometimes I think of something that is so funny that I can't stop myself from saying it to athletes or other coaches on my team, even if it is not appropriate for the situation.	1	2	3	4	5	6	7
20. I often go overboard in putting myself down when I am making jokes or trying to be funny with athletes or other coaches on my team.	1	2	3	4	5	6	7
21. I enjoy making athletes or other coaches on my team laugh.	1	2	3	4	5	6	7
22. If I am feeling sad or upset because of my sport, I usually lose my sense of humor.	1	2	3	4	5	6	7
23. I never participate in laughing at others even if all the athletes or other coaches on my team are doing it.	1	2	3	4	5	6	7
24. When I am with my team, I often seem to be the one that other people make fun of or joke about.	1	2	3	4	5	6	7
25. I don't often joke around with athletes or other coaches on my team.	1	2	3	4	5	6	7
26. It is my experience that thinking about some amusing aspect of a situation in my sport is often a very effective way of coping with problems.	1	2	3	4	5	6	7
27. If I don't like an athlete or coach on my team, I often use humor or teasing to put them down.	1	2	3	4	5	6	7

28. If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest athletes don't know how I really feel.	1	2	3	4	5	6	7
29. I usually can't think of witty things to say when I'm with athletes or other coaches on my team.	1	2	3	4	5	6	7
30. I don't need to be with my team to feel amused – I can usually find things to laugh about even when I'm by myself.	1	2	3	4	5	6	7
31. Even if something is really funny to me, I will not laugh or joke about it if an athlete or coach or on my team will be offended.	1	2	3	4	5	6	7
32. Letting athletes or other coaches on my team laugh at me is my way of keeping them in good spirits.	1	2	3	4	5	6	7

Note. Items for each subscale of humor are as follows: Affiliative humor: 1*, 5, 9*, 13, 17*, 21, 25*, 29*; Self-enhancing humor: 2, 6, 10, 14, 18, 22*, 26, 30; Aggressive humor: 3, 7*, 11, 15*, 19, 23*, 27, 31*; Self-defeating humor: 4, 8, 12, 16*, 20, 24, 28, 32. Items marked with * are reverse keyed; i.e., 1=7, 2=6, 3=5, 4=4, 5=3, 6=2, 7=1. After reversing these items, all 8 items in each scale were summed to obtain scale totals.

Appendix F. The Group Environment Questionnaire (Carron et al., 1985)

Group Environment Questionnaire (GEQ)

This questionnaire is designed to assess your perceptions of your team. There are no wrong or right answers, so please give your immediate reaction. Some of the questions may seem repetitive, but please answer ALL questions. Your responses will be kept in the strictest confidence.

The following statements are designed to assess your feelings about YOUR PERSONAL INVOLVEMENT with this team. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of these statements.

1. I do not enjoy being a part of the social activities of this team

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

2. I'm not happy with the amount of playing time I get.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

3. I am not going to miss the members of this team when the season ends.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

4. I'm unhappy with my team's level of desire to win.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

5. Some of my best friends are on this team.
- | | | | | | | | | |
|----------|---|---|---|---|---|---|---|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Strongly | | | | | | | | Strongly |
| Disagree | | | | | | | | Agree |
6. This team does not give me enough opportunities to improve my personal performance.
- | | | | | | | | | |
|----------|---|---|---|---|---|---|---|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Strongly | | | | | | | | Strongly |
| Disagree | | | | | | | | Agree |
7. I enjoy other parties rather than team parties.
- | | | | | | | | | |
|----------|---|---|---|---|---|---|---|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Strongly | | | | | | | | Strongly |
| Disagree | | | | | | | | Agree |
8. I do not like the style of play on this team.
- | | | | | | | | | |
|----------|---|---|---|---|---|---|---|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Strongly | | | | | | | | Strongly |
| Disagree | | | | | | | | Agree |
9. For me, this team is one of the most important social groups to which I belong.
- | | | | | | | | | |
|----------|---|---|---|---|---|---|---|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Strongly | | | | | | | | Strongly |
| Disagree | | | | | | | | Agree |

The following statements are designed to assess your perceptions of YOUR TEAM AS A WHOLE. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of these statements.

10. Our team is united in trying to reach its performance goals.

16. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

17. Members of our team do not stick together outside of practice and games.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

18. Our team members do not communicate freely about each athlete's responsibilities during competition or practice.

1	2	3	4	5	6	7	8	9
Strongly								Strongly
Disagree								Agree

Note. Items for each subscale of cohesion are as follows: Individual attractions to the group- social (ATG-S): 1*, 3*, 5, 7* 9; Individual attractions to the group- task (ATG-T): 2*, 4*, 6*, 8*; Group integration- social (GI-S): 11*, 13*, 15, 17*; Group integration- task (GI-T): 10, 12, 14*, 16, 18*. Items marked with * are reverse keyed; i.e., 1=9, 2=8, 3=7, 4=6, 5=5, 6=4, 7=3, 8=2, 9=1. After reversing these items, scores are summed and then averaged to provide the scale measurement.

Appendix G. Script for Initial Email to Head Coaches

Email Script for Recruitment

Subject Line: Invitation to participate in “humor in sport” research

Dear (coach’s name)

As the head coach of (name of team), you are being invited to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. Specifically, we are writing to invite: (1) *you*; (2) an *assistant coach* of your choosing; and (3) all the *athletes* from your team, to complete one online survey.

Briefly, the online survey for coaches relates to your use of humor within your sport team. The survey should take less than 20 minutes to complete and all answers will be kept confidential. The online survey for athletes relates to their use of humor as well as their perceptions of relationships on the team, and should take less than 30 minutes to complete.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner.

If you would like your team to participate, we ask that you reply to this email. We will then send you three separate emails that will contain an invitation to participate and a link to the survey. One email will be for you as the head coach, one will be for you to forward to the assistant coach of your choosing and one will be for you to forward in a mass email to all the athletes on your team. If you reply to this email, we ask that you include the *name of the assistant coach* that you have chosen to invite to participate. This will allow us to tell the athletes which assistant coach they should be thinking about when answering the survey.

Thank you,

Charles Fitzsimmons
Western University

XXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXX

Appendix H. Script for Email to Head Coaches After Agreeing to Participate

Email Script for Head Coaches Survey Link

Subject Line: Survey Link to participate in “humor in sport” research

Dear (coach’s name)

As the head coach of (name of team), you indicated a willingness to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. The survey should take less than 20 minutes to complete and all answers will be kept confidential.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner. If you would still like to participate in this study please click on the link below to access the letter of information and consent, and begin the survey.

[Link to LOI here]

Thank you,

Charles Fitzsimmons
Western University

XXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

Appendix I. Script for Email that Head Coaches Forwarded to Assistant Coaches

Email Script for Head Coaches to Forward to Assistant Coaches

Subject Line: Invitation to participate in “humor in sport” research

TO HEAD COACH: PLEASE FORWARD THIS EMAIL MESSAGE TO THE ASSISTANT COACH THAT YOU HAVE CHOSEN TO INVITE TO PARTICIPATE IN THIS STUDY

Dear (coach’s name),

As the assistant coach of (name of team), you are being invited to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. The head coach of your team has indicated a possible willingness to participate in this study and the players on your team have also been e-mailed with an invitation to participate. Having said that, please be aware that **participation in this study is voluntary**. Briefly, the study involves filling out an online survey pertaining to your use of humor within your sport. The survey should take less than 20 minutes to complete and your answers will be kept confidential.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner. If you would like to participate in this study please click on the link below to access the letter of information and consent, and begin the survey.

[Link to LOI here]

Thank you,

Charles Fitzsimmons

Western University

XXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXX

Appendix J. Script for Email that Head Coaches Forwarded to Athletes

Email Script for Head Coaches to Forward to Athletes

Subject Line: Invitation to participate in “humor in sport” research

TO HEAD COACH: PLEASE FORWARD THIS IN A MASS EMAIL MESSAGE TO ALL OF THE ATHLETES ON YOUR TEAM

Dear athletes,

As a member of (team's name), you are being invited to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. The head coach of your team has indicated a possible willingness to participate in this study and the assistant coach has also been e-mailed with an invitation to participate. Having said that, please be aware that **participation in this study is voluntary**. Briefly, the study involves completing an online survey pertaining to your use of humor within your sport as well as the relationships you have with your teammates and coaches. When filling out the survey, please answer any questions regarding your assistant coach as pertaining to (assistant coach’s name). The survey should take less than 30 minutes to complete and your answers will be kept confidential.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner. If you would like to participate in the study please click on the link below to access the letter of information and consent, and begin the survey

[Link to LOI here]

Thank you,

Charles Fitzsimmons
Western University
XXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

Appendix K. Script for Reminder Email to Head Coaches

Reminder Email Script for Head Coaches

Subject Line: Friendly Reminder: Invitation to participate in “humor in sport” research

Dear (coach’s name)

As the head coach of (name of team), you indicated a willingness to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. Specifically, you received an email with a link to the study approximately (X) weeks ago. At that time, you also received two other emails that we asked you to forward; one to an assistant coach of your choosing on your team and one to all of the athletes on your team to invite them to participate as well. Shortly, you will be receiving separate reminder emails for the assistant coach you chose as well as for your athletes. **PLEASE FORWARD THEM TO THE APPROPRIATE RECIPIENTS AS YOU RECEIVE THEM.**

As a brief reminder, the online survey for coaches relates to your use of humor within your sport team. The survey should take less than 20 minutes to complete and all answers will be kept confidential. The online survey for athletes relates to their use of humor as well as their perceptions of relationships on the team, and should take less than 30 minutes to complete.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner. If you would like to participate in this study but haven't already done so, please click on the link below to access the letter of information and consent, and begin the survey.

[Link to LOI here]

Thank you,

Charles Fitzsimmons
 Western University
 XXXXXXXXXXXXXXXX
 XXXXXXXXXXXXXXXX

Appendix L. Script for Reminder Email for Head Coaches to Forward to Assistant Coaches

Reminder Email Script for Head Coaches to Forward to Assistant Coaches

Subject Line: Friendly Reminder for Assistant Coaches: Invitation to participate in “humor in sport” research

TO HEAD COACH: PLEASE FORWARD THIS EMAIL MESSAGE TO THE ASSISTANT COACH THAT YOU HAVE CHOSEN TO INVITE TO PARTICIPATE IN THIS STUDY

Dear (coach’s name),

As the assistant coach of (name of team), you are being invited to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. The head coach of your team has indicated a possible willingness to participate in this study and approximately (X) weeks ago, they forwarded you an email with a link to the study. The players on your team have also been e-mailed with an invitation to participate. Having said that, please be aware that **participation in this study is voluntary**. Briefly, the study involves filling out an online survey pertaining to your use of humor within your sport. The survey should take less than 20 minutes to complete and your answers will be kept confidential.

Participating teams that have at least 75% of players as well as the head and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift card for a team dinner. If you would like to participate in this study but haven't done so already, please click on the link below to access the letter of information and consent, and begin the survey.

[Link to LOI here]

Thank you,

Charles Fitzsimmons
Western University
XXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

Appendix M. Script for Reminder Email for Head Coaches to Forward to Athletes

Reminder Email Script for Athletes

Subject Line: Friendly Reminder for Athletes: Invitation to participate in “humor in sport” research

TO HEAD COACH: PLEASE FORWARD THIS MESSAGE TO IN A MASS EMAIL TO ALL OF THE ATHLETES ON YOUR TEAM

Dear athletes,

As a member of (team's name), you are being invited to participate in a study as part of the PhD research of Charles Fitzsimmons, supervised by Dr. Shauna Burke and Dr. Rod Martin at Western University. The head coach of your team has indicated a possible willingness to participate in this study and approximately (X) weeks ago, they forwarded you an email with a link to the study. The assistant coach has also been e-mailed with an invitation to participate. Having said that, please be aware that **participation in this study is voluntary**. Briefly, the study involves completing an online survey pertaining to your use of humor within your sport as well as the relationships you have with your teammates and coaches. When filling out the survey, please answer any questions regarding your assistant coach as pertaining to (assistant coach's name). The survey should take less than 30 minutes to complete and your answers will be kept confidential.

Participating teams that have at least 75% of players as well as the head coach and an assistant coach complete the online survey by (*end date for that sport's regular season*) will be entered into a draw for a chance to win a \$300 gift certificate for a team dinner. If you would like to participate in this study but haven't already done so, please click on the link below to access the letter of information, consent, and begin the survey.

[Link to LOI here]

Thank you,

Charles Fitzsimmons
Western University
XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

Appendix N. Letter of Information for Head Coaches



Project Title: Humor and Intercollegiate Sports Teams

Principal Investigator: Shauna Burke, Ph.D, Kinesiology, Western University

Letter of Information

1. Invitation to Participate

You are being invited to participate in this research study on humor and team relationships in intercollegiate sport because you are a head coach on a university or college sport team in Canada and we are interested in your opinions. Specifically, we want to know about how you use humor within your sport team and how that might compare with the assistant coach you nominated to participate.

2. Purpose of the Letter

The purpose of this letter is to provide you with information required to make an informed decision regarding participation in this research.

3. Purpose of this Study

The purpose of this study is to investigate the use of humor by coaches (head and assistant) and athletes on intercollegiate sports teams in Canada.

4. Inclusion Criteria

Individuals who are over the age of 18 and are a current head coach of a university or college athletic team in Canada are eligible to participate.

5. Exclusion Criteria

Individuals under the age of 18 and/or are not a current head coach of a university or college athletic team in Canada are not eligible to participate.

6. Study Procedures

If you agree to participate, you will be asked to fill out a questionnaire with two parts; one on basic demographic information (e.g., age, gender, academic institution, sport you coach, number of years you have coached etc), and one on your use of humor within your team. It is anticipated that the entire survey will take less than 20 minutes, over one occasion. You will be asked to complete the questionnaire online after you click on the “I agree to participate” button at the end of this document.

7. Possible Risks and Harms

There are no known or anticipated risks or discomforts associated with participating in this study.

8. Possible Benefits

There are no known or certain benefits to participants. Possible societal benefits from the results of this research include athletes and coaches having a better understanding of how the humor they use can affect team relationships. This realization may help to foster more positive environments for sporting teams, in terms of the humor used and the dynamic between head and assistant coaches’ use of humor, which could increase enjoyment, satisfaction and participation.

9. Compensation

Teams that participate and have more than 75% of current athletes, as well as the head coach and an assistant coach, fill out the online questionnaire within the three weeks leading up to the end of that sport’s regular season will be entered into a draw for a \$300 gift card for a team dinner.

10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on

your future athletic or academic status. You do not waive any legal rights by participating in this research study. Each participant has the right to request the withdrawal of data or human biological materials, including any limitations on the feasibility of that withdrawal.

11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. If the results are published, your name will not be used. If you choose to withdraw from this study, your data will be removed and destroyed from our database. Your personal information will be translated into a participant code for use with the data set. Your original personal information will be kept separately on a master list saved to a password protected computer. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

12. Data Storage

All data collected will be stored for a minimum of 5 years in accordance with Western University's policy. All data will be deleted or destroyed after this period.

13. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact Charles Fitzsimmons at xxxxxxxxxxxx, Dr. Shauna Burke at xxxxxxxxxxxx, or Dr. Rod Martin at xxxxxxxxxxxx.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics xxxxxxxxxxxx, email: xxxxxxxxxxxx.

14. Publication

If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Charles Fitzsimmons via email at xxxxxxxxxxxx.

15. Consent

By clicking on the button below you indicate that you have read and understood this letter of information and give consent to participate in the study

Appendix O. Letter of Information for Assistant Coaches



Project Title: Humor and Intercollegiate Sports Teams

Principal Investigator: Shauna Burke, Ph.D, Kinesiology, Western University

Letter of Information

1. Invitation to Participate

You are being invited to participate in this research study on humor and team cohesion in intercollegiate sports because you are an assistant coach on a university or college sport team in Canada and we are interested in your opinions. Specifically, we want to know about how you use humor within your sport team and how that might compare with the head coach of your team.

2. Purpose of the Letter

The purpose of this letter is to provide you with information required to make an informed decision regarding participation in this research study.

3. Purpose of this Study

The purpose of this study is to investigate the use of humor by coaches (head and assistant) and athletes on intercollegiate sports teams in Canada.

4. Inclusion Criteria

Individuals who are over the age of 18 and are a current assistant coach of a university or college athletic team in Canada are eligible to participate.

5. Exclusion Criteria

Individuals under the age of 18 and/or are not a current assistant coach of a university or college athletic team in Canada are not eligible to participate.

6. Study Procedures

If you agree to participate, you will be asked to fill out a questionnaire with two parts; one on basic demographic information (e.g., age, gender, academic institution, sport you coach, number of years you have coached, etc), and one on your use of humor within your team. It is anticipated that the entire survey will take less than 20 minutes to complete, over one occasion. You will be asked to complete the questionnaire online after you click on the “I agree to participate” button at the end of this document.

7. Possible Risks and Harms

There are no known or anticipated risks or discomforts associated with participating in this study.

8. Possible Benefits

There are no known or certain benefits to participants. Possible societal benefits from the results of this research include athletes and coaches having a better understanding of how the humor they use can affect team relationships. This realization may help to foster more positive environments for sporting teams, in terms of the humor used and the dynamic between head and assistant coaches’ use of humor, which could increase enjoyment, satisfaction, and participation.

9. Compensation

Teams that participate and have more than 75% of current athletes, as well as the head coach and an assistant coach, fill out the online questionnaire within the three weeks leading up to the end of that sport’s regular season will be entered into a draw for a \$300 gift card for a team dinner.

10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time with no effect on

your future athletic or academic status. You do not waive any legal rights by participating in this research study. Each participant has the right to request the withdrawal of data or human biological materials, including any limitations on the feasibility of that withdrawal.

11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. If the results are published, your name will not be used. If you choose to withdraw from this study, your data will be removed and destroyed from our database. Your personal information will be translated into a participant code for use with the data set. Your original personal information will be kept separately on a master list saved to a password protected computer. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

12. Data Storage

All data collected will be stored for a minimum of 5 years in accordance with Western University's policy. All data will be deleted or destroyed after this period.

13. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact Charles Fitzsimmons at xxxxxxxxxxxx, Dr. Shauna Burke xxxxxxxxxxxx, or Dr. Rod Martin at xxxxxxxxxxxx.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics xxxxxxxxxxxx, email: xxxxxxxxxxxx.

14. Publication

If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Charles Fitzsimmons via email at xxxxxxxxxxxx.

15. Consent

By clicking on the button below you indicate that you have read and understood this letter of information and give consent to participate in the study.

Appendix P. Demographic Information and Basic Humor Questions for Head Coaches

Demographic and Basic Humor Questionnaire for Head Coaches

Please fill in the chart below with your personal information. It will be kept confidential.

Age:	Gender:
Number of Years of Coaching Experience:	
Number of Years as a Head Coach with your Current Team:	Number of Years Working with the Assistant Coach for your Current Team:
Total Number of Players on your Current Team:	Total Number of Starters* on your Current Team: (*A starter competes in at least 75% of the regular season or in the Provincial or National Championships)

Please circle the corresponding number for the extent to which you agree with the following statements about you as a head coach. For any of statements pertaining to the assistant coach, please think about the one you invited to participate:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have a sense of humor	1	2	3	4	5
I usually find something comical, witty, or funny in many situations	1	2	3	4	5
I am funnier than the assistant coach	1	2	3	4	5

I use more humor than the assistant coach	1	2	3	4	5
I consistently use humor while coaching	1	2	3	4	5
Overall, I feel humor is an important part of my coaching	1	2	3	4	5

Please add any comments to expand on how **you** use humor as a head coach as well as how that **compares** to the use of humor by the assistant coach you chose to invite to participate:

Appendix Q. Demographic Information and Basic Humor Questions for Assistant Coaches

Demographic and Basic Humor Questionnaire for Assistant Coaches

Please fill in the chart below with your personal information. It will be kept confidential.

Age:	Gender:
Number of Years of Coaching Experience:	
Number of Years as an Assistant Coach with your Current Team:	Number of Years Working with the Head Coach for your Current Team:

Please circle the corresponding number for the extent to which you agree with the following statements about you as an assistant coach. For any statements pertaining to the head coach, please think about the one who invited you to participate:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have a sense of humor	1	2	3	4	5
I usually find something comical, witty, or funny in many situations	1	2	3	4	5
I am funnier than the head coach	1	2	3	4	5
I use more humor than the head coach	1	2	3	4	5
I consistently use humor while coaching	1	2	3	4	5

Overall, I feel humor is an important part of my coaching	1	2	3	4	5
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Please add any comments to expand on how **you** use humor as an assistant coach as well as how that **compares** to the use of humor by the head coach on your current team:

Appendix R. Letter of Information for Athletes



Project Title: Humor and Intercollegiate Sports Teams

Principal Investigator: Shauna Burke, PhD, School of Health Studies, Western University

Letter of Information

1. Invitation to Participate

You are being invited to participate in this research study on humor and team cohesion in intercollegiate sport because you are an athlete on a university or college sport team in Canada and we are interested in your opinions.

2. Purpose of the Letter

The purpose of this letter is to provide you with information required to make an informed decision regarding participation in this research.

3. Purpose of this Study

The purpose of this study is to investigate your perception of relationships on your current university or college team in relation to the humor used by coaches and athletes on that team.

4. Inclusion Criteria

Individuals who are over the age of 18 and are a current member of a university or college sports team are eligible to participate.

5. Exclusion Criteria

Individuals under the age of 18 and/or are not a current member of a university or college athletic team are not eligible to participate.

6. Study Procedures

If you agree to participate, you will be asked to fill out a questionnaire with three parts; one on basic demographic information (e.g., age, number of years played, starter or non-starter, leadership role on the team, etc.), one on your use of humor, and one on your perceptions of relationships on your current team. It is anticipated that the entire survey will take less than 30 minutes to complete, on one occasion. You will be asked to complete the questionnaires online after you click on the “I agree to participate” button at the end of this document.

7. Possible Risks and Harms

There are no known or anticipated risks or discomforts associated with participating in this study.

8. Possible Benefits

There are no known or certain benefits to participants. Possible societal benefits from the results of this research include athletes and coaches having a better understanding of how the humor they use can affect team relationships. This realization may help to foster more positive environments for sporting teams, in terms of the styles of humor used and the dynamic between head and assistant coaches’ use of humor, which can increase enjoyment, satisfaction and participation.

9. Compensation

Teams that participate and have more than 75% of current athletes as well as the head coach and an assistant coach fill out the online questionnaire within the three weeks leading up to the end of that sport’s regular season will be entered into a draw for a \$300 gift card for a team dinner.

10. Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time with no effect on your future athletic or academic status. You do not waive any legal rights by participating in this research study. Each participant has the right to request the

withdrawal of data or human biological materials, including any limitations on the feasibility of that withdrawal.

11. Confidentiality

All data collected will remain confidential and accessible only to the investigators of this study. If the results are published, your name will not be used. If you choose to withdraw from this study, your data will be removed and destroyed from our database. Your personal information will be translated into a participant code for use with the data set. Your original personal information will be kept separately on a master list saved to a password protected computer.

Representatives of The University of Western Ontario Non-Medical Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

12. Data Storage

All data collected will be stored for a minimum of 5 years in accordance with Western University's policy. All data will be deleted or destroyed after this period.

13. Contacts for Further Information

If you require any further information regarding this research project or your participation in the study you may contact Charles Fitzsimmons at xxxxxxxxxxxx, Dr. Shauna Burke at xxxxxxxxxxxx, or Dr. Rod Martin at xxxxxxxxxxxx.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics xxxxxxxxxxxx, email: xxxxxxxxxxxx.

14. Publication

If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please contact Charles Fitzsimmons via email at xxxxxxxxxxxx.

15. Consent

By clicking on the button below you indicate that you have read and understood this letter of information and give consent to participate in the study.

Appendix S. Demographic Information, General Humor Questions, and Select Items from the Coach Evaluation Questionnaire (CEQ: Rushall & Wiznak, 1985) for Athletes

Demographic and Basic Humor Questionnaire for Athletes

Please fill in the chart below with your personal information. It will be kept confidential.

Age:	Number of Years on the Team:
Gender:	
Starter* or Non-Starter: (*A Starter competes in at least 75% of the regular season or in the Provincial or National Championships).	Leadership Role: (Either Captain or Assistant Captain; please use N/A if not applicable)

Please circle the corresponding number for the extent to which you agree with the following statements about your head coach (i.e., the head coach that was identified in your email invitation to participate):

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The head coach has a sense of humor	1	2	3	4	5
I like the head coach	1	2	3	4	5
The head coach usually finds something comical, witty, or funny in many situations	1	2	3	4	5
The head coach is funnier than	1	2	3	4	5

the assistant coach					
The head coach uses more humor than the assistant coach	1	2	3	4	5
I prefer when the head coach uses more humor than the assistant coach	1	2	3	4	5
Overall, I feel my head coach is a good coach	1	2	3	4	5

Please add any comments you would like to make about your **head coach's** sense of humor:

Please circle the corresponding number for extent to which you agree with the following statements about your assistant coach (i.e., the assistant coach that was identified in your email invitation to participate):

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The assistant coach has a sense of humor	1	2	3	4	5
I like the assistant coach	1	2	3	4	5
The assistant coach usually finds something comical, witty, or funny in many situations	1	2	3	4	5
Overall, I feel my assistant coach is a good coach	1	2	3	4	5

Please add any comments you would like to make about your **assistant coach's** sense of humor:

Please add any comments you would like to make about **comparing** your head and assistant coaches' sense of humor:

Appendix T. Ethics Approval Notice for Study 2 and 3



Research Ethics

Western University Health Science Research Ethics Board
NMREB Delegated Initial Approval Notice

Principal Investigator: Dr. Shama Burke
Department & Institution: Health Sciences/Faculty of Health Sciences, Western University

NMREB File Number: 105913
Study Title: Humour and Intercollegiate Sports Teams
Sponsor:

NMREB Initial Approval Date: December 03, 2014
NMREB Expiry Date: November 30, 2015

Documents Approved and/or Received for Information

Document Name	Comments	Version Date
Revised Western University Protocol	Clean Version of Ethics Protocol File	2014/11/18
Instruments	Clean Version of Demographic Questionnaire for Head Coaches (Appendix A)	2014/11/18
Instruments	Clean Version of Demographic Questionnaire for Assistant Coaches (Appendix B)	2014/11/18
Instruments	Clean Version of Demographic Questionnaire for Athletes (Appendix C)	2014/11/18
Instruments	Clean Version of Humour Styles Questionnaire for Coaches (Appendix D)	2014/11/18
Instruments	Clean Version of Humour Styles Questionnaire for Athletes (Appendix E)	2014/11/18
Instruments	Clean Version of Group Environment Questionnaire (Appendix F)	2014/11/18
Recruitment Items	Clean Version of Initial Recruitment Email for Head Coaches (Appendix G)	2014/11/18
Recruitment Items	Clean Version of Survey Link Email for Head Coaches (Appendix H)	2014/11/18
Recruitment Items	Clean Version of Recruitment Email for Assistant Coaches (Appendix I)	2014/11/18
Recruitment Items	Clean Version of Recruitment Email for Athletes (Appendix J)	2014/11/18
Recruitment Items	Reminder Email for Head Coaches (Appendix N)	2014/11/18
Recruitment Items	Reminder Email for Assistant Coaches (Appendix O)	2014/11/18
Recruitment Items	Reminder Email for Athletes (Appendix P)	2014/11/18
Letter of Information & Consent	Head Coaches	2014/12/02
Letter of Information & Consent	Assistant Coaches	2014/12/02
Letter of Information & Consent	Athletes	2014/12/02

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

[Redacted] the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

[Redacted]
Ethics Officer, on behalf of KUCY THOMSON, NMREB Chair

Ethics Officer to Contact for Further Information

	Grace Kelly	Maria Michal	Vikki Tran
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This is an official document. Please retain the original in your files.

Curriculum Vitae

Charles R. S. Fitzsimmons

EDUCATION

Doctor of Philosophy (Candidate), Kinesiology, Western University, London, ON
2012-present

- Expected Graduation Date: April 2020
- Completed Candidacy Exams: December 2012
- Major: Sport Psychology
- Thesis advisors: Dr. Albert V. Carron (2012-2014) and Dr. Shauna M. Burke (2012-present)

Master of Arts, Kinesiology, Western University, London, ON
2010-2011

- Major: Sport Psychology with a specialization in Coaching
- Dissertation Title: *Comparative performance analysis of PGA tour and Ontario university golfers*
- Thesis advisor: Dr. Albert. V. Carron

Honors Bachelor of Arts, Western University, London, ON
2006-2010

- Project Title: *Imagery ability, self-efficacy, gender and how they interact with imagery direction to affect golf putting performance*
- Fourth year project advisor: Dr. Riley Hinson

FUNDING AWARDS

Title	Granting Agency	Value, Duration	Tenure
Ontario Graduate Scholarship (OGS)	Government of Ontario	\$15,000/year, 1 year	2014-2015
Western Graduate Research Scholarship (PhD)	Western University	\$14,268/year, 4 years	2012-2016
Western Graduate Research Scholarship (Master's)	Western University	\$5,268/year, 2 years	2010-2011

DISTINCTIONS

Title	Granting Agency	Tenure
Dean's List Honors	Western University	2006-2008, 2009
OUA Academic Achievement Award	Ontario University Athletics	2006-2008, 2009-2019
OUA Men's Golf All-Star	Ontario University Athletics	2007-2013, 2015-17

Men's Golf Team MVP	Western University	2008-2013, 2016-17
Bronze W	Western University	2009
Purple Blanket Award	Western University	2010
OUA Men's Golf Individual Champion	Ontario University Athletics	2009, 2017
OUA Men's Golf Team Champions	Ontario University Athletics	2010, 2012, 2013, 2017
Canadian University Golf Individual Champion	Golf Canada	2019
Ontario Men's Mid-Amateur Champion	Golf Ontario	2019
Boyd Quaich Memorial Tournament Champion	St. Andrews University	2019

SPORT PSYCHOLOGY CONSULTING EXPERIENCE

Institutional Clients

- Ilderton Skating Club** **2019-present**
- Delivered group and individual mental skills training to top ranked provincial and national individual figure skaters and ice dance pairs teams
- Golf Ontario Development Team** **2016-present**
- Delivered group and individual mental skills training to top 7 boys and girls under 19 in the province
 - Includes running practices and observing/ coaching in tournaments
- London Junior Knights Hockey Organization** **2016-present**
- Delivered team sessions to AAA teams with 12-16 year old athletes
 - Observed games
- Ontario Curling Association** **2016-2018**
- Delivered group and individual mental skills training to carded junior boys' teams
- Ontario Hockey Federation Excellence Camp, Toronto, ON** **2015**
- Delivered general mental skills training sessions to 4 teams
- London Knights Hockey Team, London, ON** **2014-present**
- Delivered individual and team mental skills training sessions (e.g., goal-setting, team roles)
 - Included game and practice observations
 - Included individual sessions with specific players

- Western University Field Hockey Team, London, ON** **2014**
- Delivered mental skills training sessions
- Fanshawe College Athletics, London, ON** **2013-present**
- Delivered mental skills training sessions (e.g., goal-setting, self-talk, imagery, routines, mindfulness, group roles, communication & conflict resolution)
 - Included game and practice observations
 - Worked with Men's & Women's Volleyball, Men's & Women's Golf, Men's & Women's Basketball, Softball, Baseball, Men's & Women's Soccer, Men's & Women's Curling, Badminton, Cross-Country
- Mental Skills Coach, London, ON.** **2012-2017**
- Formerly Premier Elite Athletes' Collegiate (PEAC), now London Knight's Hockey Academy
 - Delivered 12 group sessions annually on mental skills in addition to one-on-one consulting with players ranging from age 12-17 competing at or above AAA minor hockey
- Mental Skills Coach, London, ON.** **2010-present**
- Western University Men's and Women's Golf Team
 - Delivered training on mental skills in addition to one-on-one consulting with players ranging from provincial to national level players
- Pure Hockey Goaltending School, London, ON** **2014**
- Delivered group session on mental toughness in goaltending
 - Total of 17 athletes ranging age 7-13
- Rotman School of Business, Toronto, ON** **2013**
- Delivered group session on physical and mental fundamentals of golf
 - Conducted brief one-on-one sessions with attendees
- London Synchronized Swimming Club, London, ON** **April 2013**
- Delivered mental skills training session on goal-setting and self-talk to 40 athletes ranging from age 8-16
- Running Room Race Club** **April 2012 & 2013**
- *Goal Setting for Race Running* (April 2012)
 - *Mental Toughness of Half and Full Marathons* (April 2013)
 - Delivered sport psychology sessions to groups of runners preparing for either a 5 km race or a half or full marathon

Individual Clients

Mental Coach at Eclipse Performance **2014-present**

- Provided mental skills training to over 100 amateur and professional male and female athletes from 10-66 years old in golf, hockey, curling, volleyball, wrestling, soccer, tennis, basketball, triathlon, swimming, and baseball

PUBLICATIONS AND PRESENTATIONS

Published Chapters

Fitzsimmons, C. R. S. (2017). Social interactions between coaches and players: It really is a laughing matter. In M. Toms (Ed.), *Routledge international handbook of golf science* (423-432). New York: Routledge.

Published Abstracts from Refereed Conference Proceedings

Fitzsimmons, C. R. S., & Burke, S.M. (2014). The 5 w's of humor in intercollegiate golf: Who, what, when, where, and why. [Abstract]. *International Journal of Golf Science*, 2 (Suppl.), S40.

Fitzsimmons, C.R.S., & Carron, A.V. (2012). Comparative performance analysis of PGA tour and Ontario university golfers [Abstract]. *International Journal of Golf Science*, 1 (Suppl.), S18-S19.

Conference Presentations

Fitzsimmons, C.R.S., & Westlund Stewart, N. (2015, November). *Why laughing matters: Humor in coaching*. Professional session presented at the 2015 ROWONTARIO Conference, Toronto, Canada.

Fitzsimmons, C.R.S., & Burke, S.M. (2014, September). *The 5 w's of humor in intercollegiate golf: Who, what, when, where, and why*. Paper session presented at the 2014 World Scientific Congress of Golf, Gold Coast, Australia.

Fitzsimmons, C.R.S., Burke, S.M., & Carron, A.V. (2013, September). *Understanding humor in intercollegiate sport*. Paper session presented at the 3rd International Symposium for Collaboration in Research, Teaching and Exchange, London, ON.

Fitzsimmons, C.R.S., Burke, S.M., & Carron, A.V. (2013, March). *Understanding the uses of humor in elite competitive sport*. Paper session presented at the Eastern Canada Sport and Exercise Psychology Symposium (ECSEPS), St. Catharines, ON.

Fitzsimmons, C.R.S., Lynch, S.J-A., Burke, S.M., & Carron, A.V. (2013, March). *Analyzing the dump-and-chase tactic at the 2013 World Junior Hockey Championships*. Paper session presented at the Eastern Canada Sport and Exercise Psychology Symposium (ECSEPS), St. Catharines, ON.

Fitzsimmons, C.R.S., Buckolz, E. E., & Carron, A.V. (2012, November). *An exploratory analysis of the dump-and-chase tactic in NHL regular season and Stanley Cup final games*. Poster session presented at the Canadian Society for Psychomotor Learning and Sport Psychology (SCAPPS) Conference, Halifax, NS.

Fitzsimmons, C.R.S., & Carron, A.V. (2012, March). *Comparative performance analysis of PGA tour and Ontario university golfers*. Paper session presented at the World Scientific Congress of Golf VI quadrennial conference, Phoenix, AZ.

Fitzsimmons, C.R.S., & Carron, A.V. (2012, March). *Comparing PGA tour and Ontario university golfers*. Paper session presented at Eastern Canada Sport and Exercise Psychology Symposium (ECSEPS), London, ON.

TEACHING EXPERIENCE

Guest Lecturer

KIN 3388B: The Psychology of Sport, Western University **2013**
 • Lectured two classes on Group Roles

Teaching Assistant

KIN 1070A: Psychology of Human Movement Science, Western University **2015**
 • Answered students' questions and marked assignments

KIN 3388B: The Psychology of Sport, Western University **2013**
 • Coordinated exam review periods and marked assignments

KIN 2921: Curling, Western University **2011-2014**
 • Assisted in course instruction and final performance evaluations

KIN 2032: Research Design in Human Movement Science, Western University **2011-2012**
 • Conducted laboratory session and marked assignments