Durham University

Durham E-Theses

Athlemaphilia: (n) meaningful affective connections with sport

HODGE, ALEXANDER,CARL

How to cite:

HODGE, ALEXANDER,CARL (2018) *Athlemaphilia: (n) meaningful affective connections with sport*, Durham theses, Durham University. Available at Durham E-Theses Online: http://etheses.dur.ac.uk/12968/

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the full Durham E-Theses policy for further details.

Academic Support Office, The Palatine Centre, Durham University, Stockton Road, Durham, DH1 3LE
e-mail: e-theses.admin@durham.ac.uk Tel: +44 0191 334 6107
http://etheses.dur.ac.uk

Athlemaphilia (ˈaTHˌlē məˈfilēə), *n.* meaningful affective connections with sport.

Dr. Xander Hodge

Abstract

Athlemaphilia: (n) meaningful affective connections with sport
Alexander C. Hodge

This thesis amalgamates self-determination and attachment theories with the three-factor theory of anthropomorphism to propose athletes can form meaningful nonhuman attachments to sport, which are experienced similarly to interpersonal attachments, and can predict wellbeing and motivation to engage in sport. This mixed methods thesis employed three studies to develop our understanding of 'athlemaphilic' relationships. The first study explored whether athletes experience athlematic interactions like interpersonal relationships, as well as how interactions with sport are associated with wellbeing. The second study utilised interpretative phenomenological analysis to examine why individuals might turn to sport for support. The final study tested how individuals primed with interpersonal insecurity might recuperate a sense of belongingness by thinking about their athlemaphilic relationships. This thesis offers preliminary support for the notions that athlemaphilic relationships: (a) exist; (b) impact wellbeing and motivation; (c) satisfy the secure base and safe haven functions of attachment figures; (d) are anthropomorphised, and; (e) can compensate for thwarted interpersonal need satisfaction. Throughout this thesis athlemaphilic attachments are compared to attachments to interpersonal others, deities, and objects (i.e., mobile-phones), although it remains unclear which type of attachment they resemble most, or if such direct comparison is even possible. Each relationship may make a unique contribution to wellbeing, and a model which can detect such variation is needed. Overall, this thesis challenges the interpersonal requirement of relatedness according to self-determination theory, broadens the scope of attachment theory, supports context-specific attachment styles, and demonstrates attachment to sport as a concept. Continuing to explore these relationships is necessary to better understand what motivates us to engage, or disengage, in sport, as well as how we generate a sense of health and wellbeing.

The copyright of this thesis rests with the author. No quotation from it should be published without the author's prior written consent and information derived from it should be acknowledged

Athlemaphilia: (n) meaningful affective connections with sport

Alexander Carl Hodge

Thesis submitted in partial fulfilment of the degree of Doctorate of Philosophy
The Department of Sport and Exercise Sciences
Durham University
2018

Table of Content

Abstract i
Table of Content iv
Acknowledgements vi
CHAPTER ONE: General Introduction 1
Introduction 2
Background and context: Why study relationships? 2
Self-determination Theory 3
Attachment Theory 4
Nonhuman Attachments 7
Self-Report Measures of Attachment 10
Anthropomorphism 13
Interpersonal relationships in sport psychology 14
Thesis Overview: Core Proposal 15
Thesis Overview: Programme of Research 15
CHAPTER TWO: Methodology 18
Introduction 19
How Do I View Mixed Methods? 19
Overview: Why I Have Used Mixed Methods 29
Research Design 36
Ontological and epistemological perspective 42
Conclusion 47
CHAPTER THREE: Exploring whether, and how, athletes experience athlemaphilia as relationships with sport, and how this relates to wellbeing. 48
Introduction 50
Method 54
Results 68
Summary of findings 77
General discussion 79
CHAPTER FOUR: Broadening the Scope of Attachment Theory: An Interpretative Phenomenological Analysis of Athlemaphilia 86
Introduction 88
Methods 93

Results 96
Discussion 117
CHAPTER FIVE: Comfort Sport 128
Introduction 129
The Current Study 136
Methods 140
Measures. 142
Results 146
General discussion 152
CHAPTER SIX: General Discussion 157
Overview of the thesis 158
Main findings and theoretical advancements made by the thesis 160
Methodological advancements made by the thesis 164
Strengths of the thesis 167
Delimitations of the thesis 167
Key limitations of the thesis 168
Ethical considerations 170
Applied Recommendations 170
Future directions 172
Autobiographical reflection on the process of developing the thesis 176
“Flavours” of athlemaphilia: A recipe book 177
Concluding remarks 181
Appendix A 182
Appendix B 185
Appendix C 192
Appendix D 194
Appendix E 196
Appendix F 205
Appendix G 206
Appendix H 211
References 214

Acknowledgements

This thesis would not be complete without acknowledging my love for volleyball and the appreciation I have for all of the opportunities it has provided for me. As much as I would like to think I could have completed this thesis only relying on sport to support my needs, the truth is I could not have done so without the help of countless individuals. As part of my acknowledgements, I am pleased to have the opportunity to thank those who have contributed to my journey or supported me along the way.

I would like to begin by thanking Brian Sheffield and Lucy Rose Wheatley for keeping my head up during the last two years of writing my thesis! I would also like to express my gratitude to Team Durham. The funding I received from them was only bested by the experience accepting that funding has afforded me. I would like to personally thank those who took a risk extending support for me to continue studying beyond my masters. Additionally, I would like to thank all of the staff of Durham University, Department of Sociology, particularly the professional and support staff. Furthermore, I want to thank the academic staff and the other PGRs in this department, particularly those on the #groundfloor. Hot-desking has never been this cool. #respectthebeep

I must extend my wholehearted thanks to the participants across all of my studies, whose time I value deeply. Without their honesty, experiences, and relationships, I would have nothing to write about. It is also my pleasure to thank Professor David W. Eccles for his incredibly thorough, challenging, and beneficial comments as I continually developed as an author and an academic. DOCTOR EMILY J. OLIVER, THANK YOU FOR NEVER YELLING AT ME. YOU'RE ACE!

Last, but certainly not least, my family has been amazing during this entire endeavour. Moving to England for one year has turned into, well, more than one year, and their constant love and support is invaluable. Ub. More.

CHAPTER ONE

General Introduction

[R]elationships with other humans are both the foundation and the theme of the human condition: We are born into relationships, we live our lives in relationships with others, and when we die, the effects of our relationships survive in the lives of the living, reverberating throughout the tissue of their relationships.

—Ellen Berscheid (1999, pp. 261–262)

Introduction

This thesis examines relationships: how we define and experience them, and how they impact our lives. Throughout recorded history our relationships have inspired the work of philosophers such as Aristotle in 340 B.C. (Rowe & Broadie, 2002), priests such as Aquinas (1947) and poets such as Shakespeare (1979), while also providing fertile ground for examination by psychiatrists (e.g., Bowlby, 1969, 1973, 1980; Deci & Ryan, 1985; Epley, Waytz, & Cacioppo, 2007), and academe (e.g., Coontz, 1995; Erikson, 1959; Ford, 1990). The majority of previous work has focused on the foundation and focus of the human condition (Berscheid, 1999), what human relationships, characterized by mutual, valenced, long term connections, look and feel like, as well as how they impact our lives. Within this introduction, I will first offer a brief discussion of relevant theories of interpersonal relationships before making a case for their continued development and application to our growing understanding of nonhuman relationships. I will then discuss how interpersonal relationships have been studied in sport psychology. Next, I present a rationalisation of the core proposal being examined by this thesis, that is: athlemaphilic relationships have an important role to play in terms of human health, wellbeing, and flourishment. To conclude this chapter, I will provide an outline of how the series of studies within this thesis seek to examine athlemaphilic relationships, before briefly considering how the findings of the thesis may be applied.

Background and context: Why study relationships?

As noted above, the study of relationships is not new. As far back as early 4th century B.C. Aristotle's writings discussed the existence and importance of 'philia,' or brotherly love, friendship, or mutual concern. Since then our definitions and understanding of the scope of relationships have changed greatly, but human interest in relationships has not wavered. This is well-reflected in dominant and emerging theories in modern psychology (Bowlby, 1969;

Deci & Ryan, 1985; Epley et al., 2007; Maslow, 1943). For example, Maslow (1943) placed interpersonal love and belonging needs as the third of his original five levels of need satisfaction. Similarly, self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000a) positions relatedness as one of three basic psychological needs, and attachment theory posits social bonds are essential for our survival (Bowlby, 1969, 1973, 1980). Furthermore, the three-factor theory of anthropomorphism (Epley et al., 2007) theorises the human motivation to perceive humanness in nonhuman to satisfy a need for relatedness. Self-determination, attachment, and the three-factor theory will all be discussed further.

Self-determination Theory

Deci and Ryan (1985; Ryan & Deci, 2000) position competence, autonomy, and relatedness as the three basic psychological needs which are essential for encouraging intrinsic motivation and wellbeing. Briefly, competence is experienced as a sense of effectively interacting in one's environment (Vansteenkiste, Ryan, & Dunantlaan, 2013) and autonomy is understood as internally regulated experiences of choice and volition (Deci & Ryan, 1987). Emerging research is exploring the consequences of basic psychological need thwarting (e.g., Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Costa, Ntoumanis, & Bartholomew, 2015) as well as the interaction of need satisfaction and need thwarting on the development of resilience (Vansteenkiste et al., 2013). The concept of relatedness is more pertinent to this thesis, and the remainder of this section will focus on defining and critiquing relatedness within SDT.

Humans are social beings (Niemiec, Soenens, & Vansteenkiste, 2014). This basic tenant underpins the conceptualisation of relatedness and relatedness satisfaction in SDT. However, this thesis questions whether we are social beings, or rather we are understood to be social beings. Furthermore, satisfying the need for interpersonal relatedness, or the need to feel a sense of belongingness and connectedness to others, increases positive affect, while

being deprived of social interaction is indicative of distress (Baumeister & Leary, 1995). SDT predominantly focuses on interpersonal, or so called “real-life social partners” (Soenens et al., 2011, p. 11), and exploration of how nonphysical others (e.g., God) affect wellbeing has not been extensively tested within SDT. Soenens et al. (2011) cite Kirkpatrick and Shaver (1990) noting that attachment theory as a leading theoretical construct for understanding relationships with God. This positions attachment theory’s conceptualisation of relationships as a more flexible construct than SDT. Within SDT the application of attachment theory has been ongoing for decades (e.g., La Guardia, Ryan, Couchman, & Deci, 2000) making the continued mixing of the two theories appropriate within the present study.

Attachment Theory

Attachment theory originated in Bowlby’s (1969, 1973, 1980) theorising of attachment, loss, and separation which suggested children innately seek out secure relationships with human caregivers (namely their parents) as a means of survival and development. The original theory underlying the utility of attachments, particularly secure ones, was that the creation of supportive attachment bonds was necessary for children to achieve balance between attachment and security in an uncertain world, and to explore that same world (Bretherton, 1985).The attachment system is activated during times of distress, and serves four main purposes: (a) the maintenance of proximity to caregivers; (b) the experience of caregivers as a safe haven; (c) the perception of caregivers as a safe base for exploratory behaviour, and; (d) undergoing separation anxiety when removed from the caregiver (Ainsworth, 1985; Ainsworth & Bell, 1970; Ainsworth, Blehar, Waters, & Wall, 1978). Additionally, when children are unable to access the benefits of secure attachments to their primary caregivers, they seek out secondary attachment figures including siblings, teachers, and therapists (e.g., Adelman & Ahuvia, 1995; Cassidy & Kobak, 1988; Cowen, 1982), and it

was observed that greater security in primary relationships is associated with greater likelihood to make secondary attachments (Bowlby, 1969).

Through repeated interactions with primary and secondary attachment figures, infants establish a semi-enduring system of internal working models of expectations of the self in relation to specific others, general others, and the social world (Bowlby, 1973, 1988). Internal working models of attachment consist of two primary components: (a) working models of the trustworthiness of others to offer support when in need and; (b) working models of whether the self is worthy of the support others offer. The intention of internal working models is to allow for the efficient appraisal of novel others by imposing established mental representations of previous interactions onto them. It is understood that internal working models shape individual attachment behaviour and style.

Based upon an understanding of internal working models, the functions of attachment bonds, and childrens' responses to separation from their primary attachment figures, children were classified as either secure, insecure-ambivalent (hereafter referred to as anxious), insecure-avoidant (hereafter referred to as avoidant), or disorganised. Securely attached children trust that others will provide support for them if they are in need and perceive themselves as worthy of support, while children with disorganised attachment styles do not trust others and do not perceive themselves as worthy of support. Anxiously attached individuals believe they are worthy of support but do not trust that others will reliably provide support when they are in need and individuals with an avoidant attachment style trust that others will provide them with support but avoid such support because they do not view themselves as worthy of it. Explaining the basic goals of internal working models and the attachment system is essential to understanding the social-psychological perspective of attachment (e.g., Hazan & Shaver, 1987; Mikulincer & Shaver, 2007) adopted in this thesis. This thesis is not concerned with the developmental or clinical conceptualisation of

attachment (e.g., George, Kaplan, & Main, 1996; George & West, 2001; Main, Kaplan, & Cassidy, 1985).

Advances in the social-psychological tradition of attachment and our understanding of adult interpersonal relationships (Bartholomew & Shaver, 1998; Hazan & Shaver, 1987, 1990; Mikulincer & Shaver, 2007; Shaver & Hazan, 1987, 1993) include the development of three conceptual components of attachment theory that are essential for understanding athlemaphilic, and nonhuman, attachment. First, the notion of transference theorises internal working models developed during childhood shape the way we view novel people and future interpersonal relationships (Ahmed & Brumbaugh, 2014; Andersen & Baum, 1994; Brumbaugh, 2017; Brumbaugh & Fraley, 2007). There is evidence that individuals possess distinct working models for different relationship types (Fraley, Heffernan, Vicary, & Brumbaugh, 2011), but limited research has focused on the working models people have for nonhuman attachments as well as what overlap may exist between human and nonhuman models (Keefer et al., 2014). Furthermore, it was hypothesised that transference plays a vital role in the generation of support-providing nonhuman relationships by establishing expectations of nonhuman others based partially upon previous positive relations with other (Epley, Akalis, Waytz, & Cacioppo, 2008; Keefer et al., 2014). Second, greater recognition that secure attachment relies upon perceptions of an attachment figure as willing to provide support and not whether that figure could or would actually do so (Collins & Feeney, 2004) developed through the exploration of adult attachment patterns. The reliance of adult attachment upon perception is particularly relevant for athlemaphilia because individuals, or researchers for that matter, cannot reliably assess support provided by sport nor the likelihood that sport will provide support during times of individual need. Finally, research has found that as individuals mature they are able to maintain attachment relationships without the need for physical proximity (Bretherton, 1987; Cicirelli, 2004). Individuals cannot physically

engage athlemaphilic partners in the same way they can interpersonal and some nonhuman (e.g., pets) others; thus, the identification that physical contact is not required to maintain attachment bonds nullifies critiques that athlemaphilia, and other noncorporeal support, cannot act as an attachment figure because it cannot offer physical support. Cumulatively, concepts of transference, perceptions of support, and the decreased requirement for physical contact to maintain attachment relationships are crucial for understanding the support derived from athlemaphilia as a form of (nonhuman) attachment.

Nonhuman Attachments

Keefer, Landau, and Sullivan (2014) highlight research regarding the support available from interactions with nonhumans including deities (e.g., Birgegard & Granqvist, 2004), food (e.g., Troisi & Gabriel, 2011), media personae (e.g., Derrick, Gabriel, & Hugenberg, 2009), objects (Keefer, Landau, Rothschild, & Sullivan, 2012; Trub & Barbot, 2016), and pets (Zilcha-Mano, Mikulincer, & Shaver, 2012). This section introduces the similarities and differences between athlemaphilia and established forms of nonhuman attachments to question how support derived from sport is experienced. Next, a brief introduction of the debate concerning whether nonhuman working models, and the attachment behaviours they underpin, correspond to or compensate for interpersonal attachments (e.g., Birgegard & Granqvist, 2004; Granqvist & Hagekull, 1999; Keefer et al., 2012) is presented. Finally, trends in measurement of other nonhuman attachments is presented to set the foreground for the assesment of athlemaphilic attachment in this thesis.

Athlemaphilia lacks a corporeal form, similar to deities and fictional characters and unlike pets, foods, and objects, athlemaphilia cannot physically interact with individuals. At a simplistic level, athlemaphilia will never walk up to you wagging its tail, it cannot be pet, and it will never give you a hug or fill your stomach. At a more complex level, like other nonhuman attachments (e.g., Trub & Barbot, 2016), the influence and support of

athlemaphilia cannot be easily separated from the influences and support of coexisting relationships with people, objects, agents, and functions taking place at the same time. Motivations to engage in sport include, habituation, to feel better, to look better, to see friends, to be with sport, and various combinations in-between. It is not yet understood how to separate these motivations and the influences they have upon individuals. Additionally, *Hearing God: Developing a Conversational Relationship with God* was first published in 1984 and has been republished four times since then, most recently in 2012 (Willard, 1984). This title depicts a conversational relationship between a person and a nonhuman entity. Debating the nature of deities is not within the scope of this thesis, however, the terminology and reported experiences of religious individuals provides a useful lens through which to examine socially-accepted relationships between a person and a nonhuman entity. To date there exists no evidence of athlemaphilic partners engaging in conversational relationships similar to those with deities or, pets, and artificially intelligent bots, positioning the lack of verbal communication as a unique feature of athlemaphilia. Overall, it is hypothesised athlemaphilia shares some, but not all, features and functions of other nonhuman, and indeed human, attachment figures; thus, working models and expectations of athlemaphilic partners are expected to result from transference of both human and nonhuman models.

Whether nonhuman attachment styles, working models, and behaviours correspond to or compensate for interpersonal attachments is a crucial question within the study of nonhuman attachment and this thesis. Considerable research regarding the correspondence and compensation hypotheses offers conflicting findings regarding whether attachments to God correspond to interpersonal attachments (e.g., Beck & McDonald, 2004; Birgegard & Granqvist, 2004) or compensate for (Granqvist & Hagekull, 1999) shortcomings in interpersonal attachment. Similarly, research regarding attachments to objects has found that regardless of the perceived importance of an object, it can offer compensatory support when

specific, close interpersonal others act unreliably (Keefer et al., 2012). As a result of the hypothesised similarities and differences between experiences of athlemaphilia and attachment to God and objects it becomes important to consider how experiences in other nonhuman domains influence hypothesising about the complimentary or compensatory nature of athlemaphilia.

Finally, it is important to consider how established forms of nonhuman attachment have been measured so that the measurement of athlemaphilia and athlemaphilic attachments can follow the examples set and accepted elsewhere. Many studies of nonhuman attachment originally measure experiences of attaching to a nonhuman other using adaptations of accepted measures of human attachment activity (e.g., Keefer et al., 2012). Alternately, other forms of nonhuman support have established domain specific measures of attachment (e.g., Birgegard & Granqvist, 2004; Trub & Barbot, 2016) to identify the effects of nonhuman attachment and explore interactions between interpersonal and nonhuman attachment characteristics. For example, Trub and Barbot generated the Young Adult Attachment to Phone Scale (YAPS) because they identified that in the research surrounding nonhuman relationships with phones, "it is difficult to isolate feelings about the device itself from feelings about its social and technical functions" (2016, p. 664). Their model and research refute the simply symbolic nature of nonhuman relationships to objects as presented by Winnicott (1971), and theorises nonhuman relationships involve unique feelings and attachments which do not need to be defined by faulty human relationships (Trub & Barbot, 2016). This thesis will follow the established trend of adapting interpersonal attachment assessments with intentions of later development of a variety of novel attachment assessments. A critique of self-report measures in attachment will be presented before introducing anthropomorphism, the final theoretical construct applied in this thesis.

Self-Report Measures of Attachment

Nearly twenty years ago, Schwarz (1999) noted that research in social sciences and psychology was dominated by self-report measures, concluding self-report measures are fallible and prone to surprises. Contemporary research, particularly for novice researchers, still relies heavily on self-repot measures and the study of adult interpersonal attachment is no exception. Sibley, Fischer, and Liu (2005) cite Mikulincer and Shaver who highlight that assessing interpersonal attachments using self-report measures is in need of considerable improvement:

> The self-report measures on which our research is based were created through a combination of research on infants, intuition, psychometrics, and convenience. . . . They were all based on item writers' exposure to the attachment literature, but in most cases were not designed component-by-component with a coherent theoretical framework in mind. Given their relative crudeness, it is remarkable how systematic and cumulative our research findings have been (Mikulincer & Shaver, 2003, pp. 140–141).

Crowell and Treboux (1995) remark that weak relations are repeatedly found between adult attachment measures and this poses considerable issues for the validity of self-report measures of adult attachment (Bernier, Larose, & Boivin, 2007). One concern regarding self-report measures in attachment research is interpreting their results relies heavily on the assumption that *claims* made about who participants turn to in times of distress accurately depict who they *actually* turn to, or at least who they prefer to turn to, when encountering actual distress (Rockett & Carr, 2014). Additionally, there are concerns that for certain individuals, particularly highly dismissive individuals, a defensive bias can create a disconnect between actual experiences and self-reports of attachment-related behaviours (Bernier, Larose, & Boivin, 2007).

Given concerns regarding the validity of self-reported attachment measures overall, specific concerns for the application of measures developed in one domain being applied in

another interpersonal domain have arisen (Bartholomew & Shaver, 1998; Mikulincer & Shaver, 2003). It then follows that applying a metric developed to assess adult interpersonal relationships in an abstract, novel, nonhuman domain will encounter similar concerns. Karabenick et al. (2007) share this concern but note adapting an existing metric is more efficient than developing an entirely new one. They champion the use of cognitive pretesting in survey development, adaptation, and modification, but comment it is not always essential (Karabenick et al. 2007). Within this thesis, particular concerns arise regarding item interpretation (Karabenick et al. 2007). Without effectively knowing how participants interpret items, it is difficult to interpret how coherently participants elaborate on the questions posed, and ultimately how often they elected a coherent response. In brief, it is difficult to know whether participants self-reported responses mean what I think they do.

This difficulty is not unique to athlemaphilia and grappling with the limitations of self-report measures and their adaptation has not gone unnoticed in the study of nonhuman attachments. At an interpersonal level, the notion of transference of internal working models (Bowlby, 1969, 1973; Hazan & Shaver, 1987) establishes that our earliest relationships play an essential role in shaping the way we build future relationships (Ahmed & Brumbaugh, 2014; Andersen & Baum, 1994; Brumbaugh, 2017). If it is true childhood attachments to primary caregivers shape adult interpersonal relationships and if we conceive of interactions with nonhumans as relationships, it then follows that our early interpersonal relationships and working models of attachment must also influence how we form relationships to nonhumans as well. Resultantly, initial assessments of attachment to particular nonhumans (e.g., deities, food, pets, places) rely heavily upon established, psychometrically validated assessments of interpersonal attachment, adding to the complexity of our understanding of attachments (Bartholomew & Shaver, 1998). Interpersonal attachment assessments, even when adapted, are not seen as entirely appropriate for the assessment of nonhuman attachments and over

time the development of domain specific measures of nonhuman attachment is required. Several examples of this have been discussed in the previous section. The adaptation of nonhuman measures of attachment was considered for this thesis but given the differing qualities of various nonhuman relationships and concerns over the validity of these metrics, it was decided the first step in assessing athlemaphilia would be based upon established, validated, interpersonal attachment measures. A discussion of the two specific measures employed follows.

In this thesis the use of self-reported measures to assess individual and group interpersonal, as well as athlemaphilic attachments unintentionally followed a historical trend in the study of attachment. At first a categorical assessment, the Adult Attachment Scale, (AAS; Hazan & Shaver, 1987) was employed in Chapter 3 before transitioning to a dimensional measure, the Experiences in Close Relationship Scale-Short Form in Chapter 5. The categorical nature of the AAS was considered too rigid, so continuous ratings were collected in line with previous research (Levy & Davis, 1988). Fraley and Waller (1998) suggest categorical measures like the AAS are not well-aligned with adult attachment experiences and indicate a dimensional model more accurately reflects individual differences. As a result, the ECR-S was adapted for Chapter 5. In response to critiques of the validity of available assessments in attachment literature (e.g., Mikulincer & Shaver, 2003), researchers began to extensively test the psychometric properties of available assessment measures. Sibley et al. (2005) confirmed the psychometric validity of the ECR for assessing adult romantic attachment. Given the relatively crude state of interpersonal assessment metrics available and the lack of an athlemaphilia specific metric, the validity of the ECR was viewed as a strength in justifying relatively valid results could be obtained from the adaptation of the ECR. Concerns regarding the cognitive validity of adaptations of both of these forms of

assessment remain yet, as has been done in other emerging nonhuman domains, the assessment of athlemaphilic attachments has to start somewhere.

Anthropomorphism

One potential explanation for the use of interpersonal relational language to describe nonhuman interactions is anthropomorphism. Anthropomorphism "involves attributing characteristics that people intuitively perceive to be uniquely human to nonhuman agents or events" (Waytz et. al., 2010, pg. 58). Epley et al. (2007) theorise individuals are motivated to anthropomorphise for three primary reasons. The first is referred to as *elicited agent knowledge* and suggests we imbue human qualities onto nonhumans because we are most familiar with humanness (Epley et al., 2007). Second, individuals tend to anthropomorphise to achieve a sense of *effectance*, or control over their immediate environment (Waytz, Morewedge, et al., 2010). Anthropomorphising nonhuman agents allows individuals to apply predictive interpersonal assumptions upon the actions of an otherwise less predictable agent. Finally, the third factor which motivates individuals to anthropomorphise is a desire for *affiliation* or *sociality* (Epley, Waytz, Akalis, & Cacioppo, 2008). Considerable research has been conducted on hoarding behaviours and affiliation motivation (Neave, Jackson, Saxton, & Hönekopp, 2015; Neave, Tyson, McInnes, & Hamilton, 2016; Norberg, Crone, Kwok, & Grisham, 2018) as well as increases in dehumanisation of distant others as a result of intense interpersonal socialisation (Waytz & Epley, 2012).

It is worth briefly drawing parallels between elicited agent knowledge, effectance, and affiliation and experiences of autonomy, competence and relatedness in SDT. Further exploration of these similarities will be discussed in Chapter 4. Finally, Waytz et al. note that "perceiving an agent to be humanlike has important implications for whether the agent is capable of social influence, accountable for its actions, and worthy of moral care and consideration" (2010, pg. 58). It is yet to be understood whether we anthropomorphise

athlemaphilic relationships and in doing so allow sports to exhibit social influence, take responsibility for its actions, or be worthy of our concern.

Interpersonal relationships in sport psychology

It has been nearly 20 years since Wylleman (2000) referred to interpersonal relationships in sport as "uncharted territory," highlighting the lack of research about the impact interpersonal others have upon sporting performance, health, and wellbeing. Since launching the call for increased attention on the influence of interpersonal relationships in sport a considerable number of researchers have joined him in "crossing the chasm" (Jowett & Wylleman, 2006). Interestingly, the application of SDT upon experiences of need frustration and thwarting within sport (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Ntoumanis et al., 2014) has resulted in significant findings for the theory on the whole, positioning sport as an exciting domain for further exploration of SDT.

Furthermore, Jowett and colleagues (Davis & Jowett, 2014; Felton & Jowett, 2013b, 2015; Jowett, Lafrenière, & Vallerand, 2013) have applied both SDT and attachment theory to improve our understanding of the relationships between athletes and coaches. For example, Felton and Jowett (2015) found perceived thwarting of autonomy and competence and perceptions of attachment insecurity in relationships between athletes and coaches were associated with increased negative affect and decreased wellbeing. Additionally research has been conducted on the importance of establishing high-quality friendships within sporting relationships (Adams & Carr, 2017; Carr & Fitzpatrick, 2011; A. L. Smith, 2003; Weiss & Smith, 2002). For example, Adams and Carr (2017) found increased competition between youth academy football players adversely affected their capacity to form high-quality relationships within their teams. Suffice to say our understanding of interpersonal relationships in sport is no longer "uncharted territory."

Thesis Overview: Core Proposal

Despite ongoing research regarding interpersonal attachments in sport, sport psychology has not fully leveraged "attachment theory to enhance our understanding of contemporary research issues" (Carr, 2009b, p. 97). Furthermore, Carr hopes to "facilitate discussion, debate, and the formulation of new ideas and research on the interface between attachment theory and sport, and, exercise, and wellness" (2012, p. 5). Keefer et al. suggest nonhuman research continues to "probe the boundaries of what constitutes an attachment bond" (2014, p. 529). Therefore, it follows that studying nonhuman interactions, relationships, and attachments in sport broadens the scope of attachment theory while facilitating discussion of new research concerning athlemaphilia.

Understanding how the social environment affects motivation in sport has been explored using perspectives provided by self-determination theory (e.g., Frederick & Ryan, 1995) and, more recently, attachment theory (e.g., Carr & Fitzpatrick, 2011; Davis & Jowett, 2010; Felton & Jowett, 2015). Whilst the aforementioned work focuses on interpersonal relationships, there has been an increase in the application of attachment theory to understand the support we derive from nonhuman relationships (Keefer et al., 2014). This thesis amalgamates self-determination and attachment theories with the three-factor theory of anthropomorphism to suggest athletes can form athlemaphilic relationships which are experienced similarly to interpersonal attachments and can predict individual wellbeing and motivation to engage in sport.

Thesis Overview: Programme of Research

Immediately following this introduction is a discussion of the methodological position taken for this research (Chapter 2). The resulting mixed methods programme of research employed three studies to develop our understanding of athlemaphilic relationships and demonstrated that they exist and appear to impact up wellbeing and motivation. The first

study (Chapter 3) explored *whether* athletes experience their interactions with sports as similar to their interpersonal relationships as well as *how* interactions with sports are associated with wellbeing. Study one (Chapter 3) found athletes experience their athlemaphilic and interpersonal relationships similarly, though athlemaphilic relationships involved less affection, security, intimacy, and communication and were more likely to provide opportunities for growth, a higher feeling of investment, greater physicality, and more obsession. Results also demonstrated that when controlling for the effect of interpersonal relationships, athlemaphilic relationships predicted variation in relatedness and environmental mastery.

The second study (Chapter 4) utilised interpretative phenomenological analysis to examine *why* individuals might turn to sport for support. Study two identified athlemaphilic relationships change a variety of elements in an athlete's life, are viewed as flexible and therefore enduring, and athletes are able to experience a sense of omnipotent control in their athlemaphilic relations. The experience of omnipotent control in a nonhuman relationship brought about comparisons to attachment to God (Birgegard & Granqvist, 2004), an interest in the extent to which athletes anthropomorphise (Epley et al., 2007) sport, and if a trait desirability of control will predict the likelihood of an athlete turning to sport for support in times of need.

The final study (Chapter 5) tested *how* individuals primed with interpersonal insecurity might recuperate a sense of belongingness by seeking out their athlemaphilic relationships. Results revealed individuals were able to recuperate a sense of positive affect from engaging with an athlemaphilic other and thinking about athlemaphilic partners decreased feelings of negative affect. Furthermore, individuals who sought athlemaphilic partners the most experienced significant decreases in loneliness. Finally, trait-based anthropomorphism was

not associated with attachment to sport but increases in the desirability of control was associated with decreased athlemaphilic attachment avoidance.

Overall, the programme of research within this thesis demonstrates athletes are able to generate support from their athlemaphilic relationships. At times, the support of athlemaphilic relationships compliments interpersonal relationships. However, athlemaphilic relationships have also demonstrated the ability to compensate for shortcomings in interpersonal relationships. As such, this thesis challenges the need for interpersonal connection to satisfy a sense of relatedness according to self-determination theory while broadening the scope of attachment theory by demonstrating the existence of athlemaphilic relationships. Continuing to explore these relationships is necessary to better understand what motivates us to engage, or disengage, in sport, as well as how we generate a sense of health and wellbeing.

CHAPTER TWO

Methodology

Love is an untamed force. When we try to control it, it destroys us. When we try to imprison it, it enslaves us. When we try to understand it, it leaves us feeling lost and confused.

- Coelho (2006, p. 79)

Introduction

In this chapter I will construct a reflexive account of my ontological, epistemological, and methodological perspective over the course of the exploratory sequential, and multiphase mixed method program of research (Creswell, 2009). This will illustrate the impact of my personal, interpersonal, academic, and paradigmatic perspectives upon the design of this research and the theoretical arguments made as a result of this research. While presenting my current views will help to understand and assess this body of work, I would like to emphasise that the views expressed below are just that; they are my *current* views. They have changed over the course of this thesis, and I expect them to change again as my, and our, understanding of understanding continues to develop.

To begin, I will draw upon the ideas of methodological pluralism (Moses & Knutsen, 2007) and methodological bricolage (Denzin, 1994; Denzin & Lincoln, 1998) to present my conceptualisation of mixed methods research. I will then justify why I have employed a mixed methods research design before presenting that design and suggesting other influences on this research. I will conclude this chapter by presenting the view I currently hold of truth, reality, and knowledge as a result of this research process.

How Do I View Mixed Methods?

The best way I can describe my view of mixed methods research (and mixed methods researchers) is to coin the phrase ‘methodological polyamory’. Within the arena of political theory Shannon and Willis (Shannon & Willis, 2010) present a case for theoretical polyamory, suggesting we apply “the lessons learned from how we love to how we think about politics” (p. 437). Taormino defines polyamory as “the desire for or the practice of maintaining multiple *significant, intimate* relationships simultaneously” (2008, p. 71). Shannon and Willis use this definition to champion a non-normative perspective of politics which resists finite categorisation and allows for the liberation of political thinkers (2008).

They question why some may insist on "dismissing and condemning entire theoretical perspectives…rather than taking what is valuable from a variety of systems of thought and not limiting ourselves to one" (Shannon & Willis, 2010).

Ritchie and Barker identified that when romantically polyamorous individuals feel "there aren't words for what [they] do" (2006) in dominant discourses, they make up words to describe their experience. Similarly, I would like to make up a word which champions a polyamorous position regarding methodologies. The crux of methodological polyamory is that it is valuable to be methodologically fluid, to have relationships with both naturalism and constructivism, and, to some degree, beneficial to draw upon various methodologies simultaneously to satisfy the variety which exists in our intellectual ponderings. There are three important points I would like to make in order to justify my position.

First, just as polyamorous relationships can involve diverse or similar participants, with a mixture of genders, identities, and roles, so can methodological polyamory. Sandelowski (2014) suggests a study composed of two qualitative or two quantitative methods would not classify as mixed-methods research, but rather as a mono-method study. In the realm of methodological polyamory, there is no need for such a distinction between mixed or mono method studies. As soon as the number of methods, perspectives, or methodologies employed in a study exceeds one, the study (and the researcher) has entered into methodological polyamory. In this programme of work, I have employed correlation based quantitative, phenomenological qualitative, and experimental qualitative methods, positioning the work, and myself as methodologically polyamorous.

Second, though there are many forms of interpersonal polyamorous relationships, one concept which adds considerable value to the presentation of methodological polyamory is the selection of a primary partner within a polyamorous landscape: "[S]ometimes our personal attachments to a particular person are so strong that it just makes sense to nestle in

with that person and to make them the center of our romantic attachments" (Shannon & Willis, 2010). Shannon and Willis also note that "one of the benefits of polyamorous arrangements is having multiple partners to meet the needs that one's primary may not" (Shannon & Willis, 2010). This concept can be applied to both a piece of research, and a researcher. A polyamorous study can be comprised primarily of constructionist methods, analysis, and interpretation, while still involving elements of a more positivist perspective to meet the needs of the study which cannot be met by the primary perspective alone. Similarly, a researcher can be primarily constructivist in the way they think, while appreciating traditionally positivist methods (e.g. surveys, statistics, and experiments). In this thesis, I employ mostly positivistic methods, but consider the data in a primarily constructivist perspective.

Third, referring back to Taormino's definition of polyamory, it is essential to note that for methodological polyamory to comply with this definition, polyamorous researchers must have *significant* and *intimate* interactions with different methods. Incorporating the two points above, these methods do not need to come from paradigmatically different perspectives, nor do they need to hold equal favour in the research. However, it is essential the researcher possesses an in-depth personal knowledge of the methods (and methodologies) employed. In light of this sentiment, McKim notes "[i]t is important to understand the perceived value of combining two distinct methodologies, especially given the added resources, time, and expertise required to conduct a mixed methods study" (2017, p. 202). Methodological polyamory requires intense investment to obtain sufficient intimacy, and in order to justify combining perspectives, the perceived value of doing so must be significant.

Finally, it is worth noting that adding partners in interpersonal polyamorous relationships is a process which can be quite difficult internally (e.g. establishing boundaries within relationships, combatting jealousy) and externally (e.g. overcoming stigma, organising

legal affairs). Venkatesh, Brown, and Bala paraphrasing Mingers (2001) note "[r]esearchers have to overcome considerable paradigmatic, cultural, cognitive, and physical challenges to be able to conduct mixed methods research" (2013, p. 26), thus positioning methodological polyamory as tough work.

Having outlined some of the key principles of methodological polyamory, I would like to present several perspectives which have influenced its development and the way I view mixed methods research. Specific focus will be given to the concept of 'methodological pluralism' as depicted by Moses and Knutsen (2007), and 'bricolage' as championed by Denzin and Lincoln (1998). Throughout the following presentation, I will highlight elements where other concepts of mixed methods research overlap with my conception of methodological polyamory.

Influencing paradigms I: Methodological pluralism. Moses and Knutsen (2007) promote the idea of methodological pluralism, often referring to an analogy regarding social scientists as good craftspeople. They contest individuals who ascribe to the notions of methodological pluralism can "let the problem at hand determine which toolbox and tool is best suited for the job" (Moses & Knutsen, 2007, p. 290). They continue, stating such craftspeople can solve any number of different problems as a result of the array of tools they have at their disposal as well as their ability to identify which tool is most appropriate to resolve the problem at hand (Moses & Knutsen, 2007, p. 161). A crucial element of their depiction of methodological pluralism is that it does not presuppose any method, or tool, is meant exclusively for a specific task, liberating researchers to employ methods more freely between methodologies. They acknowledge some methods work in both positivism and constructivism, while others require more framing to succeed.

To clarify, methodological pluralism is complicated and requires intimate and in-depth knowledge of multiple tools. Moses and Knutsen cast methodological pluralists as

"methodological jacks-of-all-trades; masters of none" (2007, p. 290). They acknowledge methodological pluralism is tricky, particularly when attempting to unify differing paradigmatic perspectives. In response to this, they call upon Richard Rorty's recommendation (with respect to reconciling different traditions in liberal thought) "to look at the relations between two methodologies 'as being like the relations between two types of tools – as little in need of synthesis as paintbrushes and crowbars'" (Rorty, 1989, p. xv, as cited in Moses, & Knutsen, 2007, p. 290). They continue this analogy to discuss the need for, and limitations of, specialist, suggesting one can become a master of wielding a hammer. This is a subtle, yet critical point to highlight; every researcher has different tastes, preferences, and skills. Some researchers are well suited to wield multiple tools and to be methodologically polyamorous, while others excel by specialising and becoming experts in one methodology.

Many elements of Moses and Knutsen's discussion of methodological pluralism mirror elements of methodological polyamory. Instead of tools, polyamorous methodologists will have partners (e.g., interviews) and relationships (e.g., interpretivism). They will understand which relationships can provide them with appropriate solutions to the problem at hand. They can establish hierarchies, ostensibly specialising in one relationship over others. They are also aware of the fact there are times when all members of a polyamorous relationship can happily cohabitate under one roof, while there are certain circumstances where different partners are incompatible.

Influencing paradigms II: Bricolage. Levi-Strauss presents the concept of a researcher as a bricoleur, a "jack of all trades, or a kind of professional do it yourself person" (Levi-Strauss, 1966). Denzin and Lincoln (1998) draw upon this definition to discuss how a bricoleur works, explaining that they create a solution for the problem at hand, given the resources available. Similar to Moses and Knutsen (2007) (particularly their depiction of

Rorty's toolbox) the language used to discuss bricolage and bricoleurs revolves around the use of tools, noting the construction created by a bricoleur will take on "new forms as different tools, methods, and techniques are added to the puzzle" (Denzin & Lincoln, 1998, p. 3). Additionally, Denzin and Lincoln (1998) quote Nelson, Treichler, and Grossber who state:

> "The choice of which tool to use, which research practices to employ, is not set in advance. The 'choice of research practices depends upon the questions that are asked, and the questions depend on their context', what is available in the context, and what the researcher can do in that setting" (1992, p. 2)

This sentiment mimics the sentiment of Mason when she said "our ways of seeing, and of framing questions, are strongly influenced by the methods we have at our disposal, because of the way we see shapes what we can see, and what we think we can ask" (2006, p. 13). Though Mason is not explicitly speaking about bricolage, both of these quotes help to illustrate a crucial difference between the jacks-of-all-trades presented by Moses and Knutsen and Levi-Strauss's. Bricolage has a greater sense of contextual influences, and the availability of particular tools. Moses and Knutsen's craftspeople bring the right tool bags to the job site, thus they would not be found painting a wall with a crowbar; bricoleurs might.

Kincheloe (2001) remarks that bricoleurs put together the pieces they have as best they can, recognising a bricoleur might not have all of the pieces, and the way they put them together might not be perfect. In spite of this, Kincheloe champions bricolage as a form of deep interdisciplinarity capable of transcending formulaic methodologies by confronting and learning from methodological differences in order to:

> "expand the researcher's interpretive horizons. Bricolage does not simply *tolerate* difference but *cultivates* it as a spark to research creativity. Here rests a central contribution of the deep interdisciplinarity of the bricolage: As researchers draw together divergent forms of research, they gain a unique insight of multiple perspectives. Thus, a complex understanding of research and knowledge production prepares bricoleurs to address the complexities of the social, cultural, psychological, and educational domains. Sensitive to complexity, bricoleurs use multiple methods to

> uncover new insights, expand and modify old principles, and re-examine accepted interpretations in unanticipated context" (Kincheloe, 2001, p. 687).

This quote, and the concepts it portrays, strike many personal chords for me. I am excited by difference and creativity. I am content to exist in a liminal state between disciplines (and methodologies) as doing so allows me to make connections individuals entrenched in a particular field might not make on their own. I often classify myself as an interdisciplinary researcher, and though I am not bold enough to suggest I possess a complex understanding of everything (if accomplishing such a task is humanly possible), I do believe the hodgepodge of my academic background and personal experiences uniquely equips me to address certain elements of our complex world. Later in this chapter I will reflect upon my background, and how it has influenced this thesis.

Connecting bricolage back to methodological polyamory brings to the forefront the necessity to make do with the relationships available. We do not have every relationship, or tool, at our disposal at every moment, and often need to make do with what we have. For example, in study three I did not have access to a surveying tool capable of randomising participants because of cost, tools available in the department, and other issues. In order to make do with what I had available, I drew upon an old relationship I had with html coding to create my own welcome page for the study, complete with a randomiser. One-hundred years ago, a researcher would not have thought about using a web-based programming language to eschew issues of participant randomisation. Similarly, at some time in the future, such tools to randomise participants could be freely available or everyone will know how to create them, making doing so unremarkable.

Additionally, I can only be in a relationship with the partners I am aware of, and methodological polyamory allows for a realignment of relationship hierarchies over time. This is important to note, as it does not constrain researchers to a particular partner (paradigm) indefinitely. While I was raised in a positivistic environment, and was content

there, my feelings changed upon exposure to more constructed forms of acquiring knowledge. I now find myself somewhere between the two positions, reflecting how "it may be more useful to think of these two methodologies as end points on an imaginary continuum, where individual authors find themselves at home some place between them" (Moses & Knutsen, 2007, p. 7).

A defence against criticism of mixed methods research. Echoing many of the sentiments above, Greene presents mixed methods research as a form of social inquiry which ''involves a plurality of philosophical paradigms, theoretical assumptions, methodological traditions, data gathering and analysis techniques, and personalized understandings and value commitments'' (2007, p. 13). Mixed methods is viewed as intuitive and practical (Gibson, 2016), as well as eclectic, plural, diverse, fluid, iterative, and focused on the research question (Denzin, 2012). Fetters notes that combining qualitative and quantitative research is not new, but modern mixed methods is characterized by a systematic approach to research (2016, p. 9); the systematic approach to mixing methods is relatively novel.

> Despite such positivity surrounding mixed methods researcher Denzin concludes:
>
> "There are multiple criticisms of MMR. We are 30 to 40 years deep into a multiple, mixed methods discourse, and we still can't define the method or be clear on its benefits. Proponents of the incompatibility and incommensurability theses contend that qualitative and quantitative methods rest on different paradigm assumptions and hence cannot be easily combined. Others find a pervasive postpositivist bias with the MMR discourse, noting the tendency to subordinate QUAL to QUAN. Some say that MMR designs are too expensive, and still some note that a superficial methodological bilingualism underlies the call for MMR" (2012, p. 82).

McKim (2017) notes that criticisms also exist for both qualitative and quantitative methods. Thus, exposing critiques of mixed methods research is seen as a means of fairly depicting it as similarly flawed as either approach alone. The remainder of this section will outline various critiques of mixing methods presenting the case that I did not engage in mixed

methods research because the method is perfect, but rather because it was most appropriate for my research questions. While Denzin's list above is quite condemning, he presents it as a means of positioning bricoleurs as adept at addressing many of these complex issues. Additionally, "some contend the incompatibility thesis has been largely discredited because researchers have demonstrated it is possible to successfully use a mixed methods approach" (Denzin, 2012, p. 81).

Sandelowski offers a harsh criticism of mixed methods research stating it is "arguably yet another in a long line of methodological trends in vogue in the guise of methodological innovation" (2014, p. 3). Sandelowski continues on to say mixed methods research is simply the repackaging and representation of perspectives, methodologies, analyses, etc. (2014, p. 3) suggesting mixed methods research does not add anything which is not already available methodologically. In response to this, Fetters (2016) outlines the emergence of a systematic approach to combining perspectives, methodologies, strategies, etc. as a hallmark characteristic of modern mixed methods.

Kincheloe notes "[d]isciplinarians maintain that interdisciplinary approaches to analysis and research result in superficiality; interdisciplinary proponents argue that disciplinarity produces naïve overspecialization" (2001, p. 683). I agree with some of the criticisms of interdisciplinary research, particularly when carried out by a single researcher (Denzin, 2008), and acknowledge I do not possess an absolute understanding of every concept depicted in this thesis. However, I disagree with the negative tone of these critiques. By sacrificing depth in a singular area, I gain the ability to personally compare between disciplines. Constructivists employ comparisons "to prise open our imaginations – to consider the possibilities and to encourage new readings and understandings of the empirical literature" (Moses & Knutsen, 2007, p. 240). I share in this view of research and see utility in

my ability to personally connect seemingly disparate bodies of literature in a way that encourages reconsideration of the boundaries between disciplines.

Not only do I agree with wider criticism of mixed methods research, but I also question how efficient me approaching research in this way is for advancing the total body of knowledge (if such a body exists?). Would it not be best for me to follow the individual method of inquiry which I most excel at, and to invite collaboration and challenge from those who perform others optimally? I tie this thought back to the principle of comparative advantage (Hunt & Morgan, 1995) which stems from my former academic experiences in economics. If we assume all researchers can produce both types of research, but at different labour costs, and if I were bold enough to presume I have an absolute advantage in conducting both types of research, then the principle of comparative advantage would suggest I will not produce everything on my own. Instead, I will produce what I have a comparative advantage in and will then engage in trade with others because it is best for the entire system, or body of knowledge, and not just my own personal accumulation of knowledge. While a thorough discussion of the comparative advantages of a researcher employing one method over another, or both, is beyond the scope of this thesis, my conceptualisation of this dilemma is, to the best of my knowledge, a unique critique of mixed methods research and one which I invite other researchers to consider.

Despite these concerns, to conclude this section, I would like to draw upon an analogy presented by Fetters (2016). He offers a compelling comparison between modern mixed methods research and the horseless-carriage of the early 20th century (Fetters, 2016). Fetters suggests that initial scepticism surrounding mixed methods is warranted, but the discipline has a world of potential, and could become the modern-day vehicle for creating knowledge. I share in this view of mixed methods as a means to an end and a progression upon common

thinking. Just as the horseless carriage is still evolving today, mixed methods research may falter, may endure, or may evolve into a more efficient form of research.

Overview: Why I Have Used Mixed Methods

Pursuing a mixed methods program of research was not my first choice. This is not linked to the criticism above as much as it is to my previous academic experience as an actuarial scientist. Later in this chapter I will discuss when my thinking changed; here, I build a case to justify mixed methods research was the best choice of method currently available to address my research questions.

Gibson notes that despite the rise in popularity of mixed methods research in the academy, it "does not currently occupy a prominent place within sport and exercise literature" (2016, p. 382). The current thesis is part of the growth in popularity of mixed methods in the academy at large (Denzin, 2010), and a response to calls to apply such analysis within sport and exercise science (Culver, Gilbert, & Sparkes, 2012; Sparkes, 2015). Additionally, a mixed method study is well suited to the current work because of the complex nature of its topic of investigation: relationships. The need for complex methods when studying relationships is well expressed by Mason:

> "to understand how relationships work and are done, what they mean, how and why they endure or do not, how they are remembered, emulated or reacted against and in general what matters in and about them, we need a methodology and methods that open our perspective to the multi-dimensionality of lived experience. To do that, I want to argue that we need to think creatively and multi-dimensionally about methods, and about our research questions themselves…. simply to measure the frequency of visits between mothers and daughters, or even what they do together and their views of the quality of their shared time, will not capture the 'heart and soul' – the essence or the multi-dimensional reality – of what is taking place" (2006, pp. 12–13).

Below, I will write a similar hypothetical example about my relationship with volleyball to serve two purposes. First, to align my sentiments about the complexity of my

relationship with volleyball to Mason's discussion of her relationship with her mother. This will suggest a mixed method research design is suitable for an attempt to capture the 'heart and soul' of a relationship of this type. Second, I want to expose my proximity to the subject being studied to the readers as a means of presenting the influence my subjective experience has had upon my research design and interpretation. I will address issues of subjectivity later in this chapter.

My relationship with volleyball is characterized by the kinaesthetic and physical demands of playing the game. The thrill of taking a powerful swing is coupled with the smell of sweat, the anxiety of competition, and the pressure of coming back down to earth (both physically and emotionally). My whirlwind romance with volleyball began by accident. I wanted to get closer to my friends who played volleyball. Their coach noticed my keen interest and awarded me an official position as the team's student assistant coach, despite my lack of knowledge of the game. My desire for friendship quickly became a hunger for learning - I was hooked. Nothing could separate me from my team, our gym, or my identity as a volleyball coach. My passion for coaching swiftly grew into a desire for performance. Learning about the game quickly gave way to hours of training, which in turn gave way to even more hours of playing. I played anywhere I could: in the gym, on the grass, at the beach. The geographic location of where I played the game had little bearing on the connection I felt to the game. Though I have never felt a physical connection – I never felt volleyball embracing me – and I never heard volleyball calling out my name, I cannot deny I feel something for the sport. At present my relationship with volleyball is strained because of clashes with players in my immediate environment and nagging injuries weighing on my back, but my affection transcends such corporeal dilemmas. At the same time, I worry about the looming certainty that I cannot play forever and whether my relationship endures is not entirely in my control. When my relationship does come to an end, I will miss the people and

places I've met through the game, as well as the support, security, and structure the sport has provided me, but most of all, I will miss volleyball.

I am aware of the conceptual and theoretical wrangles of mixing methods, but believe "lived experience transcends or traverses them and, therefore, so should our methods" (Mason, 2006, p. 12). In the same way charting the hours of time Mason spent with her mother would not depict the 'heart and soul' of their relationship, tallying the number of matches I've won or the hours I have spent training would not accurately represent the many dimensions of my relationship with volleyball. Moving beyond Mason's hypothetical scenario, my relationship with volleyball is met with more scepticism than the relationship of a mother and daughter. This in turn has added pressure to find others who view their interactions with sport similarly, as well as others who feel similar connections to other forms of nonhuman support.

Finally, Bryman (2006) concludes that being explicit about the rationale for mixing methods in research, and acknowledging the process is rarely linear, are important facets of examining mixed methods research. Additionally, Sandelowski notes:

> "strength and weakness are not attributes of research approaches, but rather judgements researchers make about them… The choice of combination of elements to use must be defended as meeting the specific objectives of a study, and it is the choice researchers make that will be judged as strong or weak" (2014, p. 4).

By presenting the narrative above as an explicit rationale for this study, it is my hope the design presented below will be seen as a selection of strong choices to address my research objectives.

Extended justification of mixed methods research. Gubrium and Holstein comment a "world comprised of meanings, interpretations, feelings, talk, and interactions must be scrutinised on its own terms" (1997, p. 13). Atkinson expresses a similar sentiment stating "if humans accumulate knowledge in a variety of ways, then so should researchers" (2011, p.

118). Silk, Andrews, and Mason assert “the critical interrogation of the sporting empirical, by its very nature, cannot treat the dynamism and complexities of the physically active human being as a set of static, isolatable, measurable, mechanical, artificial and observable variables” (2005, p. 5). The world of relationships with sport is complicated and unknown; thus, investigating it merits a mixing of methods.

Additionally, Moses and Knutsen offer one possible rationale for my initial reliance on more positivist approaches, suggesting “perhaps analysts simply tend toward one ontological view (or the other) because they are brought up to see the world in these term” (2007, p. 289). However, over the course of this degree, my perspective has changed, and I now tend towards a more constructivist stance. Shannon and Willis had a similar experience, recognising social anarchism as their primary partner, noting “[a]narchism is the political theory that radicalised us, and we have a special bond and attachment with it because of that” (Shannon & Willis, 2010). Relatedly, we do not learn about paradigms in a vacuum, but rather via socialisation within specific social context (Moses & Knutsen, 2007; Sparkes & Smith, 2013). Given my academic experiences prior to embarking on this degree, I feel the openness of my supervisory team and academic department to the mixing of methods has ‘radicalised’ me, forging a special attachment to such forms of study.

Furthermore, outside of my immediate surroundings, it is possible I am responding to larger trends in graduate students understanding of research, as well as within the academy at large. McKim notes graduate students “supported this stance in the literature mentioning mixed methods is critical in understanding complex phenomena because it allows readers to understand and explain” (2017, p. 213). Additionally, Denzin reflects: “I am impressed. There is an energy here—new handbooks, journals, annual conferences. This energy can be matched by only a few other interpretive communities and I am not being generous here” (2012, p. 20). Naturally such an energy has its allures, particularly for novice researchers.

Perhaps this allure can account for some of the findings of McKim (2017) as well as my own desire to take part in such a movement.

Accessing information exclusively, or efficiently? Shannon-Baker suggests "[t]he purpose of mixed methods research is to provide a more complex understanding of a phenomenon that would otherwise not have been accessible by using one approach alone" (2016, p. 321). McKim (2017) summarises others who posit mixed methods research is the only way to be certain of findings (Coyle & Williams, 2000; Sieber, 1973), interpretation (Morse & Chung, 2003; Teddlie & Tashakkori, 2003), and depth of understanding (Hurmerinta-Peltomaki & Nummela, 2006). It is worth noting such sentiments are not reserved to those within mixed methods, as Gibson notes:

> "Within my own research I have seen qualitative researchers present unhelpful, disingenuous, and derisory caricatures of quantitative research and quantitative researchers bewildered, dismissive, and patronizing about how and why qualitative research is conducted. O'Cathain, Murphy, and Nicholl (2008) document how quantitative researchers often feel that qualitative researchers do not respect their expertise and work, contrary to the dominant narratives in qualitative methods literature. Indeed, disappointingly, the most common manner in which you will hear paradigmatic terminology outside of texts like this is pejoratively. I frequently hear in classrooms, seminars, conferences, and corridors interpretivist researchers casually dismissing not only individual studies but also entire disciplines as positivistic. Such smug, apparently self-sufficient yet ill-thought-through dismissal of any research paradigm is superseded in its unhelpfulness only by its spuriousness" (2016, p. 383).

I take an issue with assertions of exclusive access to information in any paradigm. Instead, I argue mixed methods research allows for more efficient access to a complex understanding of particular phenomena which could hypothetically be uncovered by a mono-method approach, at the expense of cost and quality. Returning to the analogies above, I question if a handyman can paint a wall with just a brush. They can, though opening their can of paint could prove to be difficult and time consuming, potentially creating a mess in the

process. Could the same handyman paint a wall with just a crowbar? They could, though the perceived quality would suffer, and the amount of time taken to do so would be excessive. It is important to point out that the perception of a wall painted with a brush as superior to one painted with a crowbar is socially constructed (Gergen, 1999). Given the current context, definitions of quality, and the tools we know of, the best-case scenario would be for the handyman to have access to both a crowbar and a paintbrush. Doing so would make the job of covering the wall more efficient and easier, but not exclusive.

Mason explains that in her view "qualitative research has the explanatory edge precisely because it is concerned with explanation in a wider sense than measurement and causation" (2006, p. 16). Moses and Knutsen note "[b]y comparing thick, in-depth and informed stories, constructivists are able to see things that are easily obscured by the naturalist approach" (2007, p. 244). They also present Vogt's thoughts that "nonquantitative data such as transcripts or videotapes are often coded or translated into numbers *to make them easier to analyse*" (1993, p. 59, as cited in Moses, & Knutsen, 2007, p. 250, their emphasis). For me, these presentations of having an edge, uncovering something which is easily obscured, or rendering something easier to analyse, give more credit to opposing views than broad-brushed comments about superiority and exclusivity. It is in this delicate manner that I am attempting to present a mixed methods approach as the most effective and efficient way of addressing my research question given my limited funds, finite amount of time, concerns for ethics, and other contextual concerns. I did not choose a mixed methods design because it is undeniably the best method for exploring my research questions in every context.

Before moving on to address issues of subjectivity, I would like to take a moment to return to the idea of methodological polyamory, and in fact a crucial element of this thesis as a whole. I question how efficient it is to force a partner to change if they are not meeting your needs. For example, if an important interpersonal relationship is not providing adequate

physical support, forcing that partner to change may be quite difficult. Instead, finding another form of support which can satisfy the need to be physical, possibly sport, allows you to maximise satisfaction efficiently, while potentially avoiding difficult situations with your primary partner. Just as a handyman can force a paintbrush to open a can of paint, an individual can force a relationship to change, but doing so involves risks and costs. Similarly, a researcher can force one method to defy its natural ability but doing so is inefficient. Instead, in certain situations, I argue methodological polyamory presents an opportunity to achieve maximal satisfaction, at a minimal cost, optimising the efficient use of tools and time.

Immersion, empowering subjectivity. Another important reason why I engaged in methodological polyamory is because doing so allows me to work "back and forth between a variety of tension points, such as etic–emic, value neutrality–value committed" (Denzin, 2012, p. 81). As previously mentioned, I have a relationship with volleyball and an attachment to what I am studying. Additionally, relationships with sports are not yet seen as forms of legitimate social (or para-social) support. In order to expose what I observed happening to myself and my peers in a way which allows others to comfortably consider whether they are experiencing a similar type of relationship I needed to be able to oscillate between the specific and the general experience of relationships with sport. Methodological polyamory afforded me this ability.

Additionally, Shannon-Bakers' presentation of intersubjectivity is beneficial to mixed methods researchers as a means of breaking down the dichotomous view of complete objectivity or complete subjectivity (2016, p. 325). I cannot remove my attachment to the game, nor the influence that attachment would have upon the most distant form of experimental study. Similarly, I am attempting to be reflexive in this chapter, and across the thesis as a whole, but am aware I cannot completely divulge my every thought, feeling, or

emotion in prose. Sparkes and Smith (2013) quote Vannini, Waskul, and Gottschalk who note "reflexivity means seriously taking into consideration the researcher as a mindful body; a body that is obviously and inevitable present in the research process" (2012, p. 78). As much as I can see the hypothetical utility of removing myself from my research, I cannot do so and that is acceptable within a mixed methods research design.

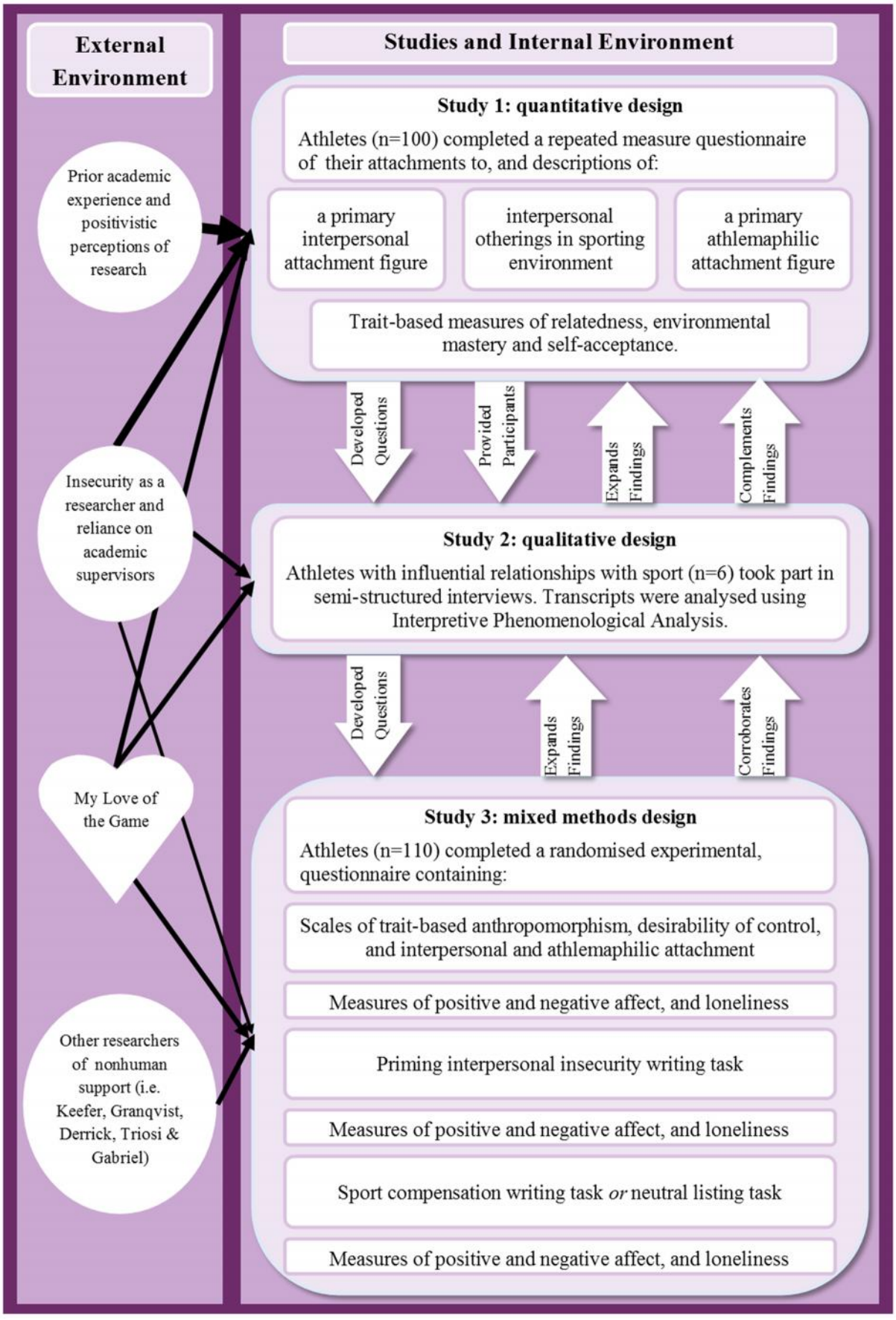
A final note before moving on to discussing the design of this study is to once again highlight a benefit of interpersonal polyamory which I was able to experience within methodological polyamory. Shannon and Willis remark that a "benefit of having polyamorous relationships for us is the chance to experiment in a variety of ways with desire" (2010, p. 439). As will be discussed in the following section, I began this thesis thinking differently than I do now and a large part of the change in my perspective resulted from my polyamorous experimentation with different methods and ways of thinking. Having the opportunity to try out various methods during the course of this thesis has presented me innumerable opportunities for growth as a researcher, a future academic, and as a person.

Research Design

This study utilized a sequential explanatory design (Creswell & Plano Clark, 2011). I will begin by presenting a diagram of the research conducted, including a depiction of external forces which have influenced my thinking, and concurrently the research design. I will conclude this section with a discussion of common elements shared by each study, before discussing my views on epistemology and ontology. Venkatesh, Brown, and Bala (2013) outline seven purposes for mixed methods research: complementation, completeness, development, expansion, corroboration or confirmation, compensation, and diversity. Development, expansion, complementation, and corroboration are most relevant to this study, and each will be discussed below.

Development is defined as “questions for one strand emerge from the inferences of a previous one (sequential mixed methods), or one strand provides hypotheses to be tested in the next one” (Venkatesh, Brown, & Bala, 2013, p. 26). Considering the sequential nature of this study, having each study develop from one to the next is seen as a strength. Expansion reflects when “mixed methods are used in order to explain or expand upon the understanding obtained in a previous strand of a study (Venkatesh, Brown, & Bala, 2013, p. 26). Again, each study sought to expand upon the result of the previous, helping to explore or explain previous findings. Complementation involves gaining “complementary views about the same phenomena or relationships” (Venkatesh, Brown, & Bala, 2013, p. 26). Study two sought to gain a more personal view of the experience of being in a relationship with sport, intending to complement the results found in study one. Finally, corroboration is seen to “assess the credibility of inferences obtained from one approach (strand)” (Venkatesh, Brown, & Bala, 2013, p. 26). Study three sought to corroborate the link between the intensity of athletes’ relationships with sport and respective athlete’s desire for control found in study two.

Figure 1: Research design diagram



Concerning the ‘External Influences’ it should be noted that arrows connecting a particular influence on a specific study reflect the existence and perceived strength of each influence. For example, over time my insecurity abated as did my reliance upon my supervisors, while my love of the game remained consistent in its influence upon the questions I was asking and the designs I then employed. I will explain more about these and other influences below.

Reflexively, I have identified four potential reasons for why my first study asked the questions it did, resulting in the use of a quantitative method. First, my previous academic experiences were entrenched in a positivist environment. Second, I was afraid of my subjectivity, in part due to realisms position “as the most widespread and institutionally revered form of academic knowledge acquisition” (Atkinson, 2011, p. 64). Additionally, I was comfortable with the necessity to demonstrate internal and external validity empirically and saw the use of quantitative methods as a means of increasing neutrality by distance myself from those being researched. Finally, I was hesitant to utilise qualitative methods because assessment of qualitative research varies, which can be distressing for students (Atkinson, 2011; Sparkes & Smith, 2013). Considering these four elements in unison exposes my initial perceptions of research as well as my sense of insecurity regarding qualitative research. That insecurity led me away from qualitative methods at first, only to later embrace the uncertainty for the potential it provides.

Furthermore, given my immersion in the research environment, issues of subjectivity are particularly pertinent to this program of research. Initially I shied away from relying upon my experiences as an athlete and attempted to create what I view to be an impossible distance from my research. Then I was introduced to the emic perspective (Sparkes & Smith, 2013), and my thoughts about subjectivity changed. If other researchers intentionally create immersion in a subject area to better understand it, and do so credibly, I concluded I would be

remiss to not utilise the ‘insider’ knowledge I naturally have. Interestingly, in the margins of Sparkes and Smith’s text, I have written a note to myself which reads “I’m probably going to have to be deductive ☹.” I bring this up as reflecting back on why I wrote it, all I can conclude is that I felt insecure as a researcher and saw induction as something reserved for more experienced and therefore credible researchers.

The last large external influence to discuss is that of Keefer, Granqvist, Derrick, and Triosi and Gabriel upon the design of my third study. Their work outlining the various forms of nonhuman support, as well as establishing new and emerging types of support inspired me to transfer some of their ideas onto my own perception of athletes’ relationships with sport. Doing so has helped me to explore “as fully as possible the situational contours and contexts of social processes, and then [to make] strategic and theoretically driven comparisons with similar processes in other contexts, or similar contexts where different processes occur, to generate explanations” (Mason, 2006, p. 16). Engaging with other contexts where similar processes were occurring allowed my confidence as a researcher to grow and will prove invaluable in generating a more complete explanation of athletes’ relationships with sports.

Recently, McKim (2017) explored graduate student’s perception of mixed-methods research, suggesting they: a) value it above research which is strictly quantitative or qualitative; b) consider it to be rigorous, and; c) believe it provides deeper insights into the meanings of phenomenon. While I do not completely agree with the first finding, the remaining findings align with my thoughts, pacifying some of my insecurity. Reading that my peers (graduate students) feel similarly to me and McKim (2017) has been able to link our shared sentiments to existing literature allowed me to calm my previous anxiety.

Looking at the design as a whole, initially I was afraid I was too ‘green’ to conduct respectable constructivist research, encouraging the use of a positivist approach to my first study. As a result of conducting that study and uncovering the results I did, my desire to

conduct more personal, constructed forms of research grew. This influenced the design of study two and began to depict a change in my way of thinking. I then conducted a heavily deterministic study for the final piece of this thesis and find solace in the sentiments of Moses and Knutsen:

> "the social world is not wholly determinist nor wholly regular or recurrent in its action. Consequently, social scientists shouldn't be afraid to impose naturalists (and dependable) frameworks to get on with analysing aspects of the social world that do seem to exhibit regularity and recurrence" (Moses, & Knutsen, 2007, p. 289).

Additionally, Atkinson notes "academics may commence a study with only a very loose or fragmented understanding of a subject and build more conceptual, general theoretical descriptions of the subject through careful observation over time" (2011, p. 165). Gill notes "[q]uestions set our destination, but they often also set the direction or path. Questions do not arise out of thin air. Rather our questions come from us (the researchers) and are influenced by a host of factors including our training, experiences, and immediate surroundings" (2011, p. 309). Bringing these three sentiments together allowed me to relax and embrace the uncertainty of where my environment, experiences, and data would take me, ultimately generating a unique collection of studies.

A final element of this design which has created a sense of insecurity is highlighted by Moses and Knutsen who comment "much contemporary social science straddles an uncomfortable chasm between the analysts' implied methodology and the methods they use" (2007, p. 288). I worry I am currently straddling this chasm and feel a sense of response bias in labelling my primary relationship as a constructivist, while utilising predominantly positivist methods of surveying, experimentation, and manipulation. Comfortingly, recent work by Shannon-Baker does not view this chasm to be as uncomfortable, remarking that the "mixture, or the integration of these two approaches, can take place in the philosophical or

theoretical framework(s), methods of data collection and analysis, overall research design, and/or discussion of research conclusions" (2016, p. 321).

Somewhat less personally, I need to discuss that the participants in all three studies are predominantly my friends and my sampling strategy was not designed to expose a generalizable "truth" but rather to depict those available to me. I am not committed to generalisation, but rather to inspiring others to question whether the ideas I present are applicable to their lived experiences. If they are unsure, I encourage them to test these ideas, and to generate a discussion of the similitude and dissimilarity of our accounts which will inform future explorations.

This abductive research design repeatedly oscillates between the general and the particular in an attempt to develop, expand, compliment, and corroborate a shared social perception of relationships with sport. In doing so, it aims to position such relationships among previously identified forms of nonhuman support. It draws upon multiple perspectives, theories, methods, and interpretations to collect a multidimensional view of the phenomenon.

Ontological and epistemological perspective

Questions surrounding my ontological position were relatively easily resolved. However, I spent a lot of time attempting to discover an established epistemology aligned with my perspective, while simultaneously questioning if such a stance could exist. Reflexively, I identify this exploration of established epistemologies, which began with the dominant positions and has continued to progress through less common epistemologies, as a quest to find a secure 'rock' from which I could anchor my research. By standing on such a foundation, I hoped to protect my views from criticism. I align with elements of many paradigms but am wary of explicitly electing one position. Below I will expose my views on

truth and knowledge as a means of clarifying any questions the reader may have regarding how the research design depicted above has been carried out, interpreted, and presented.

A portion of my worry about electing a single paradigm arises from the notion Silverman puts forth:

> "at best, they [paradigms] are pedagogic devices for students to obtain a first grip on a difficult field: they help them to learn the basics. At worst, they are excuses for not thinking, which assemble groups of sociologists into "armed camps", unwilling to learn from each other" (2011, p. 11).

I appreciate the existence of paradigms and as a student I have learned a great deal from researching their differences. Still, I am uncertain which paradigm best suits me. Returning to the concept of theoretical polyamory, Shannon and Willis state:

> "One of the things we have learned through reading queer theory (and living queer lives!) is to be suspicious of labels. Still, we require a certain amount of signification in order to communicate our ideas. Thus, any labeling that we do within this piece should be recognized as fluid and not static. By the time the reader actually sits down to read this essay, we may well have developed new interests and political commitments. Like non-monogamous sexual practices, a non-monogamous theoretical outlook should recognize that relationships do not always endure" (2010, p. 438).

I share their suspicion of labels and acknowledgment that there is some necessity for labels. As such any labels I do cast upon myself in this thesis should be recognised as fluid. Though some of my thoughts may remain unchallenged for the rest of my life, I do not expect them all to do so. It is also important to note that while I feel a form of methodological polyamory works best for me, I will not go as far as to state it should apply to everyone. I share Shannon and Willis' opposition "to the suggestion that there is a single answer to a complex problem" (Shannon, & Willis, 2010, p. 437); a view shared by many constructivist, pragmatic, and critical realist researchers.

Despite the suspicions outlined above, it is useful to outline my alignment with several concepts of pragmatism and critical realism. Shannon-Baker highlights pragmatism's

emphasis on transferability, communication, and shared meaning making, while focussing on abductive means of employing intersubjectivity to explore contextually important research questions (2016). Furthermore, "[p]ragmatism emphasizes the importance of experimenting with new ways of living, searching for alternative and more liberating vocabularies, and opening up an array of possibilities for human action" (Wicks & Freeman, 1998, p. 130). In many ways, this thesis is a series of pragmatic experiments, particularly concerning liberating vocabulary and possibility for human action.

Additionally, when discussing critical realism Shannon-Baker emphasises a focus on perceptions and relationships, as well as an ability to mix methods similarly to pragmatists, though critical realists view all realities as partial (2016). My views, values, and perceptions align with many of the key features of both pragmatism and critical realism, but I am hesitant to statically align myself with either. Furthermore, Denzin suggests "paradigms are human constructions. They define the shifting worldview of the research[er]-as-bricoleur" (2010, p. 421). Denzin's sentiment echoes the of J.S. Mill who stated "a bird or a stone, a man or a wise man, means simply an object having such and such attributes" (2002, p. 59). As such, I will take a few moments to explain how I view 'such and such attributes' of truth, reality, and knowledge.

My current view of reality, truth, and knowledge can be summarised in three main points. First, I will not deny that it is possible for there to be truths out there, but we do not have the necessary tools, methods, time, and approaches to identify if something is a truth. Given the inaccuracy of language and its reliance on individual interpretations, our ability to share thoughts is imperfect - it slows the speed in which we can uncover any truths which may exist. Compounding the delays caused by the inaccuracy of language, sharing knowledge requires time and although we currently share thoughts faster than our ancestors, requiring time to do so still slows progress towards finding out complex truths, especially on

an individual level. Collective work on a specific task could help to combat the time requirement, a view shared by Denzin (2010, p. 423), but we cannot yet share our individual discoveries perfectly and still have to contest with complications of language, which takes time, and the cycle goes on.

Moses and Knutsen (2007) display some of these concepts well in their presentation of the interpretative distancing which often happens during a large statistic gathering project. Such a large project will require several lead researchers who will hire a number of graduate researchers, who will code data according to a book, requiring "much interpretative give-and-take" (Moses, & Knutsen, 2007, p. 251). There will exist many opportunities for interpretative slippage between the lead researchers and their employed gradate researchers, and those graduate researchers and the data they collect. We cannot currently guarantee that we can convey information perfectly, and while statistics tout accuracy, distance from data can also create uncertainty.

Moses and Knutsen (2007) quote Capra, a distinguished physicist, to show even in domains dominated by positivism and naturalist inquiry "scientists became painfully aware that their basic concept, their language, and their whole way of thinking were inadequate to describe atomic phenomenon" (1982, p. 76). Capra's revelation mirrors one of my own which I had was while looking at a diagram presented by Moses and Knutsen (2007, p. 198). The diagram was used to explain the amount of data historians have at their disposal today. It presents several concentric circles, the largest of which signifies all the information that was available to those involved in an event in history. From there the circles become smaller and smaller until we arrive at the final circle which represents what a contemporary individual can know about a historical event. This inner-most circle is miniscule in comparison to the outer-most circle, yet we still struggle to completely understand what is going on in this small subsection of all of the potential information available. Analysing this diagram made me

think “we can’t handle ‘the truth’.” If all the information about every event in history was currently available to us, we would be overrun and would not be able to make any sense of it. Optimistically, I’m willing to reframe my reflection to note “we can’t handle the truth… yet.”

Additionally, “few facts survive from the very distant past” (Moses, & Knutsen, 2007, p. 197). Those that do are representations of their original discovery, “an understanding or a description of the world: it is a repeatedly presented – it is literally *re*-presented – to us as fact. This repeated presentation instils in us a sense of permanence” (Moses, & Knutsen, 2007, p. 213). “Objective reality can never be captured. We only know a thing through its representations” (Denzin, 2012, p. 82). As such, it is beneficial to note that the knowledge claims in this piece are incomplete. They are contextual and contingent upon the environment in which they were constructed. They are not timeless truths, for truths, or what we consider to be truths, are fluid socially constructed representations of knowledge which we agree upon (Gergen, 1999; Sparkes & Smith, 2013).

I am hesitant to contest there are no truths, and think it is better to suggest three things. First, we could possibly know a truth (or many truths) but have no way of assessing whether it is infinitely true. Second, we do not *yet* have the resources, methods, tools, understanding, etcetera to analyse enough detail to identify hypothetical truths, though methods and technology are improving daily. Third, we are progressing towards a goal of uncovering truth, rather than letting the uncertainty of truth stop us from researching. We continue to contribute to a collective body of knowledge in a way that progresses, rather than stagnates. Below I will highlight others who think similarly.

Driven by the perspectives on qualitative methodologies outlined by Denzin (2010; 2012), Sparkes and Smith (2013), Guba and Lincoln (2005; Lincoln & Guba, 1985, 2000), Moses and Knutsen (2007), and Allen-Collinson (2016), I gained a better understanding of realism, and more pertinent to this piece, I became entrenched in the ideas of relativism.

"When scientific investigation is aimed at *perceptions* of the world, rather than the world 'as it is', we open the possibility for multiple worlds (or, more accurately, multiple perceptions)" (Moses, & Knutsen, 2007, p. 11). Moses and Knutsen also present how Foucault hinted at "the utility and playfulness of multiple understandings and plural perspectives" (2007, p. 231). While some see benefits in reducing such equivocality (Weick, 1969), I prefer to celebrate it, similar to Feyerabend who argues:

> 'The progress of science depends on an openness of world views which conflicts with...totalitarian pronouncements.... World views may take a long time, even centuries, before they show results.... [I]ntroducing and defending world views that clash with established principles of modern science is not irrational and may even produce discoveries in the distant future" (as cited in Deltete, 2011, p. 272).

It is in the spirit of progress and potential that I'd like to conclude my discussion of truth, reality, and knowledge. Methodological polyamory is bound to clash with established principles of modern science and could be ephemeral or eternal, but only time can tell.

Conclusion

Completing a sequential, methodologically polyamorous research design was the most efficient way for me to explore, develop, complement, and corroborate my research questions and findings given my current context. The results of the studies presented in this thesis seek to encourage new reading and understanding of athletes' relationships with sport, and to position sport among other accepted forms of nonhuman support. Over the course of this research, I have questioned my perspective as well as what defines truth, the nature of knowledge, and the importance of reflecting upon our experiences. I have emerged as a jack-of-all-trades who optimistically looks forward to future improvements in mixed methods research, as well as our shared understanding of what we understand.

CHAPTER THREE

Exploring whether, and how, athletes experience athlemaphilia as relationships with sport, and how this relates to wellbeing.[1]

The language of friendship is not words, but meanings

- *Henry David Thoreau*

[1] Hodge, A., Oliver, E., Eccles, D. (2016, June). Challenging Interpersonal Requirements for Relatedness: Demonstrating the contributions of non-interpersonal relationships to satisfaction, relatedness, and wellbeing. Poster presented at the triennial meeting of The 6th International Conference on Self-Determination Theory, Vancouver Island, Canada.

Abstract

The influence of interpersonal relationships in sport psychology research is no longer uncharted territory. However, the affective bond between an athlete and their sport is yet to be understood. The purpose of this study was to: (a) assess self-reported athlemaphilic attachment ratings; (b) develop and test a framework of the features of athlemaphilic relationships, and; (c) explore the differential impact of athlemaphilic relationships upon wellbeing. Guided by attachment and self-determination theories, this study employed a repeated measures survey design to compare variations in athlemaphilia. This study identified three main results: first, context-specific self-reported athlemaphilic attachment exists; second, variation exists in the language athletes use to describe the features of their interpersonal and athlemaphilic relationships, and; third, the variation in the features of athlemaphilic relationships has a differential impact upon the meaningful contributions sport makes toward an athlete's wellbeing. These results begin to position the emotional impacts of athlemaphilia within the study of relationships in sport psychology and highlight the need for further consideration of athlemaphilia because its influence remains uncharted.

Introduction

Thoreau (1867) presents friendship, and indirectly other forms of human relationships, as capable of transcending the limitations of words, thus positioning the language of relationships as a collection of meanings. Two components of Thoreau's sentiments are developed in the present study; first, the language of relationships is often represented using words and second, variation in the language of specific relationships generate meaningful variation in affect. It has been nearly twenty years since sport psychologists were called to explore the uncharted influence of interpersonal relationships within sport (Wylleman, 2000). In response to this call, researchers (e.g., Felton & Jowett, 2013b) have applied SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) and attachment theory (Bowlby, 1969, 1980) to explore the influence of interpersonal relationships in sport. The current study builds upon ongoing research concerning interpersonal relationships in sport, and in general, to explore whether individuals engage in athlemaphilic relationships and how variation in the features of such relationships corresponds to variation in wellbeing.

Defining relationships. Self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000) posits relatedness, or the need to feel a sense of belongingness and connectedness to others, as one of three universal basic psychological needs. Satisfying the need for interpersonal relatedness increases positive affect, while being deprived of social interaction is indicative of distress (Baumeister & Leary, 1995). SDT predominantly focuses on interpersonal, or so called "real-life social partners" (Soenens et al., 2011, p. 11), and exploration of how nonphysical others (e.g., God) affect wellbeing has not been extensively tested within SDT. Soenens et al. (2011) cite Kirkpatrick and Shaver (1990) noting attachment theory is a leading theoretical construct for understanding relationships with God. The preceding two sentences position attachment theory as an appropriate construct for the exploration of athlemaphilia because, when compared to SDT, attachment has a more

flexible conceptualisation of relationships which integrates nonphysical others. Within SDT the application of attachment theory has been ongoing for decades (e.g., La Guardia, Ryan, Couchman, & Deci, 2000) making the continued mixing of the two theories appropriate within the present study.

Attachment theory (Bowlby, 1969) originated as a concept for understanding how children's attachments to primary care givers establish internal working models of expectations of others, the self, and the self as it relates to others. The theory was first empirically demonstrated during the strange situation experiment (Ainsworth et al., 1978), which laid the foundation of modern concepts of attachment types. The present study follows the social psychological tradition of attachment which focuses on adult social interactions and social relationships (Bartholomew & Shaver, 1998). In this study, attachment types will be classified as secure, avoidant, and anxious (Hazan & Shaver, 1987), though classifications are not viewed as singular finite constructs (Roisman, 2009). Individuals are viewed as having domain specific attachment patterns (Sibley & Overall, 2008) which rely upon context (Caron, Lafontaine, Bureau, Levesque, & Johnson, 2012). Both attachment theory and SDT have been applied within the domain of sport and to study the various interpersonal relationship contexts within sport .

Within sport science, attachment theory has been applied to examine the quality of interpersonal attachment to friends (Adams & Carr, 2017; Carr, 2009a; Carr & Fitzpatrick, 2011) and coaches (Davis & Jowett, 2010; Felton & Jowett, 2013b, 2015). For example, Carr (2009) examined the correspondence between attachments to parents and the quality of sports friendships, concluding attachments to parents may influence the quality of friendships young male athletes make in sport settings. Similarly, SDT research in sport has demonstrated social support and interpersonal dyadic relationships between coaches and athletes (e.g., Adie, Duda, & Ntoumanis, 2008; Gagné, Ryan, & Bargmann, 2003) significantly impact athlete

wellbeing. Results within both theoretical traditions establish that relationships within the domain of sport can increase and decrease athlete wellbeing. However, to date in sport science, the application of both theories has focused on interpersonal relationships, and neither theory has been applied to explore how interactions with sport act as a form of nonhuman relationship.

Keefer, Landau, and Sullivan (2014) have called for researchers to broaden the scope of attachment theory because of convincing evidence which challenges the exclusivity of *interpersonal* relationships' abilities to provide a sense of security and support. These challenges are built upon studies which have demonstrated deities (Granqvist & Kirkpatrick, 1999; Granqvist, Ljungdahl, & Dickie, 2007), media persona (Cohen, 2004), pets (Zilcha-Mano, Mikulincer, & Shaver, 2011), places (Guiliani, 2003), and objects (Keefer et al., 2012) can facilitate the secure base and safe haven role which is traditionally reserved for interpersonal attachments. Establishing this point is essential because the present study explores how sports facilitate similar secure base and safe haven roles, endeavouring to assert athlemaphilia as a form of nonhuman attachment which can provide social support.

The current study. The goal of this study was to examine whether athlemaphilia constituted a nonhuman relationship. To do this, we sought to achieve three preliminary aims before testing three hypotheses. The first aim of this study was to develop a theoretically-grounded framework for assessing the prevalence of features of interpersonal relationships in interactions with sports. The development of this framework incorporated concepts from two distinct theoretical views of relationships and relatedness (i.e., attachment and self-determination theory) and features of interpersonal relationships indicative of a variety of types of relationship (e.g., friendly, familiar, romantic, abusive). The second and third aims of this study were to develop an assessment method based upon the framework created and to provide initial validation and assessment of the framework. The framework was piloted and

administered alongside measures of wellbeing to assess whether variation in the presence of features of interpersonal relationships in interactions with sport differentially impacts wellbeing. Completing these three preliminary aims then allowed for the testing of the following hypotheses:

Hypothesis one. A trait-based concept of attachment (Bowlby, 1969) posits ratings of attachment are similar between different types of relationships. However, given the emergence of a domain (Sibley & Overall, 2008) and context (Caron et al., 2012) specific understanding of attachment, it was hypothesised that *self-reported ratings of attachment will differ between relationship domains (Hypothesis one-a) and variation in attachment ratings will account for variance in ratings of wellbeing (Hypothesis one-b).*

Hypothesis two. It is expected that participants will discuss diverse types of relationships using similar vocabulary and distinct types of relationships would excel at satisfying certain features of relationships. Thus, it was hypothesised that *aggregate ratings of the prevalence of features of relationships would be significantly different from zero in all domains (Hypothesis two-a) and differ between relationship domains (Hypothesis two-b).*

Hypothesis three. It is understood interpersonal relationships have varied impacts upon individual health and wellbeing. If Hypothesis two a and b are supported, it then follows that relationships with sport should also be expected to have varied impacts upon wellbeing. However, given the interpersonal requirement for relatedness in SDT and the centrality of interpersonal relationships in attachment theory (Carr, 2012), it is likely the influence of interpersonal relationships upon wellbeing will exceed the influence of athlemaphilic relationships. Thus, it is hypothesised that *variation in features of relationships with sport will predict variance in wellbeing, though variance explained by sport will be less than variance explained by interpersonal relationships (Hypothesis three)*. Support for this hypothesis allows for future investigation of why athletes might seek support from sport

instead of interpersonal relationships, as well as how the two domains interact to influence athlete wellbeing.

Method

Participants. A pilot study involving six participants was conducted to assess the feasibility of the developed framework as well as the overall design of the study. Pilot participants were representative of the target population. Results of the pilot study include the expansion of one feature to be discussed below and minor changes to the wording and structure of the study.

The full study involved 100 participants (M_{age} = 23.82, *SD* = 4.64 years). Participants were primarily female (*n* = 61), students (*n* = 72), and from English speaking countries (i.e., Australia, Canada, UK, USA; *n* = 83). The majority of participants nominated a team sport as a primary athlemaphilic relationship (*n* = 96) including volleyball, basketball, football, American football, water polo, rowing, lacrosse, and handball, while few participants nominated an individual sport (*n* = 4) namely tennis, athletics, swimming, and karate. Level of participation in sport varied from recreational to international competition over a number of years ($M_{participation}$ = 11.8, *SD* = 5.78 years). Participants were recruited via two gatekeepers who had access to diverse groups of athletes representing multiple sports, levels of competition, and cultural backgrounds. Furthermore, social media, predominantly Facebook, was used to recruit participants with targeted messages sent to athletes who satisfied the inclusion criteria of being over eighteen years of age and currently engaging in sport as an athlete. Accessing a group of athletes with diverse athlemaphilic interactions aligned with the aim of this study to explore a variety of types of athlemaphilic relationships. Additionally, participants nominated several types of interpersonal relationships (e.g., romantic, parental, sibling, platonic) and relationships within their sporting environment (e.g. teams, teammates, coaches).

Measures. Basic demographic information was collected including participant age, gender, sexuality, level of education, nationality, and employment status. Additional background information was collected regarding the duration of participants' involvement in three attachment domains, one concerning a primary interpersonal relationship, a second concerning interpersonal relationships within sport, and a third concerning a primary athlemaphilic relationship. Participants then completed a series of assessments outlined below.

Hazan-Shaver Adult Attachment Self-Report. Hazan and Shaver (1987) developed a measure to assess adult attachments based on the classifications of attachment styles developed by Ainsworth et al. (1978). This measure gained initial conceptual support (Mikulincer, Florian, & Tolmacz, 1990; Mikulincer & Nachshon, 1991), but more recently researchers have favoured a more dynamic measure of adult attachment (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). As such, an adaptation of Hazan and Shaver's (1987) measure (as described below) was used to reflect a more dynamic view of attachments, while maintaining the brevity of the original measure.

The measure used in this study presented participants with the three descriptions of attachment styles, one representing secure attachments, one representing anxious attachments, and a third representing avoidant attachments. The wording of each description was adapted to reflect which attachment domain participants were assessing. For example, the description of an interpersonal secure attachment was worded: "I find it relatively easy to get close to ___ and am comfortable depending on him/her and having him/her depend on me. I don't often worry about being abandoned or about ___ getting too close to me." Relatedly, the description of a secure athlemaphilic attachment was worded: "I find it relatively easy to get close to ___ and am comfortable depending on it and having it depend on me. I don't often worry about being abandoned or about ___ getting too close to me." The

survey software input the name participants nominated for their primary interpersonal or sporting partner into the blanks for the corresponding descriptions.

Additionally, while Hazan and Shaver's original measure asked participants to identify one description which best represented the way they felt in a relationship, the present study asked participants to rate how representative each description was of each of their relationships using a Likert scale from 1 (not representative) to 7 (very representative). The resulting measure allows for the comparison of both dominant styles of attachment and the representative strength of each styles between different attachment domains.

The Ryff Scales of Psychological Wellbeing. The Ryff Scale of Psychological Wellbeing (1989) measures six dimensions of psychological wellbeing. The six dimensions of the Ryff scale are: a) *autonomy* (e.g., "I have confidence in my opinions, even if they are contrary to the general consensus"); b) *environmental mastery* (e.g., "In general, I feel I am in charge of the situation in which I live."); c) *personal growth* (e.g., "I have the sense that I have developed a lot as a person over time."); d) *positive relations with others* (e.g., "Most people see me as loving and affectionate."); e) *purpose in life* (e.g., "Some people wander aimlessly through life, but I am not one of them"), and; f) *self-acceptance* (e.g., "I like most aspects of my personality."). Each dimension originally contained 20 items which were rated from 1 (strongly disagree) to 6 (strongly agree), but concerns regarding the length of the total scale resulted in a 14-item variation becoming the preferred version of the scale (Ryff, 2014). Although there are other versions of the Ryff scales which have been further reduced to as few as three items per dimension, the 14-item version of the scale is preferred on account of its high correlation to the original 20-item version, and strong internal consistency (Ryff, Lee, Essex, & Schmutte, 1994). For this study only the 28 items assessing environmental mastery and self-acceptance were utilised because they complement elements of other scales, and differ from features reported in the framework designed, in this study .

Relatedness to others scale. The relatedness to others in physical activity scale is a six item scale based in SDT which measures a sense of "belonging and connectedness with others in a global physical activity settings" (ROPAS; Wilson & Bengoechea, 2010, p. 61). All six items of the ROPAS were included in the study as a way of measuring a relationship-focused associate of wellbeing. Items were adapted so they were understandable across all three relationship contexts (e.g., "I fit in well with others" became 'I fit in'), and respondents rated items from 1 (false) to 6 (true). This scale has demonstrated validity in adult (Gunnell, Bélanger, & Brunet, 2016) and adolescent populations (Sebire, Jago, Fox, Edwards, & Thompson, 2013), but it is unclear how well the adapted version upholds initial validity.

Development of the Features of Relationships Scale (FRS) and the Features of Athlemaphilic Relationships Scale (FARS). Initial item development drew upon existing literature within SDT (Blais, Sabourin, Boucher, & Vallerand, 1990; Deci & Ryan, 1985; Knee, Hadden, Porter, & Rodriguez, 2013; La Guardia & Patrick, 2008; Ratelle, Carbonneau, Vallerand, & Mageau, 2013), attachment theory (Bowlby, 1969; J. A. Feeney & Noller, 1990; Lavy, Mikulincer, & Shaver, 2010; Myers, 2003; Stroebe & Archer, 2013), and other theories of relationships (Lee, 1977; Rusbult, 1980; Steinberg, 1986) which explore various kinds of human relationships (e.g., romantic, familiar, unfriendly). The nine characteristics which were identified as conceptual anchors for scale items are discussed next and the complete scale is presented in Table 2.

Love. Konstan discusses how Aristotle discusses "philia" and assimilates some level of love to be necessary in all friendly relationships (2008). Similarly, love is a necessary and indispensable element of an intimate relationship (Kelley et al., 1983). Furthermore, the omission of love denotes a specific set of relationships on its own, potentially casting love, or a lack thereof, as a variable which can define all forms of relationships. Multiple items of the FRS were shaped by these sentiments of love and Lee's (1977) Typology of Love to

investigate the presence of ludic, pragmatic, manic, and erotic love in relationships with sport. Finally, love is represented with the intrinsic motivation questions of the couples motivation questionnaire (Blais et al., 1990: e.g., "Because I love the numerous crazy and amusing moments I have with my partner").

Accommodation and mutuality. Discussing accommodation and mutuality together helps to display how each can contribute to enduring healthy relationships. Mutuality is defined as achieving balance between autonomy and relatedness and is “often challenging yet necessary for partners’ mutual satisfaction” (Lavy et al., 2010, p. 552). Mutual satisfaction is improved when a relationship presents opportunities to be both supportive and supported (Deci, La Guardia, Moller, Scheiner, & Ryan, 2006). Alternating between being autonomously supportive of someone else and having them support your sense of autonomy is a form of accommodation. It is important to note that accommodation is not always healthy (La Guardia, 2009), and can be viewed as a form of self-sacrifice for the sake of the relationship (Van Lange et al., 1997). Items focusing on physical and psychological accommodation, sacrifice, and give and take within a relationship were included to assess the existence of accommodation and mutuality within relationships.

Security. Security, protection, safety, and proximity seeking were all included as they are seen as crucial elements of attachment, and potentially the primary reasons why we use attachment systems. Bowlby (1988) theorises attachment systems exist because people are hardwired to seek out the benefits of protection in numbers. Empirical evidence confirms the presence of secure base in adulthood is linked to greater exploration, and speculates that this can lead to greater wellbeing (B. C. Feeney & Thrush, 2010). Outside of attachment theory, Ryan, Brown, and, Creswell (2007) suggest SDT offers a unique view of felt security which differs from that held by attachment theorists (Mikulincer & Shaver, 2003), but still contributes to a sense of wellbeing and health.

Communication. Collins (2002) discusses how lacking vulnerability, communication, honesty, and disclosure can have negative implications on relationship health, as well as how these lacking these adaptive interpersonal behaviours is prevalent for individuals with an insecure attachment styles. Empirical research supports the idea that decreased communication (Stanley, Markman, & Whitton, 2002) and increased secrecy between partners (Uysal, Lin, Knee, & Bush, 2012) predicts lower relationship quality. As a result, it is expected relationships which allow for openness between partners will generate greater individual wellbeing as well as increased relationship wellbeing and longevity (Domingue & Mollen, 2009).

Obsession and addiction. Obsessive preoccupation within a relationship and addiction to love have both been linked to insecure forms of attachment and indirectly to lower scores of relationship health (J. A. Feeney & Noller, 1990). Indeed, psychopharmacological research has concluded social attachment is a behavioural addiction, similar to drug addiction (Burkett & Young, 2012). Additionally, several of the addictive features of relationships can be linked to Lee's classification of ludic love (1977) and components of the investment model scale (Rusbult, Martz, & Agnew, 1998). Furthermore, Flores (2001) positions dependency as opposed to autonomy, making the exploration of how obsessed, addicted, and dependent athletes are to sport interesting. As a result, three items were developed to explore whether: (a) others perceive a relationship as addictive; (b) athletes view their relationships as addictive, and; (c) the individuals feel they are dependent upon their relationships because of the time and energy they have invested in it.

Autonomy. According to SDT, autonomy is a basic psychological need, and satisfying one's need for autonomy is required for optimal performance and flourishing (Deci & Ryan, 2000). There are numerous studies which explore the benefits of autonomy-supportive coaching (Davis & Jowett, 2010; Felton & Jowett, 2013b) and autonomy-supportive teaching

in school (Bonneville-Roussy, Vallerand, & Bouffard, 2013; Haerens, Aelterman, Vansteenkiste, Soenens, & Van Petegem, 2015). Furthermore, a sense of autonomy influences intrinsic motivation and integrated regulation within the couple motivation questionnaire (Blais et al., 1990). There is one item which directly addresses experiences of autonomy in the FRS.

Physicality. Prior to piloting this framework only one item explored the physical nature of relationships by focussing on whether participants could achieve sexual satisfaction from their relationships. The presence or absence of sex is a delineating factor when defining interpersonal relationships, as demonstrated when separating friendships from friendships with benefits (Bisson & Levine, 2009). Discussions during the piloting of the framework identified participants felt there was more to physicality than just sex, suggesting the need to specifically question the presence of sex, physical intimacy, and the ability to be physical in general. For some, sex is a demonstration of emotional intimacy and trust within a relationship (Mikulincer, 1998; Rusbult, 1980), while for others it is viewed as more of a physical exchange. Indeed, some relationships with others in sport (e.g., teammates, competitors) allow athletes to be overtly physical without being sexual or intimate. As a result, three items were included which address being: (a) sexual; (b) physical, and; (c)physically intimate within a relationship.

Idealisation. Idealisation is defined as a "perception which is idiosyncratic to the perceiver" (J. A. Feeney & Noller, 1991, p. 191) which can be viewed as both adaptive and maladaptive with respect to relationship quality and longevity. Empirical evidence supports the link between attachment style and the ideal images we hold of both parents and partners (Tolmacz, Goldzweig, & Guttman, 2004). A review of relationship processes within SDT also found benefits in the idealisation of romantic partners, though there is evidence which demonstrates more self-determined individuals have less of a need for idealisation in

relationships (Knee et al., 2013). Idealisation features twice in the FRS, once directly asking if respondents idealised their partners and once inquiring whether or not participants idealised their relationship.

Social Inclusion. There is a wealth of literature which demonstrates how increased feelings of social exclusion can negatively impact wellbeing (e.g., Leary, 1990) and intelligent thought (Baumeister, Twenge, & Nuss, 2002). Conversely, social inclusion has been linked to the activation of the affiliation system and increased opportunities for personal development (Aron, Aron, & Norman, 2003; Aron, Aron, & Smollan, 1992; Mikulincer & Shaver, 2003). The inclusion of a partner within a previously established social group is reflected in the external regulation component of the couple motivation questionnaire and opportunities to engage in new activities as a result of a relationships is addressed by identified regulation components of the same scale (Blais et al., 1990). The three items addressing social inclusion sought to address the: (a) social nature of initiating a relationship; (b) awareness of a relationship's existence in established social groups, and; (c) increase of social activities and opportunities presented by a relationship.

In sum, theoretically-informed framework of 9 relationships concepts was identified, namely: love, accommodation and mutuality, security, communication, obsession and addiction, autonomy, physicality, idealisation, and social inclusion. A complete list of the 35 features which make up the FRS can be seen in Table 1. Furthermore, the FARS is conceptually identical to the FRS, but minor changes were made to the text of the FARS to reflect the nonhuman nature of athlemaphilic relationships.

Procedure. Participants completed this study via online survey. Informed consent was collected in accordance with university ethical reporting requirements. Next, participants reported basic demographic information, nominated a primary interpersonal relationship, and provided details regarding the sport they interacted with most. Then, participants completed

the FRS twice (once regarding a close interpersonal other and a second time regarding close interpersonal others in sport) and the FARS once regarding their primary athlemaphilic relationship. Finally, participants completed the three measures of wellbeing.

Statistical Analysis. Alpha was set a priori at $\alpha = .05$. Given the limited sample size, it was not possible to uphold all of the recommendations set out by Ntoumanis (2016) for when assumptions of normality and linearity are not met. Specifically, no transformations were applied to nonparametric or nonlinear data and responses were removed in a conservative manner (i.e., only when a participant was identified as an outlier on multiple items). This maintained a balance between retaining adequate data quantity for analyses, and the ability to meaningfully interpret the factor analysis (which would have been challenging with transformed data) by potentially compromising in terms of data quality, and in doing so increasing the chance of type II errors. Four responses were removed for extensive missing data, and two additional responses were removed as outliers resulting in a working sample of 94 participants.

Descriptive statistics were compared for all FRS and FARS items, attachment ratings, and measures of wellbeing. Ratings of wellbeing were normally distributed (values ranged from -.67 to .07 for skewness and from -.35 to 1.13 for kurtosis). All ratings of secure attachment were normally distributed, but interpersonal attachment anxiety (skewness = 1.76; kurtosis = 2.11) was slightly nonparametric and interpersonal attachment avoidance (skewness = 2.55; kurtosis = 6.39) was moderately nonparametric. Difference in attachment between relationships domains were compared using a repeated measures ANOVA for attachment security Friedman's test as well Wilcoxon's signed-rank test for insecure attachment ratings. The majority of FRS and FARS items were normally distributed, but several items were moderately to severely nonparametric (values ranged from -2.27 to 3.32 for skewness and from -1.44 to 11.04 for kurtosis). Although the small sample size was

unlikely to have sufficient power for an adequate factor analysis, the 35 items of the FARS were factor analysed. FARS items were screened to assess whether they were appropriate for inclusion in this exploratory factor analysis. No items demonstrated a correlation exceeding .90, suggesting reasonable factorability. Additionally, the data set demonstrated a Kaiser-Meyer-Olkin measure of sampling adequacy score of .71, exceeding the acceptable ratio of .60 (Ntoumanis, 2016) and Bartlett's test of sphericity was significant, χ^2 (595) = 1484.57, $p < .001$. Given the conservative removal of outliers from the original data set, these findings were considered sufficient to carry out further analysis.

Exploratory factor analysis using varimax rotation was conducted because it excels at uncovering the processes which could create correlation among variables (Tabachnick & Fidell, 2007). Table 1 displays the total variance explained and the associated eigenvalues for each factor. Factors one through seven were retained in this analysis, accounting for 62.16% of total variance explained. These factors were selected by examining a scree plot of variance and because selecting these factors limited the number of cross-loading factors. The first two factors identified by the rotated matrix were split into two sub-factors each because they involved conceptually distinct elements, resulting in a total of nine factors retained for further analysis.

Table 1 Total Variance Explained

Factor	Initial Eigenvalues	% of Variance	Cumulative %
1	9.28	27.28	27.28
2	2.71	7.98	35.26
3	2.68	7.87	43.14
4	1.87	5.51	48.65
5	1.61	4.74	53.39
6	1.55	4.56	57.95
7	1.43	4.31	62.16
8	1.23	3.60	65.77
9	1.08	3.17	68.93

Note. Extraction Method: Principal Axis Factoring.

Table 2 displays the rotated factor matrix and the nine factors which have been retained for this analysis. Most factors contained cross-loaded items which was expected because the features of the FARS are based on two individually complex theories of relating to others, making it conceptually difficult to place features within factors. Unique and cross-loaded items were retained as long as their factor loadings exceeded .32 (Tabachnick & Fidell, 2007). Five items were removed because they did not load to any of the nine factors retained. The resulting nine factors were labelled communication, security, obsession, sacrifice, affection, growth, investment, intimacy, and physicality.

Table 2 Rotated Factor Matrix[a]

	M	OBS	SCF	CMM	SEC	AFF	GRT	INV	INT	PHY
Others could categorize my interaction with ___ as addictive/obsessive	3.09*	.87								
I would describe my relationship with ___ to be addictive/obsessive	2.98*	.86								
I would be lost without ___	3.29*	.75								
___ is beyond reproach and comparison	3.60*	.56				.38				
I find myself seeking ways to be closer to ___	3.50*	.43			.47					
I am willing to go to great lengths to preserve my relationship with ___	4.14*		.62			.38				
I am willing to make sacrifices that could be detrimental to my psychological health for the sake of ___	2.82*		.60					.49		
I am willing to make sacrifices that could be detrimental to my physical health for the sake of ___	3.99*		.58					.35		
If ___ were in danger, I would do everything I could to protect him/her	2.58*		.48		.37					
I feel the need to conform to certain standards to remain involved with ___	3.71*		.35					.40		.40
My relationship with ___ has grown stronger as time has passed	4.65*		.35			.36	.41			
___ and I can communicate easily	2.98*			.81						
I can have honest, open discussions with ___ without damaging our relationship	2.45*			.77						
There is nothing that I hide from ___	3.04*			.71						
Resolving conflicts that arise in my relationship with ___ is easily done	3.75*			.67						
In order for my relationship with ___ to succeed, I need to be emotionally intimate, vulnerable and expressive	2.24*			.43				.47		
___ accepts me for who I am	4.01*				.71					
I feel safe in the presence of ___	3.72*				.63					
___ will not cause me harm	2.34*				.51					-.57
I find myself seeking ways to be closer to ___	3.50*	.43			.47					
If ___ were in danger, I would do everything I could to protect him/her	2.58*		.48		.37					

Note. OBS: Obsession; SCF: Sacrifice; CMM: Communication; SEC: Security; AFF: Affection; GRT: Growth; INV: Investment; INT: Intimacy; PHY: Physicality; * *M* value is different from 0, $p < .05$; Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; [a] Rotation converged in 14 iterations.

Table 2 Rotated Factor Matrix[a]

	M	OBS	SCF	CMM	SEC	AFF	GRT	INV	INT	PHY
I love ___	5.34*					.82				
I am in this relationship because ___ is a good fit for me.	5.29*					.76				
I am very passionate about ___	5.46*					.74				
I voluntarily chose to engage in a relationship with ___	5.57*					.70				
___ is beyond reproach and comparison	3.60*	.56				.38				
I am willing to go to great lengths to preserve my relationship with ___	4.14*		.62			.38				
My relationship with ___ has grown stronger as time has passed	4.65*		.35			.36	.41			
___ regularly challenges me to develop as a person	5.27*					.34	.44	.49		
I get as much out of my relationship with ___ as I put in	5.00*						.86			
My relationship with ___ presents me with ample opportunities for growth	5.37*						.85			
___ regularly challenges me to develop as a person	5.27*					.34	.44	.49		
My relationship with ___ has grown stronger as time has passed	4.65*		.35			.36	.41			
I have invested a disproportionate amount of time and energy into building my relationship with ___ and have foregone other potential relationships (e.g., with other people, teams, or activities) as a result	4.08*							.72		
___ regularly challenges me to develop as a person	5.27*					.34	.44	.49		
In order for my relationship with ___ to succeed, I need to be emotionally intimate, vulnerable, and expressive	2.24*			.43				.47		
I am willing to make sacrifices that could be detrimental to my psychological health for the sake of ___	3.99*		.60					.49		
I am willing to make sacrifices that could be detrimental to my physical health for the sake of ___	2.82*		.58					.35		
I feel the need to conform to certain standards to remain involved with ___	3.71*		.35					.40		.40

Note. OBS: Obsession; SCF: Sacrifice; CMM: Communication; SEC: Security; AFF: Affection; GRT: Growth; INV: Investment; INT: Intimacy; PHY: Physicality; * *M* value is different from 0, $p < .05$; Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; [a] Rotation converged in 14 iterations.

I can achieve sexual satisfaction from my relationship with ___	.25*								.83	

Table 2 Rotated Factor Matrix[a]

	M	OBS	SCF	CMM	SEC	AFF	GRT	INV	INT	PHY
I can connect with ___ in a way that satisfies my desire for physical intimacy	.63*								.80	
___ allows me to be physical	4.02*									.82
___ will not cause me harm	2.34*				.51					-.57
I feel the need to conform to certain standards to remain involved with ___	3.71*		.35					.40		.40
I was first introduced to ___ by someone close to me.	4.65*									
My family and friends are aware of my relationship with ___	5.65*									
I have accepted the fact that my relationship with ___ will one day end	3.62*									
If things are not going well with ___, I have adequate places to turn to for help and support	4.46*									
___ allows me to socialize much more than I would without him/her	5.00*									

Note. OBS: Obsession; SCF: Sacrifice; CMM: Communication; SEC: Security; AFF: Affection; GRT: Growth; INV: Investment; INT: Intimacy; PHY: Physicality; * *M* value is different from 0, $p < .05$; Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization; [a] Rotation converged in 14 iterations.

The majority of retained factors were normally distributed (values ranged from -1.24 to 1.78 for skewness and from -1.88 to 1.55 for kurtosis) except for sporting environment intimacy which was slightly nonparametric (skewness = 1.78; kurtosis = 2.41) and athlemaphilic intimacy which was moderately nonparametric (skewness = 2.10; kurtosis = 3.48). All normally distributed factors were analysed using a repeated measure ANOVA to compare factor ratings between interpersonal, sporting environment, and athlemaphilic relationship domains. Comparisons of intimacy between relationship domains was carried out using Friedman's test, and Wilcoxon signed-rank test because of the nonparametric nature of the factor in two of the three reported relationship domains.

Following the comparison of factors by relationship domain, a series of linear regression analyses were conducted to identify predictive associations of attachment and factors of relationships on measures of wellbeing between domains. A sample size of 94 was deemed adequate for independent and hierarchical regression analyses of attachment ratings and independent regressions of factors of relationships as these never involved more than 9 independent variables. However, hierarchical regressions of factors of relationships between domains exceeded the minimum recommended 5:1 ratio of participants to independent variables (Ntoumanis, 2016). Attachment ratings and factors of relationships were not highly correlated within, or between, domains satisfying the assumption of multicollinearity (Ntoumanis, 2016). Unfortunately, as a result of the previously mentioned conservative removal of univariate outliers, the assumption that outliers have been removed cannot be met (Ntoumanis, 2016), and results of regression analyses need to be considered carefully.

Results

Hypothesis one: Ratings of attachment will differ between relationship domains, (a) and variation in attachment ratings between domains will account for variance in wellbeing (b). Differences in aggregate ratings of attachment security were compared using a

repeated measures ANOVA. There was a statistically significant effect of relationship type on attachment security, $F_{(1,91)} = 3373.12$, $p < .05$. Differences in attachment avoidance and anxiety were compared using Friedman's test. There were statistically significant differences between relationship domains in attachment avoidance, $\chi^2(2) = 41.23$, $p < .05$, and attachment anxiety, $\chi^2(2) = 25.90$, $p < .05$. Table 3 presents mean ratings of attachment by relationship domain as well as differences in paired mean ratings of attachment across domains. Pairwise comparisons of differences in attachment security as well as Wilcoxon signed-rank tests comparing differences in attachment avoidance and anxiety were conducted with a Bonferroni correction applied. These results support *hypothesis one-a*.

Table 3 Descriptive Statistics of Attachment Ratings by Relationship Domain

	Interpersonal		Sporting Environment		Athlemaphilic				
	M	SD	M	SD	M	SD	ΔM_1	ΔM_2	ΔM_3
Attachment Security	5.24	1.03	4.49	1.03	4.54	1.31	.75*	.70*	.05
Attachment Avoidance	.62	1.17	1.56	1.38	1.29	1.51	-.94*	-0.67*	-.27
Attachment Anxiety	.84	1.37	1.62	1.42	1.01	1.32	-.78*	-.17	-.61*

Note. ΔM_1: Difference between Interpersonal and Sporting Environment means; ΔM_2: Difference between Interpersonal and Athlemaphilic means; ΔM_3: Difference between Athlemaphilic and Sporting Environment means; * $p < .05$

Additionally, nine independent linear regression analyses were conducted, one for attachment ratings in each relationship domain (i.e., interpersonal, sporting environment, athlemaphilic) on each measure of wellbeing (i.e., environmental mastery, relatedness to others, self-acceptance). Interpersonal attachment was the only significant predictor of any measure of wellbeing. Interpersonal attachment ratings accounted for slight variation in environmental mastery $R^2 = .09$, $F_{(3,93)} = 2.81$, $p < .05$, and no unique attachment ratings (i.e., security, avoidance, anxiety) significantly predicted environmental mastery. Similarly, interpersonal attachment ratings accounted for slight variation in relatedness to others $R^2 = .09$, $F_{(3,93)} = 2.97$, $p < .05$, and interpersonal attachment security was a significant predictor of relatedness to others ($\beta = .26$, $p < .05$). Furthermore, three three-stage multiple regression analyses were conducted, once with each measure of wellbeing as the dependent variable.

Interpersonal attachment ratings were entered at stage one to control for the effect of interpersonal attachment upon wellbeing. Ratings of attachment to close sporting others were entered in stage two and athlemaphilic attachment ratings were entered at stage three. Attachment ratings were entered in this order because interpersonal attachment was the most consistently significant predictor of wellbeing at an independent level. Additionally, it seemed plausible interpersonal attachments, both to a close other and to close sporting others, would explain greater variation in wellbeing than hypothetical athlemaphilic attachments. Table 4 displays the results of these three hierarchical models of liner regression of attachment ratings on each measure of wellbeing.

Table 4 Results of Hierarchical Linear Analyses of Attachment Ratings on Wellbeing

Independent Variables	Environmental Mastery	Relatedness to Others	Self-Acceptance
Step 1: Interpersonal			
Security	.19	.26*	.21
Avoidance	-.13	-.10	-.08
Anxiety	-.01	-.10	-.04
R^2	.09	.11	.08
F	2.78*	3.45*	2.40
Step 2: Sporting Environment			
Security	.08	.30*	.08
Avoidance	-.03	.07	.03
Anxiety	-.22	.06	-.13
R^2	.12	.15	.09
ΔR^2	.03	.05	.02
F	1.91	2.55*	1.40
Step 3: Athlemaphilic			
Security	.02	-.12	-.21
Avoidance	.12	.32*	-.06
Anxiety	-.07	-.01	-.01
R^2	.14	.27	.12
ΔR^2	.02	0.12*	.03
F	1.47	3.36*	1.21

Note. * $p < .05$

Consistent with results found at an independent level, hierarchical multiple regression did not significantly explain variation in self-acceptance at any of the three stages. Additionally, in step one interpersonal attachment ratings contributed significantly to the

regression model for environmental mastery, F(3,88) = 2.78, $p < .05$) accounting for 9% of the variation in environmental mastery. Introducing additional variables in steps two and three did not result in a significant model of environmental mastery.

Importantly, hierarchical multiple regression for relatedness to others revealed at step one, interpersonal attachment ratings contributed significantly to the regression model, $F_{(3,88)} = 3.45$, $p < .05$, accounting for 10.5% of variation. Introducing ratings of attachment to close sporting others significantly explained an additional 4.8% of variation in relatedness to others but this change in R^2 was not significant, $F_{(3,85)} = 1.59$, $p = .20$. Finally, adding athlemaphilic attachment to the model significantly explained an additional 11.6% of variation in relatedness to others , $F_{(3,82)} = 4.37$, $p < .05$. Together, ratings of attachment in all three domains accounted for 26.9% of variation in feelings of relatedness to others. When regression accounted for attachment in all three domains only interpersonal attachment security and athlemaphilic attachment avoidance were uniquely significant predictors of relatedness to others.

Collectively, the results of these nine linear regressions and three hierarchical multiple regression analyses demonstrate variation in attachment ratings between domains differentially predicts wellbeing. Interpersonal attachment ratings are the only significant independent predictors of variation in wellbeing, specifically accounting for 9% and 11% of variation in feelings of environmental mastery and relatedness to others respectively. Furthermore, when controlling for attachment to close interpersonal and sporting others athlemaphilic attachment accounted for a significant increase in the variation of relatedness to others. These results support *hypothesis one-b*.

Hypothesis two: Aggregate ratings of features of relationships would be significantly different from zero in all domains (a) and differ between relationship domains (b). Appendix H displays descriptive statistics of FRS and FARS features grouped

by relationship domain as well as comparisons of aggregate feature ratings between relationship domains. Ratings for all relationship features, in all domains, were significantly different from zero. These results support *hypothesis two-a*.

Initial comparison of aggregate feature ratings between relationship domains can be seen in Appendix H. Thirty-two features demonstrated significant differences in at least one paired comparison of ratings across all three domains. Aggregate ratings of three features did not differ between domains (i.e., "I find myself seeking ways to be closer to ___", "If things are not going well with ___, I have adequate places to turn to for help and support", "My relationship with ___ has grown stronger as time has passed"). These results support *hypothesis two-b*.

Furthermore, comparison of aggregate results by factor demonstrated significant variation across all three domains. Table 5 displays descriptive statistics by factor and comparisons of aggregate factor ratings by domain. Specifically, relationships with a close interpersonal other were rated as significantly more obsessive, communicative, secure, affectionate, and intimate, requiring greater sacrifice and investment than relationships with close sporting others. Close interpersonal relationships and relationships with close sporting others did not significantly differ in opportunities for personal growth. Relationships with a close interpersonal other were rated as significantly more communicative, secure, and intimate than athlemaphilic relationships. On the other hand, athlemaphilic relationships were rated as more obsessive, affectionate, physical, likely to provide opportunities for growth, and heavily invested in than interpersonal relationships. No significant differences were found in ratings of sacrifice between athlemaphilic and interpersonal relationships. Finally, athlemaphilic relationships were rated as significantly more obsessive, affectionate, physical, and likely to provide opportunities for personal growth than relationships with close sporting others, while requiring greater sacrifice and investment. Alternatively, relationships with

close sporting others were rated as more communicative and intimate than athlemaphilic relationships. These results also support *hypothesis two-b*.

Table 5 Descriptive Statistics of Factors by Relationship Domain

	Interpersonal		Sporting Environment		Athlemaphilic				
	M	SD	M	SD	M	SD	ΔM_1	ΔM_2	ΔM_3
Obsession	2.04	.73	1.69	.81	2.41	1.04	.36*	-.37*	.72*
Sacrifice	1.96	.50	1.58	.51	1.79	.62	.38*	.17	.21*
Communication	3.14	.62	2.36	.76	1.99	1.05	.78*	1.15*	-.37*
Security	2.80	.36	2.21	.50	1.77	.73	.60*	1.04*	-.44*
Affection	2.59	.66	2.26	.59	2.81	.48	.33*	-.21*	.55*
Growth	2.97	.77	2.85	.57	3.20	.62	.12	-.23*	.35*
Investment	1.49	.48	1.42	.52	1.80	.56	.06*	-.32*	.38*
Intimacy	2.38	2.21	.64	1.06	.36	.74	1.74*	2.02*	-.29*
Physicality	.05	.83	.30	.78	1.14	.87	-0.25	-1.09*	.84*

Note. ΔM_1: Difference between Interpersonal and Sporting Environment means; ΔM_2: Difference between Interpersonal and Athlemaphilic means; ΔM_3: Difference between Athlemaphilic and Sporting Environment means; * $p < .05$

Collectively, comparisons of FRS and FARS ratings relative to zero and each other between domains demonstrated significant differences. Aggregate ratings for all FRS and FARS features were significantly different from zero. Additionally, the majority of features (91.4%) demonstrated significant differences in aggregate ratings between domains. Furthermore, all nine factors demonstrated statistically significant differences in aggregate ratings between relationship domains. Therefore, hypothesis two-a and -b were accepted.

Hypothesis three: Variation in features of relationships between domains will significantly predict variance in wellbeing. Nine independent linear regression analyses were conducted, one for factor scores for features of relationship ratings in each domain (i.e., interpersonal, sporting environment, athlemaphilic) on each measure of wellbeing (i.e., environmental mastery, relatedness to others, self-acceptance). Factors of relationships to a close interpersonal other and to close sporting others were significant predictors of one or more measure of wellbeing. Factors of athlemaphilic relationship were not independently

significant predictors of any measure of wellbeing, but their predictive strength approached significance concerning environmental mastery ($p = .06$).

Factors of relationships to a close interpersonal other accounted for moderate variation in relatedness to others, $R^2 = .22$, $F_{(9,84)} = 2.58$, $p < .05$ where obsession ($\beta = .38$, $p < .05$), growth ($\beta = .29$, $p < .05$), and investment ($\beta = -.47$, $p < .05$) were significant predictors as an individual level. Factors of relationships to a close sporting other accounted for moderate variation in environmental mastery, $R^2 = .27$, $F_{(9,84)} = 3.50$, $p < .05$ where security ($\beta = .54$, $p < .05$) and investment ($\beta = -.35$, $p < .05$) were significant predictors at an individual level. Similarly, factors of relationships to a close sporting other accounted for moderate variation in self-acceptance, $R^2 = .24$, $F_{(9,84)} = 2.94$, $p < .05$ and security ($\beta = .62$, $p < .05$) was a significant predictor at an individual level.

Furthermore, Table 6 displays the results three three-step hierarchical linear regressions for relationship factors on each measure of wellbeing

Table 6 Results of Hierarchical Regression Analyses for Wellbeing

Independent Variables	Model 1:Self-Acceptance	Model 2: Environmental Mastery	Model 3: Relatedness to Others
Step 1: Interpersonal Factors			
Obsession	0.25	0.03	.63*
Sacrifice	-0.12	-0.17	-0.16
Communication	-0.05	0.08	0.12
Security	0.05	-0.03	-0.13
Affection	-0.02	-0.01	-0.21
Growth	0.22	0.25	0.29
Investment	0.06	-0.03	-0.25
Intimacy	-0.14	-0.42	-.44*
Physicality	-0.02	0.19	0.38
R^2	0.13	0.17	0.22
F	1.33	1.86	2.58*
Step 2: Sporting Environment Factors			
Obsession	-0.13	-0.14	-0.35
Sacrifice	0.29	0.42	0.27
Communication	-0.3	-0.12	-0.34
Security	.63*	.54*	.67*
Affection	-0.08	-0.09	0.17
Growth	-0.08	0.03	-0.2
Investment	-0.43	-.57*	0
Intimacy	-0.2	-0.24	-0.22
Physicality	.36*	.41*	0.3
R^2	0.29	0.36	0.34
ΔR^2	0.16	.19*	0.12
F	1.73	2.30**	2.18*
Step 3: Athlemaphilic Factors			
Obsession	-0.12	-0.17	-0.14
Sacrifice	-0.08	0.02	-0.11
Communication	0.24	0.1	.39*
Security	-0.19	-0.06	-0.29
Affection	0.12	0.06	0.01
Growth	0.24	.33*	.33*
Investment	-0.08	-0.1	-0.04
Intimacy	-0.07	0.01	-0.02
Physicality	-.30*	-.26*	0.05
R^2	0.4	0.47	0.44
ΔR^2	0.11	0.11	0.1
F	1.65	2.13**	1.93*

Note. * $p < .05$; ** $p < .01$

Hierarchical multiple regression of the factors of relationships did not significantly explain variation in self-acceptance at any of the three steps. The second hierarchical multiple regression revealed at step one, interpersonal attachment ratings did not significantly contribute to the regression model for environmental mastery. However, introducing factors of relationships to close sporting others resulted in a significant model, $F_{(18,75)} = 2.30$, $p < .05$) accounting for 35.5% of variation in environmental mastery. This change in R^2 was significant, $F_{(9,75)} = 2.45$, $p < .05$. Finally, introducing the factors of athlemaphilic relationships resulted in a significant model accounting for an additional 11% of variation in environmental mastery, but this change in R^2 was not significant, $F_{(9,66)} = 1.51$, $p = .16$. Together the factors of relationships in all three domains accounted for 46.5% of variation in environmental mastery. When regression accounted for the factors of all three relationship domains, security, investment, and physicality in relationships with close sporting others and physicality and opportunities for personal growth in athlemaphilic relationships were uniquely significant predictors of environmental mastery.

The final hierarchical multiple regression revealed at step one, factors of relationships to a close interpersonal other contributed significantly to the regression model for relatedness to others, $F_{(9,84)} = 2.57$, $p < .05$, accounting for 21.6% of variation. Introducing the factors of relationships to close sporting others maintained the significance of the overall model, $F_{(18,75)} = 2.18$, $p < .05$, explaining an additional 12.7% of variation in relatedness to others, but this change in R^2 was not significant, $F_{(9,75)} = 1.61$, $p = .13$. Finally, adding factors of athlemaphilic relationships to the model maintained the significance of the overall model once again, $F_{(27,66)} = 1.93$, $p < .05$, explaining an additional 9.8% of variation in relatedness to others, but this change in R^2 was not significant, $F_{(9,66)} = 1.27$, $p = .27$. Together the factors of relationships in all three domains accounted for 44.1% of variation in relatedness to others. When regression accounted for the factors of all three relationship domains, obsession and

investment in interpersonal relationships, security in relationships with close sporting others, and communication and opportunities for personal growth in athlemaphilic relationships were uniquely significant predictors of relatedness to others.

The results of these nine linear regressions and three hierarchical multiple regression analyses demonstrate variation in features and factors of relationships between domains differentially predict variation in wellbeing. Factors of relationships with a close interpersonal other were significant independent predictors of variation in wellbeing, specifically accounting for 21.6% of variation in relatedness to others. Additionally, factors of relationships with close sporting others significantly predicted 27.3% of variation in environmental mastery and 23.8% of variation in self-acceptance. Furthermore, when controlling for the factors of relationships to close interpersonal and sporting others factors of athlemaphilic relationships significantly predicted variation in environmental mastery and relatedness to others. Collectively, these results demonstrate variance in the features and factors of relationships between domains differentially explain significant variation in wellbeing independently and collectively. These results support *hypothesis three*.

Summary of findings

Attachment. According to Bowlby's (1969) initial concept of attachment, attachment styles are developed in infancy as consistent and trait-like representations of the self in relation to interpersonal others. Recent advances in the concept of attachment offer support for a view of attachment as domain specific (Sibley & Overall, 2008), reliant upon context (Caron et al., 2012), and influenced by nonhumans (Keefer et al., 2014). This study used an adaptation of the adult attachment self-report measure (Hazan & Shaver, 1987) to support that individuals are able to conceive of their interactions with a nonhuman other, in this case a sport, as an attachment. Furthermore, results indicate aggregate ratings of attachment differ

across relationship domains, challenging Bowlby's original theorising of trait-based attachment systems.

Relationships. According to concepts of interpersonal relationships within SDT (Deci & Ryan, 1985; La Guardia & Patrick, 2008; Ryan & Deci, 2000), attachment theory (Ainsworth et al., 1978; Bowlby, 1969; Hazan & Shaver, 1987), and various other theories of relationships (e.g., Rusbult, 1980; Steinberg, 1986) interpersonal relationships can be identified and classified according to the presence of certain features (e.g., love, intimacy, communication). This study generated a framework for exploring the features of relationships and assessed the presence of those features across interpersonal and non-interpersonal relationship domains. Initial piloting of the framework as well as the data displayed in Appendix H offer support for the face validity (Nevo, 1985) of this framework. At an aggregate level, participants report the presence of all of the features of interpersonal relationships in their athlemaphilic relationships.

Furthermore, results revealed that when compared to interpersonal relationships, athlemaphilic relationships were rated as more obsessive, affectionate, physical, encouraging of personal growth, and, likely to require investment. Conversely, athlemaphilic relationships were less communicative, secure, and intimate than close interpersonal relationships and no differences were found in ratings of sacrifice between the two relationship domains. In summary, these findings reveal participants conceptualise their interpersonal and athlemaphilic relationships using similar features, but variation exists with regard to the prevalence of particular features in each domain.

Wellbeing. According to SDT (Deci & Ryan, 1985; Ryan & Deci, 2000) and attachment theory (Ainsworth et al., 1978; Bowlby, 1969; Shaver & Hazan, 1987) satisfying or thwarting certain features of interpersonal relationships is linked to variance in wellbeing. Extending these ideas, Keefer et al. (2014) review emerging research related to nonhuman

attachment and the impact various forms of nonhuman support can have upon wellbeing. The results of this study reveal neither athlemaphilic attachment nor the individual factors of athlemaphilic relationships independently predicted variation in wellbeing. However, when controlling for attachment to close interpersonal and sporting others athlemaphilic attachment accounted for a significant increase in the variation of feelings of relatedness to others. Additionally, when controlling for the factors of relationships to close interpersonal and sporting others factors of athlemaphilic relationships significantly predicted variation in environmental mastery and relatedness to others. In summary, these findings reveal variation in ratings of athlemaphilic attachment and features of athlemaphilic relationships moderately improve variation in wellbeing explained by interpersonal relationships.

General discussion

The purpose of this study was to explore whether nonhuman interactions with sport are experienced similarly to theoretical concepts of interpersonal relationships and how nonhuman interactions with sport affect wellbeing. The results of the study support the conception of athlemaphilic relationships which can significantly predict variation in wellbeing when considered alongside interpersonal relationships. This conclusion has various implications for our understanding of anthropomorphism, attachment, self-determination, features of relationships, and wellbeing. Those implications will be discussed below.

Establishing sport as a nonhuman source of attachment continues to extend the social-psychological understanding of attachment theory. Numerous studies have experimentally tested the interaction of interpersonal and nonhuman sources of support. Results demonstrate significant interpersonal attachments can affect attachment styles to nonhumans (e.g., Birgegard & Granqvist, 2004), and nonhuman forms of attachment can be used to compensate for depleted need satisfaction from interpersonal relationships (Keefer et al., 2012). The findings in this study suggest athlemaphilia may also be affected by interpersonal

attachments as demonstrated by ratings of attachment to and factors of athlemaphilic relationships significantly predicting variation in wellbeing only when controlling for the effects of interpersonal relationships. Furthermore, the disparity in reported attachment between relationship domains offers support for a domain (Sibley & Overall, 2008) and context (Caron et al., 2012) specific view of attachment. Further research is required to explore how attachments to sport are shaped by interpersonal, and indeed other nonhuman, attachments within sport and in wider context, as well as how individuals can use sport to compensate for suboptimal interpersonal need satisfaction.

Deci and Ryan (2000, 2012) present SDT as a key theory for understanding human motivation and optimal performance. The findings presented in this study challenge the interpersonal requirement of relatedness (Ryan, 1991) and position athlemaphilic relationships as capable of satisfying certain features of relationships better than interpersonal relationships. A more detailed discussion of the variation of features of relationships is included below, considering in turn: (i) dimensions of relationships reported similarly between humans and sport, (ii) dimensions of relationships stronger with sport than with humans, and (iii) dimensions of relationships stronger with humans than with sport.

First, results of this study have shown reported willingness to make sacrifices for the sake of the relationship does not differ between interpersonal and athlemaphilic relationships. This is perhaps not surprising on account of expectations to overconform to a sporting ethic of sacrifice (Hughes & Coakley, 1991). Athletes, athletes' families, and coaches view discipline and sacrifices in terms of time, money, and pain as necessary for sporting success (Holt & Dunn, 2004; Jowett & Ntoumanis, 2004; Newhouse-Bailey, Dixon, & Warner, 2015; Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998) and it is reasonable to assume such views regarding sacrifice would permeate athlemaphilic relationships. Future research needs to explore the influence of self-sacrificing behaviour and social norms upon athlemaphilic

relationships as well as the intersection of these concepts, potentially through cross-cultural exploration of relationships with sport.

Second, findings identify that athlemaphilic relationships present greater opportunities for personal growth and physical harm, involve a greater sense of investment and obsession, and are more affectionate than interpersonal relationships. These findings call to mind salient sporting narratives influenced by the concept of a growth mind-set (Dweck, 2000), the 10,000 hour rule (Ericsson, 2014), and elements of sacrifice mentioned in the previous paragraph. These concepts combine to create a sense that increased investment is a necessary sacrifice for continued growth and mastery. Additionally, the primary features of affectionate relationships were a sense of love, passion, goodness of fit, and the voluntary initiation of the relationship. This is an exciting finding, but it needs to be viewed cautiously. It is plausible interpersonal relationships rated lower than athlemaphilic relationships on this factor because many respondents completed the survey with regard to a parent or family member and not a romantic partner. This is unsurprising given the prominence of parental influence on interpersonal attachment (Hazan & Shaver, 1987).

Furthermore, respondents expect their athlemaphilic relationships to cause them more harm than their interpersonal relationships, which could be understandable given the physical and adversarial nature of sport and the acceptance of injury (Wiese-bjornstal et al., 1998) and violence (Channon & Matthews, 2018; Matthews & Channon, 2016, 2017) within sport. However, it needs to be pointed out that if interpersonal relationships were found to be characterised by increased expectations of physical harm, it would be cause for concern. These findings bring about questions of social normalisation and whether sport exists as a domain where socially unacceptable behaviour is viewed as acceptable.

Third, , interpersonal relationships scored significantly higher in communication, security, and intimacy than athlemaphilic relationships. The extent to which individuals in

relationships with sport anthropomorphise (Epley et al., 2007) their partners is unknown and future research can explore this further. It is not surprising that inanimate athlemaphilic relationships are not expected to be very expressive, though other forms of nonhuman support are thought to communicate with individuals (e.g., Gods; Shtulman & Lindeman, 2014). This uniquely positions athlemaphilia as a nonhuman form of support to study the implications of nonverbal anthropomorphism. Additionally, competitive sport is inherently adversarial and even competition within a team can undermine wellbeing (Adams & Carr, 2017). As a result, it is not surprising experiences of security in athlemaphilia are complicated. Finally, there is some evidence of individuals achieving sexual satisfaction through sport, for example Arnold Schwarzenegger's testimony in "Pumping Iron" (Gaines, 1981), but few participants rated their athlemaphilic relationships as satisfying their sexual needs. It is possible that, like interpersonal relationships, there exists variation in the types of athlemaphilic relationships an individual can engage in. Some types of athlemaphilia, like Arnold's experiences in the gym, may be characterised by intense sexual satisfaction, while others may more closely resemble a platonic or familiar relationship. Future research should examine the variety of experiences within athlemaphilia.

Implications. Conceptualising nonhuman interactions with sport as influential relationships has many implications within the context of sport and exercise sciences. For example, the sport commitment model (Scanlan, Carpenter, Simons, Schmidt, & Keeler, 1993) defines the social constraints which influence sport commitment through an entirely interpersonal perspective. Incorporating the psycho-social influence sport can potentially exhibit in terms of sport commitment has yet to be tested. Additionally, the life-span perspective proposed by Wylleman and Lavallee (2004) acknowledges the influence of interpersonal relationships upon the life-span of an athlete, but it does not incorporate the influence nonhuman relationships with the sport itself can have upon an athletic life-span.

Additionally, Ryff and colleagues (2014; Ryff & Singer, 2008) position environmental mastery as important for controlling and manipulating the complex environments we encounter across our life-spans; thus the link between features of athlemaphilic relationships and increased environmental mastery can suggest enduring positive benefits of maintaining athlemaphilic relationships. These and other ways we currently understand why we engage and remain in sport, as well as what sport provides individuals, are yet to be fully understood through the lens of athlemaphilic attachments.

Limitations. Bartholomew and Shaver (1998) warn that metrics used to assess attachment should be specific to the domain of interest. This presents two issues for the present study. First, there is no metric for assessing athlemaphilic attachments, thus the measurement of attachments to sport must currently be done with a metric from another domain. Second, the attachment system is increasingly being understood as a complex interrelated tree of attachment experiences (Bartholomew & Shaver, 1998), and even if a unique measure for athlemaphilic attachment were to be derived, it is not yet understood how the insight gained from such a metric is connected to other human and nonhuman attachment experiences.

Additionally, this study obtained sufficient data to suggest the existence of sport as a nonhuman relationship, but a larger sample size is needed to more clearly illuminate how relationships with sport interact with interpersonal relationships and wellbeing. Furthermore, improvements to the FARS are needed. First, the FARS did not explicitly ask participants whether they viewed their interactions with sport as a relationship, requiring all comparisons to be made upon inference. Overtly asking whether participants view their interactions with sport as relationships will help to avoid the reliance on inference in future studies. Second, interpreting the results of the factor analysis of the current responses to the FARS is difficult

as a result of high collinearity between factors. More thorough factor and structural testing is needed with extensive sampling to validate the FARS.

Furthermore, this study has not been able to separate the contribution of athlemaphilic relationships from the contributions of interpersonal relationships, with regard to experiences of wellbeing. Future studies must consider whether such separation is possible, and if so, how to measure it. Also, limited analysis of relationships with close sporting others was conducted, because the collective nature of these relationships was less directly comparable to athlemaphilic relationships than nominated individual interpersonal relationships. Future study is needed to explore the associations between athlemaphilia and attachment to close sporting others including teammates, coaches, and fans. Finally, the present study is entirely reliant upon self-reported data and correlation analyses. Future research can address these limitations by incorporating qualitative methods, observational data, and experimental designs.

Concluding remarks. The present study provides initial evidence supporting the concept of athlemaphilic relationships. The findings show individuals conceptualise their athlemaphilic attachments in a comparable manner to their interpersonal attachments, though ratings of attachment differ by domain. The development of a specific measure of athlemaphilic attachment, built upon metrics in the interpersonal domain (Brennan et al., 1998) and derivations of these metrics already established within other nonhuman domains (e.g., God; Beck & McDonald, 2004), will allow for further exploration of athlemaphilic attachment.

Additionally, findings suggest individuals express and experience athlemaphilia through features traditionally reserved for interpersonal relationships. This finding places athlemaphilia among research which explores the human capacity to satisfy emotional needs using nonhuman forms of support (Keefer et al., 2014). The present study has shown features

of interpersonal relationships are present within athlemaphilic relationships and variation in these features differentially relates to wellbeing. It is not yet known which features of interpersonal relationships do not exist in athlemaphilic relationships, and vice versa. Considering differences in need satisfaction by relationship domain can continue to improve our understanding of how we satisfy support, generate security, and flourish overall.

Finally, the current study demonstrates that variation in the FARS predict changes in relatedness to others and environmental mastery. One implication of this finding is it calls into question the way we define relatedness and the subsequent motivational processes involved in satisfying relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000). If athlemaphilic relationships exist, and individuals use them to satisfy their basic psychological need for relatedness, then it follows individual motivation to engage in sport can be derived from nonhuman relatedness satisfaction. Further exploration of the motivational antecedents of athlemaphilia are needed to clarify the association between athlemaphilia and relatedness.

In conclusion, the current study begins to position the emotional benefits of athlemaphilic attachment as an area in need of further consideration. Respondents have demonstrated they conceive of their interactions with sport as similar to interpersonal relationship. Furthermore, athlemaphilic relationships have been found to contribute to wellbeing but only in conjunction with interpersonal relationships. This study challenges the interpersonal requirement for relatedness within SDT and presents numerous questions regarding what motivates individuals to engage in sport. Finally, this study demonstrates the language of relationships, and its underlying collection of meanings, has a great deal to offer our understanding of what sport means to an individual.

CHAPTER FOUR

Broadening the Scope of Attachment Theory: An Interpretative Phenomenological Analysis of Athlemaphilia[2]

The best and most beautiful things in the world cannot be seen nor even touched, but just felt in the heart.

– *Helen Keller*

[2] Hodge, A., Oliver, E., Eccles, D. (2017, November). *Conceptualizing sporting experiences as romantic attachments: A mixed methods exploration of loving the game.* Paper presented at the annual meeting of The British Association of Sport and Exercise Sciences (BASES), held in conjunction with The European Federation of Sport Psychology (FEPSAC), Nottingham, England. *Awarded the Human Kinetics Student Free Communication Presentation Award*.

Abstract

Chapter 3 in this thesis revealed individuals experience their interactions with sport as athlemaphilic relationships and the features of athlemaphilic relationships are associated with variation in wellbeing. Six participants from the Chapter 3 were interviewed about the various influences their athlemaphilic relationships have upon their lives The interpretative phenomenological analysis presented in this chapter was used to analyse these individuals' experiences of athlemaphilia, begins to explore why individuals form athlemaphilic relationships, and continues exploring the association between athlemaphilic relationships and wellbeing... Findings reveal participants' athlemaphilic relationships involve a series of choices, are internally and externally influenced, change various elements of participants' lives, and provide athletes with a sense of comfort. Additionally, participants describe experiencing omnipotent control over their athlemaphilic partners suggesting motivation to engage in athlemaphilia may be related to control, effectance, and anthropomorphism. These findings advance our understanding of what motivates individuals to engage and remain in athlemaphilic relationships, demonstrating athlemaphilia's influence extends beyond interactions with sport.

Introduction

Keller (1954) articulates that feelings involve far more than can be seen with our eyes or touched with our hands. In the previous chapter we have seen support for the existence of athlemaphilic relationships and identified how these relationships are associated with individual wellbeing. However, we still understand little in the phenomenal world of athletes' meaningful affective connections with sport. Continuing to study experiences of athlemaphilia may provide a better understanding of what motivates individuals to engage and remain in athlemaphilic relationships, as well how athlemaphilic relationships interact with important interpersonal relationships.

The previous chapter challenged the interpersonal requirement of relatedness in SDT. Self-determination theory theorises individuals are motivated to initiate and persist in particular behaviours which afford them opportunities to satisfy three basic psychological needs of autonomy, competence, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000). The concepts of SDT are frequently applied in sport psychology literature to understand how interpersonal relationships affect need satisfaction and wellbeing (e.g., Adie, Duda, & Ntoumanis, 2008; Felton & Jowett, 2013; Sebire, Standage, Gillison, & Vansteenkiste, 2013), however, little is known about the associations between SDT and athlemaphilia. Furthermore, Chapter 3 in this thesis revealed variation in features of athlemaphilic relationships are associated with a sense of environmental mastery, demonstrating athlemaphilic relationships afford individuals the opportunity to competently experience autonomous choice over the relationships and environments which effectively satisfy their needs (Ryff, 2014). The link between self-determined experiences of environmental mastery through athlemaphilic relationships is not yet understood. Resultantly, the continued application of SDT to the analysis of athlemaphilia is integral to advancing our understanding of whether athlemaphilia

satisfies or thwarts basic psychological needs and how variation in available need satisfaction motivates individuals to build athlemaphilic relationships.

Additionally, Chapter 3 revealed participants view their athlemaphilic relationships as attachments (Ainsworth et al., 1978; Bowlby, 1969). Ainsworth and colleagues (1985; Ainsworth et al., 1978) outlined four primary functions of attachment bonds. First, attachment bonds act as a secure base from which individuals can explore unknown experiences. Second, attachment bonds act as a safe haven and place where individuals can return to when frightened or threatened. The third and fourth functions of attachment bonds are identified by proximity maintenance and distress upon separation from attachment figures. On average, respondents in Chapter 3 rated items related to security in the FRSS (e.g., "I feel safe in the presence of", "I find myself seeking ways to be closer to___") as representative of their athlemaphilic relationships. This offered initial support for the notion that athlemaphilia can facilitate some of the functions of attachment bonds and further exploration is required to uncover whether athlemaphilic relationships can satisfy all four of the functions of attachment bonds.

Furthermore, the construction of internal working models is a central concept of attachment theory (Ainsworth et al., 1978; Bowlby, 1973). Internal working models are theorised to be trait-based and enduring "generalized representations about whether close others will be responsive and supportive in times of need and whether the self is worthy of support and care" (Collins & Feeney, 2004, p. 364). The development of internal working models during childhood is theorised to shape our expectations of future relationships (Bowlby, 1969, 1973; Hazan & Shaver, 1987) and transference suggests previous relationships play an essential role in shaping the way we view novel people (Ahmed & Brumbaugh, 2014; Brumbaugh & Fraley, 2007) and future interpersonal relationships (Ahmed & Brumbaugh, 2014; Andersen & Baum, 1994; Brumbaugh, 2017).

Empirical evidence regarding internal working models supports both their fluidity and stability across various types of relationships. Evidence demonstrates individuals possess a variety of distinct working models in different types of relationships (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) while other research demonstrates the stability of internal working models in interpersonal relationships (Baldwin, 1995; Baldwin et al., 1996). Additionally, empirical evidence suggests internal working models of interpersonal attachment correspond to internal working models of religious attachment. (e.g., Beck & McDonald, 2004; Granqvist, 2014; Kirkpatrick & Shaver, 1990). Variation in ratings of attachment across different relationship domains presented in Chapter 3 supports the concept of attachment as domain (Sibley & Overall, 2008) and context (Caron et al., 2012) specific. Internal working models underpin attachment behaviour; thus, additional exploration is necessary to better understand how internal working models and attachment bonds interact across interpersonal and athlemaphilic relationship domains.

Finally, anthropomorphism (Epley et al., 2007) is a crucial component for understanding the transference of human working models of attachment unto nonhuman deities (e.g., Barrett & Keil, 1996; Shenhav, Rand, & Greene, 2012; Wlodarski & Pearce, 2016). For example, Barrett and Keil (1996) reported that theological belief was not consistently related to anthropomorphic concepts of God suggesting individuals anthropomorphise God, and presumably other agents, as a means of representing an entity they cannot otherwise understand. Their findings align with the concepts of elicited agent knowledge and effectance , two of three factors theorised to motivate individuals to anthropomorphise (Epley et al., 2007). Elicited agent knowledge refers to the cognitive process whereby knowledge about humans is a "readily accessible base for induction about the properties of unknown agents" (Epley et al., 2007, p. 866). Effectance explains the motivation to apply knowledge about humans to increase the predictability of otherwise

unpredictable behaviour of a nonhuman agent (Epley et al., 2007). Finally, the three-factor theory of anthropomorphism posits individuals are motivated to anthropomorphise nonhuman agents to facilitate a sense of affiliation and belongingness (Epley et al., 2007). Anthropomorphism in athlemaphilia is yet to be understood and further exploration of whether participants anthropomorphise sport, and what motivates them to do so, is necessary.

The current study seeks to advance the findings of Chapter 3 by qualitatively exploring four research questions: (a) why athletes form athlemaphilic relationships; (b) why some athlematic interactions act as relationships while others do not; (c) how athlemaphilic attachments interact with other attachments, and; (d) how athletes perceive the influence athlemaphilic relationships has upon their psychological wellbeing. An explanation of why interpretative phenomenological analysis (IPA: Smith et al., 1999; Smith & Osborn, 2003) is well suited for the investigation of how athletes make sense of their athlemaphilic relationships and what athlemaphilic relationships mean to athletes is provided below.

Conducting an IPA of athlemaphilic experience responds to "recent calls by researchers to expand the methodological repertoire within sport and exercise psychology so as to develop credible alternatives to (post)positivistic or (neo)realist forms of inquiry" (Smith & Sparkes, 2008, p. 1). Phenomenological philosophy is a crucial component of IPA enabling researchers to focus on the experiences of their participants as well as the consciousness those experiences aid in creating (Giorgi, 1995; Husserl, 1970). IPA is a method which seeks to give voice to a phenomenon, while employing the researcher to make sense of the phenomenon in wider social, cultural, and theoretical contexts (Larkin, Watts, Clifton, 2006). IPA recognizes participants are "experiential experts on the subject" (Smith & Osborn, 2003, p. 59) and treats them as such, requiring the researcher to interpret the meaning making of participants' experiences. The use of IPA in this study will incorporate all of these components as I seek to "make sense of my participants trying to make sense of their world"

(Smith & Osborn, 2003, p. 53). Furthermore, it is expected each athlete sampled will have a different experience of their relationships with sport and a critical review of IPA in health psychology concluded that when compared to other qualitative methods IPA has a more explicit focus on ideography (Brocki & Wearden, 2006). The experiential and ideographic focus of IPA is thus well aligned with the research questions outlined in this study.

Outside of health domains, the use of IPA in sport psychology is increasing (Smith, 2016), with examples illuminating how goals may influence thoughts and behaviour (Sebire, Standage, et al., 2013) and how social support benefits athletes who are facing adversity (Mcdonough, Sabiston, & Ullrich-French, 2011; Tamminen, Holt, & Neely, 2013) or transitioning out of elite sport (Brown, Webb, Robinson, & Cotgreave, 2018). Additionally, a phenomenological methodology was employed to study risk in extreme sports (Brymer, 2010) and revealed novel ways to view motivation to participate in extreme sports (Brymer & Schweitzer, 2013b), the positive transformative opportunities available through extreme sport participation (Brymer & Oades, 2009; Brymer & Schweitzer, 2013a), and engagement in extreme sports can foster an improved relationship with nature (Brymer & Gray, 2009, 2010). It is evident the use of IPA in sport psychology is appropriate and increasing and IPA can explore experiences of nonhuman relationships.

In summary, the aim of this research was to develop our understanding of individuals' experiences of athlemaphilic relationships and in doing so to explore how and why nonhuman relationships are pursued and lived. This study builds on the findings of Chapter 3 which provided preliminary evidence individual experiences of athlemaphilia constitute meaningful relationships and the features of athlemaphilic relationships are associated with variation in relatedness, environmental mastery, and wellbeing. Specifically, this study sought to explore how athletes experience athlemaphilic relationships, how these

relationships interact with other elements of athletes' lives, and how athletes perceive the influence of their athlemaphilic relationship upon their health and wellbeing.

Methods

Participants and Sampling. IPAs typically involve small groups of participants for whom the research question is significant (Smith, Flowers, & Larkin, 2009). Participants for this study were selected using a purposeful sampling method (Patton, 2005) to encourage homogeneity in terms of experiencing athlemaphilia as a meaningful contributor to wellbeing (Smith, 2016). To identify a sample, participants from Chapter 3 were ranked according to the contribution of their athlemaphilic relationship to wellbeing relative to the contribution of their interpersonal relationship. This was irrespective of which components of the relationship were making the contribution. In this way, athletes who had influential athlemaphilic relationships in terms of wellbeing were prioritised for invitations to participate; athletes with the highest scoring positively and negatively-valenced relationships with wellbeing were equally targeted in terms of the sample.

Following university ethical approval (See Appendix B), 42 individuals were invited to partake in an interview to follow-up their survey response. Six individuals were available to interview (M_{age} = 23.00, range = 21 to 26 years). Smith et al. (2009) recommend IPAs should include between three and six participants, or between four and ten interviews; thus, the number of participants and interviews is consistent with methodological guidelines. Interviewees singed informed consent forms (See Appendix B); interviews were recorded and lasted on average 53 minutes (range = 36 to 80 min). Participants are introduced briefly in Table 7.

Table 7 Descriptive Characteristics of Interview Participants

Dany is a 23-year-old American female who competes in CrossFit, volleyball, and basketball. Dany enjoys exceeding the expectations of others, particularly when competing in mixed-gender competitions. IS = 5, SS = 5, AS = 4; IV = 0, SV = 1, AV = 1; IX = 4, SX = 4, AX = 4; EM = 5.00, RS = 4.00, SA = 4.64
Thomas is a 23-year-old American male who competes in American football. Thomas uses his relationship with American football to build interpersonal relationships and has experienced two injury-related setbacks in his athlemaphilic relationship. IS = 5, SS = 4, AS = 5; IV = 1, SV = 0, AV = 0; IX =0, SX = 0, AX = 0; EM = 4.50, RS = 4.17, SA = 4.29
Emma is a 23-year-old Canadian female who competes in CrossFit, athletics, and volleyball. Emma experiences her interaction with sport as "more than a relationship" and commented that spending time with her boyfriend at CrossFit is better than spending time alone at CrossFit, or alone with her boyfriend.* IS = 4, SS = 4, AS = 5; IV = 1, SV = 1, AV = 1; IX = 1, SX = 3, AX = 3; EM = 3.64, RS = 3.33, SA = 3.21
Sarah is a 21-year-old British and Dutch female who currently plays basketball but has played volleyball and hockey in the past. She is a versatile athlete who is willing to leave one relationship with sport if another relationship presents her with a better opportunity to satisfy her need to excel. IS = 5, SS = 5, AS = 4; IV = 1, SV = 1, AV = 1; IX = 2, SX = 2, AX = 0; EM = 4.14, RS = 3.33, SA = 4.21
Mario is a 22-year-old Norwegian male who plays handball. His first experiences with handball were driven by a desire to spend more time with his friends, but now he uses his relationship with the sport to increase the wellbeing of others. IS = 5, SS = 5, AS = 6; IV = 0, SV = 2, AV = 1; IX =1, SX = 2, AX = 1; EM = 4.07, RS = 3.33, SA = 4.29
Rapunzel is a 26-year-old Canadian female who played tennis to an international standard. She has spent so much time on her own with tennis that she struggles to form lasting interpersonal relationships. IS = 6, SS = 6, AS = 6; IV = 0, SV = 0, AV = 0; IX = 0, SX = 0, AX = 0; EM = 4.86, RS = 4.20, SA = 4.86

Note. IS = interpersonal security, SS = sporting environment security, AS = athlemaphilic security; IV = interpersonal avoidance, SV = sporting environment avoidance, AV = athlemaphilic avoidance; IX = interpersonal anxiety, SX = sporting environment anxiety, AX = athlemaphilic anxiety; EM = environmental master, RS = relatedness to others in physical activity, SA = self-acceptance

* After her interview, Emma's boyfriend proposed to her while training together at CrossFit.

Procedure. Consistent with the recommendations of Smith and Osborn (2009), data was collected using semi-structured interviews (See Appendix D for interview guide). All interviews began with an explanation of the intended research aims coupled with a description of why each participant had been invited to participate. Interviewees were then asked to discuss: (a) what they considered a relationship to be; (b) to indicate if they felt they were in a relationship with sport; (c) the most positive and most negative, athlematic experiences during their time in sport; (d) unique experiences they have in their athlemaphilic

relationship and not their interpersonal relationships, and vice versa, and; (e) why they felt they had developed an influential athlemaphilic relationship. At the end of the interview, I verbally summarised the interview and asked respondents whether they felt my summary was accurate. Participants were sent a transcript and summary of their interview and were asked to correct anything they felt did not represent the interview correctly.

Data analysis. The method of analysis chosen for this IPA closely follows Larkin and Griffiths (2004) and Chappell, Eatough, Davies and Griffiths (2006), which they both are influenced by Smith and Osborn (2003). The two-margin approach used by Larkin and Griffiths (2004) begins by reading and rereading transcripts while making notes on the left margin regarding participants' concerns and experiences. Following that process, the right margin is used to create a series of interpretative codes to capture something of the meaning and context of the notes mapped out on the left margin. Some of these right margin codes are unique to individual participants while others can be found in all accounts. A third type of code appears on the right margin, linking codes on both margins to existing theoretical concepts. Patterns in the codes are then grouped into themes in a somewhat hierarchical structure. A map of these themes, as well as supporting excerpts for each, was compiled then reviewed. Prevalent themes were then identified.

Research quality and methodological rigor. Qualitative research is a subjective endeavour and different results will be found by different researchers. In IPA specifically, the researcher's perspective is expected to influence the analysis (Golsworth & Coyle, 2001). Elliot, Fisher, and Rennie (1999) suggest the researcher should present their relevant personal perspectives to validate good qualitative practice. The following is a brief summary of factors influencing my interpretative perspective including my: (a) personal involvement in a variety of athlemaphilic relationships over nearly two decades; (b) experiences as a coach of a variety of sports; (c) observations of peers struggling with their commitments to sport, and;

(d) academic engagement with theories of attachment, self-determination, and anthropomorphism. Disclosing these facts and the biases they potentially create allows me to "transform the 'problem' of subjectivity (in the eyes of some) into an opportunity" (Sparkes & Smith, 2013, p. 20).

Despite this, Smith and Osborn (2003) express concerns regarding the potential of researchers' interpretations to not truly represent the experiences of participants. To mitigate this concern member checking (Schwant, 2007) was employed to ensure a fair representation of participants. During their interviews participants verbally verified my summary of their experience and following their interviews participants were sent a copy of their transcript, as well as a typed summary of their account as I saw it. Additionally, all participants were sent a copy of this manuscript to ensure the way I depicted their experiences aligned with their own thoughts about those same experiences. None of the participants indicated they were unhappy with the transcripts, summaries, or manuscript.

Furthermore, the participant descriptions above situates participants and provides background details about them in accordance with discipline specific guidelines for qualitative research (Elliott, Fischer, & Rennie, 1999). Additionally, all transcripts were read by my primary supervisor and themes were discussed with them prior to finishing this analysis. My supervisor acted as a critical friend (Marshall & Rossman, 2006) to ensure the analysis conducted was supported by the data and not overly influenced by my personal interpretative perspective (Allen-Collinson, 2009).

Results

The following diagram outlines the five superordinate and sixteen subordinate themes uncovered in this analysis.

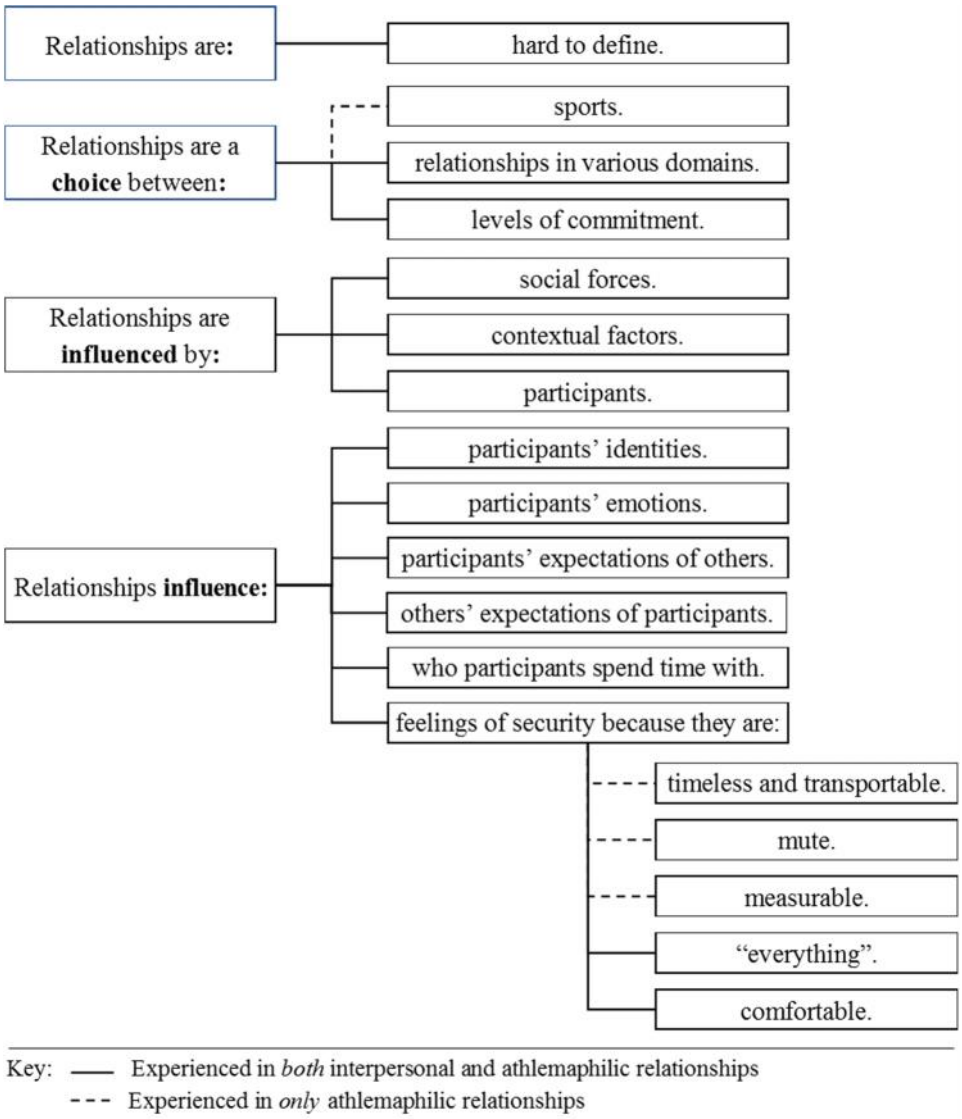


Figure 1 *Emergent Themes of Participants' Experiences of Relationships*

Emergent themes identified were: (a) the concept of a relationship was *hard to define*; (b) participants experienced athlemaphilic relationships as the result of a series of *choices* about different levels of commitment, sports, and indeed relationships outside of sport; (c) athlemaphilic relationships were *influenced* by social factors, participants physical and geographic environment, and the athletes themselves; (d) athlemaphilic relationships *change*d various elements of participants' lives, including their emotions, expectations of others, the expectations others hold of them, who the athletes spend time with, and the athletes themselves, and; (e) athlemaphilic relationships were experienced as being *secure* because

they are timeless and transportable, mute, measurable, comforting, and all-encompassing. How athletes viewed the relationship between athlemaphilia and wellbeing will be discussed throughout the presentation of these themes. It is important to highlight that many subordinate themes are experienced in both interpersonal and athlemaphilic relationships, but three of the five subordinate themes related to experiences of security are exclusive to athlemaphilia.

Relationships are hard to define. Participant's struggled to define what the term "relationship" means and often the way they used the term changed throughout their interviews. Dany's definition was the clearest and highlighted that for her relationships are not based upon the participants, but rather upon the benefits provided to her through interactions with another. She defined a relationship as "something that you have a bond with… that you love doing or being with – it's something that you can't live without, because it makes you happy. It makes you happy in different ways, whether it's with a person, an object, or an event." Importantly, the last sentence of her definition highlights that for her different relationships affect her happiness differently.

Thomas stated, "relationships take many different forms, but it's something that involves interaction between, usually two different human-beings, but in this sense, you know, between a human and something else." When advised he did not have to alter his definition of a relationship to fit the research being conducted, Thomas replied "No no no – I definitely have a relationship with football… I would describe it differently to the way I would describe my relationship with you or my teammates, but it is a relationship." Rapunzel also offered a definition which initially focused on mutually beneficial interpersonal interactions, but she later clarified she "definitely" had a relationship with tennis.

Similarly, when asked to define a relationship, Mario initially replied "that's a hard question. There're so many different kinds of relationships... I don't have a good definition

that encompasses them all." He proceeded to list different types of interpersonal relationships highlighting that for him, the crucial thing which defines a relationship is whether he could trust the other person. When asked specifically about his interactions with handball, the following discourse took place:

> *Interviewer:* Do you think that relationships only occur between two people?
>
> *Mario:* Two humans? No.
>
> *Interviewer:* So, would you say that you have a relationship with handball?
>
> *Mario:* No, not really. I could say it about other things, but—I would say I am passionate about handball, but not in a relationship with handball.

Despite the assertion he was not in a relationship with handball, later in his interview, Mario spoke of his interactions with handball almost exclusively using the term relationship.

Similarly, Sarah defined a relationship as only being between two people "because that's kind of the only way in which I have heard of a relationship." Intriguingly, she discussed interactions with sport without using the term "relationship" until after she spoke about her relationship with her schoolwork. Once she used the term "relationship" to define her interactions another nonhuman entity, she also discussed her interactions with sport as a relationship.

Finally, Emma said she could "have a relationship with everything", but when asked to list the relationships in her life she only listed interpersonal relationships. When questioned about why she had not included her relationship with sport in this list, she replied "I feel like it's – it's so much more." Emma was not able to offer a concise definition of what the added benefit of her interaction with sport was and she consistently referred to the love she experienced towards various sports while using the term "relationship." Although all participants did not initially define their interactions with sport as relationships, they did all refer to their athlemaphilic relationships within their interviews. As such, all of their interactions will be spoken about as relationships for the remainder of this chapter.

Beyond the difficulties of defining the term relationship and identifying whether participants were in relationships with sport, participants also struggled to delineate between the relationships they had within sport. Thomas commented on how he had two separate relationships with football, the first as a player and the second as a coach. However, during a discussion of these two roles, Thomas reflected how his current role as a player-coach made it impossible for him to completely delineate between the two relationships. He stated, "in theory, I would have liked them to be different, but they weren't." He identified he could not distinguish between two forms of athlemaphilic relationship and as a result he could not clearly articulate the unique benefits of his relationship with football as a player or coach. Others shared similar experiences of struggling to define the range of athlemaphilic relationships they had within sport.

In summary, participants defined relationships in a variety of ways and many definitions revolved around interpersonal interactions. Dany defined relationships by the benefits she derived from them, not by the participants involved. Mario, Thomas, Rapunzel and Sarah initially defined relationships exclusively in terms of interpersonal relationship but later either explicitly or discreetly amended their definitions often by using the term relationship to discuss interactions which were not interpersonal. Emma defined her athlemaphilic relationship as meaning more to her than interpersonal relationships and Thomas discussed how the difficulty in delineating relationships also existed within an athlemaphilic domain.

Theme 1: Athlemaphilia is a choice. The first superordinate theme identified from participants' accounts was their experience of choice. Participants chose between one sport and another, between their athlemaphilic relationship and alternative nonsporting relationships, and regarding varying levels of commitments to their athlemaphilic relationship.

Athlemaphilia as a choice between sports. Participants described experiencing choice in their decisions to begin a relationship with a sport, to maintain their relationship with a variety of sports, and to end their relationships with one or more sports. Athletes decided to choose one sport over others because that sport was a good fit for their physical abilities, geographical location, and social circumstances. Dany struggled when faced with the choice of whether to specialise and to devote herself to one sport. She identified that relationships with multiple sports provided her with optimal satisfaction, but at times continuing to engage in multiple sports constrained opportunities she has to advance in one, making her experience of choice between sports troubling. On the other hand, Mario's experience of choice between one sport and another was quite simple. He stated "I had a more difficult relationship with jujitsu because that was on my own, and it was a long way to travel as well. So, when time became an issue, I chose handball over jujitsu." Mario explains that there are a variety of contextual factors which resulted in him no longer competing in jujitsu, but in the end, he chose handball.

Additionally, participants reported how their personal preferences can influence how they choose between sports. Dany commented "I was awesome at tennis, but I didn't like it because it was so mental, and it wasn't a team sport." Conversely, Rapunzel indicated that she played tennis because she "tried a couple of different sports… but [she] didn't like the teammate... the whole being around people thing". The contrast between these two experiences reflects how athletes have different personal tastes and make choices between the sports available to them because of these tastes.

Athlemaphilia as a choice between available relationships in various domains. Not only do participants experience their athlemaphilic relationship as a choice between sports, but often they must choose between their sport and alternative nonhuman and human

relationships outside of sport. Rapunzel demonstrated she chose to remain with tennis because it provided her with positive reinforcement, which she didn't get elsewhere:

> then I continue playing [tennis] because it's something that I'm good at, and other aspects, like in school, I was never, school wasn't something that I excelled at, or it didn't come naturally. I was never told "ooh, um, you're really good at this, you're really good at art or you're really good at music." I was never told that, but tennis was the only thing that I was told "oh, you're so good," "you're so good," "you're so good," "you're so good." So it's something where, like—it was where I got my positive reinforcement from, and I wanted that.

Emma described a similar situation but added that she stays with sport because it is a rewarding and efficient relationship. Furthermore, her fear of losing the benefits she gained from her relationships with sports complicated her experience during a transition between life as a student-athlete and full-time employment. Sarah was transitioning in her academic domain and expressed that she had control over whether she made time to prioritise her relationship with basketball over work and study. Dany also demonstrated that she chose to prioritise her athlemaphilic relationships over others, including her relationships with her family, church, and sleep, because athlemaphilia provided her with the happiness she sought in an efficient way. All of the participants felt empowered to make choices regarding how they prioritise their athlemaphilic relationships relative to their relationships outside of sport, namely their professional, academic, and social relationships.

Athlemaphilia as a choice between levels of commitment. This section advances the previous two by presenting how participants often chose between various levels of commitment in their athlemaphilic relationship to maintain multiple relationships. Participants mentioned different levels they can play at including recreationally, provincially, scholastically, professionally, nationally, and internationally. Dany loves basketball and volleyball, but she chose to accept a scholarship to play university volleyball over scholarships to play university basketball. She explained there wasn't much difference

between the level of competition available in university level volleyball and basketball, but she could not commit to playing both at that level. She felt there were far more opportunities to play high-level pick-up basketball than there were to play high level volleyball. As a result, she chose to increase her commitment to volleyball and to diminish her commitment to basketball because doing so allowed her to maintain both of her athlemaphilic relationships at the highest level possible. She reflected that making these choices allowed her to generate the most personal satisfaction from her athlemaphilic relationships. Similarly, Rapunzel depicted her ability to choose how committed she was to tennis when she said "you can kind of decide how much—when you want it, when you want a little bit of a break, it's kind of like, you can mould it to what you want it to be. So that's nice."

Conversely, Emma had her heart set on playing volleyball at university and intended to compete on the athletics team "on the side." She was not offered a place on the volleyball team and became very upset. She did not feel happy again until she chose to increase her level of commitment to athletics and fully invested in that relationship. Additionally, Thomas experienced two major injuries during his relationship with American football, and he responded differently to each injury. The first time he was injured, he "redoubled efforts" to get better faster so he could reengage with his relationship. During his most recent injury, getting injured allowed him to "allocate a lot of his effort" towards other elements of his life like coaching, school, and socialising. Thomas' change in reaction to injury demonstrates that he can choose the impact an injury has upon his relationship and the response he chooses is linked to his current environment. Rapunzel also commented on choice and injury when she expressed that "tennis doesn't really not choose you, unless you're injured, and you can't play. But still, that's your choice." This quote demonstrates even experience of injury cannot stop some athletes from choosing to engage in their relationship.

This section has shown that the participants experience the ability to choose their relationships with sports, as well as how to prioritise their athlemaphilic relationships among alternative relationships. Some participants expressed that they frequently chose to change their levels of commitment to a sport as a means of maintaining multiple relationships, sporting or otherwise. Other participants have experienced situations where they felt forced to choose whether to dissolve their athlemaphilic relationships because of injury, and it was shown that participants felt the choice to allow injury to end their career was up to them, as was the choice to move on to another relationship. The athletes expressed that there are things which influence their relationships, but choices about engagement were predominantly theirs to make.

Theme 2: Athlemaphilia is influenced by others. The second superordinate theme identified from participants' accounts was their experience of athlemaphilic relationships as influenced by people and society, athletes' environments, and the athletes themselves.

Athlemaphilia is influenced by social forces. Participants discussed how other people and society can influence the sports they chose to create relationships with, the wellbeing benefits they obtained from their athlemaphilic relationships, and the way they acted and reacted within their relationships. Sarah explained how her PE teacher, and various basketball coaches, influenced the initiation and development of her relationship with basketball. Emma discussed how her parents were heavily involved in her relationship with gymnastics but stated "volleyball was, it was my own", reflecting how she chose to initiate that relationship.

However, Emma mentioned that she began playing volleyball because volleyball was what "all of the cool girls played", depicting the social desirability of the sport influenced the initiation of her athlemaphilic relationship even if her parents did not. Additionally, Emma, Dany, and Sarah expressed how they enjoyed their athlemaphilic relationships more when certain interpersonal others played along with them, depicting an increased benefit of social

engagement. Alternatively, Rapunzel discussed how her coaches heavily influenced her relationship with tennis. They mandated that she limit the number of interpersonal relationships she engaged in because they felt her having too many interpersonal relationships would disrupt her performances on the court. As a result, the rules they imposed on Rapunzel made her relationship with tennis change; for her, "sport was—it was just stable, it was more stable. I knew kind of what was going on as the sport. And I guess this changed when other people had an impact on that relationship." She experienced total security in her athlemaphilic relationship with tennis, until her coaches influenced her relationship.

Athlemaphilia is influenced by contextual factors. As was mentioned in the first theme regarding choice, the way which Thomas reacted to injury was influenced by contextual factors. Becoming injured as a player no longer meant the end of his relationship with football but rather a reinvestment of his energies into a different element of his relationship, in this instance, coaching. For him, being a player-coach influenced the way he could define his relationship with American football. This in turn affected the relationship itself and allowed it to be flexible and resilient in response to potential relationship ending threats.

While Thomas felt his relationship with American football was the same whether he was coaching or playing, Rapunzel frequently commented on how her relationship with tennis as a coach was different from as a player. She further divided her relationship as a player between singles and doubles tennis, as well as between individual- and team-based tennis. In total, Rapunzel felt she was involved in five separate relationships with tennis, and the location, environment, and structure of play influenced which relationship she was engaging in with tennis. Similarly, Sarah discussed how she chose not to pursue a relationship with rowing because doing so would have required her to go to boarding school,

demonstrating that her current living situation and potential changes to that situation influenced whether she would entertain starting a new relationship.

Additionally, Sarah and Emma described how sport is more than just "running around on a court." Emma stated she will always need sport, but despite being a track-athlete, she does not see going for a run as something that will satisfy her. She needs to compete and mentioned her happiest moments as an athlete are while she is doing so. This shows how contexts relating to competing and training are independently important contributors to some athlemaphilic relationships.

Finally, Rapunzel's experience after leaving the national team and her current struggles to make competent interpersonal relationships depicts how contextual factors that thwart athletes' interpersonal needs can also influence athlemaphilic relationships. While Rapunzel's interpersonal relatedness was being thwarted her athlemaphilic relationship with tennis was able to satisfy her need for relatedness; thus, it becomes an empirical question to examine whether she, or athletes who have experienced interpersonal relatedness thwarting, demonstrate depleted competence in terms of nonhuman relatedness. In sum, it appears contextual factors influence how participants respond to threats towards their athlemaphilic relationships, which relationship participants engage in, and whether and how participants derive a sense of pleasure from the act of engaging in physical activity.

Athlemaphilia is influenced by participants. Participants felt their bodies have influenced which sports they engage in relationships with. Mario noted he enjoyed handball because it was a good physical fit for him, and Sarah mentioned the main reason her coaches suggested she play basketball was because of her height. Relatedly, participants discussed how being injured or even unfit can impact their athlemaphilic relationship. Rapunzel said, "I do like competing, so I tried to keep my body so I can keep that relationship in my life," indicating that being unfit would adversely affect her relationship with tennis.

Rapunzel displayed another connection between the influence her physical body has upon her relationship with tennis when she said, “I physically couldn’t play, so it was kind of – I had no choice, but I – but I – mentally, I did want a break.” Earlier Rapunzel stated that athletes get to choose whether or not they disengage from their athlemaphilic relationships when injured but here she explains she had no choice but to stop playing due to injury. Her contradictory accounts of the impact injury has upon her relationship suggest her mental state influenced her level of commitment to tennis and altered her relationship. Physical injury alone was not able to influence her relationship but when physical injury was coupled with the need for mental rest, she had no choice and the influence of injury was irrefutable.

Alongside the physical influence the athletes’ bodies had upon their relationships, the participants expressed experiences of their mind-sets and outlooks also influenced their relationships. Mario explained that after not being selected for a team “there was a short amount of time where it was sad, then I left that behind me, and I started focussing on getting better.” This presents how his outlook on sport influenced his relationship with handball, allowing the relationship to endure. Had Mario not been as resilient and able to leave feelings of sadness behind his relationship with handball could have ended, demonstrating the outlook an athlete has can alter their relationship.

Finally, Emma’s relationship with volleyball demonstrated that the removal of her parent’s influence upon her choice to initiate the relationship allowed her to feel more volition in her relationship, which in turn led her to develop a strong identity as a volleyball player. Emma’s parents influenced the initiation of her relationship with gymnastics but her relationship with volleyball was her own. Volleyball also allowed Emma to use her energy and physical ability to excel at the sport and to finally find the thing she could do better than others, revealing that social comparison influenced her feelings of competence.

This section has shown that participants experienced interpersonal others influencing the initiation and maintenance of their athlemaphilic relationship. Additionally, participants reported contextual factors influenced how they interpreted threats to their athlemaphilic relationship, which form of their relationship they were engaging in, and how they generated a sense of pleasure from physical activity. Finally, participants discussed how their bodies and minds influenced the sports they initiated and continued relationships with. The athletes demonstrated their experiences of athlemaphilic relationships are controlled by people.

Theme 3: Athlemaphilia encourages change. The third superordinate theme identified in participants' accounts was their experiences of change because of their athlemaphilic relationships. Participants experienced their athlemaphilic relationship as relationships which changed them: the way they felt, what they expected of others, what others expected of them, and who they spent their time with.

Athlemaphilia changes you. Participants discussed experiences where their relationships with sport changed their bodies and identities and afforded opportunities for personal growth. Dany and Emma's accounts of how they viewed themselves without sport illustrated the extent of the impact an athlemaphilic relationship can have upon identity. Dany commented "I'm trying to picture myself without volleyball, and I don't know who I would be. I don't know what my identity would be. I don't know." This quote highlights that Dany allowed her relationship with volleyball to define her identity and who she is. Emma mirrored Dany's experience when she said:

> So there's no, there's no 'Emma, not doing a sport.' There's always gunna be something, you know, that – without, *without sport*, without, you know, a team, or something of that sort, I just feel, like, I don't know. Hahaha I'm trying to say a proper way to put it, but, literally, *I just feel like a big lump of nothing*, 'cause, all I want to do is just, you know? Yeah.

Emma has allowed a variety of athlemaphilic relationships to change who she is so much so she feels she must continue to be involved in sport otherwise she is a "big lump of nothing." These enduring changes to identity are complimented by participants' accounts of experiences of temporary emotional change within their athlemaphilic relationships.

Athlemaphilia changes how you feel. When asked how sport changes his mood, Thomas simply replied "greatly." Other participants offered similar responses, revealing an awareness of athlemaphilia's ability to change the way they felt. Rapunzel stated, "sport does give me enjoyment, it's something I look forward to go to, and to be with", demonstrating that beyond getting enjoyment from her athlemaphilic relationship, simply anticipating being with tennis made her excited. This suggests Rapunzel did not need to be physically engaged in her athlemaphilic relationship for it to affect how she felt. Dany demonstrated the positive impact of her athlemaphilic relationship when she stated "[sport] makes me happy, so I will do whatever it takes to make my day, and myself, happy." Similarly, Emma recalled an experience when she won a national athletics competition, noting the experience made her feel like she was drunk or invincible.

Sarah provided additional evidence of seeking support from sport to improve her mood when she said, "if I am feeling low, I can be like 'sorry, I'm going to go play basketball,' and then I feel happy after that," demonstrating sport can be used to compensate for depleted wellbeing. Emma presented an interesting experience within her relationship with athletics where a poor performance undermined her self-confidence which was only regained by going back to the track and doing better. Emma's experience suggests the changes sport makes to how participants feel are not always positive and there exists some benefit of repairing damage done by an athlemaphilic relationship using an athlemaphilic relationship. Additionally, when Mario was not selected to travel with his team, he experienced various negative emotions and even cried before regrouping and resolving to view not being selected

as an opportunity to improve. Athlemaphilic relationship's influences on psychological wellbeing was expansive. Emma summarised it well when she equated the influence of her relationships with sport to the influence of her relationships with her sisters; "they make me angry, and sad, and every emotion you could think of, you know?"

Athlemaphilia changes your expectations of others. Thomas mentioned American football allowed him to see how different people "operate under different types of pressure" and sharing these experiences with others changed his expectations of them. Mario commented on how his expectations of his teammates in Norway were performance oriented and his expectations his teammates in England were focused on socialisation, supporting the notion that sport can change his expectations of people. Thomas and Mario demonstrated that through sport they could learn to appreciate people for more than just their abilities on the pitch.

Rapunzel's experience depicts a critical example for our understanding of how athlemaphilia and interpersonal domains might interact. She mentioned how her relationship with tennis has changed what she expects from others:

> because tennis is everywhere I go, it's hard for me – like I'll kind of get close to other people, but I won't let them get as close as the sport is to me, because they're just gunna—like I might not see them again, I might not—it might not be forever, so tennis is just something that I let so close, but not other people. I only let—I don't let them as close as tennis to me.

Rapunzel described tennis' ability to go with her everywhere and to be with her forever which has changed what she expects from close interpersonal relationships. She's established an expectation for relationships across domains which was based upon her experiences in her athlemaphilic relationship. As a result, what she expects from interpersonal others is unrealistic and she will not let people close to her.

Athlemaphilia changes others' expectations of you. Rapunzel's childhood friends expect her to be training and to not want to socialise. Dany's cross-fit teammates expect her to be in the gym daily and become worried on days when she is not there. Dany and Thomas discussed how their athlemaphilic relationship have allowed them to defy the expectations others have set for them. In Dany's experience outperforming male athletes in basketball makes them more attracted her because they do not expect to be beaten by a girl. Thomas is a small guy, especially per the standards established in American football. As such, he enjoys proving he "can hang with the big guys" by defying the expectations others have for him. Collectively these experiences show the participants use their athlemaphilic relationships to establish and defy others' expectations of them.

Athlemaphilia changes who you spend time with. Thomas discussed four separate occasions where he moved, used his athlemaphilic relationship to introduce himself to others, and subsequently made new friends. Dany expressed that she loves CrossFit because it allows her to engage with a similar, yet diverse, community. She discussed how "CrossFit is a global language" and she can find a gym anywhere in the world where she will be able to make friends using that "language." Mario mentioned he only began to play handball to maintain his relationship with his childhood friends and Rapunzel explained that to protect her athlemaphilic relationship with tennis she was asked to forego human relationships all-together. Dany also mentioned she struggled to deepen relationships with her family and her church because people in those domains did not share her relationship with sports. The interactions between athlemaphilic and interpersonal relationships are complex, beneficial, destructive, healthy, and unhealthy all at the same time, changing who participants enjoy spending time with, and thus who they choose to spend time with.

This section has shown participants' athlemaphilic relationships change a variety of things in their lives. Dany and Emma discussed how their athlemaphilic relationships have

identified them and they cannot allow, nor do they want, their athlemaphilic relationships to end because without their athlemaphilic relationship they might as well be “a big lump of nothing” . Additionally, Thomas expressed that sport can greatly change the way he feels, and Dany showed she uses her athlemaphilic relationship to feel happy. Sarah and Emma presented their ability to use sport to cope particularly when failures in sport have gotten them down. Mario and Thomas’s experiences showed how their athlemaphilic relationships allowed them to expect different things from people. Similarly, Rapunzel’s expectations of interpersonal others have been changed by her relationship with tennis and she won’t let people close to her now because she expects interpersonal relationships cannot give her what she’s grown accustomed to in her athlemaphilic relationship. Furthermore, it was discussed that participants use sport to establish and defy others’ expectations of them and athlemaphilic relationship shape who they choose to spend time with.

Theme 4: Athlemaphilia provides security. The fourth superordinate theme identified in participants’ accounts was their experiences of athlemaphilic relationships which offered them security and safety. It is important to note the word secure is being used to encompass the fact that athlemaphilic relationships are experienced as timeless, transportable, mute, measurable, “everything,” and comfortable to participants. The experiences discussed allow the athletes to feel secure in their athlemaphilic relationship but that does not mean the relationships are always positive or healthy. In this section data is presented to show athlemaphilia is able to provide benefits for participants, partially because participants do not experience sport as exhibiting control over their athlemaphilic relationships.

Athlemaphilia is timeless and transportable. Participants presented how their athlemaphilic relationships develop over time and adapt to a variety of locations allowing them to experience their relationships as secure. For example, Rapunzel discussed how her relationship with tennis can go with her everywhere and will never end. She noted her

relationship may change shape or form and through doing so it can stay with her always and everywhere. Others expressed similar sentiments acknowledging their athlemaphilic relationships can endure even though their bodies can only play for so long. Dany discussed how she hates "that day," meaning the day she can no longer play sports, but she knows it is inevitable. She began to coach as a way to actively adapt her athlemaphilic relationship so volleyball will never be out of reach. All athletes spoke of the importance of being able transport their relationships with them as is demonstrated by their engagement in those relationships in England despite being from elsewhere.

Athlemaphilia is mute. Participants pointed out they can use their athlemaphilic relationships as they choose because, unlike interpersonal relationships, sport cannot to verbally communicate. When frustrated, Dany found it difficult to discuss her emotions with interpersonal others, including her boyfriend, so she used sport as an outlet for releasing frustration without the need to verbalise her distress. She experienced releasing frustration in her athlemaphilic relationship as more efficient than talking about her feelings with interpersonal others because doing so did not require her to engage in uncomfortable discussion and it did not risk upsetting others. Emma shares a similar preference for letting out anger in sport, but she does so because sport cannot lash out at her in response.

Sarah discussed how she "can't know how basketball feels," because basketball cannot communicate with her; thus, she is not concerned with the feelings of her partner and can easily move from relationship to relationship in sport in a way which she cannot do in interpersonal relationships . Rapunzel showed how she controlled her relationship with tennis concluding that tennis cannot chose to leave her because it cannot communicate. Thomas commented on the largest difference between his relationships with his grandma and football stating "Grandma will call me if I don't call her. Football will not." This demonstrates that for him football's inability to communicate means he can ignore football. As a result, the

relationship he has with football is predictable in a way which he cannot experience in interpersonal relationships. Overall, participants demonstrated that because sport is mute and cannot communicate with them, they do not have to worry about how itis feeling. This results in a sense of control over the relationship and security in the relationship because participants' athlemaphilic relationships are not going anywhere.

Athlemaphilia is measurable. Participants explained sport is measurable and involves various rules, structures, and scales which they can use to assess progress, set goals, and feel safe. Participants' experiences of measurement and assessment in their athlemaphilic relationships varied. For example, during training sessions Dany self-assessed and self-corrected her technique after every pass, and after training sessions she watched video of herself on a daily basis to continue improving. Thomas expressed that because "in college, everything was measured" included his weight, sprint speeds, and lifting performances "it would show up in the numbers" if he was not improving. Measuring performance as a means of analyse and improvement added to the sense of security in participant's relationships because solutions to problems appeared readily available.

Additionally, participants commented on how the structure of sport including rules, leagues, and rankings allowed them to feel they would not be harmed during competitions. Sporting structures also meant participants could assess how well they were performing and could set achievable goals. The opportunity to experience this type of structural safety in athlemaphilic relationship is comforting for participants because it contrasts the structures of interpersonal relationships which are not as clearly defined and lack the ability to discretely measure performance.

Athlemaphilia is everything. Participants defined their athlemaphilic relationships as "everything" to them, positioning the all-encompassing nature of athlemaphilia as something

to feel comforted by. The all-encompassing nature of participants' athlemaphilic relationships allowed them to focus all their efforts into sport. Emma said:

> "instead of focussing my time on other things, I'd much rather be focusing my time – investing my time on sport, excelling in that. Rather than trying to pick something else. If this has worked for me, everything else would kinda be just a waste of time really. And, I'm not happier, doing this other thing, than I am when I'm doing sport, so I might as well do sport"

Emma was not able to identify any other nonhuman relationships which she was involved in and believed there was no need to invest her energy elsewhere when she knows sport will make her happy and other relationships will not. Thomas supported the all-encompassing nature of sport when he said, "football was life" For him. Football was more than something he did, and it was more than a part of his life; football was his life. As long as participants' athlemaphilic relationships were going well the all-consuming nature of their relationships allowed them to generate optimal wellbeing.

Rapunzel's relationship with the national tennis team did not always go well and in hindsight she reflected on how her relationship with tennis was once oppressive. Interestingly, while playing for the national team she never realised how much she was sacrificing for her relationship with tennis. It was not until after she left university and the national team that she understood the false sense of satisfaction and security she once had. When discussing how her relationship with tennis changed over time, she said "I felt that I had a balance, probably until when I was about ten. Then from about twelve – ten or eleven, to about university, it was all sport." Now, after her university career has ended, she commented "I am spending a lot of time away from the sport… and I'm getting to see how other people are – I'm seeing that they are still successful people" even though they are social and not completely focussed on sport or work. Rapunzel described how, like Emma, she did not have the desire or time to invest her energies elsewhere, so she experienced her

relationship with tennis and the national team as secure. However, when she spent time away from her relationship with tennis, she reappraised the benefit of the relationship and no longer viewed it as secure or beneficial. The contrast between the two experiences of her relationship with tennis demonstrates individual perceptions of their athlemaphilic relationships as secure and beneficial might depend upon contextual factors and individual immersion in their relationship.

Athlemaphilia is comfortable. Examples discussed in the previous subsections demonstrate how participants experience their relationships as secure because athlemaphilic relationships provide a feeling of comfort. Emma's quote on the preceding page illustrates the stability she experiences in her athlemaphilic relationship as well as the comfort such stability allows her to derive. Similarly, Rapunzel said "part of the reason I hold onto the sport is that there's nowhere to go… I've tried to do something that hasn't worked, so I just go back. I'm just safe here."

Another way athlemaphilic relationships allowed participants to generate a sense of comfort was by providing them with a socially accepted means of doing otherwise socially unacceptable things. Sarah, Emma, and Rapunzel commented on how their athlemaphilic relationships allowed them to do things they could not do in a human relationship. Sarah expressed she enjoys not having to care about how basketball feels and doing so allowed her to "just take, take, take" from this relationship whenever she needed. Emma discussed how she enjoyed that athlemaphilia allowed her to let her anger out on sport without fear of repercussions because she could not get away with doing so in an interpersonal relationship. Additionally, Rapunzel commented that she can be completely selfish in her relationship with tennis and doing so allows her to be alone in a safe and acceptable manner:

> I, it's just, because you can sit somewhere, and someone would be like "why are you sitting in the corner for four hours?" but with tennis they'd be like "Oh, you were

> playing tennis!" So they don't like—nobody comes after you for that, so you're not seen as like some freak that just goes like – and you're not made fun of.

These participants were able to use their athlemaphilic relationships to comfortably satisfy their desires to do socially unacceptable things without having to risk hurting someone else, having someone else lash out at them, or getting made fun of.

Finally, Mario commented that he finds it easier to show emotion in sport, because "it's more clearly defined in sport, what's supposed to be heart-breaking, and what's not." The definition he refers to is socially constructed and implicit in his quote is that the rules for being emotional are less clear and more complex in human relationships. The clarity of social norms in sport allows Mario to feel comfortable expressing emotions in ways which he does not feel he can do elsewhere.

In summary, participants experienced their athlemaphilic relationship as secure because they cannot envision a place nor time when they will not be able to be with their sport. Additionally, sport cannot talk to them which allows participants to ignore how sport feels and to securely control the relationship without worrying about harming anyone else. The ability to weigh, measure, structure, and regulate athlemaphilic relationship also allows participants to feel secure, particularly when they consider their athlemaphilic relationship to be everything to them. All of this combines to allow participants to feel more comfortable because athlemaphilic relationships are perceived as stable, safe, and an acceptable place to do otherwise unacceptable things.

Discussion

The present IPA investigated athletes' experiences of being in athlemaphilic relationships. The results revealed athlemaphilia is not experienced in discrete terms and participants define, engage in, and benefit from individual ideographic relationships in idiosyncratic ways. The results also suggested participants experience omnipotent control

over their partners in athlemaphilic relationships and as a result athlemaphilic relationships can provide participants with benefits they do not feel they can obtain in interpersonal relationships.

Collectively, the data suggest the distinctive experiences within athlemaphilic relationships motivate some participants to seek support from sport and reshape participants' internal working models of nonhuman and interpersonal attachment. It is believed sport can be experienced as a nonhuman attachment figure and this research continues to broaden the scope of attachment theory (Keefer et al., 2014). The specific implications of each of the key findings will be discussed in turn.

Relationships are hard to define. Participant's inability to discretely delineate between definitions of relationships with sport and interpersonal relationships allows interactions between domains to be experienced similarly. There are ample theoretical definitions of relationships (e.g., Bowlby, 1969; Rusbult, 1988; Ryan & Deci, 2000) which offer clear delineation but it is evident participants' definitions are composites of theoretical definitions; thus their experiences of relationships, particularly their athlemaphilic relationships, do not clearly align with established theories.. Additionally, it must be noted that athlemaphilic relationships do not exist in a vacuum and the presentation of participants' experiences above cannot parse out the exact contributions of dyadic interpersonal, collective interpersonal, and athlemaphilic relationships to wellbeing.

Athlemaphilia is a choice. Participants discussed how they often chose to resolve their problems or to release frustration through their athlemaphilic relationships because doing so requires less effort than doing so using interpersonal relationships. This offers support to the notion that sport may be a nonhuman attachment figure, because nonhuman attachment figures "afford relatively less costly (in terms of time and effort) support than traveling to be with a close friend" Keefer et al. (2014, p. 531). Participants' experiences have demonstrated

environmental mastery (Ryff, 2014) once again because they sought athlemaphilic relationships to efficiently satisfy their needs.

Furthermore the use of the word "choice" can be linked to the concept of autonomy as described within SDT (Deci & Ryan, 1987; Ryan & Deci, 2006). Participants' discussions have not depicted any experiences of sport exhibiting choice in their relationships. Thus, if athlemaphilic relationships are understood as dyadic interactions, participants experience omnipotent control over the relationships. This mirrors how "most people learn as infants that they can exercise total control over objects because objects do no resist influence or act unpredictably" (Keefer et al., 2014). It is possible that satisfying the desire for control may be attractive to some individuals, suggesting athlemaphilic relationships may be sought to experience control which cannot be experienced in interpersonal relationships.

Athlemaphilia is influenced by others. Participants did not describe any experiences when sport effected their relationships, but they did discuss experiences when other people, individually or collectively, influenced their relationships with sport. Mario described how the desire to be with his interpersonal friends influenced his decision to play handball, demonstrating the effect satisfying interpersonal relatedness can have upon athlemaphilic relationships (Ryan & Deci, 2000). Less positively, Rapunzel described how her coaches thwarted her ability to satisfy relatedness via interpersonal interaction forcing her to intensify her relationship with tennis and alter the way she satisfied relatedness well beyond her years playing tennis. Recently, the thwarting of basic psychological needs has garnered considerable research attention (e.g., Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Costa, Ntoumanis, & Bartholomew, 2014) and it is expected that thwarting an individual's ability to satisfy a sense of interpersonal relatedness results in decreased interpersonal relationship competence (Buhrmester, Furman, Wittenberg, & Reis, 1988). There were multiple examples of how athlemaphilic relationships both directly and indirectly

(as a compensatory reaction to thwarting in an interpersonal domain) influenced need satisfaction and subsequent wellbeing. This was evident in respect to being able to act autonomously, to feel competent, and to gain a sense of meaningfully relating to something (relatedness).

Athlemaphilia encourages change. Participants' experiences depicted various ways athlemaphilic relationships changed them and the people they spent time with, as well as the expectations participants held of others and vice versa. Rapunzel demonstrated her relationship with tennis changed the way she expected interpersonal others to act towards her in a relationship. This is the first evidence which could suggest the internal working model created with respect to an athlemaphilic relationship can alter internal working models of attachment to people. This is a major discovery. Internal working models are developed during interpersonal childhood interactions (Bowlby, 1969, 1973) and typically transference of internal working models involves an interpersonal model being applied to nonhuman interaction. There is evidence of correspondence between religious and interpersonal attachment styles (e.g., Granqvist, 2014; Kirkpatrick & Shaver, 1990), but this research does not explicitly suggest a directional influence of one working model upon another in the way Rapunzel's experience does.

Epley et al. (2007) suggest a plausible reason why Rapunzel's intense involvement in tennis from an early age might allow her to impose a nonhuman model onto her human experiences. They theorise that "[a]s knowledge about nonhuman agents is acquired, however, knowledge about humans or the self should be less likely to be used as a basis for induction simply because of the coactivation (and perhaps eventual substitute activation) of alternate knowledge structures" (Epley et al., 2007, p. 866). It then follows if an individual has limited knowledge of general humanness and extensive knowledge of specific and general nonhumanness, they may begin to imbue known nonhumanness onto unknown

human agents essentially dehumanising socially distant interpersonal others (Waytz & Epley, 2012; Waytz, Epley, & Cacioppo, 2010). Additionally, Moller and Deci (2010) conclude that thwarted autonomy is associated with mechanistic dehumanisation (Haslam, 2006), suggesting interpersonal control leads to people feeling they and others are less human. Rapunzel was forced to restrict interpersonal interaction undermining both her sense of autonomy and interpersonal relatedness; thus, her experience results in two empirical questions: (a) whether athlemaphilic relationships of varying intensities have varying influences upon internal working models across domains, and; (b) how thwarting of basic psychological needs is associated to athlemaphilic anthropomorphism and interpersonal dehumanisation.

Athlemaphilia is secure. Participants' experiences revealed their athlemaphilic relationships are able to satisfy the four primary functions of attachment bonds (Ainsworth, 1985). Researchers in religious attachment have argued that satisfying the four functions of an interpersonal attachment figures make God an attachment figure (e.g., Granqvist & Hagekull, 1999; Kirkpatrick, 1999) and it is believed sport should be considered accordingly. Furthermore, some participants reported high ratings of athlemaphilic attachment insecurity, yet they provided examples of inconsistent experiences of attachment security. This inconsistency advances the findings of Chapter 3 by suggesting athlemaphilic attachment varies between domains (Sibley & Overall, 2008) and contexts (Caron et al., 2012) generally and attachment can vary within the specific domains and context of sport.

Additionally, participants discussed multiple instances when athlemaphilic relationships allowed them to perform socially unacceptable behaviour in a socially acceptable way. Some participants discussed experiences of seeking out sport to satisfy their desire to be physically violent in a ritualised (Matthews, 2014), neutralised (Matthews & Channon, 2016), and socially acceptable manner (Matthews & Channon, 2017). Beyond

physical violence, participants mentioned their athlemaphilic relationships allowed them to be emotionally violent to their athlemaphilic partners by just "take, take, tak[ing]" with no regard for how this affected sport. Additionally, participants perceived being alone as socially unacceptable, yet they experienced athlemaphilic relationships as socially acceptable, or indeed desirable, spaces to satisfy their desire to be alone. It is clear there is a precedent for sport as a space to perform socially accepted socially unacceptable physical behaviour towards others. Further exploration is necessary to better understand how athlemaphilic relationships allow individuals to perform ritualised, neutralised, and socially accepted unacceptable emotional behaviour towards themselves and, in this instance, a nonhuman significant other.

Finally, based on the data it is proposed that participants were able to derive a sense of security from their athlemaphilic relationships because they experienced complete control over these relationships. Sport could not communicate or leave participants allowing them to predict how sport would satisfy their needs. This suggests that effectance (Epley et al., 2007) motivated participants to seek out relationships with sport, positioning the anthropomorphism of athlemaphilic relationships as an area for future consideration.

Limitations. IPA requires a great deal of self-reflection on the part of the researcher (Ravn, 2016). In the spirt of such reflection, I believe a limitation of this study is that it was my first endeavour at qualitative research and IPA. As a male, it is possible my interviews with female participants inflated the asymmetrical power relationships already implied in an interview (Kvale, 2006). It is also possible male interviewees were unwilling to disclose certain sensitive experiences because of the perceived loss of power or masculinity associated with doing so (Emslie, Ridge, Ziebland, & Hunt, 2006). Furthermore, participants were personal friends of mine who might have felt comfortable sharing some details of their athlemaphilic relationships with me but not comfortable disclosing to others (Platt, 1981),

and my interpretations of their experiences may have been shaped by my familiarity with them and their narratives (Quinney, Dwyer, & Chapman, 2016).

Additionally, while all participants were selected because they had influential relationships with sport, they were also selected to represent a range of athletic attachments and levels of wellbeing. Increased homogeneity of participants can be obtained by sampling athletes with similar athlemaphilic attachments or levels of wellbeing. Furthermore, all participants spoke English, but not as a first language. It is possible individuals whose native language has a different definition of "relationship" or a more clearly delineated understanding of various kinds of relationships experience athlemaphilic relationships differently. Finally, this chapter addressed some of the limitations of Chapter 3, but the casual nature of athlemaphilic relationships and their impact on wellbeing remains untested.

Future directions. The results of this study suggest two main areas to focus future research efforts. The first is to further explore whether athlemaphilic relationships, attachments, and internal working models correspond with interpersonal models or if they act as a form of compensation. The correspondence or compensation hypothesis has been explored in religious literature (e.g., Beck & McDonald, 2004) and the data presented thus far suggests a similar hypothesis could exist within athlemaphilia. Furthermore, little is known regarding whether athlemaphilic attachment corresponds to or compensates for other forms of nonhuman attachment and future research is needed to better understand this process.

In order to explore the correspondence or compensation hypothesis in athlemaphilia, an athlemaphilic attachment assessment must be devised. Given the inconsistencies in participants' ratings of attachment and the experiences they shared, it is possible to suggest adaptations of interpersonal attachment assessments (e.g., Hazan & Shaver, 1987) are not wholly representative of athlemaphilic attachment experiences. Alternately, it is possible the inconsistencies depicted are a result of contextual variation in athlemaphilic attachment,

suggesting the need for a measure of which is more sensitive to state-based contextualised variation in attachment experiences (e.g., Gillath, Hart, Noftle, & Stockdale, 2009). Future research needs to establish a consistent measure of athlemaphilic attachment which is comparable to both established interpersonal and nonhuman attachment ratings to conclusively explore the correspondence and compensation hypothesis within athlemaphilic attachment.

Second, results of Chapter 3 and participants' experiences depicted in the current chapter suggest a potential association between athlemaphilia and both anthropomorphism (Epley et al., 2008, 2007) and dehumanisation (Haslam, 2006; Moller & Deci, 2010; Waytz & Epley, 2012). Future research is needed to explore how athletes imbue elicited agent knowledge onto sports as well as how effectance and affiliation motivate the formation and maintenance of athlemaphilic relationships (Epley et al., 2007). Additionally, participants in the current study experienced omnipotent control over their athlemaphilic relationships and it is not yet understood if individuals seek out sport on account of effectance motivation (Epley et al., 2007) or self-determined autonomy (Deci & Ryan, 1985; Ryan & Deci, 2000). Future research should focus on experiences of control and individual variation in the desire to experience control as a means of exploring whether individuals are motivated towards athlemaphilia because it allows them to experience control in a socially acceptable manner.

Furthermore, Birgegard and Granqvist (2004) suggest that because God is physically anthropomorphised and viewed as human it follows interpersonal and religious attachment ratings are likely to correspond. However, there exists debate in religious literature regarding the psychological and physiological anthropomorphism of God and experimental evidence concluded God is more likely to be viewed as having a mind and not a body (Shtulman & Lindeman, 2014). Further research clarifying whether athlemaphilic partners are anthropomorphised psychologically, physiologically, or both psychologically and

physiologically can help to better understand transference of internal working models between interpersonal and athlemaphilic attachments.

Finally, associations between athlemaphilia and dehumanisation are not fully understood. Dehumanisation is experienced in a variety of manners between and within relationship domains (Haslam, 2006; Waytz & Epley, 2012), is associated with anthropomorphism (Waytz, Epley, et al., 2010), and at times arises from the thwarting of basic psychological needs (Moller & Deci, 2010). Future research is needed to explore the motivation to dehumanise interpersonal others as a result of athlemaphilic relationships as well as whether variation in athlemaphilia can predict dehumanisation of nonhuman relationships.

Concluding remarks. The present study provides initial qualitative evidence which supports the concept of sport as a nonhuman relationship and attachment. The findings support and extend the initial quantitative data from Chapter 3 by highlighting individual experiences of athlemaphilic attachment. In the current study participants shared experiences of sport as an attachment figure which were inconsistent with their ratings of athlemaphilic attachment in Chapter 3. This adds further support to the need to develop a specific model for athlemaphilic attachment based upon existing trait-based interpersonal (e.g., Brennan, Clark, & Shaver, 1998) and nonhuman (e.g., Beck & McDonald, 2004; Trub & Barbot, 2016) attachment measures. These findings also suggest that similar to interpersonal attachments, athlemaphilic attachments may vary depending upon contexts; thus the assessment of athlemaphilic attachments may benefit from a measure based upon a state-based assessment of attachment (Gillath et al., 2009). Improved measures of athlemaphilic attachment will allow for more consistent, valid, and reliable exploration of the phenomena of athlemaphilia.

Additionally, this study offers the first evidence of an individual's athlemaphilic relationship influencing their interpersonal internal working models of attachment (Bowlby,

1969, 1973). It is possible experiences of close social connection to an athlemaphilic partner can result in the dehumanisation of distant social others (Waytz & Epley, 2012) and perceiving sport as an attachment partner can impact internal working models of interpersonal attachment. The process through which intense athlemaphilic relationships and thwarted psychological needs can result in altered expectation of interpersonal others is not fully understood and future research should consider these interactions.

Finally, findings support the existence of experiences of environmental mastery (Ryff, 2014) in Chapter 3. Athletes offered multiple examples of using sport to efficiently satisfy their needs particularly when satisfying the same need through interpersonal relationships was perceived as requiring greater effort. This finding calls into question whether athlemaphilia is experienced as a corresponding substitute for, or a compensatory attachment which works in harmony with, interpersonal attachments to provide individuals with optimal and efficient need satisfaction. The relationship between interpersonal and athlemaphilic relationships is not clearly understood and further research is need to explore whether a hypothesis similar to the correspondence or compensation hypothesis found in religious attachment (Beck & McDonald, 2004) exists in athlemaphilic attachments as well.

In conclusion, the current study continues to position the affective influence of athlemaphilic attachments as an area in need of further consideration. Participants discussed their experiences of athlemaphilia as hard to define but nonetheless influential in various areas of their lives. Furthermore, participants experienced choice and a sense of comfort in their athlemaphilic relationships. Additionally, participants described experiences of omnipotent control over their athlemaphilic partners, demonstrated interpersonal others could affect their athlemaphilic relationships, and positioned sport as predictable on account of its impotence. A particularly important finding in this chapter is some athletes may alter their general internal working models of attachment as a result of thwarted psychological needs,

mechanistic dehumanisation, and athlemaphilic anthropomorphism. Collectively these data suggest the motivation to engage and remain in athlemaphilic relationships is more complex than initially hypothesised. Finally, participants' experiences demonstrated that although their athlemaphilic relationships cannot be seen nor touched, they are felt with the heart, and influence more than just athletic engagement.

CHAPTER FIVE

Comfort Sport

The game of basketball has been everything to me. My place of refuge, place I've gone when I needed comfort and peace. It's been the site of intense pain and the most intense feelings of joy and satisfaction. It's a relationship that has evolved over time, given me the greatest respect and love for the game.

– Michael Jordan

Introduction

It is apparent that for Jordan (1998), basketball satisfies many of the roles which we traditionally reserve for close interpersonal others (e.g., Bowlby, 1969, 1973, 1980; Deci & Ryan, 1985; Ryan & Deci, 2000). Jordan reports turning to sport to replenish a sense of comfort, improve his mood, and to feel less alone. This study explores whether these effects can be empirically evidenced.

Chapters 3 and 4 identified individuals experience their athlemaphilic and interpersonal relationships in similar ways and individuals experience a sense of control over their relationships with sport. This study extends previous findings by further aligning the concepts of athlemaphilic attachments with those of attachments to other nonhuman forms of support. Some forms of nonhuman support allow individuals to exhibit omnipotent control, for example asymmetrical relationships with objects (Keefer, 2016; Richardson, 2016), while others, most notably relationships with God (Cicirelli, 2004; Mcdonald, Beck, Allison, & Norsworthy, 2005), do not. Additionally, relationships with deities tend to be anthropomorphised (Barrett et al., 1996; Shtulman & Lindeman, 2014). As a result, the current study draws upon research regarding attachments to favourite objects (Keefer et al., 2012), places (Guiliani, 2003), fictional characters (Derrick, 2013), deities (Birgegard & Granqvist, 2004), and foods (Troisi & Gabriel, 2011) to explore whether individual tendencies to desire control and anthropomorphise effect the way they relate to sport. The understanding developed in this study continues to assess how athlemaphilic relationships affect wellbeing.

The remainder of this chapter will begin with a brief review of traditional attachments, reiterating the case for the rise of attachment theory in sport science before concluding with a summary of recent increases in our understanding of nonhuman forms of support. A focus will be paid to the use of experimental studies in interpersonal and nonhuman attachment

domains, as well as studies which manipulate attachment using some form of priming. Finally, the present study will be outlined before data is analysed and discussed.

Traditional Attachments. Bowlby (1969, 1973, 1980) established the theoretical basis for attachment theory, presenting the idea that within each of us there are internal working models of relationships which are shaped early and applied consistently across our lives. These models have two dimensions: the first reflects the way we view the trustworthiness of others to provide us with support when we are in need and the second reflects whether we view ourselves as being worthy of support. Bowlby viewed parents as our first primary attachment figures and theorised the way parents and children interact has a pivotal role in shaping a child's internal working models. He also attested that internal working models remain stable in most cases but are susceptible to change, both during childhood and into adulthood, depending upon experiences of support within an environment (Bowlby, 1973).

While Bowlby provided the theoretical basis for attachment theory, Ainsworth and Bell (1970) were the first to present empirical support for the theory. Their "Strange-Situation" experiment profiled the reactions of infants to periods of separation from their primary attachment figures. They identified three primary modes of attachment: secure, anxious, and avoidant. Securely attached babies showed minimal distress as a result of separation, and their behaviour prior to separation did not differ from their behaviour afterwards.

In contrast, Ainsworth and Bell (1970) demonstrated babies who displayed either form of insecure attachment showed signs of distress during separation then changed their behaviour when reunited with their parent. Prior to separation, anxiously attached babies clung on to their parents, depicting an intense desire to maintain proximity. Upon separation, anxiously attached babies displayed signs of distress, namely crying. Following a period of separation and distress anxiously attached babies tend to withdraw from their parent to protest their violated trust. Avoidant babies show a consistent pattern of not relying on their

parents for support before, during, and after separation and do not display signs of distress upon separation .

Consistent with the observations of Ainsworth and colleagues (Ainsworth & Bell, 1970; Ainsworth et al., 1978), Hazan and Shaver (1987) demonstrated adult attachment styles mimic those of infant attachment styles. This lends support to Bowlby's initial concept of attachment as an enduring, trait-like characteristic shaped by the internal working models developed through crucial relationships between children and caregivers. Secure adult attachment styles have since been linked to healthier interpersonal relationships and greater personal wellbeing (e.g., B. C. Feeney & Collins, 2015; B. C. Feeney & Thrush, 2010; Finkel, Simpson, & Eastwick, 2017). Insecurity in adult interpersonal attachments is frequently linked to shorter and less healthy relationships, increased loneliness and lower overall wellbeing (Lavy et al., 2010). Within sport and exercise sciences, ongoing research provides evidence of the patterns of attachment and wellbeing described above, focusing on the impact of attachment within coach-athlete dyads (Davis & Jowett, 2010, 2014; Felton & Jowett, 2015), parent-athlete relationships (Carr, 2009a; Felton & Jowett, 2013a), and even experiences of being a sports fan (Dixon, 2014; Dwyer, Mudrick, Greenhalgh, LeCrom, & Drayer, 2015; Vallerand et al., 2008).

There is a growing body of research applying attachment theory to sporting contexts. Concurrently, our understanding of attachment to nonhuman entities (deities, pets, places, etc.) is developing (e.g., Carr & Rockett, 2017; Counted, 2016; Granqvist & Kirkpatrick, 1999; Keefer, Landau, & Sullivan, 2014). To date, the ideas presented and evidenced in the latter body of work have not been applied in sporting contexts, thus there is a unique opportunity to develop a robust understanding of how athlemaphilic attachments effect wellbeing.

Nonhuman Attachments and Support. While reviewing the dominant domains in which we understand nonhuman support, Keefer, Landau, and Sullivan offer the following summary of the meaning of attachment in nonhuman support, and how we develop such attachments:

> People confidently depend on attachment figures for support because they expect them to be available, reliable, and responsive. These expectations do not arise spontaneously; rather, they are the result of recurring positive, supportive interactions in which a figure is associated with feelings of security and comfort (2014, p. 529)

It is important to note this definition does not differ from what we would expect to see in the literature surrounding interpersonal attachments because the process of attachment to nonhuman sources of support is currently understood to happen in a very similar way. Athletes depend upon their athlemaphilic relationships because these relationships are available, provide consistent support, and cannot refuse to respond to an athlete's demands (Chapter 4). These expectations arise from recurring positive interactions with sport which allow athletes to generate a sense of security and safety (Chapter 4). It is yet to be known whether athlemaphilic relationships provide a sense of comfort suggesting the need to explore this further.

Drawing on research in other nonhuman domains, Keefer, Landau, and Rothschild note "recent research focuses on a unique compensatory response to close others' perceived unreliability, namely, searching for alternative, nonhuman sources of security perceived as more reliable" (2012, p. 912). This quote suggests that when close others are not available, or are perceived as unreliable, the need for an alternative attachment is activated. Specifically, under such conditions some nonhuman forms of support are desirable sources of re-establishing a sense of security: "Indeed, studies show nonhuman targets can serve the same safe haven and secure base roles traditionally thought to be filled only by other people" (Keefer et al., 2014).

Keefer et al. (2014) elaborate further suggesting that examining multiple sources of nonhuman support has allowed them to identify that when faced with stressful situations, particularly ones where close others cannot provide support, people seek the support of nonhumans. Furthermore, supportive relationships with nonhumans can do more than simply supplement interpersonal support; nonhuman sources of support can promote psychological growth and wellbeing (Keefer et al., 2014). A brief focus on several established sources of nonhuman support (i.e., comfort food, deities, fictional characters, and parasocial relationships) will illustrate how athlemaphilic relationships may also facilitate psychological growth and wellbeing.

Troisi and Gabriel "propose that comfort food derives its appeal from cognitive associations with relationships and that the 'comfort' of comfort food can be understood by examining its effect on loneliness" (2011, p. 747). Positive experiences of eating a comfort food with an important interpersonal partner can lead to similarly positive experiences while eating the comfort food alone (Troisi & Gabriel, 2011). It is currently unclear whether wellbeing benefits perceived from sporting relationships are derived from cognitive associations similar to comfort foods or if there is an element of athlemaphilic attachments which exist independently of shared social bonds within sport. Additionally, given interpersonal relationships within sport are not always present and even when present, not always positive, the way in which wellbeing is derived from athlemaphilia may not be as straightforward as appears to be in studies of comforting foods. Furthermore, while recapping empirical research related to comfort foods, Troisi and Wright concluded the key determinant of whether an individual derives comfort from a particular food is whether he or she "perceive[s] the foods to be comfort foods, not what the actual foods are" (2017, p. 80). When translating these findings into a discussion of athlemaphilia, it follows that the type of

sport should not directly affect whether an individual draws wellbeing benefits from it, as long as the individual *perceives* the sport to be comforting.

Importantly, empirical research has found comfort foods reduce loneliness for those who are securely attached, but not for those who are insecurely attached (Troisi, Gabriel, Derrick, & Geisler, 2015). This finding partially arises because of the association between perceiving a food as comforting and consuming that food with significant interpersonal others, highlighting the interpersonal relationships surrounding certain forms of nonhuman support influence experiences of nonhuman support. Chapter 3 demonstrated attachment ratings were significantly different by relationship domain, but it is an empirical question as whether secureness of athletes' interpersonal attachments affects their perceptions of athlemaphilic relationships as secure.

Furthermore, research regarding attachments to deities and fictional characters demonstrates nonhuman forms of support do not need to physically exist nor involve physical experience to provide support. Research concerning relationships with deities (e.g., Birgegard & Granqvist, 2004) contests the deity is a nonfictional entity despite not having a physical body. Conversely, research concerning relationships with fictional characters and celebrities (e.g., Cohen, 2004; Derrick, 2013; Derrick, Gabriel, & Hugenberg, 2009; Derrick, Gabriel, & Tippin, 2008) often highlights that fictional characters do not exist although they can be seen and despite never interacting with an individual the celebrities who play the characters exist and can be viewed as attachment figures for fans.. With respect to the present thesis context, this raises the question of whether athlemaphilic relationships can also be viewed as a nonhuman support, despite not being having a corporeal human form and definitive ability to interact with individuals.

Experiencing comfort from a partner which does not exist is also observed in parasocial relationships. Parasocial relationships are one-sided relationships established between a

person and a media persona which are characterised by imaginary intimacy, growth over time, and the demonstration of interpersonal attachment characteristics (Cohen, 2004; Derrick et al., 2008; Greenwood & Long, 2011). Parasocial partners can counteract rejection from a real relationship, people's responses to parasocial partners are often like their responses to interpersonal partners, and strong attachments to parasocial partners encourage social facilitation effects (Derrick et al., 2008). Although people consciously know parasocial relationships are not real relationships, in many ways they feel psychologically real and meaningful (Derrick et al., 2008). The potentially intense requirements to invest time in a one-sided parasocial relationship is a phenomenon which has been observed in athlemaphilic relationships (Chapters 3 & 4). Further investigation is required to identify whether athlemaphilic relationships can counteract rejection or emotional upheaval created by close others similarly to parasocial relationships.

Attachment related studies using experimental design. In order to make causal claims regarding athlemaphilic attachment and changes in affect as a result of athlemaphilic attachments compensating for shortcomings in interpersonal attachments, an experimental design is required (Shaver & Mikulincer, 2002). Gillath and colleagues (Gillath et al., 2006; Gillath & Shaver, 2007; Mikulincer, Gillath, & Shaver, 2002; Mikulincer, Shaver, Gillath, & Nitzberg, 2005) have employed both subconscious and conscious experimental designs, to activate attachment related systems and encourage attachment related behaviour in interpersonal contexts. Subconsciously priming threat to close interpersonal others resulted in greater accessibility of attachment figures (Mikulincer et al., 2002). Additionally, priming relationship security demonstrates increases in secure attachment behaviour (Mikulincer et al., 2005), while experimenting with varied relationship contexts has identified that deteriorating relationship contexts increase insecure attachment behaviours (Gillath & Shaver, 2007).

Similarly, experimental designs have been employed in research relating to many forms nonhuman support. Experiments have been used in religious attachment research to support the correspondence between attachments to people and attachments to God (Birgegard & Granqvist, 2004; Granqvist, Mikulincer, Gewirtz, & Shaver, 2012). Experiments have also demonstrated priming interpersonal insecurity can increase attachment to objects (Keefer et al., 2012), and the tendency to anthropomorphise predicts greater experiences of security after being primed to think about a favourite object (Keefer, 2016). Finally, experiments have demonstrated when feeling rejected or lonely, thinking about favourite pets (C. M. Brown, Hengy, & McConnell, 2016) or fictional characters (Derrick et al., 2009) alleviates worries regarding social rejection and facilitates a sense of belongingness.

The Current Study

The current study draws from the paradigms of previous attachment-related experimental studies to explore whether athlemaphilic relationships alleviate feelings of loneliness and decreased emotional wellbeing following primed interpersonal insecurity. Previous research has demonstrated favourite belongings (e.g., Keefer, 2016), comfort foods (e.g., Troisi & Gabriel, 2011), the fictional world (e.g., Derrick, 2013), and deities (e.g., Birgegard & Granqvist, 2004) offer compensatory nonhuman support. This study explores whether athlemaphilic relationships can facilitate a similar compensatory function though it is hypothesised athlemaphilic relationships will affect wellbeing differently than other forms of nonhuman support. Chapter 3 demonstrated athlemaphilic attachment and factors of athlemaphilic relationships are significantly associated with variation in relatedness. As a result of this finding, the current study will explore whether seeking athlemaphilic support can satisfy an individual's desire for relatedness as measured by variation in feelings of loneliness. The five hypotheses examined in this chapter will be outlined below.

Anthropomorphism. Waytz, Cacioppo, and Epley cite Hume's (1757) statement that "there is a universal tendency among mankind to conceive all beings like themselves" (2010, p. 219). As such, studies of other nonhuman relationships have explored how anthropomorphising other beings and conceiving them as humans affects experiences of such relationships. Studies of relationships with deities have identified strong connections between agency, belief, and attachment. Indeed, Birgegard and Granqvist (2004) included a question about anthropomorphising God as an inclusion criterion for a study of the correspondence between attachment to parents and God. Their results suggest highly anthropomorphic individuals' perceptions of security from God corresponds with their attachment to people because God is perceived to be similar to people and to have high levels of agency (Birgegard & Granqvist, 2004). Thus, it is likely individuals who exhibit interpersonal attachment insecurity and high ratings of anthropomorphism will *not* turn to God to recuperate wellbeing lost because of interpersonal conflict. The findings of Birgegård and Granqvist (2004) support the hypothesis that when people are acting unreliably a form of nonhuman support which is not highly anthropomorphised nor considered to exhibit agency could be a preferred form of support .

Furthermore, the three-factor theory of anthropomorphism (Epley et al., 2007) notes individuals have three primary motives for anthropomorphising nonhuman agents. The first is *elicited agent knowledge* which suggests individuals are motivated to anthropomorphise because they are most familiar with humanness and their own understandings of how the world works. The second is *effectance*, where individuals give human traits to nonhumans as a means of understanding the motives of the nonhuman other. Third, individuals anthropomorphise for the sake of *affiliation*, which is an intentional imbuing of humanness to nonhuman objects to create a sense that one is not alone. In the current study, anthropomorphic tendencies are proposed to interact with the variables under investigation.

Specifically, following recalled interpersonal unreliability those who experience an increase in loneliness and are highly anthropomorphic may be more likely to derive a sense of companionship from sport as a way to counteract loneliness, regardless of their athlemaphilic attachments. Thus, it is hypothesised *trait anthropomorphism will not interact with athlemaphilic attachment (Hypothesis one-a) per se, but trait anthropomorphism is expected to influence the compensatory ability of sport to decrease a sense of loneliness, regardless of athlemaphilic attachment style (Hypothesis one-b).*

Control. Keefer et al. (2012) propose that, unlike close others or divine figures, objects have no agency, compassion, nor other obvious features which might qualify them as attractive sources of security, yet objects become desirable sources of support because they lack agency. Objects, and indeed the current conceptualisation of athlemaphilic attachment figures, "can be completely controlled, summoned when needed, and discarded when not" (Keefer et al., 2012, p. 913) making them ideal alternatives to seek support from, particularly when close others are acting unpredictably and unreliably. The control over athlemaphilic relationships some participants in Chapter 4 experienced underpinned some of the perceived benefits they derived from sport relative to interpersonal relationships. Other studies provide evidence adults continue to generate psychological support from objects and those who regularly attach to objects have fewer close interpersonal attachments (Neave et al., 2016; Norberg et al., 2018).

Additionally, "objects do not resist influence or act unpredictably" (Keefer et al., 2014), making them preferable forms of support when coping with experiences of limited control. Keefer also suggests "the proactive possibility that individuals may turn to objects as a means of meeting their need for social belonging" (2016).Chapter 4 evidenced sport does not resist individual influences and does not act unpredictably, suggesting athlemaphilic relationships may function similarly to objects. Thus, sport may facilitate the recuperation of a sense of

control, comfort, and security and individuals may turn to sport to meet their need for belongingness. Exploring whether sport can be used in a controlled manner, similar to objects, presents an interesting opportunity to continue challenging the notion that a sense of belongingness must involve interpersonal relationships. If sport can be controlled similarly to objects, those who are more in need of, or prefer, control are more likely to use sport as a way of providing it than those who do not. It is expected that *trait desirability of control will predict the likelihood of an athlete to generate a compensatory sense of athlemaphilic security (Hypothesis two).*

This study's second research question addresses how interpersonal and athlemaphilic attachments influence a state-based sense of security and feelings of loneliness. It is expected that, relative to individuals who have lower levels of interpersonal attachment anxiety, *when encountering situations which make individuals feel uncertain of their interpersonal attachments, individuals with higher levels of interpersonal attachment anxiety will experience greater loneliness and lower affect (hypothesis three-a) and will demonstrate higher levels of seeking out sport for compensatory support (hypothesis three-b).* . The third hypothesis results from the expectation that those who are more anxiously attached in their interpersonal relationship will possess an internal working model of support which is more sensitive to close interpersonal others violating their trust. Thus, individuals who experience greater interpersonal attachment insecurity are expected to demonstrate a greater desire to seek out the comfort they have come to expect from sport.

Similarly, it was hypothesised that *individuals with higher levels of security in sport will be more likely to seek out sport for support compared to those who are less securely attached to sport (Hypothesis four).* This hypothesis is based on the argument that individuals who are more securely attached to sport are more likely to use sport as a safe haven during periods of increased need for support and security.

Finally, interpersonal attachment anxiety and athlemaphilic attachment security are expected to interact; thus, if Hypothesis four is supported, *the benefit derived from engaging with sport is expected to be greater for individuals with higher interpersonal attachment anxiety and athlemaphilic attachment security (Hypothesis five)* suggesting an increased desire to seek out sport for support. Chapter 3 suggest that in many instances, the benefits sport provides to wellbeing are associated with the benefits provided by interpersonal relationships. This hypothesis seeks to explore such associations, suggesting for certain individuals with varying attachment hierarchies, the benefits available from sport can exceed those from interacting with close others, creating a desire to seek out sport.

Methods

Participants. A sample size of 110 were opportunistically recruited via social media, affording sufficient statistical power based on Troisi and Gabriel (2011) who employed a similar study design and analysis. Inclusion criteria involved being aged 18 years or older, considering engagement with sport or physical activity to be important, and being able to identify a primary athlemaphilic attachment. Following Troisi and Wright (2017), type of sport was not expected to affect the study results, and thus participants were from many different sports (e.g., basketball, dance, volleyball, yoga). Participants' had a mean age of 25.43 years (*SD* = 7.17), were predominantly female (69%), and European or North American (94%). All participants spoke fluent English.

Writing tasks. This study involved three different writing tasks: one intended to manipulate feelings of interpersonal security; a second detailing the perceived impact of athlemaphilic engagement upon a participant's life, and; a third neutral listing task.

Priming interpersonal insecurity writing task. A writing tasks based upon recalling moments of conflict in interpersonal relationships was used to manipulate participants' sense of interpersonal security. Similar writing tasks have activated attachment systems and

increased object based attachments (Keefer et al., 2012) and increased feelings of loneliness (Derrick et al., 2009). Keefer et al. (2012) asked participants to write a few sentences about three recent instances where they needed support and someone close to them acted unreliably. It was not known how frequently respondents interacted with their nominated interpersonal attachment figures. As a result, the current study made a minor adaptation to the manipulation to allow participants to recall three instances, from *any time in the past*, when they needed support and their interpersonal attachment figures acted unreliably.

Athlemaphilic compensation writing task. Participant's desire to seek support from sport was assessed using a writing task developed by Derrick and colleagues (Derrick, 2013; Derrick et al., 2009) who experimentally demonstrated variation in the length of a writing task about a preferred form of nonhuman support can predict the restoration of wellbeing. Derrick et al. (2009) demonstrated that following belongingness depletion, participants who wrote about a preferred television program wrote more than participants who wrote about a random television program and reported minimised feelings of loneliness as a result. Derrick et al.'s (2009) findings indicate that when feeling lonely individuals seek out a preferred nonhuman forms of support and suggest seeking support can be measured by the text length of an associated writing task. Further experimental research by Derrick (2013) instructed participants to write about their favourite television programme following a cognitive depletion task and demonstrated doing so restores resources depleted during the cognitive depletion task.

In the present study, participants were asked to write about their primary athlemaphilic engagement, and the influence sport has had upon their lives. Aligned with Derrick et al,'s (2009) study, it was interpreted that individuals who wrote longer descriptions of their athlemaphilic engagement and the influence sport had upon their lives were doing so to seek out support from their athlemaphilic relationships. It was also expected that longer

athlemaphilic compensation writing tasks would be associated with greater restoration of depleted affect.

Athlemaphilic compensation writing tasks were analysed using the Linguistic Inquiry and Word Count software (LIWC; Pennebaker, Booth, & Francis, 2007; Pennebaker, Mehl, & Niederhoffer, 2003). Within a given writing sample, the LIWC computes length of writing tasks, the frequency of social words, words about the self, positive mood words, and negative mood words. While the primary use of this writing task was to assess how much individuals seek out sport to compensate for experiences of interpersonal insecurity (written length), the frequency of social words within a writing task was expected to influence changes in participants' feelings of loneliness as a result of thinking about others in the athlemaphilic compensation writing task.

Neutral listing writing task. A neutral writing task was employed to establish a control condition in this experiment. The neutral listing writing task is an adaptation of a writing task used by Derrick and colleagues (Derrick, 2013; Derrick et al., 2009) which asks participants to list items in their bedroom.

Measures.

Individual Differences in Anthropomorphism Questionnaire (IDAQ). Tendency to anthropomorphise nonhumans was measured using the IDAQ. The IDAQ (Waytz, Cacioppo, et al., 2010) is a psychometrically validated self-report measure of an individual's tendency to attribute human like mental states such as consciousness and freewill to nonhuman agents like animals, machines, and nature. Participants rate sixteen items (e.g., "To what extent does the ocean have consciousness?") using a scale from 0 (not at all) to 10 (very much). The IDAQ does not include elements reflecting a tendency to anthropomorphise attachment figures which lack a physical existence. However, it has been utilised in studies of attachment to nonphysical deities (Wlodarski & Pearce, 2016), and the concept of anthropomorphising a

nonphysical other is common in religious literature (e.g., Granqvist, Ljungdahl, & Dickie, 2007; Shtulman & Lindeman, 2014). Furthermore, the IDAQ has been used to in prior research to predict variation in psychological wellbeing as a result of engaging with a nonhuman form of support (e.g., Keefer, 2016).

Desirability of control scale (DCS). A general level of motivation to control the events in one's life was measured using the DCS. The DCS (Burger & Cooper, 1979) is a psychometrically validated questionnaire which asks participants to rate statements such as "I enjoy making decisions." using a scale from 1 (the statement does not apply to me at all) to 7 (the statement always applies to me). Desirability of control has been found to be an antecedent for autonomous motivation (Amoura, Berjot, Gillet, & Altintas, 2014). The DCS assesses motivation and desire to control, not whether someone is currently in control.

Short version of the experience in close relationships scale for (a) interpersonal relationships (ECR-S) and (b) adapted for athlemaphilic relationships (ECR-S-Sport). Brennan, Clark, and Shaver (1998) factor analysed a compilation of all self-reported attachment metrics to create the thirty-six item experience in close relationships scale (ECR). The ECR demonstrated reliability and validity on multiple occasions, and can be adapted to measure attachments to various specific relationships or relationships in general (Mikulincer & Shaver, 2007). The ECR-short form (ECR-S) is a twelve-item version of the ECR with all metrics exceeding conventional thresholds of acceptable reliability to the thirty-six-item ECR (Wei, Russell, Mallinckrodt, & Vogel, 2007). Each item is scored on a seven point, partly anchored, Likert scale from 1 (disagree strongly) to 7 (agree strongly) which asks the respondent to rate their level of agreement with each statement. Point 4 on the scales is anchored by a rating of neutral or mixed feelings.

The ECR-S analyses attachment according to two dimensions, the first represented by six items which address attachment avoidance and the second represented by the remaining

six items which address attachment anxiety. Reporting high scores on either dimension individually indicates high experiences of the corresponding attachment style. Low ratings across both dimensions reflects a secure attachment style, while high ratings in both dimensions depicts a disorganised attachment style. The ECR-S was used in this study because it is a concise measure of attachment by dimension rather than a means of classification.

The ECR-S was unchanged for ratings of interpersonal attachment, while two changes were made to the ECR-S to generate the ECR-S-Sport. These changes were made to explore an aggregate level of acceptability of adapting an interpersonal attachment scale for a nonhuman assessment, and to allow respondents to distinguish between low levels of athlemaphilic attachment and a lack of athlemaphilic attachment. The first change was to substitute nouns and pronouns referring to humans for similar words reflecting sport. For example, "I worry that *romantic partners* won't care about me as much as I care about them" was altered to "I worry that *sports* won't care about me as much as I care about them." The second change was to include an option for participants to rate items as "not applicable" for items they did not think applied to their athlemaphilic relationship to assess whether the ECR-S-Sport accurately represented participants' athlemaphilic relationships. Apart from the two changes discussed, the ECR-S-Sport uses the same twelve items as the ECR-S, the same seven-point Likert scale, and is scored and interpreted similarly.

The Scale of Positive and Negative Experiences (SPANE). State based feelings of positive and negative affect were measured using the SPANE (Diener et al., 2009), a short-form version of the positive and negative affect scale (PANAS; Watson, Clark, & Tellegen, 1988). The shortened form offered by the SPANE reduced the overall number of responses required by participants while maintaining the reliability and validity of the PANAS (Diener et al., 2010). The SPANE presents respondents with twelve affect-related words split into two

dimensions. Six SPANE items represent positive affect (SPANE-P; e.g., happy, positive) and the remaining six items represent negative affect (SPANE-N; e.g., negative, sad). Respondents rate how much they are currently experiencing each feeling or emotion on a Likert scale ranging from 1 (very slightly, or not at all) to 5 (extremely).

UCLA Loneliness Scale – 8-Item version (ULS-8). State based feelings of loneliness were measured using the ULS-8. The ULS-8 (Hays & DiMatteo, 1987) is shortened form of the UCLA Loneliness Scale (Russell, 1996; Russell, Peplau, & Cutrona, 1980) which has demonstrated psychometric reliability and validity (Wu & Yao, 2008). The ULS-8 has eight items (e.g., "I lack companionship," "I feel left out") and participants rate how often they experience these items on a Likert scale ranging from 1 (never) to 4 (always).

Procedure. Consistent with university ethical requirements (Appendix E), all participants were presented an information sheet, and provided informed consent prior to taking part in this study (Appendix F) All participants were randomly assigned to either the control or experimental condition before Bristol Online Survey presented them with all study material. All participants completed a demographic information form, the IDAQ, DCS, ECR-S, ECR-S-Sport, SPANE, and ULS-8 at time 1 (baseline). Next participants completed the priming interpersonal insecurity writing task, as well as the SPANE and ULS-8 at time 2 (post-manipulation). Participants in the experimental condition then completed the athlemaphilic compensation writing task, and those in the control condition completed the neutral listing writing task. Following the completion of the second writing task, all participants completed the SPANE and ULS-8 at time 3 (post-intervention; Appendix G for full questionnaire).

Statistical Analysis. Alpha was set a priori at $\alpha = .05$. Correlation analysis was conducted between the independent variables (IDAQ, DFC, interpersonal attachment avoidance, interpersonal attachment anxiety, athlemaphilic attachment avoidance,

athlemaphilic attachment anxiety) and the dependent measures of affect (SPANE-N, SPANE-P, and ULS-8) at all three time points, and with respect to changes in affect post-manipulation and post-intervention. Next, repeated measure ANOVA were carried out regarding changes in affect over time, controlling for experimental condition. Finally, all independent variables and changes in dependent ratings between time points were analysed with respect to total words written during the athlemaphilic compensation writing task.

Preliminary Analysis. Following data collection, skewness and kurtosis were found to be abnormal. Data screening revealed 18 participants with at least one rating of a dependent variable which was three *SDs* from the mean. Removing these participants resulted in relatively normal distributions for all dependent variables, where skewness now ranged from -.89 to 1.44 and kurtosis from -.77 to 1.72. The remaining 92 respondents (30 male & 62 female) averaged 25.61 years of age (*SD* = 7.62 years). Only hypotheses one and two were tested using this sample.

Results

Manipulation Check. Not all of the remaining 92 respondents fully adhered to the first emotional manipulation. In an attempt to ensure completion of the protocol, all three elements of the interpersonal insecurity writing task were marked as required. However, instead of listing times when their interpersonal attachment figure let them down during a time of need, many individuals wrote responses such as “N/A,” “I can only think of one time,” or “This has never happened.” Any individual who did not write three satisfactory responses for the interpersonal insecurity writing task was viewed as not fully adhering to the protocol and has been removed from any analysis following the first manipulation. Following the removal of those who did not comply with the interpersonal insecurity writing task, 63 participants remained (18 male & 45 female), with a mean age of 25.73 years (*SD* = 7.96 years).

Analyses of baseline variables for the full sample (*N* = 92). Error! Reference source not found. shows descriptive statistics and correlations for all data collected prior to the interpersonal insecurity writing task. Results revealed interpersonal attachment avoidance was positively correlated to negative affect (ß = .22, $p < .05$) and loneliness (ß = .36, $p < .01$), and negatively correlated to positive affect (ß = -.29, $p < .01$). Similarly, interpersonal attachment anxiety was positively correlated to negative affect (ß = .21, $p < .05$) and loneliness (ß = .52, $p < .01$), and negatively correlated to positive affect (ß = -.26, $p < .05$). Athlemaphilic attachment ratings did not significantly correlate to any baseline ratings of affect, though the direction of correlation for each interaction between attachment and affect mimicked the direction of corresponding interactions between interpersonal attachment and affect.

Table 8 Descriptive statistics and correlations of independent and dependent variables prior to manipulation

	M	SD	N	1	2	3	4	5	6	7	8	9
1. IDAQ	51.11	25.18	92	1.00	.09	.06	.16	-.19	.20	-.02	.13	.12
2. DFC	98.92	11.93	92			.05	.01	-.32^	-.16	-.12	.01	-.08
3. IV	12.54	5.75	92				.20	.19	.16	-.29^	.22*	.36^
4. IX	19.46	6.29	92					.05	.16	-.26*	.21*	.52^
5. AV	18.29	5.81	71						.17	-.04	.15	.07
6. AX	18.06	6.82	68							-.13	.08	.13
7. T1 P-SPANE	15.66	4.62	92								-.44^	-.34^
8. T1 N-SPANE	4.17	4.11	92									.36^
9. T1 ULS-8	6.95	4.68	92									

Note. *$p < .05$; ^ $p < .01$; IV: Interpersonal Avoidance; IX: Interpersonal Anxiety; AV: Athlemaphilic Avoidance; AX: Athlemaphilic Anxiety; P-SPANE: Positive Components of SPANE; N-SPANE: Negative Components of SPANE; T1: Baseline;

Hypothesis one: Trait anthropomorphism will not interact with athlemaphilic attachment (a) per se, but trait anthropomorphism is expected to influence the compensatory ability of sport to decrease a sense of loneliness, regardless of athlemaphilic attachment style (b). Trait anthropomorphism was not significantly correlated to athlemaphilic attachment avoidance nor anxiety. This provides support for *Hypothesis one-a* which expects IDAQ ratings to not significantly correlate to athlemaphilic attachment.

Additionally, linear regression analysis was conducted to test differences in variance of post-intervention loneliness explained by IDAQ. IDAQ scores accounted for 23.7% of variance in post-intervention loneliness in the experimental condition, $F(1,28) = 1.67$, $p = .21$). Similarly, IDAQ accounted for 5.8% of variance in post-intervention loneliness in the control condition, $F(1,31) = .11$, $p = .75$). Neither regression achieved significance, but IDAQ scores accounted for more variation in the experimental condition and was relatively closer to achieving significance. These findings offer support for *Hypothesis one-b*, though not significantly.

Hypothesis two: Trait desirability of control will predict the likelihood of an athlete to generate a compensatory sense of athlemaphilic security. Desirability of control was significantly negatively correlated to sport attachment avoidance (ß = -.32, $p < .01$) but was not significantly correlated to sport attachment anxiety. This finding partially rejects *Hypothesis two* which expected desirability of control to correlate to decreased athlemaphilic anxiety *and* avoidance.

Analyses of baseline variables for individuals who fully completed in the protocol (*N* = 63). Hypotheses three, four, and five were tested using this sample. Consistent with the results from in the larger sample most variables were unrelated at bivariate level. However, six bivariate relationships achieved significance: (a) desirability of control was negatively correlated with athlemaphilic attachment avoidance (ß = -.28, $p < .05$); (b) interpersonal attachment anxiety was positively correlated to negative affect (ß = .26, $p < .05$); (c) interpersonal attachment anxiety was positively correlated to loneliness (ß = .55, $p < .01$); (d) interpersonal attachment anxiety was positively correlated to trait anthropomorphism (ß = .26, $p < .05$), (e) positive affect was positively correlated to trait anthropomorphism (ß = .31, $p < .05$), and; (f) positive affect was negatively correlated to negative affect (ß = -.29, $p < .05$).

Table 9. Mean affect ratings, and correlations to dependent variables at all three time points

		P-SPANE			N-SPANE			ULS-8		
	N	T1	T2	T3	T1	T2	T3	T1	T2	T3
M	63	16.30	14.89	16.30	3.90	4.33	2.95	6.97	7.05	6.48
SD	63	3.48	4.33	4.47	3.51	4.02	3.16	4.62	4.81	4.75
Correlations (ß)										
IDAQ	63	.31*	.22	.23	.06	-.01	.02	.04	.03	.08
DFC	63	-.05	.03	.07	.01	.05	.05	.03	-.03	-.12
IV	63	-.07	-.06	-.13	.11	.12	.15	.23	.19	.28*
IX	63	-.07	-.12	-.11	.26*	.25*	.16	.55^	.53^	.45^
AV	51	-.11	.00	-.19	.07	.04	.15	-.05	-.03	-.03
AX	49	-.13	-.15	-.13	.02	.04	-.16	.03	.05	-.02

Note. * $p < .05$; ^ $p < .01$; IV: Interpersonal Avoidance; IX: Interpersonal Anxiety; AV: Athlemaphilic Avoidance; AX: Athlemaphilic Anxiety; P-SPANE: Positive Components of SPANE; N-SPANE: Negative Components of SPANE; T1: Baseline; T2: Post Manipulation; T3: Post Intervention

To assess the performance of the manipulation and interventions, a repeated measures ANOVA was conducted for each measure of affect across all three time periods. Table 10 presents aggregate changes in affect as a result of the manipulation (i.e., interpersonal insecurity writing task) and the interventions (i.e., the athlemaphilic compensation writing task, neutral listing writing task).

Table 10 Change in Affect by Independent Variable

		P-SPANE		N-SPANE		ULS-8	
	N	Δ1	Δ 2	Δ1	Δ 2	Δ1	Δ 2
M	63	-1.41*	1.41*	.43	-1.38*	.08	-.57
SD	63	3.40	3.26	3.11	2.73	2.16	2.26
Correlations (ß)							
IDAQ	63	-.03	.02	-.09	.04	-.03	.10
DFC	63	.08	.06	.06	-.02	-.14	-.19
IV	63	-.01	-.10	.03	.00	-.07	.17
IX	63	-.09	.01	.03	-.19	-.01	-.17
AV	51	.14	-.28	-.02	.11	.05	-.01
AX	49	-.05	.01	.04	-.25	.04	-.14

Note. * $p < .05$; IV: Interpersonal Avoidance; IX: Interpersonal Anxiety; AV: Athlemaphilic Avoidance; AX: Athlemaphilic Anxiety; P-SPANE: Positive components of SPANE; N-SPANE: Negative Components of SPANE; Δ1: Post Manipulation minus Baseline; Δ2: Post Intervention minus Post Manipulation; T3: Post Intervention

Hypothesis three: When encountering situations which make individuals feel uncertain of their interpersonal attachments, individuals with higher levels of interpersonal attachment anxiety will experience greater loneliness and lower affect (a) and will demonstrate higher levels of seeking out sport for compensatory support (b). Interpersonal attachment anxiety did not significantly correlate to changes in any measure of affect between baseline and post manipulation. This rejects *Hypothesis three*-a which expected increased interpersonal attachment anxiety to predict change in affect following the interpersonal insecurity writing task. Furthermore, linear regression of interpersonal attachment anxiety on the total word count of the athlemaphilic compensation writing task accounted for 35.3% of variation, and nearly achieved significance, $F_{(1,29)} = 4.00$, $p = .06$). This suggests increases in interpersonal attachment anxiety are associated with increases in athlemaphilic compensation writing task length. This finding offers support of *Hypothesis three-b*, but not significantly.

Hypothesis four: Individuals with higher levels of security in sport will be more likely to seek out sport for support compared to those who are less securely attached to sport. Linear regression analysis was conducted with length of athlemaphilic compensation writing task as the dependent variable, and ratings of athlemaphilic attachment anxiety and avoidance as independent variables. The resulting model did not achieve significance, $F_{(2,27)} = 1.58$, $p = .23$), though it did account for 10.5% of the variation in athlemaphilic compensation writing task length. This finding rejects *Hypothesis four*.

Change in positive affect over time. A repeated measures ANOVA with a Sphericity-Assumed correction determined aggregate positive affect achieved a statistically significant difference between time points, $F_{(2, 124)} = 7.68$, $p < .05$. Post hoc tests using the Bonferroni correction revealed the manipulation elicited a significant decrease in positive affect from baseline to post-manipulation ($16.30 \pm .44$ vs $14.89 \pm .55$, $p < .01$), and the intervention

elicited a significant increase in positive affect from post-manipulation to post-intervention (14.89 ± .55 vs 16.30 ± .56, p <.01).

Further analysis of change in positive affect post-intervention by experimental condition revealed individuals who completed the neutral listing writing task (the control group) did not report a significant change in positive affect post-manipulation or post-intervention. However, individuals who completed the athlemaphilic compensation writing task (the experimental group) reported a significant decrease in positive affect post-manipulation (15.83 ± .80 vs 14.07 ± .77, p <.01), and a significant increase in positive affect post intervention (14.07 ± .77 vs 15.67 ± .89, p <.01). Therefore, we can conclude individuals in the experimental condition felt less positive following primed interpersonal insecurity and successfully recuperated positive affect by engaging with their athlemaphilic relationship. This is a significant finding.

Change in negative affect over time. A repeated measures ANOVA with a Greenhouse-Geisser correction determined aggregate negative affect differed statistically significantly between time points, $F_{(1.72, 123.60)} = 8.65$, $p < .05$. Post hoc tests using the Bonferroni correction revealed the manipulation did not elicit a significant change in negative affect from baseline to post-manipulation and the intervention elicited a significant decrease in negative affect from post-manipulation to post-intervention (4.33 ± .51 vs 2.95 ± .40, p <.01).

Further analysis of change in negative affect post-intervention by experimental condition revealed individuals who completed the neutral listing task (the control group) did not report a significant change in negative affect post-manipulation but did report a significant decrease in negative affect post-intervention (4.85 ± .77 vs 3.21 ± .58, p <.01). Individuals who completed the athlemaphilic compensation writing task (the experimental group) did not report a momentous change in negative affect post-manipulation but did report

a significant decrease in negative affect post intervention (4.17 ± .65 vs 2.67 ± .55, p <.01). Therefore, we can conclude individuals in the experimental condition experienced a greater decrease in negative affect than those in the control group and engaging with their athlemaphilic relationship significantly predicted change in affect. This is a significant finding.

Change in loneliness over time. A repeated measures ANOVA with a Sphericity-Assumed correction determined aggregate loneliness did not differ statistically significantly between time points, $F_{(2, 124)} = 2.19$, $p = .12$. Post hoc testing was not conducted for change in loneliness overtime because time was not a significant predictor of change in loneliness.

Hypothesis five: The benefit derived from engaging with sport is expected to be greater for individuals with higher interpersonal attachment anxiety and athlemaphilic attachment security. Three linear regression analyses were conducted with the change in each measure of wellbeing post-intervention as the dependent variables and athlemaphilic compensation writing task length as the independent variable. The resulting model did not achieve significance with regard to change in positive affect, $F_{(1,28)} = 2.46$, $p = .13$), though it did account for 8.1% of variation. The regression model for post-intervention change in negative affect nearly achieved significance, $F_{(1,28)} = 3.99$, $p = .06$), and accounted for 12.5% of variation. Finally, the regression model for post-intervention change in loneliness achieved significance, $F_{(1,28)} = 6.26$, $p < .05$), accounting for 18.3% of variation. Multivariate regression was conducted and identified no statistically significant change in overall wellbeing based on the length of athlemaphilic compensation writing tasks, $F_{(1,26)} = 1.69$, p = .34; Wilk's $\Lambda = .00$, partial $\eta^2 = .97$. These results offer partial support for *Hypothesis five*.

General discussion

Athlemaphilic Compensation Writing Task. The most significant finding in this chapter is that individuals in the experimental condition experienced a decrease in positive

affect following the interpersonal insecurity writing task, and importantly, they were able to recuperate their depleted positive affect by engaging with their athlemaphilic relationship. Individuals in the control group did not gain a similar benefit from the neutral listing writing task. This finding aligns with those of (Derrick et al., 2009) and demonstrates athlemaphilia can compensate for depleted affect caused by interpersonal others. Additionally, those in the experimental group did not demonstrate a momentous change in affect post manipulation but reported greater and more significant increases in negative affect post-intervention. This finding adds to the previous, suggesting that engaging with an athlemaphilic relationship not only compensates for depleted wellbeing caused by interpersonal insecurity, but also can generate improvement in affect even when individuals are not significantly upset.

Attachment. None of the measures of attachment correlate with any of the others. This adds support to the lack of correspondence between attachments to people and athlemaphilic attachments, thus continuing to cast sport as a preferable place to turn for support when close interpersonal others are not available. These findings continue to support the concept that attachment styles are not pervasive, and may be domain (Sibley & Overall, 2008) and indeed context (Caron et al., 2012) specific.

Anthropomorphism. Trait anthropomorphism was not significantly associated with either rating of athlemaphilic attachment. Further research is need to explore the how individuals anthropomorphise (Epley et al., 2007) or even personify (Freling, Crosno, & Henard, 2010) athlemaphilic attachments. Furthermore, trait anthropomorphism nearly achieved significance in predicting moderate amounts of the change in loneliness post-intervention. Though not significant, these findings suggest highly anthropomorphic individuals are potentially motivated to anthropomorphise sport for the sake of affiliation. A larger sample size, even slightly, can help to clarify this finding.

Control. Desirability of control was found to be considerably negatively correlated to athlemaphilic avoidance. This implies individuals who desire more control in their lives are less likely to avoid attaching to sport. This does not irrefutably demonstrate individuals who desire greater control in their lives are drawn to sport because it can satisfy their need to experience control, though it does offer compelling evidence when combined with the findings of Chapter 4. Connecting this result to the results regarding anthropomorphism, it is possible to suggest athlemaphilia is a desirable form of support because it lacks agency, and can satisfy an individual's need for belongingness (Keefer, 2016; Keefer et al., 2012).

Seeking Athlemaphilic Support. It was found that increased interpersonal anxiety was not associated with a decline in wellbeing following the interpersonal insecurity writing task. However, interpersonal attachment anxiety explained a considerable amount of variation in the athlemaphilic compensation writing task, though this analysis was just beyond the a prioi established alpha value. Additionally, variation in athlemaphilic attachment ratings were not significantly correlated to increases in the length of the athlemaphilic compensation writing task. Finally, variation in the length of athlemaphilic compensation writing tasks did significantly predict a decrease in post-intervention loneliness.

Collectively, these findings suggest that although variation in individual interpersonal and athlemaphilic attachment ratings did not significantly predict the length of athlemaphilic compensation writing tasks, the writing length, a proxy for support seeking, did significantly decrease individual loneliness. The second research question addresses how interpersonal and athlemaphilic attachments influence a state-based sense of security and feelings of loneliness. Variation in the length of athlemaphilic compensation writing tasks here hypothesised to represent the amount an individual was seeking athlemaphilic support (Derrick, 2013). Thus, taken collectively, these findings suggest individual who sought out sport and were able to

engage with it were able to decrease their feelings of loneliness. This find needs to be explored further.

Limitations and future directions. The first limitation of this study is that only57% of the respondents completed the entire protocol. On average, completion of this questionnaire took more than twenty minutes and it is believed the length of the questionnaire lead participants to disengage. Additionally, some respondents commented on how hard the questionnaire was to complete and how some of the questions did not seem relevant. Though comments were not directed specifically at the IDAQ, similar criticisms about the abstract nature of the items have been made (Neave et al., 2015). It is recommended that future attempts to collect additional data using this protocol is conducted in two phases, first collecting demographic information, and measures of IDAQ, desirability of control, and attachment. Then, in a second data collection participants get randomly assigned to either the control or experimental condition and asked to complete measures of affect and writing tasks. It is understood that breaking the questionnaire into two phases runs a risk of low adherence but set against low adherence to the current protocol, breaking the questionnaire up is thought to improve the quality of data collected, even if it does sacrifice adherence. These changes may also mitigate some of the issues associated with common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Additionally, Keefer *et al.* propose "two factors will determine, at least in part, people's preferred security source: the nature of the situational threat and the relative availability of attachment figures" (2014, p. 530). In this study, it is possible nature of situational threat to interpersonal attachment security did not align with threats which participants would traditionally require support from a nonhuman relationship with sport to address. Furthermore, given the written nature of the intervention and the typically physical nature of athlemaphilic relationships, it is possible the intervention did not allow participants to

successfully perceive their athlemaphilic relationship as being available to them. This could explain the weak relationships between attachment ratings and seeking sport as measured by the LIWC. Furthermore, while assessing a desire to seek support form sport according to the length of athlemaphilic compensation writing tasks aligns with previous experimentation regarding nonhuman relationships there is an argument for the need to qualitatively analyse these writing tasks. Future analysis looking at the content of the writing tasks instead of just the length could provide different results.

Finally, the high prevalence of respondents who chose “not applicable” for at least one item measuring athlemaphilic attachment indicates the ECR-S-Sport can be improved to better reflect the experience of athlemaphilic attachments. There exists the potential to develop a novel model for assessing athlemaphilic attachments by incorporating elements of the FARS (Chapter 3), the sport commitment model (Scanlan et al., 1993), passion in sport (Vallerand, & Miquelon, 2007), the attachment to god inventory (Beck & McDonald, 2004), the ECR (Brennan *et al.*, 1998), the young adult attachment to phones scale (Trub, & Barbot, 2016), and other scales from sport science, interpersonal relationships studies, and research regarding nonhuman attachments.

Concluding remarks. This study demonstrates that when primed with interpersonal insecurity, engaging with close athlemaphilic others can improve ratings of affect. Additionally, increases in the length of athlemaphilic compensation tasks were associated with decreased feelings of loneliness. These results suggest that, like Jordan (1998), individuals seek out athlemaphilic relationships as a refuge and a place of moderately controlled security.

CHAPTER SIX

General Discussion

It ain't over till it's over

- *Yogi Berra*

Overview of the thesis

This thesis had three main aims, to explore whether, why, and how individuals engage in athlemaphilia. The first aim of this thesis was to establish *whether* individuals experienced athlemaphilia similarly to their interpersonal interactions. The second aim of this thesis was to better understand *why* individuals seek support from sport. The third aim of this thesis was to explore *how* variation in athlemaphilia interacts with wellbeing. The main findings of the thesis are athlemaphilia exists, interacts with interpersonal support, and affects wellbeing.

Athlemaphilia exists. The results of thesis provide quantitative and qualitative support for the existence of athlemaphilia. Results suggest athlemaphilic relationships involve features of relationships which are traditionally experienced in interpersonal relationship (Chapter 3) and metrics of interpersonal attachment have some applicability to understanding and quantifying the nature of participants' athlemaphilic attachments (Chapters 3 & 5). Furthermore, despite participants in Chapter 4struggling to define the term "relationship," they all discussed experiences of athlemaphilia and used the word "relationship" to describe how they interact with sport . These findings suggest athlemaphilia exists and previously accessible language and definitions may have prevented an in-depth awareness and understanding of athlemaphilia from developing. Further research is required to explore awareness of athlemaphilia. Finally, it is worth noting individual differences did arise in both the strength and nature of athlemaphilic relationships.

Athlemaphilia exists as a unique nonhuman form of support. The results of thesis provide quantitative and qualitative support suggesting athlemaphilia shares some, but not all, features with other forms of nonhuman support. Results highlight a lack of verbal communication in athlemaphilic relationships (Chapters 3 & 4) delineating athlemaphilia from conversational relationships with nonhumans such as deities. Relatedly, results (Chapters 4 & 5) suggest athlemaphilia may act as a compensatory form of support,

particularly when interpersonal others act unreliably. Furthermore, sport is inherently physical, and it has been found (Chapter 3) that athlemaphilia affords athletes an opportunity to regularly experience some forms of physicality, but not others. No significant correspondence was found between athlemaphilic attachment and trait anthropomorphism (Chapter 5) and individuals describe athlemaphilia as their entire lives, but no one offered a physical, corporeal, nor symbolic representation of their attachment figures. The association of athlemaphilia and changes in wellbeing combined with the lack of a corporeal, communicative, and anthropomorphised partner positions athlemaphilia as a unique form of nonhuman support in need of further investigation.

Athlemaphilia interacts with interpersonal support. The results of this thesis demonstrate individual differences exist in the way athlemaphilia interacts with interpersonal relationships. Most significantly, Chapter 5 demonstrates that when interpersonal relationships make individuals feel badly, seeking the support of athlemaphilic relationships can restore depleted wellbeing. Additionally, participants discussed experiences where interpersonal others influenced the initiation, quality, and longevity of their athlemaphilic relationship, and vice versa (Chapter 4). Exploring these results further exposed that participants experience omnipotent control over their athlemaphilic relationships (Chapter 4) and variation in the desirability of control was significantly negatively associated with athlemaphilic attachment avoidance not seeking support from sport (Chapter 5). These findings suggest the interaction between athlemaphilic and interpersonal relationships is not straightforward and additional research is required to further clarify this interaction.

Athlemaphilia influences wellbeing. The results of this thesis demonstrate athlemaphilia has various associations with wellbeing. Chapter 3 found variation in the features of athlemaphilic relationships differentially predicted ratings of relatedness, self-acceptance, and environmental mastery. Furthermore, when comparing the variance in

wellbeing associated with athlemaphilic and interpersonal relationships, athlemaphilic relationships were mimetic of interpersonal relationships though contributing less variance in wellbeing. Chapter 4 illuminated participants' experiences of security in their athlemaphilic relationships as well as experiences of altered moods as a result of interacting with athlemaphilic partners. Chapter 5 provided experimental evidence of the restorative potential of thinking about athlemaphilic relationships when experiencing a depleted sense of wellbeing. These findings suggest the influence of athlemaphilic and interpersonal relationships upon wellbeing are similar and further research is needed to improve our understanding of whether athlemaphilic relationships are sought for support because they can impact wellbeing.

Main findings and theoretical advancements made by the thesis

Findings and theoretical advancements relating to anthropomorphism. The findings in this thesis are consistent with previous research concerning the three-factor theory of anthropomorphism (Epley et al., 2007). This theory suggests individuals are motivated to anthropomorphise because they have an abundance of elicited agent knowledge of humanness, are able to experience effectance through imbuing human qualities onto nonhumans, and can increase a sense of affiliation by viewing nonhuman agents as humanlike (Epley et al., 2007). Participants, and indeed the researcher, elicited agentic knowledge by discussing athlemaphilic interactions in terms of human characteristics (Chapter 3 & 4) but struggled to conceive of their interactions with sport as relationships (Chapter 4), exposing the potential lack of humanness ascribed to sport. Furthermore, on the basis of this data, I propose the anthropomorphism of sport is motivated by effectance, or minimising uncertainty by ascribing human features to nonhumans, and affiliation, or the opportunity to experience a sense of belongingness by increasing the perceived humanness of

sport. The order in which these three experiences occur in anthropomorphism, and in general, is currently unclear (Epley et al., 2007).

Findings and theoretical advancements relating to attachment theory. Before discussing any findings that relate to the advancement of attachment theory, it must first be discussed whether athlemaphilia is a form of attachment, per se, or whether attachment is a useful lens through which to better understand athlemaphilia. Given the diverse theoretical concepts used to explore and establish athlemaphilia within this thesis it would be unwise to suggest that athlemaphilia exists solely as a theory of attachment. However, it would be equally unwise to ignore the attachment related behaviours participants in this thesis have displayed, particularly those who have had repeated, significant, need supportive interactions with their athlemaphilic partner. Suffice to say it may be true that every athlemaphilic attachment is an athlematic interaction, but every athlematic interaction is not an athlemaphilic attachment the same way every square is a rectangle, but every rectangle is not a square.

A key finding supporting athlemaphilia as attachment is found in Chapter 4 where a participant discussed how athlemaphilia altered their expectations of others, and presumably their internal working models of attachment (Bowlby, 1969, 1973, 1980) outside of the domain and contexts of sport. It is one thing for athlemaphilic attachment to arise as a model of expectations for interactions with sport; it is another for repeated intense athlematic interactions to lead to a strong athlemaphilic attachment which in turn alters expectations of interpersonal attachment experiences. The latter must be considered within the realm of attachment theory, but it is currently unclear where the line should be drawn between interaction and attachment (rectangles and squares).

Furthermore, athlemaphilia has been presented as a meaningful affective bond and participants described experiencing the four key functions of attachment bonds (i.e.,

proximity seeking, separation anxiety, secure base, safe haven; Ainsworth, 1985) within athlemaphilic relationships. Perhaps satisfaction of the four features of attachment bonds can be used to delineate between athlemaphilic interactions and attachments. Results suggest that individuals experience these features in varying degrees, as evidenced by participants completing two self-report measures of athlemaphilic attachment (Chapters 3 & 5). It should be noted that when given the option to refer to specific items of the measure of athlemaphilic attachment used in Chapter 5 as not applicable to their interactions with sport. Further investigation of the features of interpersonal attachment which are not applicable to some experiences of athlemaphilic attachment will provide useful insight into where athlemaphilic attachment truly begins.

Additional findings related to attachment theory include, ratings of interpersonal and athlemaphilic attachment differed, supporting a domain- (Sibley & Overall, 2008) and context- (Caron et al., 2012) specific understandings of attachment more broadly. Additionally, athlemaphilic attachment ratings are not uniquely predictive of wellbeing but offer significant predictive ability after controlling for the effect of interpersonal relationships. Athlemaphilic attachments are not related to trait anthropomorphism but athlemaphilic avoidance is significantly negatively associated with desirability of control indicating further investigation of the intersection between athlemaphilic attachment and trait-based personality is needed. . Cumulatively, these findings partially answer the call to broaden the scope of attachment theory (Keefer et al., 2014) by exploring a novel form of nonhuman support and suggesting, for some, athlemaphilia is experienced similarly to interpersonal attachments. Future research should explore the (dis)similarity between athlematic interactions, athlemaphilic attachments, interpersonal attachments, and attachments to other nonhuman forms of support.

Findings and theoretical advancements relating to self-determination theory. The findings of this thesis are broadly harmonious with the principles of SDT (Deci & Ryan, 1985; Ryan & Deci, 2000), though they do challenge the interpersonal requirement of relatedness (Baumeister & Leary, 1995)**.** Ryan presents the organismic need for interpersonal interaction as vital for intrinsic motivation stating organisms strive for "cohesion and integration of the individual within a social matrix" (1991, p. 209). Nonhumans lack the ability to self-regulate autonomy and competence, therefore they are not viewed as capable of being integrated within a social matrix. Furthermore, the benefits derived from engagement with nonhumans can viewed as either satisfaction of relatedness or satisfaction of autonomy experienced by choosing not to interact with humans. The findings of the current thesis demonstrate experiencing certain features of athlemaphilic relationships predicts variation in relatedness and when consciously primed with interpersonal insecurity some individuals seek out support from sport, and benefit from doing so. These findings continue to question the interpersonal requirement for relatedness and future studies employing subliminal primes to manipulate athlemaphilic attachment can investigate individual experiences of agency (Damen, Van Baaren, & Dijksterhuis, 2014) and autonomy in athlemaphilia. Further exploration is needed to determine whether the benefits derived from engagement with nonhumans operates through satisfaction of relatedness or the satisfaction of autonomy experienced by choosing not to interact with humans.

In summary, this thesis offers an understanding of how and why individuals might anthropomorphise, attach to, and relate to sport. It is currently unclear whether anthropomorphism leads to attachment, or attachment leads to anthropomorphism. In either case, the results of this thesis demonstrate participants experience their interactions with sport as attachments. Athlemaphilic attachments, particularly when anthropomorphised for the sake of affiliation, present a strong challenge for the interpersonal requirement of relatedness

satisfaction in SDT. These findings extend our understanding of relatedness, loneliness, attachment, motivation, affect, wellbeing, and athlemaphilia.

Methodological advancements made by the thesis

The most substantial methodological advancement of this thesis is the presentation of methodological polyamory. Methodological polyamory incorporates elements of methodological pluralism (Moses & Knutsen, 2007; Popa & Guillermin, 2017), methodological bricolage (Denzin & Lincoln, 1998; Kincheloe, 2001; Levi-Strauss, 1966), and theoretical polyamory (Shannon & Willis, 2010) to promote a mixing of methods. Certain researchers are encouraged to cultivate intimate and significant relationships with multiple research paradigms and methods in order to efficiently satisfy intellectual ponderings. Methodological polyamory recognises there are difficulties in a fluid conceptualisation of research, researchers, and methodology while acknowledging for some, in certain contexts, the value added by integrating multiple relationships into research justifies the costs. Presenting a polyamorous perspective of research emerged organically from a thesis which champions a reconsideration of how we draw upon various significant sources of support during times of need.

Additionally, the development of the theoretically informed framework to assess the features of relationships across domains advances the tools researchers have at their disposal. The Features of Athlemaphilic Relationships Scale needs further testing, refinement and validation. Decreasing redundant features and associated collinearity, incorporating features which are prevalent in nonhuman relationships, and adding an explicit question concerning whether respondents view their interactions with a nonhuman as a relationship can improve the framework. In turn, the framework can assist in the development of our understanding of the variety of meaningful relationships we engage in.

Pioneering the measurement of athlemaphilic attachment is another methodological advancement in need of critical discussion. Bartholomew warns the ability to test attachment theory "and accumulate convincing evidence of its usefulness is closely tied to the quality of our measures" (1994, p. 23) and researchers need to pay close attention to measurement issues instead of adopting a measure of attachment uncritically. However, it is an established progression of assessments of attachment to nonhumans to begin by transferring human metrics into the nonhuman domain and then to develop tailored and individually valid assessments (e.g., Trub & Barbot, 2016; Zilcha-Mano et al., 2011). In Chapters 3 and 5, two methods of assessing interpersonal attachment (Hazan & Shaver, 1987; Wei et al., 2007) were critiqued and adapted to assess athlemaphilic attachments and met moderate success. A factor which limited the deployment of both the AAS (Hazan & Shaver 1987) and the ECR (Brennan et al., 1998) was my desire to reduce the number of questions participants were asked. I am not the first research to trade brevity and convenience for reliability and comprehension (Overall, Fletcher, & Friesen, 2003; Pierce & Lydon, 2001) but given the intent of this thesis I retrospectively reconsider this decision. Improved reliability, validity, and clarity would be beneficial for drawing explicit conclusions regarding athlemaphilic attachment and improved stability is viewed as beneficial during the development of athlemaphilia as an attachment construct. That is not said to discredit the results of this thesis but rather to highlight that there are multiple opportunities to learn from this experience and consider such trade-offs more thoroughly in future research, especially concerning metric generation.

Specifically, in Chapter 3 adaptations were made to the AAS because of critiques concerning the categorical nature of the metric not representing dynamic attachment experiences. Reliability and success of the adapted AAS were demonstrated by the successful completion of the metrics by all participants and assessed through pilot testing and face

validity (Nevo, 1985). Unfortunately, after data was collected, it was identified participants had to report scores for each item of the AAS regarding their athlemaphilic interactions and were not presented with an opportunity to report an item as "not applicable," potentially making their completion of the metric an unremarkable success. This critique was considered and led to the inclusion of a "not applicable" as a response option for the ECR-S-Sport (Wei et al., 2007) in Chapter 5 enabling successful completion of the entire ECR-S-Sport to offer evidence of the face validity of the ECR-S-Sport. However, the high prevalence of respondents who rated one or more element of the ECR-S-Sport as not applicable and inconsistencies between completed ratings of athlemaphilic attachment hypothesised interactions with wellbeing suggest adaptations of the ECR-S may not be wholly representative of athlemaphilic attachment experiences. Alternately, it is possible inconsistencies reported result from contextual variation in athlemaphilic attachment, suggesting the need for a measure of which is more sensitive to state-based contextualised variation in athlemaphilic attachment experiences (e.g., Gillath et al., 2009). Furthermore, face validity (Nevo, 1985) is a good starting point for assessing the validity of data generated by a particular metric, but future studies need to incorporate more advanced assessment of validity and reliability. Another concern for future assessment of athlemaphilic attachment arises from acknowledging that that self-reports of attachments may yield biased and invalid results, particularly concerning individuals who are highly dismissive (Bernier et al., 2007). It is possible dismissive individuals' responses to the self-report measures employed in this thesis compromise measurement reliability and future research should integrate measures which do not rely on self-reports to adjust for this concern.

Beyond advances related to the measurement of athlemaphilic attachment, this thesis employed multiple established metrics and methods in novel ways to varying degrees of success. For example, in Chapter 5, when experiencing interpersonal insecurity, the sport

compensation writing task was not a successful method of exploring how participant's access support from their athlemaphilic relationships to recuperate a sense of security, presumably because writing about sport is not the preferred method of seeking support from sport. Also, Chapter 5 demonstrated that the IDAQ (Waytz, Cacioppo, et al., 2010), a trait-based assessment of anthropomorphism which was not developed to explore athlemaphilia but is a useful metric for the continued advancement of our understanding of nonhuman relationships with sports.

Strengths of the thesis

Athlemaphilia is a complex phenomenon and complex problems require complex approached to understand them. The creativity employed in this thesis allowed the researcher to efficiently generate valuable insights by drawing upon a polyamorous and liberated combination of disciplines, theories, and methodologies rather than remaining within a singular silo. The interdisciplinary nature of this thesis is one of its greatest strengths. The individual study designs were inspired by a combination of traditional theories, established metrics, and emerging research. The result of this creative process is littered with potential and the numerous applied recommendations and future directions this research can inform are a testament to the strength of the thesis as a whole.

Delimitations of the thesis

Findings should not be taken as evidence that everyone is athlemaphilic. None of the samples collected were representative of the general population and any global generalisation drawn from the conclusions of this thesis should be done with extreme care. Furthermore, the results of this thesis must be understood through a relativist ontological perspective. Given my perspective on the creation and communication of knowledge, findings in this thesis are interpreted as depictions of shared co-constructed perceptions. The results of this thesis

cannot be interpreted as absolute truths (see Chapter 2 (methodology) for a full delimitation of epistemological choices made within the thesis).

I should make clear that I have deliberately focused on the athlemaphilic experiences of athlete participants in sport and have not researched the athlemaphilic relationships of fans, coaches, or other stakeholders. Experiences of athlemaphilia are expected to differ according to the type of interaction an individual has with sport and it was beyond the scope of this programme of research to identify those boundaries. That does not mean the experiences of athlemaphilia in individuals who do not participate in sport are unimportant, and future research is needed to expose other experiences of meaningful affective connections with sport.

Additionally, I have not defined what a sport is, nor recruited participants based upon the type of sport, exercise, or physical activity they engage in. Given the exploratory nature of this study, I sought various experiences of athlemaphilia; thus, keeping a broad scope was advantageous. Finally, I should stress this thesis is primarily concerned with athlemaphilia. While I have drawn upon literature from other forms of human and nonhuman attachment and support, the findings of this thesis cannot be read as evidence for or against other forms of support (e.g., people, deities, objects, pets) without further examination.

Key limitations of the thesis

An overarching limitation of this thesis is its reliance upon self-reported measures, which have been widely criticised across scientific discourse. Conceptually, these issues might be exacerbated by the often-physical nature of sports, meaning athlemaphilia may not be accurately measured without a physical component. While interpersonal relationships are marked by their ability to be intimate and communicative, athlemaphilia often relies on physical expression. Thus, a behavioural examination of athlemaphilia, potentially even as a substitute for the athlemaphilic compensation writing task in Chapter 5, offers an opportunity

to assess athlemaphilia on its own terms. Further explorations of physiological, neurological, chemical, or other scientific analyses of experiences of athlemaphilia are intriguing.

Additionally, many of the self-report measures used in this thesis were amended and used outside of their intended domain. Given the novel nature of this research, this limitation could not be avoided. This analysis focused on adult populations, thus, the findings cannot be extrapolated to young athletes. Relatedly, all measures employed to assess attachment ratings asked participants to rate a current primary attachment figure, and none focused on influential developmental attachments during childhood. Furthermore, despite multiple repeated measures of attachment, this thesis has not successfully separated athlemaphilic relationships from other types of relationships taking place at the same time.

An additional limitation of this thesis arises from the lack of conclusive experimental results limiting the claims which can be made regarding the causal relationships between athlemaphilia, interpersonal relationships, and wellbeing. Further experimentation, consciously and subconsciously, can improve our understanding of how athlemaphilia effects wellbeing and why some people are drawn to sport. This thesis has not been able to explore cross-cultural variation in experiences of athlemaphilia, nor differences in experiences of athlemaphilia depending upon type of sport or the role an individual has relative to sport (e.g., player, coach, spectator). Though the current scope and scale of this thesis are limited, it is exciting to consider the benefits of exploring these concepts in larger populations with varying demographic and athlemaphilic characteristics. Finally, given the novel and complex nature of athlemaphilia, studies were presented to participants in a way that many found difficult, confusing, or emotionally draining. I was often more worried about designing the studies to obtain sufficient data to support test hypothesis than I was about communicating this research to participants in a clear and understandable manner. This can be improved in the future.

Ethical considerations

There were few ethical issues associated with the thesis which transcend the typical considerations of psychological research. Chapters individually consider issues of consent, confidentiality, risk, harm and distress, and sensitivity of information. All studies received ethical approval from the departmental ethical approval process. Perhaps the most contentious point of ethical consideration for this thesis, which should be kept in mind for all future experimental studies, is that priming participants with interpersonal insecurity was not a pleasant experience. Participants reported immediate reductions in wellbeing variables or considerable magnitude. Perhaps: (a) implementing methods of data collection over a longer period of time which exhibit a lower severity of immediate emotional upheaval would decrease distress, or; (b) ensuring the available means of recuperating wellbeing are more in-line with participant needs can evade some of these ethical considerations.

Applied Recommendations

An improved understanding of the meaningful affective bonds athletes experience with sport has several ramifications for applied practice. It is worth noting the recommendations presented in this section position athlemaphilia as a subtle addition to existing practice; none of the recommendations are expansive. First, the positive and negative effects of athlemaphilia can influence various transitions athletes experience in their careers (e.g. Brown et al., 2015; Wylleman & Lavallee, 2004). In fact, reconceptualising careers in sports as athlemaphilic attachments and relationships allows for a nuanced understanding of the emotions involved in athletic life-spans without presenting the passion some have for sport as a series of capital exchanges. The most logical next course of action is to thoroughly and empirically evidence this hypothetical link, then if results dictate a greater need to focus on the relational elements of sporting careers, gradual transitions are advised.

Second, Carr (2012) discusses the nonlinear links between team cohesion and attachment, noting the effects of attachment characteristics and performance related outcomes may be moderated by a sense of cohesion. To make this point, Carr (2012) offers an example where the negative effects of attachment related responses to threat upon performance were negated in part by a sense of cohesion, or attachment to a group (Rom & Mikulincer, 2003). If athlemaphilia is experienced as an attachment, it then follows athlemaphilic attachments could operate similarly to group attachments and cohesion. This would mean for individuals with insecure interpersonal attachment styles, the existence of a secure athlemaphilic attachment provides a sense of security which helps to deactivate attachment related concerns, allowing the athlete to allocate attention elsewhere, namely towards performance. Carr (2012) connects increased group cohesion to coach's behaviour and leadership, presenting yet another interesting applied consideration for athlemaphilia. If secure athlemaphilic attachments can mitigate some of the negative performance outcomes associated with insecure attachments, then it follows coaches, particularly of athletes who are insecurely attached can benefit from encouraging secure emotional connections with sport. How coaches can achieve this is yet to be understood and given the complex nature of forming secure interpersonal attachments, a considerable amount of research is needed to clarify these applied benefits.

Finally, the application of athlemaphilic attachments may provide useful insights into participant retention in health-based interventions. Every academic discipline has something to gain from better understanding nonhuman support and health psychology is no different. There is a need to incorporate a broad range of relationships constructs in our understanding of health (Pietromonaco, Uchino, & Dunkel Schetter, 2013). The application of athlemaphilia as a relationship construct in the health psychology of sport and exercise science presents numerous opportunities to understand individual variation in intervention engagement,

adherence, and completion. When sport or physical activity is utilised to achieve a health-based initiative, it behoves researchers and practitioners alike to consider the impact of meaningful affective connections with sport or in this instance the intervention. Furthermore, commitment to sport related health based initiatives can be view as similar to committed spectatorship (Dwyer et al., 2015; Koo & Hardin, 2008), where increased emotional attachment may influence continuous consumption or engagement. Understanding the implications of individual differences in athlemaphilic attachment within the context of sport related health-based interventions allows for improved design, implementation, and hopefully success of such interventions. At the present moment, there is not sufficient data to encourage applied health practitioners to drastically change their provisions.

Future directions

Without further development of a psychometrically tested measure of athlemaphilic attachment, understanding athlemaphilia and its potential benefits will be challenging. Heeding the previously mentioned warning concerning the development of quality understanding through attachment assessment (Bartholomew, 1994) and recognition of attachment system as a complex interrelated tree of attachment experiences (Bartholomew & Shaver, 1998) the development of an athlemaphilic attachment scale will continue to critically adapt and assess measures from other attachment domains. A specific measure of athlemaphilic attachment should incorporate components of measures of interpersonal attachment (e.g., Brennan et al., 1998; Hazan & Shaver, 1987) as well as measures of other nonhuman attachments including but not limited to the pet attachment questionnaire (Zilcha-Mano et al., 2011), the young adult attachments to phones scale (Trub & Barbot, 2016), the attachment to God inventory (Beck & McDonald, 2004), and the assessment of “Rootedness” (McAndrew, 1998). Additionally, the development of an athlemaphilic attachment assessment which does not rely on self-reports helps to minimise concerns regarding bias in

self-reports from dismissive individuals (Bernier et al., 2007) and discrepancies between self-reports of preferred supports and actual forms of support (Rockett & Carr, 2014). Longitudinal studies (e.g., Diamond, Hicks, & Otter-Henderson, 2008), narrative and lexicological techniques similar to the adult attachment inventory (George et al., 1996), or the incorporation of biological and behavioural assessment may relieve concerns regarding reliance on self-report. Alternately, the use of taxometric techniques instead of categorical or dimensional methods of analysis allows researchers to distinguish between latent types and latent dimensions of attachment (Meehl, 1995).

Furthermore, given the rise in the application of attachment theory to experiences of nonhuman support (Keefer et al., 2014), there is utility in constructing a broad measure of nonhuman attachment which allows for direct comparison of attachment ratings across nonhuman domains. Adaptation of the interpersonal attachment network questionnaire (ANQ: Trinke & Bartholomew, 1997) to focus on a network of nonhuman relationships may provide beneficial insights into motivation to engage with particular forms of support. Future studies could then explore the interactional influences of attachments to sports, places, objects, animals, and deities within a sporting context. Beyond identifying interactions between nonhuman forms of support, an adapted ANQ could provide valuable insights into the hierarchical structure of nonhuman support, thus allowing a clearer understanding of experiences which trigger the need for nonhuman support generally and specifically. Concurrently, it is suggested that developing measures of interpersonal and nonhuman attachment networks separately limits our ability to investigate the entirety of the complex interrelated system of attachment experiences. Thus, the development of an attachment network assessment incorporating both interpersonal and nonhuman attachments may be necessary.

The development of measure of athlemaphilic attachment, nonhuman attachment, nonhuman attachment networks, and global attachment networks should focus on extensive piloting and cognitive pretesting (Karabenick et al., 2007). Specifically, cognitive pretesting can eschew issues of cognitive validity arising from the analysis of conceptually abstract items such as athlemaphilic attachment and a global attachment network (Karabenick et al., 2007) by assessing how well participants interpret items. This increases the likelihood that respondents will choose a coherent answer to the question posed (Woolley, Bowen, & Bowen, 2006). Increased cognitive validity in the development of athlemaphilic attachment assessment and global attachment networks benefits from improved cognitive validity which allows for more accurate assessment of the unique, and similar, components of various forms of attachment. Additionally, model development, including piloting and cognitive pretesting, needs to engage a more diverse group of participants to allow for future findings to be extrapolated to a wider population.

Furthermore, understanding commitment to sport as a participant (Scanlan et al., 1993) and a fan (e.g., Dwyer, Mudrick, Greenhalgh, LeCrom, & Drayer, 2015; Koo & Hardin, 2008) employs investment (Rusbult, 1988) and attachment theory (Bowlby, 1969) to understand continued interaction with sport. Applying athlemaphilia within sport commitment (Scanlan et al., 1993) allows researchers to move beyond interactional investments in sport to consider commitments as emotional connections. Doing so can generate a broader understanding of why some individuals leave sports while others remain. Additionally, applying the concept of athlemaphilic attachment to fans experiences presents a unique opportunity expand the models of attachment to a sports team (Dwyer et al., 2015) and the strategies employed to understand spectator motives and engagement (Koo & Hardin, 2008). Individual differences in athlemaphilic attachment to sport in general, as well as specific sports, may interact with the current understandings of attachments to teams; thus,

incorporating athlemaphilia into applied marketing research may explain some variation in spectator engagement and retention.

Another avenue for further research is to examine the effects of subconscious activation of athlemaphilic attachment systems. Future research can employ implicit or subliminal primes (e.g., Carr & Landau, 2012; Mikulincer, Shaver, Gillath, & Nitzberg, 2005) to assess conscious and subconscious athlemaphilic attachment related responses to threat. If athlemaphilic attachment behaviour can be activated subconsciously, it then follows that attachment to sport may be an involuntary means of seeking social support during times of need. Testing this is essential to challenging the interpersonal requirement for relatedness. Furthermore, a diary based study of experiences of separation from sport similar to Diamond, Hicks, and Otter-Henderson (2008) would extend support for potential causal relationships between athlemaphilia, relatedness, wellbeing, and interpersonal interaction.

Additionally, the development of clinical or developmental assessments of athlemaphilic attachment similar to the adult attachment interview (George et al., 1996) or the adult attachment projective (George & West, 2001) may be necessary. The interaction between athlemaphilic support and emotional development is not clearly understood, thus, the development of such measures could provide valuable insights. Combining a developmental or clinical measure of athlemaphilic attachment with an awareness of an individual's network of nonhuman attachments can lead to a better understanding of the role nonhuman connections, particularly those with sport, play in the development of all relationships across a life-span.

Finally, future research into athlemaphilia might usefully focus on anthropomorphism within this context. This thesis (Chapter 5) provides some evidence athlemaphilic attachments are related to anthropomorphism (Epley et al., 2007). Future research is needed to explore individual differences in awareness of anthropomorphism in athlemaphilic

relationships, and whether such differences are associated with wellbeing or motivation to seek sport to compensate for experiences of interpersonal insecurity. Given emerging research linking anthropomorphism to dehumanisation (Landau, Sullivan, Keefer, Rothschild, & Osman, 2012; Moller & Deci, 2010; Waytz & Epley, 2012; Waytz, Epley, et al., 2010), opportunities to satisfy emotional needs through athlemaphilia could represent a unique arena which is not overtly viewed as human, but can be experienced as such.

Autobiographical reflection on the process of developing the thesis

Julius Caesar is credited as being the first to state "experience is the teacher of all things" (Flexner, 1993). Dewey (1933) latter clarified that we do not learn from experience alone, yet rather by reflecting upon our experiences. These two sentiments depict my doctoral experience perfectly. Nothing about my PhD went to plan and I revel in the serendipity of the past four years (See Appendix A for more details).

Every moment of this process has been a learning experience, including learning to reflect upon my experiences. From reflection, I have learned my ability to create networks intellectually and interpersonally is the greatest strength I possess. Specifically, my first two academic conferences felt immense. One morning in June, I was rubbing elbows with Ryan and Deci over lunch, and somehow, what feels like the next day, I'm in Nottingham sat at a dinner table where I am the only native English speaker. Moving forward I will continue to use this strength to creatively build ideas and opportunities.

Additionally, I have learned to appreciate a wider array of emotional experiences and now understand even when times are tough if I keep my head up, both physically and emotionally, I will be alright. If I had to change one thing about my doctoral experience, I would have downloaded a reference manager on my first day. Other than that, I appreciate the lessons I have learned from every positive and negative experience had over the last four years, and I look forward to fondly looking back upon my years as a PhD student.

"Flavours" of athlemaphilia: A recipe book

Battered Basketball

1) Take 1 average 12-year-old boy
2) Add an 8-inch growth spurt
3) Force basketball into the mix
4) Remove teammate and peer support
5) Undermine sense of competence
6) Whip into shape
7) Break down regularly to avoid stiffness
8) Have coach call all of the shots
9) Remove from environment after 6 years

British Un-Battered Basketball

1) Take one Battered Basketball
2) Let rest for 10 years
3) Transfer to a smaller pan
4) Open lid to remove some pressure
5) Sprinkle with opportunities to feel supported
6) Cut off burnt-ends
7) Add a leadership role
8) Enjoy a final year of playing with close friends and less emotional baggage

Cross-Fit Crème Brûlée

1) Create a socially supportive environment of intense daily exercise with regular opportunities for collective competition
2) Give a 22-year old girl a taste
3) Wait 3 years for her to return
4) Remove relationships with other sports
5) Strengthen ties between her and Cross-Fit
6) Sweeten with social support from others and her significant other
7) Makes an endless serving of support and attachment

Fencers' Foil-Wrapped Flambé

1) Take two portions of sibling rivalry
2) Add a pinch of salt to the more mature sibling
3) Simmer on low for 10 years of competition
4) Beat the older sibling until softened
5) Keep tasting until no longer bitter

Fried Football with Friends

1) Take one adolescent male who is uncomfortable is social settings
2) Reinforce the notion he will become popular because of football
3) Move him away from his friends and home
4) Mix in children his age
5) Watch him make friends through sport
6) Repeat this process three more times
7) Love the ability of sport to make social ties

Hearty Helpings of Handball

1) Find a strong, large, powerful male jujitsu athlete
2) Make it difficult for him to stay with jujitsu
3) Have his friends beg him to try handball
4) Indulge their request and watch the young man excel
5) Leave like this for 6 years
6) Move the man to a new country where handball is not a popular sport.
7) Have him lead a team, helping his new friends develop relationships with the sport

Pretty Pick-up Pie

1) Take 1 25-year-old woman
2) Immerse in a culture where men are viewed as superior to women as athletes
3) Develop a strong relationship with basketball
4) Practice shooting 3-point shots extensively
5) Mix into men's pick-up basketball games
6) Watch for the woman to outperform all of the men
7) Count the number of men who find her athletic abilities attractive
8) Appreciate the sport for allowing her to feel wanted

Tennis Trap Tortellini

1) Take 1 talented 12-year-old girl
2) Separate from significant human relationships
3) Train excessively
4) Discourage forming meaningful human relationships
5) Encourage devotion to sport
6) Add years of high-achievement
7) Develop tennis as a meaningful support
8) Prove reliability of tennis
9) Remove tennis as a form of support

Volleyball & Vegetable Soup

1) Bring a 21-year-old to a volleyball match
2) Make him an assistant coach despite lacking extensive knowledge of the sport
3) Have him participate in training
4) Remove from environment
5) Bring him to every open-gym available
6) Teach him to play the game
7) Offer him a scholarship to play abroad
8) Watch the relationship flourish for 3 years
9) Separate the soup into separate pans, removing him from volleyball again
10) Move the pans closer again and watch the temperature rise

The most important distinction between recipes for athlemaphilia is that they are different, ideographic, and unique to the athlete experiencing them. Some recipes are sweet, others are sour or salty. Some people love one recipe while others loathe it. The individuality of athlemaphilic experiences is essential to understanding the concept as a whole. Such individuality also means all of the possible athlemaphilic experiences cannot be summarised with a single recipe any more than every culinary recipe can be concocted by following the instructions to simply "cook the food." Indeed, some recipes are passed down from generation to generation while others are borne out of opportunity and inspiration. Multiple athletes can follow the same recipe, but it is likely the result will leave a different taste in the mouth of each athlete. It is also important to note taste is vital to enjoying a recipe, but personal preferences and the opinions of others can also play a pivotal role. If you don't like cheese, pizza probably isn't for you and if your mother recommends a recipe on Facebook, you're likely to give it a go. Similarly, if you enjoy team sports, volleyball might appeal to you, and if your brother was permanently injured playing rugby you might be averse to recipes involving contact sports.

Drawing our focus further inward, within the vast array of ingredients for athlemaphilic experiences, time arises as an important distinguishing feature. For some, athlemaphilia is like frying an egg, a mere flash in a pan, while others experience it like a good brisket, a long slow-roasted exchange which softens over time. Additionally, some recipes require completely raw materials to be worked tirelessly over time while in other recipes a few steps can be skipped by using ingredients made elsewhere. Additionally, merely being in possession of all the ingredients for a particular recipe does not mean someone will generate support from sport any more than having eggs, flour, and milk means you have pancakes. Another important facet of any recipe for athlemaphilia is that once the ingredients are combined it is as difficult to separate them and the influences they have as it is to deconstruct

a fully baked cake. It is not easy to separate feelings about sport from physical, interpersonal, social, financial, and other benefits associated with sport. Recipes for athlemaphilia cannot be unfollowed and, even if unacknowledged, the changes made by experiencing athlemaphilia cannot be unexperienced any more than a hard-boiled egg can be unboiled.

Furthermore, any good cook knows cooking, particularly baking, involves influential unwritten ingredients in the environment and the sequence of a recipe is very important. Following a recipe at altitude in a cool, crisp environment will yield a different result than following the same recipe in a hot and humid tropical location. The same can be said for athlemaphilia where the unwritten ingredients including environmental variation can be as influential to the outcome of a recipe as the observable instructions. Similarly, you cannot bake a cake in reverse order. If the sequence of the recipes above were taken out of order, each would result in a different attachment, if any at all. Finally, the interactions between the ingredients of a recipe do not have to be completely understood for a chef to bake a brilliant cake and individuals experiencing athlemaphilia do not need to be fully aware of the ingredients shaping their experience. Knowing more about the chemical reactions of eggs and flour or the need satisfying opportunities of nonhuman relationships helps chefs and athletes alike to adapt and perform in varied environments, but deep knowledge of the underlying processes is not required for either domain to be need supportive.

Finally, the recipes for athlemaphilia above represent a few of many potential recipes, and those recipes are a portion of the need supportive relationships available to an individual in the same way cakes are only a portion of the foods available. While it is possible for someone to survive off of cakes alone, it is not advisable. The same can be said for athlemaphilia and need supportive relationships where variety and balance are essential for health and wellbeing.

Concluding remarks

Athlemaphilia is a novel way to conceptualise experiences of meaningful affective connections with sport. The methodologically polyamorous research in this thesis has begun to explore the interactions of the application of self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), attachment theory (Bowlby, 1969, 1973, 1980; Hazan & Shaver, 1987; Keefer et al., 2014), and the three-factory theory of anthropomorphism (Epley et al., 2007) with regard to understanding individual experiences of emotions towards sport. Results demonstrate athlemaphilia exists, interacts with other relationships, and effects wellbeing. It is understood this thesis espouses a great deal of potential future research and it is exciting to consider where athlemaphilia will take us next. However, for the time being, relationships with sport are viewed as exciting and efficient, they have a lot to offer athletes, coaches, and fans; the same can be said of athlemaphilia.

Appendix A

Alex 'Xander' Hodge, BSc, MSc, AFHEA **06/06/2018**
Durham, England – +44744 921 9683 – A.C.Hodge@Durham.ac.uk

Education

PhD Candidate – Sport Sciences (June 2018) - The Department of Sociology, Durham University
Thesis title – Athlemaphilia: (n) meaningful affective connections to sport.
Viva: May 25, 2018. Passed with corrections.
Explored the impact of nonhuman relationships with sport upon motivation, health, and wellbeing.
Applied self-determination theory, attachment theory, and the three-factor theory of anthropomorphism.
Utilized a mixed-methods programme of research, including survey, interviews, and experimental designs.
Identified for the first time that athlemaphilic relationships mirror, and at times offset, their interpersonal counterparts, challenging conventional hierarchies favouring interpersonal relationships for health.

Durham University Learning and Teaching Award (December 2017)
Awarded Associate Fellowship of the Higher Education Academy on completion.

MSc Business Management (January 2014) - Durham University Business School, Durham University
Dissertation title – Applying the Burke-Litwin Model for Organizational Performance and Change to the Salz Review: An in-depth analysis of the business practices at Barclays leading up to the financial crisis between 2008 and 2012.
Obtained a 2:1.
Studied organizational behavior, human relations, accounting, economics, strategy, and marketing.

BSc Mathematical Science (May 2010) - Bentley University, Waltham, Massachusetts, USA
Received a 3.68 GPA focusing on actuarial sciences.
Obtained minors in international economics, and Spanish.
Studied accounting, finance, marketing, management, and law, at an introductory level.

Study Abroad (September-December 2008) - Universidad de Navarra, Pamplona, Spain
Studied Spanish language, culture, history, and theory of probability (all in Spanish).

Awards and Recognition

June 2018: Funded Workshop Award - Writing Articles for Publication in Peer-Reviewed Journals in Humanities and Social Sciences
Awarded a place after departmental nomination and Institute of Advanced Studies competitive selection process.

May 2018: Postgraduate Publication Bursary - Durham University Faculty of Social Sciences and Health
Granted a £1,756 bursary to support the publication of "Athlemaphilia and athlete wellbeing: a multi-study exploration of meaningful affective connections to sport."

April 2018: Postgraduate Student Free Communication Award
Awarded £100 in Routledge book vouchers at the BASES Student Conference, Newcastle, England.

November 2017: Human Kinetics Student Free Communication Award
Awarded £100 in Human Kinetics book vouchers at the BASES-FEPSAC Conference, Nottingham, England.

September 2012 – Present: Team Durham Postgraduate Scholarship Scheme
Secured the first ever PhD scholarship of £28,700 in recognition of my athletic and academic ability (2014-2018).
Received a one-year athletic scholarship of £8,200 to complete a master's degree (2012-2013).

June 2016: School of Applied Social Sciences Postgraduate Research Fund
Received an £850 grant towards the cost of attending The 6th International Conference on SDT.

June 2016: Ustinov College Travel Grant
Received a £100 grant to assist with the cost of attending The 6th International Conference on SDT.

Teaching and External Engagement Experience

External Assessor: The University of Edinburgh (May 2018)

- Assessed essay exams on the first year *Sport Management 1* and third year *Sport and Recreation: Performance Indicators, Measurement, and Management* modules.

Course Lead: Sutton Trust and Supported Progression, Sport, Durham University (2015-Present)

- Advanced from teaching assistant in 2015 to academic lead in 2017 on these widening participation schemes, which required a working knowledge of diversity and equality initiatives within Higher Education.
- Led lectures, practical and lab sessions in various disciplines (e.g., psychology, sociology, physiology).
- Redesigned the content and assessment of the courses to align with intended outcomes.

Course Instructor: Introduction to Sport Psychology, Durham University (2016-2018)

- Delivered first year seminars concerning team building, injury, goal setting, and anxiety and performance.
- Provided support for the marking of first-year written assessments (2017-2018).

Invited Lecturer: School Sports Partnership – Gifted and Talented Workshops (2017-2018)

- Introduced year-six students across County Durham to elements of sport psychology.

Invited Lecturer: Widening Participant Day, St. Chad's College, Durham University (2017-2018)

- Presented an overview of the Sport & Exercise Science course as part of a college widening participation initiative.

Research Assistant: HEFCE-funded LEGACY Research Project, Warwick University (2017)

- Conducted interviews as part of the Higher Education Research Council for England's R2 Strength Profiler research project.

Course Instructor: Developing Movement Skill, Durham University (2015-2017)

- Conducted practical sessions centered on attentional capacity, schema development, structuring practice, and feedback, as well as skill development and retention.
- Marked annual assessments including multiple-choice and essay questions.
- Invigilated exams for students with learning difficulties,

Invited Lecturer: Applied Sport Psychology, Durham University (2017)

- Presented a guest lecture as part of third year module, challenging students to apply the course's content to a documented high-performance sport scenario.

Demonstrator: Durham University School Science Fair (2015-2017)

- Encouraged year-nine and -ten students to consider studying sport sciences at university.

Publications

Hodge, A., Oliver, E. J., & Eccles, D. W. (in prep). Athlemaphilia and athlete wellbeing: a multi-study exploration of meaningful affective connections to sport. *Psychology of Sport and Exercise.* Impact factor, 1.930. Journal ranking, 3/35 (Sport Sciences).

Hodge, A. (in prep). Mixing research methods with love: Inviting pluralism and bricolage into methodological polyamory. *Journal of Mixed Methods Research.* Impact factor, 1.600. Journal ranking, 19/96 (Social Sciences, Interdisciplinary).

Hodge, A., Oliver, E. J., & Eccles, D. W. (2017). Conceptualizing sporting experiences as romantic relationships: A mixed methods exploration of loving the game. *BASES Conference 2017 – Programme and Abstracts* (Vol. 35, p. S58). Nottingham, England: Routledge. https://doi.org/10.1080/02640414.2017.1378421

Hodge, A. (2017) The 6th International Conference on Self-Determination Theory: A review and emerging themes. *The British Psychological Society: Sport & Exercise Psychology Review*, 13(1), 94-96.

Conference Presentations

Hodge, *A., Oliver, E., Eccles, D. (2018, September). Personification, Agency, and Anthropomorphism in Athlemaphilic Attachments.* Free communication presented at Personification Across Disciplines, Durham, England.

Hodge, *A., Oliver, E., Eccles, D. (2018, April). Understanding meaningful affective connections to sport: Introducing "athlemaphilia".* Free communication presented at the annual BASES Student Conference, Newcastle, England.

Hodge, *A., Oliver, E., Eccles, D. (2018, March). In Love and Alone: Exploring the downsides of athlemaphilic relationships.* Free communication presented at Competing in the Dark – Mental Health in Sport, the third annual conference hosted by the Open University Milton Keynes, England.

Hodge, *A., Oliver, E., Eccles, D. (2017, November). Conceptualizing sporting experiences as romantic attachments: A mixed methods exploration of loving the game.* Free communication presented at the BASES-FEPSAC Conference, Nottingham, England.

Hodge, A., Oliver, E., Eccles, D. (2016, June). *Challenging Interpersonal Requirements for Relatedness: Demonstrating the contributions of non-interpersonal relationships to satisfaction, relatedness, and wellbeing.* Poster presented at the triennial meeting of The 6th International Conference on Self-Determination Theory, Vancouver Island, Canada.

Leadership and Organisational Roles

Editor: The Inaugural Faculty Interdisciplinary Conference (July 2019)

- Currently organizing a post-graduate led conference with members of the Faculty of Social Sciences and Health.
- Leading the establishment of a journal to publish papers presented at this event.

The British Sociological Association's Sport Studies Postgraduate Forum (September 2018)

- Currently co-organizing the BSA's annual sport studies postgraduate forum with the members of DU RISES.

DU RISES: Durham University Researchers in Sport & Exercise Science (2016-Present)

- Founded and lead DU RISES, a group of postgraduate students from various disciplines (e.g. sport, sociology, anthropology, education, business, psychology) who share a research interest in sport.

Postgraduate Ambassador: Department of Sociology (2016-Present)

- Assist program directors with the inductions of new postgraduate students.
- Serve as an intermediary between students and academic staff during the year.

The Wolfson Research Institute for Health and Wellbeing ECR Committee (2016-Present)

- Co-organize a series of events across each academic year. Events organized included networking evenings, discussions about generating impact in health-based research, and career planning seminars.

Selection Panel – Director of the Centre for Academic Development, Durham University (June 2018)

- Invited student representative for the assessment and selection process for the deve

The Wolfson Research Institute for Health and Wellbeing ECR Conference (June 2017 & 2018)

- Led a team of early career researchers to organise the WRIHW's Early Career Researcher Conference.
- Encourage other young researchers to rehearse their presentation skills within a multidisciplinary environment.

Durham University Learning and Teaching Network (2017-Present)

- Contribute to regular discussions of ongoing developments in learning and teaching at Durham.
- Interact with senior academic and executive staff to promote high quality teaching at Durham.

Postgraduate Ambassador: Student Recruiting and Admissions Office (2017-Present)

- Encourage students across the UK to pursue postgraduate study at Durham.

Durham University Volleyball Club (2012-2016)

- Acted as club captain, men's team captain, member of the men's first team, and player-coach.

Team Durham Vice President's Panel (2014-2015)

- Assisted the athletic union president in fulfilling the duties of that role, including awarding annual honors to successful students, teams, and clubs.

Appendix B

Durham University
School of Applied Social Sciences

Revised Research Ethics and Risk Assessment Form, May 2015

Section A: Introductory Information

A.1. Name of researcher(s):	**Alex Hodge**
A.2. Email Address(es) of researcher(s):	**A.C.Hodge@Durham.ac.uk**
A.3. Project Title:	**Examining Relationships with Sport**
A.4. When do you intend to start data collection?	**January, 2016**
A.5. When will the project finish?	**March, 2016**
A.6. *For students only:* Student ID: Degree, year and module: Supervisor:	**000575951** **Second Year PhD in Sport Sciences** **Dr. Emily Oliver**
A.7. Brief summary of the research questions: **This study aims to build upon the first study of my thesis which demonstrated that athletes describe their relationships with sport in a similar manner to the ways they would with people. Beyond that, the first study also demonstrated that athletes' relationships with sport can influence their wellbeing.** **This study hopes to advance the understanding of those two findings by:** **Gaining a better understanding of how athletes experience their relationships with sport** **Understanding the differences in the influences that relationships with sport have upon wellbeing.**	
A.8. What data collection method/s are you intending you use, and why? This study will employ interviews. This choice has been made as the first study in the research program utilised a survey, and interviews are seen as an opportunity to more deeply explore some of the questions brought up by the initial survey.	

SECTION B: ETHICS CHECKLIST

While all subsequent sections of this form should be completed for all studies, this checklist is designed to identify those areas where more detailed information should be given. Please note: It is better to identify an area where ethical or safety issues may arise and then explain how these will be dealt with, than to ignore potential risks to participants and/or the researchers.

	Yes	No
a). Does the study involve participants who are *potentially vulnerable*?	☐	☒
b). Will it be necessary for participants to take part in the study without their knowledge/consent (e.g. covert observation of people in non-public places)?	☐	☒
c). Could the study cause harm, discomfort, stress, anxiety or any other negative consequence beyond the risks encountered in normal life?	☒	☐
d) Does the research address a *potentially sensitive topic*?	☒	☐
e). Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☒
f). Are steps being taken to protect anonymity and confidentiality?	☒	☐

g). Are there potential risks to the researchers' health, safety and wellbeing in conducting this research beyond those experienced in the researchers' everyday life?	☐	☒

SECTION C: Methods and Data Collection

C.1. Who will be your research participants?

Participants will be invited to take part in this study based on their results from the first study of my thesis. Respondents will be flagged for invitation based on three criteria:

They have indicated that they are willing to take part in a follow up study and provided me with contact details

Their relationships with sport have been demonstrated to influence their wellbeing more so than their reported relationship with a person, according to at least one of the three metrics collected.

Individuals who fit the two above criteria and find themselves either in the top, or bottom quartile of reported scores for wellbeing will be selected as the study aims to be inductive, and such cases present opportunities for information rich interviews, and comparisons.

C.2. How will you recruit your participants and how will they be selected or sampled?

Upon completion of my previous study, respondents were asked to leave a contact email should that be willing to participate in follow up research. Potential respondents will be emailed and asked if they would still like to be involved in future research, and if so be selected based on the extent to which they demonstrate the last two criteria outlined in C.1.

C.3. How will you explain the research to the participants and gain their consent? (If consent will not be obtained, please explain why.)

Given that this is a follow up study, I will briefly explain what I've found from the first study, and explain how I intend to use this study to clarify or advance those findings. Consent forms will be given out during the initial greeting of participants. Both of these are outlined in the attached interview guide.

C.4. What procedures are in place to ensure the anonymity and confidentiality of your participants and their responses?

Data storage will be done exclusively on the university network, minimising the risk of casual contact with the data. Beyond that pseudonyms will be used during transcribing interviews, and recordings will be discarded after satisfactory completion of transcription. Additionally, interviews will be held in private locations to limit the opportunity for onlookers to obtain personal information about participants.

C.5. Are there any circumstances in which there would be a limit or exclusion to the anonymity/confidentiality offered to participants? If so, please explain further.

Any potentially identifying information will be kept broad (e.g. a 'university student' will be used in place of the more specific 'Durham University student') as the pool of research participants is relatively small. This will be explained to participants to ensure they understand that no public reports will mention them by uniquely identifiable information (e.g. 'the only British female on the women's first team at Durham University's basketball team').

C.6. You must attach a **participant information sheet or summary explanation** that will be given to potential participants in your research.

Within this, have you explained (in a way that is accessible to the participants):	Yes	No
a). What the research is about?	☒	☐
b). Why the participants have been chosen to take part and what they will be asked to do?	☒	☐

c). Any potential benefits and/or risks involved in their participation?	☒	☐
d) What levels of anonymity and confidentiality will apply to the information that they share, and if there are any exceptions to these?	☒	☐
e). What the data will be used for?	☒	☐
f). How the data will be stored securely?	☒	☐
g). How they can withdraw from the project?	☒	☐
h). Who the researchers are, and how they can be contacted?	☒	☐

SECTION D: Potential Risks to Participants

You should think carefully about the risks that participating in your research poses to participants. Be aware that some subjects can be sensitive for participants even if they are not dealing explicitly with a 'sensitive' topic. Please complete this section as fully as possible and continue on additional pages if necessary.

What risks to participants may arise from participating in your research?	How likely is it that these risks will actually happen?	How much harm would be caused if this risk did occur?	What measures are you putting in place to ensure this does not happen (or that if it does, the impact on participants is reduced)?
1. Potential distress can occur as a result of discussing relationship histories or sensitive information	Low	Low amounts of harm	Participants will be informed that if at any point they become uncomfortable with the content of the interview, they can say so, and ask to not answer particular questions. Additionally, contact details for SCS will be given to them on their informed consent forms, and at the close of the interview I will make note of those contact details once more and inform participants that if they feel the need to speak to someone, the university provides them with that service.

SECTION E: POTENTIAL Risks to Researchers

You should think carefully about any hazards or risks to you as a researcher that will be present because of you conducting this research. Please complete this section as fully as possible and continue on additional pages if necessary. Please include an assessment of any health conditions, injuries, allergies or intolerances that may present a risk to you taking part in the proposed research activities (including any related medication used to control these), or any reasonable adjustments that may be required where a disability might otherwise prevent you from participating fully within the research.

1.Where will the research be conducted/what will be the research site?

Research will be conducted in a close meeting room at Maiden Castle Sport Centre, in an attempt to remain as naturalistic as possible. There is also a possibility for conducting the interview via Skype, and this will be done using a tudy room within the Bill Bryson Library to maintain privacy.

What hazards or risks to you as a researcher may arise from conducting this research?	How likely is it that these risks will actually happen?	How much harm would be caused if this risk did happen?	What measures are being put in place to ensure this does not happen (or that if it does, the impact on researchers is reduced)?

SECTION F: Other Approvals

	Yes, document attached	Yes, documents to follow	No
a). Does the research require ethical approval from the NHS or a Social Services Authority? If so, please attach a copy of the draft form that you intend to submit, together with any accompanying documentation.	☐		☒
b). Might the proposed research meet the definition of a *clinical trial*? (If yes, a copy of this form must be sent to the University's Insurance Officer, Tel. 0191 334 9266, for approval, and evidence of approval must be attached before the project can start).	☐		☒
c). Does the research involve working data, staff or offenders connected with the National Offender Management Service? If so, please see the guidance at https://www.gov.uk/government/organisations/national-offender-management-service/about/research and submit a copy of your proposed application to the NOMS Integrated Application System with your form.	☐		☒
d). Does the project involve activities that may take place within Colleges of Durham University, including recruitment of participants via associated networks (e.g. social media)? (If so, approval from the Head of the College/s concerned will be required after SASS approval has been granted – see guidance notes for further details)		☐	☒
e). Will you be required to undertake a Disclosure and Barring Service (criminal records) check to undertake the research?	☐	☐	☒
f) I confirm that travel approval has or will be sought via the online approval system at http://apps.dur.ac.uk/travel.forms for all trips during this research which meet the following criteria: For Students travelling away from the University, this applies where travel is not to their home and involves an overnight stay. For Staff travelling away from the University, this applies only when travelling to an overseas destination.	Yes ☒		No ☐

SECTION G: Submission Checklist and Signatures

When submitting your ethics application, you should also submit supporting documentation as follows:

Supporting Documents	**Included (tick)**
Fully Completed Research Ethics and Risk Assessment Form	
Interview Guide (if using interviews)	

Focus Group Topic Guide (if using focus groups)	
Questionnaire (if using questionnaires)	
Participant Information Sheet or Equivalent	
Consent Form (if appropriate)	
For students only: Written/email confirmation from all agencies involved that they agree to participate, also stating whether they require a DBS check. If confirmation is not yet available, please attach a copy of the letter that you propose to send to request this; proof of organisational consent must be forwarded to your Programme Secretary before any data is collected.	

Please indicate the reason if any documents cannot be included at this stage:
(Please note that any ethics applications submitted without sufficient supporting documentation will not be able to be assessed.)

Signatures

Researcher's Signature:
Date:
Supervisor's Signature (PGR students only):
Date:

Please keep a copy of your approved ethics application for your records.
If you decide to change your research significantly after receiving ethics approval, you must submit a revised ethics form along with updated supporting documentation before you can implement these changes.

PART F: Outcome of the Application

Reject The application is incomplete and/or cannot be assessed in its current format. Please complete the application fully.	
Revise and Resubmit The application cannot be approved in its current format. Please revise the application as per the comments below. Please complete the application fully.	
Approved, with Set Date for Review The application is approved and you may begin data collection. A date for further review of the project as it develops has been set to take place on: _____ The anticipated nominated reviewer will be:_____	
Approved The application is approved and you may begin data collection.	

Comments:
I approve this Ethics and Risk Assessment application and I have no conflict of interest to declare.
First Reviewer's Signature:
First Reviewer's Name:
First Reviewer's Role:
Date:
If applicable:
I approve this Ethics and Risk Assessment application and I have no conflict of interest to declare.
Second Reviewer's Signature:
Second Reviewer's Name:
Second Reviewer's Role:
Date:

Appendix C

Exploring Relationships and Wellbeing, Using Sport
Participant Information Sheet

Why have you been invited to take part in this study?
You have been selected for this interview as your previous data indicated that you have an important relationship with your sport. You have also indicated that you would be willing to take part in further research.

What is the study about?
As you may remember from my initial survey, my name is Alex Hodge and I am a PhD Candidate in Sport at the School of Applied and Social Sciences at Durham University. I am interested in how our relationships impact wellbeing, particularly relationships people have with sport. This interview will explore how you relate to sport, as well as how your relationship with sport impacts your wellbeing

What is needed from you?
We will schedule an appointment to conduct this interview. You do not need to prepare anything in advance. If you decide to take participate in this interview, it should take a minimum of 30 minutes to complete. There is no payment for partaking in this study, and it is your right, as a voluntary participant, to stop taking part in the study at any point, without explanation or repercussion. Should you choose to drop out of the study, you can request that your data be removed up to two weeks after your interview is completed. You are not required to answer all questions, and can ask to pass on any question which you do not feel comfortable answering. Should any portion of the interview leave you feeling upset, or wanting to speak to someone, the contact details for the university counselling service have been provided below.

If you have any questions about the procedure or intent of this study after reading this information sheet, please contact me for clarification prior to being interviewed. If you are satisfied and would like to take part in the study, please contact me to arrange a time.

I appreciate your time and welcome any questions regarding this body of research and any details you are unsure of.

Researcher Contact Details:
Alex Hodge
A.C.Hodge@Durham.ac.uk

Durham University Student Counselling Services:
Durham Campus
Tel: 0191 334 2200
Email: counsel.service@dur.ac.uk

EXPLORING RELATIONSHIPS AND WELLBEING, USING SPORT

As part of a PhD research project I am exploring the relationship athletes have with their sports.

By signing below, you are agreeing that:

(1) you have read and understood the Participant Information Sheet,

(2) any questions you have have been answered satisfactorily,

(3) you are taking part in this research study voluntarily (without coercion).

Please type your name below to confirm consent Date

_____ _____

**Participants wishing to preserve some degree of anonymity may use their initials (from the British Psychological Society Guidelines for Minimal Standards of Ethical Approval in Psychological Research)*

Appendix D

Interview Guide: Exploring Inanimate Relationships, Using Sport

The format of this interview will be effected by _____ (insert reference to the chapter David sent)

Pre-Session: Each athlete will have completed a previous survey including demographic information. Before taking part in this interview they will be given a new informed consent form, including contact details for myself and Student Counselling Services.

Welcome and Overview:
[Opening statement from myself]:
Introduce myself and thank participants for coming. Briefly explain the purpose of the interview and introduce topic – "You have been selected for this interview as your previous data indicated that you have an important relationship with your sport. I am interested in how our relationships impact wellbeing, particularly relationships people have with sport."

Make sure participants are aware that there are no right/wrong answers, and that some questions will be sensitive in nature, and that they are allowed to not answer anything that upsets them. Beyond not answering a particular question, explain that they are allowed to ask to withdraw from the study at any time during the interview by indicating that they do not wish to continue on. They can also ask that their data be removed from analysis up to two weeks after the completion of the interview.

Explain the ways in which the participant's anonymity will be protected, and that no uniquely identifying information will be used in any publications. Additionally, inform them that all data will be stored on university networks, and that the recording of the interview will be erased after it has been transcribed.

Explain why the session will be recorded – re-check consent for this.

1. Opening Questions: Purpose - to make people feel comfortable

For the sake of the recording, please introduce yourselves, tell me what sport you play, and tell me about how you first became involved in X (the sport).

2. Introductory/Transition Questions: To encourage conversation and interaction in open-ended manner, while gaining insight into the perspective on relationships. Get participant and researcher on the same understanding of the topic.

Could you briefly tell me a bit about how you would define a relationship?
Prompts: Human v inhuman? Positive v negative? Upper and lower bounds

In your experience, to what extent/how do you think relationships can influence mood, wellbeing and happiness?

3. Key Questions: To drive the session, 2-5questions taking 10-15mins to answer.

Note: X is the name of the sport.

How does X contribute to your life?
Prompts: *What do you get from your relationship?*
Are all contributions positive?
How do these contributions encourage you to remain in the relationship?

Can you tell me about the best and worst thing you have experienced in X?
Prompt: *Which positive and negative experiences have been the most influential?*
How does X make you feel? Most extreme examples?

Has your engagement with X changed over time?
Prompts: *Have you ever thought about disengaging with X? When/why/why didn't you?*

Tell me about other important relationships in your life?
Prompts: *What are the most important relationships you are involved in? What do these bring to your life?*
Animate v. inanimate
Are there any relationships you are involved with that are negatively impacting you? Tell me about these.

Why do you think that you have formed an influential relationship with sport?

4. Summary Questions:

*[*Give a summary of discussion*] Is this an adequate summary of the relationships we have discussed today? Does it capture what was said here today?*
Is there anything that we have not discussed today which you would like to add?
Have I misrepresented / misinterpreted anything?

Closing: Thank participants for taking part. Mention the contact details for SCS and explain that they can contact that service, or myself if any of the content of this interview has upset them. Debrief – any comments regarding the setup of the session or particular questions.

Appendix E

School of Applied Social Sciences

REVISED RESEARCH ETHICS AND RISK ASSESSMENT FORM, MAY 2015
SECTION A: INTRODUCTORY INFORMATION

A.1. Name of researcher(s):	**Alex Hodge**
A.2. Email Address(es) of researcher(s):	**a.c.hodge@dur.ac.uk**
A.3. Project Title:	**Examining the compensatory nature of nonhuman relationships with sport**
A.4. Project Funder (where appropriate):	**N/A**
A.5. When do you intend to start data collection?	**August, 2017**
A.6. When will the project finish?	**September 30, 2017**
A.7. *For students only:* Student ID: Degree, year and module: Supervisor:	**000575951** **Final year PhD in Sport Sciences** **Dr. Emily Oliver & Prof. David Eccles**

A.8. Brief summary of the research questions:

The proposed study combines elements from four other studies which have demonstrated the supportive abilities of favourite belongings (Keefer, 2016), comfort foods (Troisi, & Gabriel, 2011), fictional worlds (Derrick, 2012), and God (Birgegård, & Granqvist, 2004). Previous work by Hodge (in prep) has indicated that athletes develop a sense of security from their relationships with sport, in part because they are able to control these relationships. This study explores sport's ability to act as a compensatory support figure, similar to favourite belongings, comfort foods, and fictional world. This is because unlike relationships with deities, relationships with sport are not believed to be anthropomorphised, allowing them to represent a reliable and controllable relationship for individuals to use when close human relationships are acting unreliably.

RQ1: How do trait anthropomorphism, and trait desire for control, affect attachment to sport, as well as the ability for sport to generate a compensatory sense of security and closeness?

RQ2: How will interpersonal, and sport based, attachments influence a state based sense of security, and feelings of loneliness?

A.9. What data collection method/s are you intending you use, and why?
IDAQ. A trait based self-assessment of anthropomorphism (Waytz, Cacioppo, & Epley, 2010). This measure was used in Keefer's (2016) study which demonstrated that it can predict the psychological benefit of a favourite belonging. While Birgegård and Granqvist (2004) did not use the IDAQ, they did measure anthropomorphism of God, suggesting that individual's ability to generate security from God corresponded with their attachment to people, as God has high levels of agency and was thought to be similar to people.

Desirability of Control Scale. "A scale designed to measure the individual differences in motivation to control the events in one's life" (Burger, & Cooper, 1979). Athletes in study two expressed an ability to control their relationship with sport, which led to some of the benefits they were able to derive from sport relative to their interpersonal relationships.

Experience in Close Relationships Scale – Short Version. Brennan, Clark, and Shaver factor analysed a compilation of all self-reported attachment metrics into one group to create the thirty-six item experience in close relationships scale (ECR; 1998). Wei, Russell, Mallinckrodt, and Vogel have generated a twelve item version of the ECR, which will be used in this analysis as it is concise, but still improves the ability to analysis dimensions, rather than classifications, of attachment. It will be left as is for assessment of interpersonal attachment, and will be adapted to reflect sport for assessment of attachment to sport.

SPANE. The Scale of Positive and Negative Experiences (Diener, Wirtz, Tov, & Kim-Preito, 2010) will be adapted from a 4-week recall to a current state assessment of positive and negative affect. Placing this scale before the manipulation, and writing task will allow for an investigation into the change in felt security as a result of the different combinations of attachment styles and experiment condition.

ULS-8. A shortened form of the UCLA Loneliness Scale (Russel, Peplau, & Cutrona, 1980). The ULS-8 (Hays, & DiMatteo, 1987) is a state based assessment of current feelings of loneliness Placing this scale before the manipulation and writing task, as well as at the end of the questionnaire will allow for exploration of whether each task will alter individuals' feelings of loneliness. Depicting this, particularly with the writing task, is an essential element for demonstrating that sport can recuperate feelings of belongingness which are depleted by felt insecurity in interpersonal relationships.

Writing Task. An adaptation of a writing task used by Derrick (2012) which suggested that individuals who wrote longer essays following a cognitive depletion task were thinking about their favourite fictional television program more, and thus were "seeking" out that program more so than nondepleted individuals. All writing tasks will be submitted to analysis through the Linguistic Inquiry and Word Count software (LIWC; Pennebaker, Booth, & Francis, 2007) which details the length of written work, frequency of social words used, frequency of words about the self, positive mood words, and negative mood words. While the primary use of this writing task is to assess how much individuals seek out sport to compensate for experiences of interpersonal insecurity (written length), frequency of social words used can add to an analysis of how much of a change in loneliness is linked to thoughts about others in the written piece. Additionally, the positive and negative mood word frequencies match up well with elements of the PANAS, again, allowing a more detailed analysis.

Security Manipulation. An adaptation of a manipulation conducted by Keefer *et al.* (2012) who asked participants to write a few sentences about three times when someone close to them acted unreliably during a time of need. Results demonstrated that this manipulation activated attachment systems, increasing object based attachment for conditions regarding close others.

The order of the study, as well as assumed timings of each section can be viewed in the table below.

Measure	# of ?s	s/?	Assumed Time (s)
Demo	8	12	96
IDAQ	15	12	180
Desire For Control Scale	20	12	240
ECR-Short Person	12	12	144
ECR-Short Sport	12	12	144
SPANE	12	12	144
ULS-8	8	12	96
Security Manipulation	1	300	300
SPANE	12	12	144
ULS-8	8	12	96
Writing Task	1	300	300
SPANE	12	12	144
ULS-8	8	12	96
	127		2124
Assumed Minutes for Survey			35.4

SECTION B: ETHICS CHECKLIST

While all subsequent sections of this form should be completed for all studies, this checklist is designed to identify those areas where more detailed information should be given. Please note: It is better to identify an area where ethical or safety issues may arise and then explain how these will be dealt with, than to ignore potential risks to participants and/or the researchers.

	Yes	No
a). Does the study involve participants who are *potentially vulnerable*?	☐	x
b). Will it be necessary for participants to take part in the study without their knowledge/consent (e.g. covert observation of people in non-public places)?	☐	x
c). Could the study cause harm, discomfort, stress, anxiety or any other negative consequence beyond the risks encountered in normal life?	x	☐
d) Does the research address a *potentially sensitive topic*?	x	☐
e). Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	x
f). Are steps being taken to protect anonymity and confidentiality?	x	☐

g). Are there potential risks to the researchers' health, safety and wellbeing in conducting this research beyond those experienced in the researchers' everyday life?	☐	x

SECTION C: METHODS AND DATA COLLECTION

C.1. Who will be your research participants?

110 adult participants will be needed to conduct the analysis. The experiment follows a 2 (interpersonal attachment: secure or insecure) X 2 (attachment to sport: secure or insecure) X 2 (writing manipulation: sport or neutral) design which resembles that of Troisi and Gabriel (2011) who sought 110 participants, and achieved sufficient power in their results. This assumes a global population of 7billion, a confidence interval of 9.34%, and a 95% confidence level.

C.2. How will you recruit your participants and how will they be selected or sampled?

Participants will be opportunistically sampled via online survey distribution. Inclusion criteria would include being a sportsperson who is at least 18 years old, has expressed a love for sport or physical activity, and is able to identify a primary sport/physical activity which they are attached to.

C.3. How will you explain the research to the participants and gain their consent? (If consent will not be obtained, please explain why.)

Given that this is a follow up study, I will briefly explain what I've found from the first two studies, and explain how I intend to use this study to clarify or advance those findings. I will explain that the study will involve the completion of six scales, and two writing tasks. I will acknowledge that the content of the study involves experiences of insecurity, and will warn that this can be unsettling.

Informed consent will be indicated before completing the survey. Additionally, it will be made clear that participants can drop out at any time without repercussion.

C.4. What procedures are in place to ensure the anonymity and confidentiality of your participants and their responses?

Data storage will be done exclusively on the university network, minimising the risk of casual contact with the data. The Bristol Online Survey Tool will be used for data collection, as supported by the university. This tool meets all data protection requirements for research being conducted in the UK.

C.5. Are there any circumstances in which there would be a limit or exclusion to the anonymity/confidentiality offered to participants? If so, please explain further.

No, as no personally identifiable information will be collected from participants.

C.6. You must attach a **participant information sheet or summary explanation** that will be given to potential participants in your research.

Within this, have you explained (in a way that is accessible to the participants):	Yes	No
a). What the research is about?	X	☐
b). Why the participants have been chosen to take part and what they will be asked to do?	X	☐
c). Any potential benefits and/or risks involved in their participation?	X	☐

d) What levels of anonymity and confidentiality will apply to the information that they share, and if there are any exceptions to these?	X	☐
e). What the data will be used for?	X	☐
f). How the data will be stored securely?	X	☐
g). How they can withdraw from the project?	X	☐
h). Who the researchers are, and how they can be contacted?	X	☐

SECTION D: POTENTIAL RISKS TO PARTICIPANTS

You should think carefully about the risks that participating in your research poses to participants. Be aware that some subjects can be sensitive for participants even if they are not dealing explicitly with a 'sensitive' topic. Please complete this section as fully as possible and continue on additional pages if necessary.

What risks to participants may arise from participating in your research?	How likely is it that these risks will actually happen?	How much harm would be caused if this risk did occur?	What measures are you putting in place to ensure this does not happen (or that if it does, the impact on participants is reduced)?
1. The main risk a participant faces is that the insecurity prime/manipulation will upset them beyond a reasonable amount.	Unlikely.	Given the voluntary nature of the study, and the fact that this protocol is a replication of one previously used by Keefer et al. (2012), I do not expect harm to be caused. It is a risk, but necessary steps are being taken to ensure that individuals are aware of it, and are able to withdraw before any harm is done.	Individuals are being warned of the potentially upsetting content prior to taking part. They are being told that they do not have to complete the survey if they become upset, and will be reminded of this during the manipulation. Upon completing the study, a web address will provided which suggests on how to access support if needed.

SECTION E: POTENTIAL RISKS TO RESEARCHERS

You should think carefully about any hazards or risks to you as a researcher that will be present because of you conducting this research. Please complete this section as fully as possible and continue on additional pages if necessary. Please include an assessment of any health conditions, injuries, allergies or intolerances that may present a risk to you taking part in the proposed research activities (including any related medication used to control these), or any reasonable adjustments that may be required where a disability might otherwise prevent you from participating fully within the research.

Where will the research be conducted/what will be the research site?

The research will be conducted over the internet, and as such there are no expected risks for the researcher.

What hazards or risks to you as a researcher may arise from conducting this research?	How likely is it that these risks will actually happen?	How much harm would be caused if this risk did happen?	What measures are being put in place to ensure this does not happen (or that if it does, the impact on researchers is reduced)?

SECTION F: OTHER APPROVALS

	Yes, document attached	Yes, documents to follow	No
a). Does the research require ethical approval from the NHS or a Social Services Authority? If so, please attach a copy of the draft form that you intend to submit, together with any accompanying documentation.	☐		☒
b). Might the proposed research meet the definition of a *clinical trial*? (If yes, a copy of this form must be sent to the University's Insurance Officer, Tel. 0191 334 9266, for approval, and evidence of approval must be attached before the project can start).	☐		☒
c). Does the research involve working data, staff or offenders connected with the National Offender Management Service? If so, please see the guidance at https://www.gov.uk/government/organisations/national-offender-management-service/about/research and submit a copy of your proposed application to the NOMS Integrated Application System with your form.	☐		☒
d). Does the project involve activities that may take place within Colleges of Durham University, including recruitment of participants via associated networks (e.g. social media)? (If so, approval from the Head of the College/s concerned will be required after SASS approval has been granted – see guidance notes for further details)		☐	☒
e). Will you be required to undertake a Disclosure and Barring Service (criminal records) check to undertake the research?	☐	☐	☒
f) I confirm that travel approval has or will be sought via the online approval system at http://apps.dur.ac.uk/travel.forms for all trips during this research which meet the following criteria: For Students travelling away from the University, this applies where travel is not to their home and involves an overnight stay. For Staff travelling away from the University, this applies only when travelling to an overseas destination.	Yes ☐		No ☒

SECTION G: SUBMISSION CHECKLIST AND SIGNATURES

When submitting your ethics application, you should also submit supporting documentation as follows:

Supporting Documents	**Included (tick)**
Fully Completed Research Ethics and Risk Assessment Form	X
Interview Guide (if using interviews)	N/A
Focus Group Topic Guide (if using focus groups)	N/A

Questionnaire (if using questionnaires)	X
Participant Information Sheet or Equivalent	X
Consent Form (if appropriate)	X (page 2 of Participant Information Sheet)
For students only: Written/email confirmation from all agencies involved that they agree to participate, also stating whether they require a DBS check. If confirmation is not yet available, please attach a copy of the letter that you propose to send to request this; proof of organisational consent must be forwarded to your Programme Secretary before any data is collected.	N/A

Please indicate the reason if any documents cannot be included at this stage:
(Please note that any ethics applications submitted without sufficient supporting documentation will not be able to be assessed.)

Signatures

Researcher's Signature:
Date: Alex Hodge
Supervisor's Signature (PGR students only):
Date: Emily Oliver

Please keep a copy of your approved ethics application for your records.

If you decide to change your research significantly after receiving ethics approval, you must submit a revised ethics form along with updated supporting documentation before you can implement these changes.

PART F: OUTCOME OF THE APPLICATION

Reject The application is incomplete and/or cannot be assessed in its current format. Please complete the application fully.	
Revise and Resubmit The application cannot be approved in its current format. Please revise the application as per the comments below. Please complete the application fully.	
Approved, with Set Date for Review The application is approved and you may begin data collection. A date for further review of the project as it develops has been set to take place on: _____ The anticipated nominated reviewer will be:_____	
Approved The application is approved and you may begin data collection.	

Comments:
I approve this Ethics and Risk Assessment application and I have no conflict of interest to declare.
First Reviewer's Signature:
First Reviewer's Name:
First Reviewer's Role:
Date:
If applicable:
I approve this Ethics and Risk Assessment application and I have no conflict of interest to declare.
Second Reviewer's Signature:
Second Reviewer's Name:
Second Reviewer's Role:
Date:

Appendix F

Participant Information Sheet – Study 3

Hello, and welcome!

My name is Alex Hodge, and I appreciate you taking the time to read this information sheet. This study is the final study of my PhD, and the data collected will be used for my thesis, a potential journal article submission, and a conference presentation. My previous research has found that athletes generate a sense of comfort from their relationship with sport, and that this comfort mimics the security felt from close human relationships. In this study, I explore potential reasons why athletes are doing this, as well as a link between the security generated by human and sporting relationships.

For this study, I need to explore adult attachments to sport, and as such I need participants who are over 18 years old, who consider their engagement with sport or physical activity to be important, and who are able to identify a primary sport/physical activity which they are attached to. If you satisfy those criteria, and are willing to take part in the study, you will be asked the following:
a) to provide basic demographic information about yourself;
b) to fill out four questionnaires about yourself one time each;
c) to fill out two questionnaires about your current feelings three times each, and;
d) to perform two writing tasks.

One of the writing tasks intends to activate your attachment system by asking you to recall three instances when a person close to you acted unreliably when you needed their support. This task is expected to be mildly distressing, but if you find it to be very upsetting, you do not have to complete the survey. Participation is entirely voluntary, and you can withdraw from the study at any time.

All data will be anonymous, confidential, and securely stored in accordance with The School of Applied Social Science's ethical requirements. If you have any questions before, during, or after taking part in the study, feel free to contact me at A.C.Hodge@Durham.ac.uk.
Thank you again for taking part!
Best Wishes,
Alex Hodge

Informed consent form

As part of a PhD research project I am exploring the relationship athletes have with their sports.
By ticking below, you are agreeing that:
(1) you have read, and understood, the Participant Information Sheet;
(2) any questions you have, have been answered satisfactorily, and;
(3) you are taking part in this research study voluntarily (without coercion).

Please click tick the box below to confirm consent

Appendix G

Page 1: Demographic Information – Study 3

How old are you? [18-99+]
What is your nationality? [_____]
What is your gender? [male, female, transgender female, transgender male, non-conforming, not listed, prefer not to answer]
What is your sexual identify? [heterosexual, homosexual, bisexual, other, multiple, prefer not to say]
Do you identify as: [polyamorous, asexual, aromantic, none of the above, prefer not to say]
What is your current relationship status (e.g., single, dating, friends-with-benefits, married…)? [_____]
How religious do you consider yourself to be? [Very, Moderately, Somewhat, Not at all]

Page 2 – Individual Differences in Anthropomorphism

Please rate each of the items below on a scale from 0 (not at all) to 10 (very much):

To what extent does technology – devices and machines for manufacturing, entertainment, and productive process (e.g., cars, computers, television sets) – have intentions?
To what extent does the average fish have free will?
To what extent does the average mountain have free will?
To what extent does a television set experience emotions?
To what extent do the average robot have consciousness?
To what extent do cows have intentions?
To what extent does a car have free will?
To what extent does the ocean have consciousness?
To what extent does the average computer have a mind of its own?
To what extent does a cheetah experience emotion?
To what extent does the environment experience emotions?
To what extent does the average insect have a mind of its own?
To what extent does a tree have a mind of its own?
To what extent does the wind have intentions?
To what extent does the average reptile have consciousness?

Page 3 – Desirability of Control Scale

Below you will find a series of statements. Please read each statement carefully, and respond to it be expressing the extent to which you believe the statement applies to you. For all items, a response from 1 (This statement doesn't apply to me at all) to 7 (This statement always applies to me) is required.

I prefer a job where I have a lot of control over what I do, and when I do it.
I enjoy political participation because I want to have as much of a say in running government as possible.
I try to avoid situations where someone else tells me what to do.
I would prefer to be a leader, rather than a follower.
I enjoy being able to influence the actions of others.
I am careful to check everything on an automobile before I leave for a long trip.
Others usually know what is best for me.
I enjoy making my own decisions.
I enjoy having control over my own destiny.

I would rather someone else took over the leadership role when I'm involved in a group project.
I consider myself to be generally more capable of handling situations than others are.
I'd rather run my own business and make my own mistakes than listen to someone else's orders.
I like to get a good idea of what a job is all about before I begin.
When I see a problem, I prefer to do something about it, rather than sit by and let it continue.
When it comes to orders, I would rather give them than receive them.
I wish I could push many of life's daily decisions off on someone else.
When driving, I try to avoid putting myself in a situation where I could be hurt by someone else's mistake.
I prefer to avoid situations where someone else has to tell me what it is I should be doing.
There are many situations in which I would prefer only one choice rather than having to make a decision.
I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered by it.

Page 4 – Experience in a close relationship

Please indicate the name of someone who you consider yourself to have a close relationship with, one you are able to rely on in times of need [NAME]
What is your relation to {insert [NAME]}? [_____]
Please indicate the degree to which you agree with each of the following statements, on a scale from 1 (disagree strongly) to 7 (agree strongly).
I worry that romantic partners won't care about me as much as I care about them.
I want to get close to [NAME], but I keep pulling back.
I am nervous when partners get too close to me.
My desire to be very close sometimes scares people away.
I try to avoid getting close to [NAME].
I need a lot of reassurance that I am loved by [NAME].
I do not often worry about being abandoned.
I find that my partners don't want to get as close to me as I would like.
I usually discuss my problems and concerns with [NAME].
I get frustrated if romantic partners are not available when I need them.
It helps to turn to [NAME] in times of need.
I turn to [NAME] for many things, including comfort and reassurance.

Page 5– Experience in a relationship with sport

Please indicate your primary sport, one you are able to rely on in times of need [SPORT]
Please select the ways which you interact with [SPORT]: [as a coach, as a spectator (in person), as a fan (on television, the internet, or other form of distance viewing), as a parent]
Do you consider your sport to be an individual sport? [Yes, No, Sometimes]
How closely linked are [NAME] and [SPORT] in your life (e.g., do you train together, are you teammates, do you go to, or watch, games together): 1 (not at all) to 7 (very closely linked).
Please indicate the degree to which you agree with each of the following statements, on a scale from 1 (disagree strongly) to 7 (agree strongly).
I worry that sports won't care about me as much as I care about them.
I want to get close to [SPORT], but I keep pulling back.
I am nervous when sports get too close to me.
My desire to be very close sometimes scares sports away.

I try to avoid getting close to [SPORT].
I need a lot of reassurance that I am loved by [SPORT].
I do not often worry about being abandoned.
I find that sports don't want to get as close to me as I would like.
I usually discuss my problems and concerns with [SPORT].
I get frustrated if sports are not available when I need them.
It helps to turn to [SPORT] in times of need.
I turn to [SPORT] for many things, including comfort and reassurance.

Page 6 – Current Mood

Below is a scale which consists of a number of words that describe different feelings and emotions. Please read each item, and indicate the extent to which you feel each item describes your mood right now using a scale from 1(very slightly, or not at all) to 5 (extremely).
Positive
Negative
Good
Bad
Pleasant
Unpleasant
Happy
Sad
Afraid
Joyful
Angry
Contented

Page 7 – Feelings of Loneliness

The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described on a scale from 1 (never) to 4 (always).
I lack companionship
There is no one I can turn to
I am an outgoing person
I feel left out
I feel isolation from others
I can find companionship when I want it
I am unhappy being so withdrawn
People are around me but not with me

Page 8 – Experiencing Insecurity with [NAME]

In the boxes below, please write a few sentences about three separate instances when [NAME] let you down in a time of need.
First Instance
Second Instance
Third Instance

Page 9 – Current Mood

Below is a scale which consists of a number of words that describe different feelings and emotions. Please read each item, and indicate the extent to which you feel each item describes your mood right now using a scale from 1(very slightly, or not at all) to 5 (extremely).

Positive
Negative
Good
Bad
Pleasant
Unpleasant
Happy
Sad
Afraid
Joyful
Angry
Contented

Page 10 – Feelings of Loneliness

The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described on a scale from 1 (never) to 4 (always).
I lack companionship
There is no one I can turn to
I am an outgoing person
I feel left out
I feel isolation from others
I can find companionship when I want it
I am unhappy being so withdrawn
People are around me but not with me

Page 11 – Writing Task

Control: Please list as many items as you can which are in your bedroom.
Experiment: Please describe your interaction with [SPORT] in as detail as possible, then briefly write about the influence [SPORT] has had on your life.

Page 12 – Current Mood

Below is a scale which consists of a number of words that describe different feelings and emotions. Please read each item, and indicate the extent to which you feel each item describes your mood right now using a scale from 1(very slightly, or not at all) to 5 (extremely).
Positive
Negative
Good
Bad
Pleasant
Unpleasant
Happy
Sad
Afraid
Joyful
Angry
Contented

Page 13 – Feelings of Loneliness

The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described on a scale from 1 (never) to 4 (always).

I lack companionship
There is no one I can turn to
I am an outgoing person
I feel left out
I feel isolation from others
I can find companionship when I want it
I am unhappy being so withdrawn
People are around me but not with me

Page 14 -- Current Mood

Below is a scale which consists of a number of words that describe different feelings and emotions. Please read each item, and indicate the extent to which you feel each item describes your mood right now using a scale from 1(very slightly, or not at all) to 5 (extremely).

Interested
Hostile
Excited
Guilty
Alert
Nervous
Strong
Distressed
Attentive
Afraid
Enthusiastic
Irritable
Determined
Ashamed
Inspired
Jittery
Active
Upset
Proud
Scared

Page 15 – Thank You for your time!

I really appreciate you taking the time to complete this study! If you have any questions, or would like to learn more about my research, please contact me at the email address below.

Additionally, if this study has made you feel very lonely, and you feel that you need support, below are three online resources which can help.

The Samaritans
Healthline
The Meaningful Life Center

Thank you again!

Alex Hodge
E: A.C.Hodge@Durham.ac.uk
Twitter & Instagram: @TheAlexHodge

Appendix H

Descriptive Statistics by Relationship Domain

	Interpersonal		Sporting Environment		Athlemaphilic				
	M	SD	M	SD	M	SD	ΔM1	ΔM2	ΔM3
I was first introduced to ___ by someone close to me.	1.88	2.53	2.93	2.45	4.69	1.98	-1.05*	-2.81*	1.76*
I am in this relationship because ___ is a good fit for me.	4.51	1.86	3.90	1.67	5.21	1.06	.61*	-.7*	1.31*
In order for my relationship with ___ to succeed, I need to be emotionally intimate, vulnerable and expressive	4.02	1.85	2.51	1.75	2.20	2.00	1.51*	1.82*	-.31
I can achieve sexual satisfaction from my relationship with ___	2.83	2.83	.62	1.42	.26	.75	2.21*	2.57*	-.36*
I can connect with ___ in a way that satisfies my desire for physical intimacy	3.08	2.69	.99	1.54	.64	1.31	2.09*	2.44*	-.35*
___ allows me to be physical	3.33	2.62	2.66	2.24	4.09	2.25	.67	-.76	1.43*
I get as much out of my relationship with ___ as I put in	4.42	1.76	4.36	1.38	4.88	1.38	.06	-.46*	.52*
My relationship with ___ presents me with ample opportunities for growth	4.91	1.27	4.66	1.06	5.32	1.01	.25	-.41*	.66*
___ regularly challenges me to develop as a person	4.78	1.46	4.29	1.38	5.24	.98	.49	-.46*	.95*
I voluntarily chose to engage in a relationship with ___	4.40	2.31	4.89	1.08	5.55	.74	-.49	-1.15*	.66*
I am very passionate about ___	4.60	1.78	4.27	1.43	5.43	1.00	.33	-.83*	1.16*
I love ___	5.23	1.48	3.87	1.57	5.33	1.17	1.36*	-.10	1.46*
___ is beyond reproach and comparison	4.17	1.73	2.58	1.82	3.50	2.12	1.59*	.67*	.92*
If ___ were in danger, I would do everything I could to protect him/her	5.68	.68	3.69	1.47	2.51	2.06	1.99*	3.17*	-1.18*
I feel safe in the presence of ___	5.38	.97	4.22	1.25	3.62	1.86	1.16*	1.76*	-.6*
___ accepts me for who I am	5.52	.79	4.47	1.13	4.02	1.88	1.05*	1.50*	-.45
I find myself seeking ways to be closer to ___	3.81	2.04	3.82	1.52	3.51	1.94	-.01	.30	-.31
___ and I can communicate easily	5.13	.96	4.30	1.14	3.01	2.01	.83*	2.12*	-1.29*

Descriptive Statistics by Relationship Domain

	Interpersonal		Sporting Environment		Athlemaphilic				
	M	SD	M	SD	M	SD	ΔM1	ΔM2	ΔM3
I can have honest, open discussions with ___ without damaging our relationship	5.16	1.13	3.93	1.55	2.45	2.12	1.23*	2.71*	-1.48*
___ will not cause me harm	5.61	.75	4.14	1.40	2.29	1.85	1.47*	3.32*	-1.85*
I would describe my relationship with ___ to be addictive/obsessive	1.34	1.71	1.09	1.42	2.95	2.08	.25	-1.61*	1.86*
Others could categorize my interaction with ___ as addictive/obsessive	1.04	1.41	1.28	1.73	3.14	2.25	-.24	-2.10*	1.86*
I am willing to make sacrifices that could be detrimental to my physical health for the sake of ___	3.27	2.02	2.81	1.82	4.07	1.69	.46	-.80*	1.26*
I am willing to make sacrifices that could be detrimental to my psychological health for the sake of ___	3.06	2.08	2.06	1.66	2.86	2.08	1.00*	.20	.80*
I feel the need to conform to certain standards to remain involved with ___	1.68	1.75	3.01	1.79	3.71	1.92	-1.33*	-2.03*	.70*
My family and friends are aware of my relationship with ___	5.25	1.42	4.83	1.40	5.64	.72	.42*	-.39*	.81*
___ allows me to socialize much more than I would without him/her	2.90	1.86	4.46	1.39	4.98	1.36	-1.56*	-2.08*	.52*
Resolving conflicts that arise in my relationship with ___ is easily done	4.55	1.32	3.84	1.33	3.77	1.78	.71*	.78*	-.07
There is nothing that I hide from ___	4.00	1.82	2.32	1.69	2.99	2.27	1.68*	1.01*	.67*
I would be lost without ___	3.56	1.93	2.59	1.80	3.28	1.97	.97*	.28	.69
I am willing to go to great lengths to preserve my relationship with ___	4.87	1.40	3.53	1.46	4.12	1.59	1.34*	.75*	.59*
I have accepted the fact that my relationship with ___ will one day end	1.94	2.14	4.28	1.53	3.64	2.18	-2.34*	-1.7*	-.64
If things are not going well with ___, I have adequate places to turn to for help and support	4.18	1.62	4.55	1.43	4.49	1.62	-.37	-.31	-.06

Descriptive Statistics by Relationship Domain

	Interpersonal		Sporting Environment		Athlemaphilic				
	M	SD	M	SD	M	SD	ΔM1	ΔM2	ΔM3
I have invested a disproportionate amount of time and energy into building my relationship with ___ and have foregone other potential relationships as a result	2.00	2.01	2.96	1.93	4.09	1.90	-.96*	-2.09*	1.13*
My relationship with ___ has grown stronger as time has passed	4.91	1.48	4.73	1.22	4.65	1.68	.18	.26	-.08

Note. ΔM1: Difference between Interpersonal and Sporting Environment means; ΔM2: Difference between Interpersonal and Athlemaphilic means; ΔM3: Difference between Athlemaphilic and Sporting Environment means; * $p < .05$

References

Adams, A., & Carr, S. (2017). Football friends: adolescent boys' friendships inside an English professional football (soccer) academy. *Soccer & Society*, (May), 1–23. https://doi.org/10.1080/14660970.2017.1331164

Adelman, M. B., & Ahuvia, A. C. (1995). Social Support in the Service Sector: The Antecedents, Processes, and Outcomes of Social Support in an Introductory Service. *Journal of Business Research*, *32*, 273–282.

Adie, J. W., Duda, J. L., & Ntoumanis, N. (2008). Autonomy support, basic need satisfaction and the optimal functioning of adult male and female sport participants: A test of basic needs theory. *Motivation and Emotion*, *32*(3), 189–199.

Ahmed, T., & Brumbaugh, C. C. (2014). One Foot Out of the Nest: How Parents and Friends Influence Social Perceptions in Emerging Adulthood. *Journal of Adult Development*, *21*(3), 147–158. https://doi.org/10.1007/s10804-014-9187-9

Ainsworth, M. D. S. (1985). Attachment across the life span. *Bulletin of the New York Academy of Medicine*, *61*(9), 792–812.

Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, Exploration, and Separation: Illustrated by the Behavior of One-Year-Olds in a Strange Situation. *Child Development*, *41*(1), 49–67.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment. A psychological study of the strange situation*. *NJ: Lawrence Erlbaurn*.

Allen-Collinson, J. (2016). Phenomenological perspectives on sport and exercise. In B. Smith & A. C. Sparkes (Eds.), *Routledge Handbook of Qualitative Research in Sport and Exercise* (pp. 11–23). Taylor.

Allen-Collinson, J. (2009). Sporting embodiment: sports studies and the (continuing) promise of phenomenology. *Qualitative Research in Sport and Exercise*, *1*(3), 279–296. https://doi.org/10.1080/19398440903192340

Amoura, C., Berjot, S., Gillet, N., & Altintas, E. (2014). Desire for control, perception of control: their impact on autonomous motivation and psychological adjustment. *Motivation and Emotion*, *38*(3), 323–335. https://doi.org/10.1007/s11031-013-9379-9

Andersen, S. M., & Baum, A. (1994). Transference in Interpersonal Relations: Inferences and Affect Based on Significant-Other Representations. *Journal of Personality*, *62*(4), 459–497. https://doi.org/10.1111/j.1467-6494.1994.tb00306.x

Aquinas, T. (1947). 1265-1274. *Summa Theologiae*.

Aron, A., Aron, E. N., & Norman, C. (2003). Self-expansion model of motivation and cognition in close relations and beyond. In G. J. O. Fletcher & M. S. Clark (Eds.), *Blackwell Handbook of Social Psychology: Interpersonal Processes* (pp. 478–501). Blackwell Publishers Ltd. https://doi.org/10.1016/B978-0-7506-8984-7.00019-9

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interperonal closeness. *Journal of Personality and Social Psychology*, *63*(4), 596–612. https://doi.org/10.1037/0022-3514.63.4.596

Atkinson, M. (2011). *Key concepts in sport and exercise research methods*. Sage.

Baldwin, M. W. (1995). Relational schemas and cognition in close relationships. *Journal of Social and Personal Relationships*, *12*(4), 547–552.

Baldwin, M. W., Patrick, J., Keelan, R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social-Cognitive Conceptualization of Attachment Working Models: Availability and Accessibility Effects. *Journal of Personality and Social Psychology*, *71*(1), 94–109.

Barrett, J. L., Keil, F. C., & Barrett, J. L. (1996). Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts. *Cognitive Psychology*, *31*, 219–247.

Bartholomew, K. J. (1994). Assessment of individual differences in adult attachment. *Psychological Inquiry*, *5*(1), 23–67.

Bartholomew, K. J., & Horowitz, L. M. (1991). Attachment Styles Among Young Adults: A Test of a Four-Category Model Childhood Attachment and Internal Models. *Journal of Personality and Social Psychology*, *61*(2), 226–244.

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., Bosch, J. A., & Thøgersen-Ntoumani, C. (2011). Self-Determination Theory and Diminished Functioning. *Personality and Social Psychology Bulletin*, *37*(11), 1459–1473. https://doi.org/10.1177/0146167211413125

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., & Thøgersen-Ntoumani, C. (2011). Psychological Need Thwarting in the Sport Context: Assessing the Darker Side of Athletic Experience. *Journal of Sport and Exercise Psychology*, *33*(1), 75–102. https://doi.org/10.1123/jsep.33.1.75

Bartholomew, K. J., & Shaver, P. R. (1998). Methods of Assessing Adult Attachment: Do They Converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25–45). New York: Guilford Press.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundemental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/http://dx.doi.org/10.1037/0033-2909.117.3.497

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology*, *83*(4), 817–827. https://doi.org/10.1037//0022-3514.83.4.817

Beck, R., & McDonald, A. (2004). Attachment to God: The attachment to God Inventory, Tests of Working Model Correspondence, and an Exploration of Faith Group Differences. *Journal Of Psychology And Theology*, *32*(2), 92–103.

Bernier, A., Larose, S., & Boivin, M. (2007). Individual differences in adult attachment: Disentangling two assessment traditions. *European Journal of Developmental Psychology*, *4*(2), 220–238. https://doi.org/10.1080/17405620600662720

Berscheid, E. (1999). The Greening of Relationship Science. *American Psychologist*, *54*(4), 260–266.

Birgegard, A., & Granqvist, P. (2004). The Correspondence between Attachment to Parents and God: Three Experiments Using Subliminal Separation Cues. *Personality and Social Psychology Bulletin*, *30*(9), 1122–1135. https://doi.org/10.1177/0146167204264266

Bisson, M. A., & Levine, T. R. (2009). Negotiating a friends with benefits relationship. *Archives of Sexual Behavior*, *38*(1), 66–73. https://doi.org/10.1007/s10508-007-9211-2

Blais, M. R., Sabourin, S., Boucher, C., & Vallerand, R. J. (1990). Toward a Motivational Model of Couple Happiness. *Journal of Personality and Social Psychology*, *59*(5), 1021–1031. https://doi.org/0022-3514/90

Bonneville-Roussy, A., Vallerand, R. J., & Bouffard, T. (2013). The roles of autonomy support and harmonious and obsessive passions in educational persistence. *Learning and Individual Differences*, *24*(April), 22–31. https://doi.org/10.1016/j.lindif.2012.12.015

Bowlby, J. (1969). *Attachment and loss, vol. 1: Attachment*. New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss, vol. 2: Spearation: Anxiety and anger*. New York: Basic Books.

Bowlby, J. (1980). *Attachment and loss, vol. 3: Loss: Sadness and depression*. New York: Basic Books.

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.

Bretherton, I. (1985). Attachment Theory: Retrospect and Prospect. *Monographs of the Society for Research in Child Development*, *50*(1/2), 3. https://doi.org/10.2307/3333824

Bretherton, I. (1987). New perspectives on attachment relations: Security, communication, and internal working models. In J. Osofsky (Ed.), *Handbook of infant development* (pp. 1061–1100). New York: Wiley.

Brocki, J. M., & Wearden, A. J. (2006). *A critical evaluation of the use of interpretative phenomenological analysis (IPA) in Health Psychology (Evaluating the use of IPA in Health Psychology)*. *Psychology and Health* (Vol. 21). https://doi.org/10.1080/14768320500230185

Brown, C. J., Webb, T. L., Robinson, M. A., & Cotgreave, R. (2018). Athletes' experiences of social support during their transition out of elite sport: An interpretive phenomenological analysis. *Psychology of Sport and Exercise*, *36*, 71–80. https://doi.org/10.1016/j.psychsport.2018.01.003

Brown, C. M., Hengy, S. M., & McConnell, A. R. (2016). Thinking about Cats or Dogs Provides Relief from Social Rejection. *Anthrozoös*, *29*(1), 47–58. https://doi.org/10.1080/20414005.2015.1067958

Brown, D. J., Fletcher, D., Henry, I., Borrie, A., Emmett, J., Buzza, A., & Wombwell, S. (2015). A British university case study of the transitional experiences of student-athletes. *Psychology of Sport and Exercise*, *21*, 78–90. https://doi.org/10.1016/j.psychsport.2015.04.002

Brumbaugh, C. C. (2017). Transferring connections: Friend and sibling attachments' importance in the lives of singles. *Personal Relationships*, *24*(3), 534–549. https://doi.org/10.1111/pere.12195

Brumbaugh, C. C., & Fraley, R. C. (2007). Transference of attachment patterns: How important relationships influence feelings toward novel people. *Personal Relationships*, *14*, 513–530.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, *6*(1), 97–113. https://doi.org/10.1177/1468794106058877

Brymer, E. (2010). Risk taking in Extreme Sports: A phenomenological perspective. *Annals of Leisure Research*, *13*(12), 218–239.

Brymer, E., & Gray, T. (2009). Dancing with nature: rhythm and harmony in extreme sport participation. *Journal of Adventure Education & Outdoor Learning*, *9*(2), 135–149. https://doi.org/10.1080/14729670903116912

Brymer, E., & Gray, T. (2010). Developing an intimate "relationship" with nature through extreme sports participation. *Leisure/Loisir*, *34*(4), 361–374. https://doi.org/10.1080/14927713.2010.542888

Brymer, E., & Oades, L. G. (2009). Extreme Sports. *Journal of Humanistic Psychology*, *49*(1), 114–126. https://doi.org/10.1177/0022167808326199

Brymer, E., & Schweitzer, R. (2013a). Extreme sports are good for your health: A phenomenological understanding of fear and anxiety in extreme sport. *Journal of Health Psychology*, *18*(4), 477–487. https://doi.org/10.1177/1359105312446770

Brymer, E., & Schweitzer, R. (2013b). The search for freedom in extreme sports: A phenomenological exploration. *Psychology of Sport and Exercise*, *14*(6), 865–873. https://doi.org/10.1016/j.psychsport.2013.07.004

Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five Domains of Interpersonal Competence in Peer Relationships. *Journal of Personality and Social Psychology*, *55*(f), 991–1008.

Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion*, *3*(4), 381–393. https://doi.org/10.1007/BF00994052

Burkett, J. P., & Young, L. J. (2012). The behavioral, anatomical and pharmacological parallels between social attachment, love and addiction. *Psychopharmacology*, *224*(1), 1–26. https://doi.org/10.1007/s00213-012-2794-x

Capra, F. (1982). The Turning Point: A New Vision of Reality. *Futurist*, *16*(6), 19–24.

Caron, A., Lafontaine, M.-F. F., Bureau, J.-F. F., Levesque, C., & Johnson, S. M. (2012). Comparisons of close relationships: An evaluation of relationship quality and patterns of attachment to parents, friends, and romantic partners in young adults. *Canadian Journal of Behavioural Science*, *44*(4), 245–256. https://doi.org/10.1037/30028013

Carr, S. (2009a). Adolescent-parent attachment characteristics and quality of youth sport friendship. *Psychology of Sport and Exercise*. https://doi.org/10.1016/j.psychsport.2009.04.001

Carr, S. (2009b). Implications of attachment theory for sport and physical activity research: conceptual links with achievement goal and peer-relationship models. *International Review of Sport and Exercise Psychology*, *2*(1), 95–115.

Carr, S. (2012). *Attachment in sport, exercise and wellness*. Routledge.

Carr, S., & Fitzpatrick, N. (2011). Experiences of dyadic sport friendships as a function of self and partner attachment characteristics. *Psychology of Sport and Exercise*, *12*(4), 383–391. https://doi.org/10.1016/j.psychsport.2011.03.003

Carr, S., & Landau, S. (2012). Consciously identified attachment hierarchies: Cognitive accessibility of attachment figure names as a function of threat primes in a lexical decision task. *Scandinavian Journal of Psychology*, *53*(1), 17–25. https://doi.org/10.1111/j.1467-9450.2011.00916.x

Carr, S., & Rockett, B. (2017). Fostering secure attachment: experiences of animal companions in the foster home. *Attachment and Human Development*, *19*(3), 259–277. https://doi.org/10.1080/14616734.2017.1280517

Cassidy, J., & Kobak, R. R. (1988). Avoidance and its relation to other defensive processes. *Clinical Implications of Attachment*, *1*, 300–323.

Channon, A., & Matthews, C. R. (2018). Love Fighting Hate Violence : An Anti-Violence Program for Martial Arts and Combat Sports. In T. F. Cater, D. Burdsey, & M. Doidge (Eds.), *Transforming Sport: Knowledge, Practices, Structures*.

Cicirelli, V. (2004). God as the ultimate attachment figure for older adults. *Attachment and Human Development*, *6*(4), 371–388. https://doi.org/10.1080/1461673042000303091

Coelho, P. (2006). *The Zahir: A novel of love, longing, and obsession*. HarperCollins.

Cohen, J. (2004). Parasocial break-up from favorite television characters: The role of attachment styles and relationship intensity. *Journal of Social and Personal Relationships*, *21*(2), 187–202. https://doi.org/10.1177/0265407504041374

Collins, N. L., Cooper, M. L., Albino, A. W., & Allard, L. (2002). Psychosocial Vulnerability From Adolescence to Adulthood: A Prospective Study of Attachment Style Differences in Relationship Functioning and Partner Choice. *Journal of Personality*, *70*(6), 965–1008.

Collins, N. L., & Feeney, B. C. (2004). Working Models of Attachment Shape Perceptions of Social Support: Evidence From Experimental and Observational Studies. *Journal of Personality and Social Psychology*, *87*(3), 363–383. https://doi.org/10.1037/0022-3514.87.3.363

Coontz, S. (1995). The American family and the nostalgia trap. *Phi Delta Kappan*, *76*(7), K1. https://doi.org/10.1111/jftr.12207

Costa, S., Ntoumanis, N., & Bartholomew, K. J. (2015). Predicting the brighter and darker sides of interpersonal relationships: Does psychological need thwarting matter? *Motivation and Emotion*, *39*(1), 11–24. https://doi.org/10.1007/s11031-014-9427-0

Counted, V. (2016). Making sense of place attachment: towards a holistic understanding of people-place relationships and experiences. *Environment, Space, Place*, *8*(1), 7–32.

Cowen, E. L. (1982). Help is where you find it: Four informal helping groups. *American Psychologist*, *37*(4), 385–395. https://doi.org/10.1037/0003-066X.37.4.385

Creswell, J. W. (2009). Mixed Methods Procedures. In *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed., pp. 203–224). Sage.

Creswell, J. W., & Plano Clark, V. L. (2011). Choosing a mixed methods design. *Designing*

and Conducting Mixed Methods Research, 53–106.

Crowell, J. A., & Treboux, D. (1995). A Review of Adult Attachment Measures: Implications for Theory and Research. *Social Development*, *4*, 294–327.

Culver, D. M., Gilbert, W., & Sparkes, A. (2012). Qualitative Research in Sport Psychology Journals: The Next Decade 2000-2009 and Beyond. *The Sport Psychologist*, *26*(2), 261–281. https://doi.org/10.1123/tsp.26.2.261

Damen, T. G. E., Van Baaren, R. B., & Dijksterhuis, A. (2014). You should read this! Perceiving and acting upon action primes influences one's sense of agency. *Journal of Experimental Social Psychology*, *50*, 21–26. https://doi.org/10.1016/j.jesp.2013.09.003

Davis, L., & Jowett, S. (2010). Investigating the Interpersonal Dynamics Between Coaches and Athletes Based on Fundamental Principles of Attachment. *Journal of Clinical Sport Psychology*, *4*, 112–132.

Davis, L., & Jowett, S. (2014). Coach–athlete attachment and the quality of the coach–athlete relationship: implications for athlete's well-being. *Journal of Sports Sciences*, *32*(15), 1–11. https://doi.org/10.1080/02640414.2014.898183

Deci, E. L., La Guardia, J. G., Moller, A. C., Scheiner, M. J., & Ryan, R. M. (2006). On the benefits of giving as well as receiving autonomy support: Mutuality in close friendships. *Personality and Social Psychology Bulletin*, *32*(3), 313–327. https://doi.org/10.1177/0146167205282148

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. Boston, MA: Springer US. https://doi.org/10.1007/978-1-4899-2271-7

Deci, E. L., & Ryan, R. M. (1987). The Support of Autonomy and the Control of Behavior. *Journal of Personality and Social Psychology*, *53*(6), 1024–1037.

Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: an overview of self-determination theory. In R. M. Ryan (Ed.), *The Oxford Handbook of Human Motivation* (pp. 85–107). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195399820.001.0001

Deltete, R. (2011). Paul Feyerabend: The Tryanny of Science. *Philosophy in Review*, *4*, 271–273.

Denzin, N. K. (1994). Romancing the Text: The Qualitative Researcher-Writer-as-Bricoleur. *Music Education*, (122), 15–30.

Denzin, N. K. (2008). *Collecting and interpreting qualitative materials* (Vol. 3). Sage.

Denzin, N. K. (2010). Moments, mixed methods, and paradigm dialogs. *Qualitative Inquiry*, *16*(6), 419–427. https://doi.org/10.1177/1077800410364608

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, *6*(2), 80–88. https://doi.org/10.1177/1558689812437186

Denzin, N. K., & Lincoln, Y. S. (1998). *Introduction: Entering the field of qualitative research. Strategies of qualitative inquiry*. Sage.

Derrick, J. L. (2013). Energized by Television: Familiar Fictional Worlds Restore Self-Control. *Social Psychological and Personality Science*, *4*(3), 299–307. https://doi.org/10.1177/1948550612454889

Derrick, J. L., Gabriel, S., & Hugenberg, K. (2009). Social surrogacy: How favored television programs provide the experience of belonging. *Journal of Experimental Social Psychology*, *45*(2), 352–362. https://doi.org/10.1016/j.jesp.2008.12.003

Derrick, J. L., Gabriel, S., & Tippin, B. (2008). Parasocial relationships and self-discrepancies: Faux relationships have benefits for low self-esteem individuals. *Personal Relationships*, *15*(2), 261–280. https://doi.org/10.1111/j.1475-6811.2008.00197.x

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educational process. *Lexington, MA: Heath*, *35*, 64.

Diamond, L. M., Hicks, A. M., & Otter-Henderson, K. D. (2008). Every Time You Go Away: Changes in Affect, Behavior, and Physiology Associated With Travel-Related Separations From Romantic Partners. *Journal of Personality and Social Psychology*, *95*(2), 385–403. https://doi.org/10.1037/0022-3514.95.2.385

Diener, E., Wirtz, D., Biswas-Diener, R., Tov, W., Kim-Prieto, C., Choi, D.-W., & Oishi, S. (2009). New Measures of Well-Being. In E. Diener (Ed.), *Assessing Well-Being: The Collected Works of Ed Diener* (Vol. 39, pp. 247–266). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-90-481-2354-4_12

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New Well-being Measures: Short Scales to Assess Flourishing and Positive and Negative Feelings. *Social Indicators Research*, *97*(2), 143–156. https://doi.org/10.1007/s11205-009-9493-y

Dixon, K. (2014). The football fan and the pub: An enduring relationship. *International Review for the Sociology of Sport*, *49*(3–4), 382–399. https://doi.org/10.1177/1012690213501500

Domingue, R., & Mollen, D. (2009). Attachment and conflict communication in adult romantic relationships. *Journal of Social and Personal Relationships*, *26*(5), 678–696. https://doi.org/10.1177/0265407509347932

Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development*. Psychology Press.

Dwyer, B., Mudrick, M., Greenhalgh, G. P., LeCrom, C. W., & Drayer, J. (2015). The tie that blinds? Developing and validating a scale to measure emotional attachment to a sport team. *Sport Management Review*, *18*(4), 570–582. https://doi.org/10.1016/j.smr.2015.01.001

Elliott, R., Fischer, C. T., & Rennie, D. L. (1999). Evolving guidelines for publication of pualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, *38*, 215–229.

Emslie, C., Ridge, D., Ziebland, S., & Hunt, K. (2006). Men's accounts of depression: Reconstructing or resisting hegemonic masculinity? *Social Science and Medicine*, *62*, 2246–2257. https://doi.org/10.1016/j.socscimed.2005.10.017

Epley, N., Waytz, A., Akalis, S., & Cacioppo, J. T. (2008). When we need a human: Motivational determinants of anthropomorphism. *Social Cognition*, *26*(2), 143–155.

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, *114*(4), 864–886. https://doi.org/10.1037/0033-295X.114.4.864

Ericsson, K. A. (2014). *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games*. Psychology Press.

Erikson, E. H. (1959). Identity and the life cycle: Selected papers.

Feeney, B. C., & Collins, N. L. (2015). A New Look at Social Support. *Personality and Social Psychology Review*, *19*(2), 113–147. https://doi.org/10.1177/1088868314544222

Feeney, B. C., & Thrush, R. L. (2010). Relationship influences on exploration in adulthood: The characteristics and function of a secure base. *Journal of Personality and Social Psychology*, *98*(1), 57–76. https://doi.org/10.1037/a0016961

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology*, *58*(2), 281–291. https://doi.org/10.1037/0022-3514.58.2.281

Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners. *Journal of Social and Personal Relationships*, *8*, 187–215.

Felton, L., & Jowett, S. (2013a). Attachment and well-being: The mediating effects of psychological needs satisfaction within the coach-athlete and parent-athlete relational contexts. *Psychology of Sport and Exercise*, *14*(1), 57–65. https://doi.org/10.1016/j.psychsport.2012.07.006

Felton, L., & Jowett, S. (2013b). Attachment and well-being: The mediating effects of psychological needs satisfaction within the coach–athlete and parent–athlete relational contexts. *Psychology of Sport and Exercise*, *14*(1), 57–65. https://doi.org/10.1016/j.psychsport.2012.07.006

Felton, L., & Jowett, S. (2015). On understanding the role of need thwarting in the association between athlete attachment and well/ill-being. *Scandinavian Journal of Medicine and Science in Sports*, *25*(2), 289–298. https://doi.org/10.1111/sms.12196

Fetters, M. D. (2016). "Haven't We Always Been Doing Mixed Methods Research?": Lessons Learned From the Development of the Horseless Carriage. *Journal of Mixed Methods Research*, *10*(1), 3–11. https://doi.org/10.1177/1558689815620883

Finkel, E. J., Simpson, J. A., & Eastwick, P. W. (2017). The Psychology of Close Relationships: Fourteen Core Principles. *Annual Review of Psychology*, *68*(1), 383–411. https://doi.org/10.1146/annurev-psych-010416-044038

Flexner, S. B. (1993). *Wise Words and Wives' Tales: The Origins, Meanings and Time-honored Wisdom of Proverbs and Folk Sayings, Olde and New*. Avon Books.

Flores, P. (2001). Addiction as an attachment disorder : Implications for group therapy. *International Journal of Group Psychotherapy*, *51*(1), 63–81.

Ford, H. A. (1990). Relationships between distribution, abundance and foraging specialization in Australian landbirds. *ORNIS SCANDINAVICA*, *21*, 133–138.

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—Relationship Structures Questionnaire: A method for assessing

attachment orientations across relationships. *Psychological Assessment*, *23*(3), 615–625. https://doi.org/10.1037/a0022898

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model.

Frederick, C. M., & Ryan, R. M. (1995). Self-determination in sport: A review using cognitive evaluation theory. *International Journal of Sport Psychology*.

Freling, T. H., Crosno, J. L., & Henard, D. H. (2010). Brand personality appeal: Conceptualization and empirical validation. *Journal of the Academy of Marketing Science*, *38*(3), 392–406. https://doi.org/10.1007/s11747-010-0208-3

Gagné, M., Ryan, R. M., & Bargmann, K. (2003). Autonomy Support and Need Satisfaction in the Motivation and Well-Being of Gymnasts. *Journal of Applied Sport Psychology*, *15*, 372–390. https://doi.org/10.1080/10413200390238031

Gaines, C. (1981). *Pumping iron: The art and sport of bodybuilding*. New York: Simon & Schuster.

George, C., Kaplan, N., & Main, M. (1996). *Adult Attachment Interview. Unpublished manuscript, Department of Psychology, University of California, Berkley (third edition)*.

George, C., & West, M. (2001). The development and preliminary validation of a new measure of adult attachment: the Adult Attachment Projective. *Attachment and Human Development*, *3*(1), 30–61. https://doi.org/10.1080/14616730010024771

Gergen, K. J. (1999). *An invitation to social construction*. Sage.

Gibson, K. (2016). Mixed methods research in sport and exercise: Integrating qualitative research. In B. Smith & A. C. Sparkes (Eds.), *Routledge Handbook of Qualitative Research in Sport and Exercise*. Routledge. https://doi.org/10.4324/9781315762012.ch29

Gill, D. L. (2011). Beyond the Qualitative–Quantitative Dichotomy: Notes from a Non-qualitative Researcher. *Qualitative Research in Sport, Exercise and Health*, *3*(3). https://doi.org/10.1080/2159676X.2011.607184

Gillath, O., Hart, J., Noftle, E. E., & Stockdale, G. D. (2009). Development and validation of a state adult attachment measure (SAAM). *Journal of Research in Personality*, *43*(3), 362–373. https://doi.org/10.1016/j.jrp.2008.12.009

Gillath, O., Mikulincer, M., Fitzsimons, G. M., Shaver, P. R., Schachner, D. A., & Bargh, J. A. (2006). Automatic Activation of Attachment-Related Goals. *Personality and Social Psychology Bulletin*, *32*(10), 1375–1388. https://doi.org/10.1177/0146167206290339

Gillath, O., & Shaver, P. R. (2007). Effects of attachment style and relationship context on selection among relational strategies. *Journal of Research in Personality*, *41*(4), 968–976. https://doi.org/10.1016/j.jrp.2006.11.003

Granqvist, P. (2014). Mental health and religion from an attachment viewpoint: overview with implications for future research. *Mental Health, Religion and Culture*, *17*(8), 777–793. https://doi.org/10.1080/13674676.2014.908513

Granqvist, P., & Hagekull, B. (1999). Religiousness and Perceived Childhood Attachment: Profiling Socialized Correspondence and Emotional Compensation. *Journal for the*

Scientific Study of Religion, *38*(2), 254. https://doi.org/10.2307/1387793

Granqvist, P., & Kirkpatrick, L. A. (1999). Attachment and religious representations and behavior.

Granqvist, P., Ljungdahl, C., & Dickie, J. R. (2007). God is nowhere, God is now here: Attachment activation, security of attachment, and God's perceived closeness among 5 - 7-year-old children from religious and non-religious homes. *Attachment and Human Development*, *9*(1), 55–71. https://doi.org/10.1080/14616730601151458

Granqvist, P., Mikulincer, M., Gewirtz, V., & Shaver, P. R. (2012). Experimental findings on God as an attachment figure: Normative processes and moderating effects of internal working models. *Journal of Personality and Social Psychology*, *103*(5), 804–818. https://doi.org/10.1037/a0029344

Greene, J. C. (2007). *Mixed methods in social inquiry* (Vol. 9). John Wiley & Sons.

Greenwood, D. N., & Long, C. R. (2011). Attachment, belongingness needs, and relationship status predict imagined intimacy with media figures. *Communication Research*, *38*(2), 278–297. https://doi.org/10.1177/0093650210362687

Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic Controversies. *Contradictions, And*.

Gubrium, J. F., & Holstein, J. A. (1997). *The new language of qualitative method*. Oxford University Press on Demand.

Guiliani, M. V. (2003). Theory of Attachment and Place Attachment. In *Psychological Theories for Environmental Issues* (pp. 137–170).

Gunnell, K. E., Bélanger, M., & Brunet, J. (2016). A tale of two models: Changes in psychological need satisfaction and physical activity over 3 years. *Health Psychology*, *35*(2), 167.

Haerens, L., Aelterman, N., Vansteenkiste, M., Soenens, B., & Van Petegem, S. (2015). Do perceived autonomy-supportive and controlling teaching relate to physical education students' motivational experiences through unique pathways? Distinguishing between the bright and dark side of motivation. *Psychology of Sport and Exercise*, *16*(P3), 26–36. https://doi.org/10.1016/j.psychsport.2014.08.013

Haslam, N. (2006). Dehumanization: An Integrative Review. *Personality and Social Psychology Review*, *10*(3), 252–264.

Hays, R. D., & DiMatteo, M. R. (1987). A Short-Form Measure of Loneliness. *Journal of Personality Assessment*, *51*(1), 69–81. https://doi.org/10.1207/s15327752jpa5101_6

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*(3), 511–524. https://doi.org/10.1037/0022-3514.52.3.511

Hazan, C., & Shaver, P. R. (1990). Love and work: An attachment-theoretical perspective. *Journal of Personality and Social Psychology*, *59*(2), 270–280. https://doi.org/10.1037/0022-3514.59.2.270

Holt, N. L., & Dunn, J. G. H. (2004). Toward a Grounded Theory of the Psychosocial Competencies and Environmental Conditions Associated with Soccer Success. *Journal of Applied Sport Psychology*, *16*, 199–219. https://doi.org/10.1080/10413200490437949

Hughes, R., & Coakley, J. (1991). Positive Deviance among Athletes: The Implications of Overconformity to the Sport Ethic. *Sociology of Sport Journal*, *8*(4), 307–325. https://doi.org/10.1123/ssj.8.4.307

Hunt, S. D., & Morgan, R. M. (1995). The Comparative Advantage Theory of Competition. *Journal of Marketing*, *59*(2), 1–15.

Hurmerinta-Peltomaki, L., & Nummela, N. (2006). Leila Hurmerinta-Peltomäki/Niina Nummela Mixed Methods in International Business Research: A Value-added Perspective. *Management International Review*, *46*(4), 439–459.

Jordan, M., & Vancil, M. (1998). *For the love of the game: My story*. Crown Publishers.

Jowett, S., Lafrenière, M. A. K., & Vallerand, R. J. (2013). Passion for activities and relationship quality: A dyadic approach. *Journal of Social and Personal Relationships*, *30*(6), 734–749. https://doi.org/10.1177/0265407512467748

Jowett, S., & Ntoumanis, N. (2004). The coach-athlete relationship questionnaire (CART-Q): Development and initial validation. *Scandinavian Journal of Medicine & Science in Sports*, *14*(4), 245–257.

Jowett, S., & Wylleman, P. (2006). Interpersonal relationships in sport and exercise settings: Crossing the chasm. *Psychology of Sport and Exercise*, *7*, 119–123. https://doi.org/10.1016/j.psychsport.2005.08.001

Karabenick, S. A., Woolley, M. E., Friedel, J. M., Ammon, B. V., Blazevski, J., Bonney, C. R., … Kelly, K. L. (2007). Cognitive Processing of Self-Report Items in Educational Research: Do They Think What We Mean? *Educational Psychologist*, *42*(3), 139–151. https://doi.org/10.1080/00461520701416231

Keefer, L. A. (2016). Is There Anybody Out There? *Journal of Individual Differences*, *37*(4), 231–238. https://doi.org/10.1027/1614-0001/a000210

Keefer, L. A., Landau, M. J., Rothschild, Z. K., & Sullivan, D. (2012). Attachment to objects as compensation for close others' perceived unreliability. *Journal of Experimental Social Psychology*, *48*(4), 912–917. https://doi.org/10.1016/j.jesp.2012.02.007

Keefer, L. A., Landau, M. J., & Sullivan, D. (2014). Non-human Support: Broadening the Scope of Attachment Theory. *Social and Personality Psychology Compass*, *8*(9), 524–535. https://doi.org/10.1111/spc3.12129

Keller, H. (1954). *The story of my life* (Vol. 1). Library of Alexandria.

Kelley, H. H., Berscheid, E., Christensen, A., Harvey, J. H., Huston, T. L., Levinger, G., … Peterson, D. R. (1983). *Close relationships*. Freeman New York.

Kincheloe, J. L. (2001). Describing the briocoloage: Conceptualizzing a new rigor in qualitative research. *Qualitative Inquiry*, *7*(6), 679–696.

Kirkpatrick, L. A., & Shaver, P. R. (1990). Attachment Theory and Religion: Childhood Attachments, Religious Beliefs, and. *Journal for the Scientific Study of Religion*, *29*(3), 315–334.

Knee, C. R., Hadden, B. W., Porter, B., & Rodriguez, L. M. (2013). Self-Determination Theory and Romantic Relationship Processes. *Personality and Social Psychology Review*, *17*(4), 307–324. https://doi.org/10.1177/1088868313498000

Konstan, D. (2008). Aristotle on love and friendship. *Schole. Философское Антиковедение и Классическая Традиция*, *2*(2), 207–212.

Koo, G.-Y., & Hardin, R. (2008). Difference in Interrelationship between Spectators' Motives and Behavioral Intentions Based on. *Sport Marketing Quarterly*, *17*(1), 30–43.

Kvale, S. (2006). Dominance Through Interviews and Dialogues. *Qualitative Inquiry*, *12*(3), 480–500. https://doi.org/10.1177/1077800406286235

La Guardia, J. G. (2009). Developing who i am: A self-determination theory approach to the establishment of healthy identities. *Educational Psychologist*, *44*(2), 90–104. https://doi.org/10.1080/00461520902832350

La Guardia, J. G., & Patrick, H. (2008). Self-determination theory as a fundamental theory of close relationships. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 201–209. https://doi.org/10.1037/a0012760

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-Person Variation in Security of Attachment: A Self-Determination Theory Perspective on Attachment, Need Fulfillment, and Well-Being. *Journal of Personality and Social Psychology*, *79*(3), 367–384. https://doi.org/10.1037//0022-3514.79.3367

Landau, M. J., Sullivan, D., Keefer, L. A., Rothschild, Z. K., & Osman, M. R. (2012). Subjectivity uncertainty theory of objectification: Compensating for uncertainty about how to positively relate to others by downplaying their subjective attributes. *Journal of Experimental Social Psychology*, *48*(6), 1234–1246. https://doi.org/10.1016/j.jesp.2012.05.003

Lavy, S., Mikulincer, M., & Shaver, P. R. (2010). Autonomy–proximity imbalance: An attachment theory perspective on intrusiveness in romantic relationships. *Personality and Individual Differences*, *48*, 552–556. https://doi.org/10.1016/j.paid.2009.12.004

Leary, M. R. (1990). Responses to social exclusion : Social anxiety, jealousy, loneliness, depression, and low self-esteem. *Journal of Social and Clinical Psychology*, *9*(2), 221–229.

Lee, J. A. (1977). Loving University. *Personality and Social Psychology Bulletin*, *3*(2), 173–182.

Levi-Strauss, C. (1966). *The savage mind*. University of Chicago Press.

Levy, M. B., & Davis, K. E. (1988). Lovestyles and attachment styles compared: Their relations to each other and to various relationship characteristics. *Journal of Social and Personal Relationships*, *5*(4), 439–471.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.

Lincoln, Y. S., & Guba, E. G. (2000). The only generalization is: There is no generalization. *Case Study Method*, 27–44.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in Infancy, Childhood, and Adulthood: A Move to the Level of Representation. *Monographs of the Society for Research in Child Development Growing Points of Attachment Theory and Research*, *50*(12), 66–104.

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research* (6th ed.). Thousand

Oaks, CA: Sage.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*(4), 370–396.

Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research*, *6*(1), 9–25. https://doi.org/10.1177/1468794106058866

Matthews, C. R. (2014). Biology Ideology and Pastiche Hegemony. *Men and Masculinities*, *17*(2), 99–119. https://doi.org/10.1177/1097184X14526699

Matthews, C. R., & Channon, A. (2016). "It's Only Sport": The Symbolic Neutralisation of "Violence." *Symbolic Interaction*, *39*(4), 557–576.

Matthews, C. R., & Channon, A. (2017). Understanding sports violence: revisiting foundational explorations. *Sport in Society*, *20*(7), 751–767. https://doi.org/10.1080/17430437.2016.1179735

Mcdonald, A., Beck, R., Allison, S., & Norsworthy, L. (2005). Attachment to God and Parents: Testing the correspondence vs. compensation hypotheses. *Journal of Psychology and Christianity*, *24*(1), 21–28.

Mcdonough, M. H., Sabiston, C. M., & Ullrich-French, S. (2011). The Development of Social Relationships, Social Support, and Posttraumatic Growth in a Dragon Boating Team for Breast Cancer Survivors. *Journal of Sport & Exercise Psychology*, *33*, 627–648.

McKim, C. A. (2017). The Value of Mixed Methods Research: A Mixed Methods Study. *Journal of Mixed Methods Research*, *11*(2), 202–222. https://doi.org/10.1177/1558689815607096

Mikulincer, M. (1998). Attachment Working Models and the Sense of Trust: An Exploration of Interaction Goals and Affect Regulation. *Journal of Personality and Social Psychology*, *74*(5), 1209–1224.

Mikulincer, M., Florian, V., & Tolmacz, R. (1990). Attachment styles and fear of personal death: A case study of affect regulation. *Journal of Personality and Social Psychology*, *58*(2), 273–280. https://doi.org/10.1037/0022-3514.58.2.273

Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology*, *83*(4), 881–895. https://doi.org/10.1037//0022-3514.83.4.881

Mikulincer, M., & Nachshon, O. (1991). Attachment Styles and Patterns of Self-Disclosure. *Journal of Personality and Social Psychology*, *61*(2), 321–331.

Mikulincer, M., & Shaver, P. R. (2003). The Attachment Behavioral System in Adulthood: Activation, Psychodynamics, and Interpersonal Process. *Advances in Experimental Social Psychology*, *35*, 53–152. https://doi.org/0065-2601/03

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. Guilford Press.

Mikulincer, M., Shaver, P. R., Gillath, O., & Nitzberg, R. A. (2005). Attachment, Caregiving, and Altruism: Boosting Attachment Security Increases Compassion and Helping.

Journal of Personality and Social Psychology, *89*(5), 817–839. https://doi.org/10.1037/0022-3514.89.5.817

Mill, J. S. (2002). A system of logic, Reprint of the 1891 Edition. Honolulu: University Press of the Pacific.

Mingers, J. (2001). Combining IS Research Methods: Towards a Pluralist Methodology. *Information Systems Research*, *12*(3), 240–259. https://doi.org/10.1287/isre.12.3.240.9709

Moller, A. C., & Deci, E. L. (2010). Interpersonal control, dehumanization, and violence: A self-determination theory perspective. *Group Processes and Intergroup Relations*, *13*(1), 41–53. https://doi.org/10.1177/1368430209350318

Morse, J. M., & Chung, S. E. (2003). Toward Holism: The Significance of Methodological Pluralism. *International Journal of Qualitative Methodology*, *2*(3), 13–20.

Moses, J., & Knutsen, T. (2007). *Ways of knowing: competing methodologies in social and political research*. Palgrave Macmillan.

Myers, D. G. (2003). Close Relationships and Quality of Life. In *Well-being: Foundations of hedonic psychology* (pp. 374–391). Russell Sage Foundation.

Neave, N., Jackson, R., Saxton, T., & Hönekopp, J. (2015). The influence of anthropomorphic tendencies on human hoarding behaviours. *Personality and Individual Differences*, *72*, 214–219. https://doi.org/10.1016/j.paid.2014.08.041

Neave, N., Tyson, H., McInnes, L., & Hamilton, C. (2016). The role of attachment style and anthropomorphism in predicting hoarding behaviours in a non-clinical sample. *Personality and Individual Differences*, *99*(September), 33–37. https://doi.org/10.1016/j.paid.2016.04.067

Nelson, C., Treichler, P. A., & Grossberg, L. (1992). Cultural studies: An introduction. *Cultural Studies*, *1*, 22.

Nevo, B. (1985). Face validity revisited. *Journal of Educational Measurement*, *22*(4), 287–293.

Newhouse-Bailey, M., Dixon, M. A., & Warner, S. (2015). Sport and Family Functioning: Strengthening Elite Sport Families. *Journal of Amateur Sport In Press Newhouse-Bailey et Al*, 1–26.

Niemiec, C. P., Soenens, B., & Vansteenkiste, M. (2014). Is Relatedness Enough? On the Importance of Need Support in Different Types of Social Experiences. In *Human Motivation and Interpersonal Relationships* (pp. 77–96). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-017-8542-6_4

Norberg, M. M., Crone, C., Kwok, C., & Grisham, J. R. (2018). Anxious attachment and excessive acquisition: The mediating roles of anthropomorphism and distress intolerance. *Journal of Behavioral Addictions*, 1–10. https://doi.org/10.1556/2006.7.2018.08

Ntoumanis, N. (2016). *A Step-by-Step Guide to SPSS for Sport and Exercise Studies*. Routledge.

Ntoumanis, N., Healy, L. C., Sedikides, C., Duda, J., Stewart, B., Smith, A. L., & Bond, J.

(2014). When the going gets tough: The “Why” of goal striving matters. *Journal of Personality*, *82*(3), 225–236. https://doi.org/10.1111/jopy.12047

Overall, N. C., Fletcher, G. J. O., & Friesen, M. D. (2003). Mapping the Intimate Relationship Mind: Comparisons Between Three Models of Attachment Representations. *Personality and Social Psychology Bulletin*, *29*(12), 1479–1493. https://doi.org/10.1177/0146167203251519

Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). Linguistic inquiry and word count: LIWC [Computer software]. *Austin, TX: Liwc. Net*.

Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological Aspects of Natural Language Use: Our Words, Our Selves. *Annual Review of Psychology*, *54*(1), 547–577. https://doi.org/10.1146/annurev.psych.54.101601.145041

Pierce, T., & Lydon, J. (2001). Global and specific relational models in the experience of social interactions. Journal of Personality and. *Social Psychology*, *80*(March 2016), 1441–1448. https://doi.org/10.1037/0022-3514.80.4.613

Pietromonaco, P. R., Uchino, B., & Dunkel Schetter, C. (2013). Close relationship processes and health: Implications of attachment theory for health and disease. *Health Psychology*, *32*(5), 499–513. https://doi.org/10.1037/a0029349

Platt, J. (1981). On Interviewing One’s Peers. *The British Journal of Sociology*, *32*(1), 75–91.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Popa, F., & Guillermin, M. (2017). Reflexive Methodological Pluralism. *Journal of Mixed Methods Research*, *11*(1), 19–35. https://doi.org/10.1177/1558689815610250

Quinney, L., Dwyer, T., & Chapman, Y. (2016). Who, Where, and How of Interviewing Peers: Implications for a phenomenological study. *SAGE Open*, *6*(3), 215824401665968. https://doi.org/10.1177/2158244016659688

Ratelle, C. F., Carbonneau, N., Vallerand, R. J., & Mageau, G. (2013). Passion in the romantic sphere: A look at relational outcomes. *Motivation and Emotion*, *37*(1), 106–120. https://doi.org/10.1007/s11031-012-9286-5

Ravn, S. (2016). Phenomenological analysis in sport and exercise. In B. Smith & A. C. Sparkes (Eds.), *Routledge Handbook of Qualitative Research in Sport and Exercise* (pp. 206–229). New York: Routledge.

Richardson, K. (2016). The Asymmetrical “Relationship”: Parallels Between Prostitution and the Development of Sex Robots. *SIGCAS Computers and Society*, *45*(3), 290–293. https://doi.org/10.1145/2874239.2874281

Ritchie, A., & Barker, M. (2006). ‘There Aren’t Words for What We Do or How We Feel So We Have To Make Them Up’: Constructing Polyamorous Languages in a Culture of Compulsory Monogamy. *Sexualities*, *9*(5), 584–601. https://doi.org/10.1177/1363460706069987

Rockett, B., & Carr, S. (2014). Animals and attachment theory. *Society & Animals*, *22*(4), 415–433. https://doi.org/10.1163/15685306-12341322

Roisman, G. I. (2009). Adult Attachment Toward a Rapprochement of Methodological Cultures. *Current Directions in Psychological Science*, *18*(2), 122–126. https://doi.org/10.1111/j.1467-8721.2009.01621.x

Rom, E., & Mikulincer, M. (2003). Attachment theory and group processes: The association between attachment style and group-related representations, goals, memories, and functioning. *Journal of Personality and Social Psychology*, *84*(6), 1220–1235. https://doi.org/10.1037/0022-3514.84.6.1220

Rorty, R. (1989). *Contingency, irony, and solidarity*. Cambridge University Press.

Rowe, C. J., & Broadie, S. (2002). *Nicomachean ethics*. Oxford University Press, USA.

Rusbult, C. E. (1980). Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology*, *16*(2), 172–186. https://doi.org/10.1016/0022-1031(80)90007-4

Rusbult, C. E. (1988). Commitment in close relationships: The investment model. *Readings in Social Psychology: Classic and Contemporary Contributions*, 147–157.

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size for their help in conducting Study 1; we thank. *Personal Relationships*, *5*, 357–391.

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, Validity, and Factor Structure. *Journal of Personality Assessment*, *66*(1), 20–40. https://doi.org/10.1207/s15327752jpa6601_2

Russell, D. W., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, *39*(3), 472–480. https://doi.org/10.1037//0022-3514.39.3.472

Ryan, R. M. (1991). The Nature of the Self in Autonomy and Relatedness. In *The Self: Interdisciplinary Approaches* (pp. 208–238). New York, NY: Springer New York. https://doi.org/10.1007/978-1-4684-8264-5_11

Ryan, R. M., Brown, K. W., & Creswell, J. D. (2007). How Integrative is Attachment Theory? Unpacking the Meaning and Significance of Felt Security. *Psychological Inquiry*, *18*(3), 177–182. https://doi.org/10.1080/10478400701512778

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2006). Self-Regulation and the Problem of Human Autonomy: Does Psychology Need Choice, Self-Determination, and Will? *Journal of Personality*, *746*. https://doi.org/10.1111/j.1467-6494.2006.00420.x

Ryff, C. D. (1989). Happiness Is Everything, or Is It? Explorations on the Meaning of Psychological Well-Being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081.

Ryff, C. D. (2014). Psychological Well-Being Revisited: Advances in the Science and Practice of Eudaimonia. *Psychotherapy and Psychosomatics*, *83*(1), 10–28. https://doi.org/10.1159/000353263

Ryff, C. D., Lee, Y. H., Essex, M. J., & Schmutte, P. S. (1994). My children and me: Midlife evaluations of grown children and of self. *Psychology and Aging*, *9*(2), 195–205. https://doi.org/10.1037//0882-7974.9.2.195

Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, *9*(1), 13–39. https://doi.org/10.1007/s10902-006-9019-0

Sandelowski, M. (2014). Unmixing mixed-methods research. *Research in Nursing and Health*, *37*(1), 3–8. https://doi.org/10.1002/nur.21570

Scanlan, T. K., Carpenter, P. J., Simons, J. P., Schmidt, G. W., & Keeler, B. (1993). An Introduction to the Sport Commitment Model. *Journal of Sport & Exercise Psychology*, *15*(1), 1–15. https://doi.org/10.1123/jsep.15.1.1

Schwarz, N. (1999). Self-Reports: how the questions shape the answers. *American Psychologist*, *54*(2), 93–105.

Sebire, S. J., Jago, R., Fox, K. R., Edwards, M. J., & Thompson, J. L. (2013). Testing a self-determination theory model of children's physical activity motivation: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 111. https://doi.org/10.1186/1479-5868-10-111

Sebire, S. J., Standage, M., Gillison, F. B., & Vansteenkiste, M. (2013). "Coveting Thy Neighbour's Legs": A Qualitative Study of Exercisers' Experiences of Intrinsic and Extrinsic Goal Pursuit. *Journal of Sport & Exercise Psychology*, *35*, 308–321.

Shakespeare, W. (1979). *A Midsummer Night's Dream. 1595*. London: Methuen.

Shannon-Baker, P. (2016). Making Paradigms Meaningful in Mixed Methods Research. *Journal of Mixed Methods Research*, *10*(4), 319–334. https://doi.org/10.1177/1558689815575861

Shannon, D., & Willis, A. (2010). Theoretical polyamory: Some thoughts on loving, thinking, and queering anarchism. *Sexualities*, *13*(4), 433–443. https://doi.org/10.1177/1363460710370655

Shaver, P. R., & Hazan, C. (1987). Being Loneley, Falling in Love: Perspectives from Attachment Theory. *Journal of Behavior and Personality*, *2*(2), 105–124.

Shaver, P. R., & Hazan, C. (1993). Adult romantic attachment: Theory and evidence. *Advances in Personal Relationships*, *4*, 29–70.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment and Human Development*, *4*(2), 133–161. https://doi.org/10.1080/14616730210154171

Shaver, P. R., & Mikulincer, M. (2007). Adult Attachment Strategies and the Regulation of Emotion. *Handbook of Emotion Regulation2*.

Shenhav, A., Rand, D. G., & Greene, J. D. (2012). Divine intuition: Cognitive style influences belief in God. *Journal of Experimental Psychology: General*, *141*(3), 423–428. https://doi.org/10.1037/a0025391

Shtulman, A., & Lindeman, M. (2014). God Can Hear But Does He Have Ears? Dissociations Between Psychological and Physiological Dimensions of Anthropomorphism. *Proceedings of Teh Annual Meeting of the Cognitive Science Society*, *36*(36).

Sibley, C. G., Fischer, R., & Liu, J. H. (2005). Reliability and Validity of the Revised Experiences in Close Relationships (ECR-R) Self-Report Measure of Adult Romantic Attachment. *Personality and Social Psychology Bulletin*, *31*(11), 1524–1536. https://doi.org/10.1177/0146167205276865

Sibley, C. G., & Overall, N. C. (2008). Modeling the hierarchical structure of attachment representations: A test of domain differentiation. *Personality and Individual Differences*, *44*(1), 238–249. https://doi.org/10.1016/j.paid.2007.08.003

Silk, M. L., Andrews, D. L., & Mason, D. S. (2005). Encountering the Field: Sports Studies and Qualitative Research. In D. L. Andrews, D. S. Mason, & M. L. Silk (Eds.), *Qualitative Methods in Sport Studies* (pp. 1–20). Berg.

Silverman, D. (2011). What Is Qualitative Research? *Qualitative Research*, *01*(1992), 3–26.

Smith, A. L. (2003). Peer relationships in physical activity contexts: a road less traveled in youth sport and exercise psychology research. *Psychology of Sport and Exercise*, *4*, 25–39. https://doi.org/10.1016/S1469-0292(02)00015-8

Smith, J. A. (2016). Interpretative phenomenological analysis in sport and exercise. In B. Smith & A. C. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 219–229). New York: Routledge.

Smith, J. A., Flowers, P., & Larkin, M. (2009). Interpretative Phenomenological Analysis: Theory, Method and Research. London: Sage Publications.

Soenens, B., Neyrinck, B., Vansteenkiste, M., Dezutter, J., Hutsebaut, D., & Duriez, B. (2012). How Do Perceptions of God as Autonomy Supportive or Controlling Relate to Individuals' Social-Cognitive Processing of Religious Contents? The Role of Motives for Religious Behavior. *International Journal for the Psychology of Religion*, *22*(1), 10–30. https://doi.org/10.1080/10508619.2012.634781

Sparkes, A. C. (2015). Developing mixed methods research in sport and exercise psychology: Critical reflections on five points of controversy. *Psychology of Sport and Exercise*, *16*, 49–59. https://doi.org/10.1016/j.psychsport.2014.08.014

Sparkes, A. C., & Smith, B. (2013). *Qualitative research methods in sport, exercise and health: From process to product*. Routledge.

Stanley, S. M., Markman, H. J., & Whitton, S. W. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*, *41*(4), 659–675. https://doi.org/10.1111/j.1545-5300.2002.00659.x

Steinberg, R. J. (1986). A Triangular Theory of Love The Triangle of Love. *Psychological Review*, *93*(2), 119–135.

Stroebe, M. S., & Archer, J. (2013). Origins of modern ideas on love and loss: Contrasting forerunners of attachment theory. *Review of General Psychology*, *17*(1), 28–39. https://doi.org/10.1037/a0030030

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon/Pearson Education.

Tamminen, K. A., Holt, N. L., & Neely, K. C. (2013). Exploring adversity and the potential for growth among elite female athletes. *Psychology of Sport and Exercise*, *14*(1), 28–36. https://doi.org/10.1016/j.psychsport.2012.07.002

Taormino, T. (2008). *Opening up: A guide to creating and sustaining open relationships*. Simon and Schuster.

Teddlie, C., & Tashakkori, A. (2003). Major issues and controveries inthe use of mixed methods in the social and behvioral sciences. *Handbook of Mixed Methods in Social & Behavioral Research*, 3–50.

Thoreau, H. D. (1867). *A Week on the Concord and Merrimack Rivers* (11th ed.). Boston: Houghton, Mifflin.

Tolmacz, R., Goldzweig, G., & Guttman, R. (2004). Attachment styles and the ideal image of a mate. *European Psychologist*, *9*(2), 87–95. https://doi.org/10.1027/1016-9040.9.2.87

Troisi, J. D., & Gabriel, S. (2011). Chicken soup really is good for the soul: "Comfort food" fulfills the need to belong. *Psychological Science*, *22*(6), 747–753. https://doi.org/10.1177/0956797611407931

Troisi, J. D., Gabriel, S., Derrick, J. L., & Geisler, A. (2015). Threatened belonging and preference for comfort food among the securely attached. *Appetite*, *90*, 58–64. https://doi.org/10.1016/j.appet.2015.02.029

Troisi, J. D., & Wright, J. W. C. (2017). Comfort Food: Nourishing Our Collective Stomachs and Our Collective Minds. *Teaching of Psychology*, *44*(1), 78–84. https://doi.org/10.1177/0098628316679972

Trub, L., & Barbot, B. (2016). The paradox of phone attachment: Development and validation of the Young Adult Attachment to Phone Scale (YAPS). *Computers in Human Behavior*, *64*(July), 663–672. https://doi.org/10.1016/j.chb.2016.07.050

Uysal, A., Lin, H. L., Knee, C. R., & Bush, A. L. (2012). The association between self-concealment from one's partner and relationship well-being. *Personality and Social Psychology Bulletin*, *38*(1), 39–51. https://doi.org/10.1177/0146167211429331

Vallerand, R. J., Ntoumanis, N., Philippe, F. L., Lavigne, G. L., Carbonneau, N., Bonneville, A., … Maliha, G. (2008). On passion and sports fans: A look at football. *Journal of Sports Sciences*, *26*(12), 1279–1293. https://doi.org/10.1080/02640410802123185

Van Lange, P. A. M., Rusbult, C. E., Drigotas, S. M., Arriaga, X. B., Witcher, B. S., & Cox, C. L. (1997). Willingness to Sacrifice in Close Relationships. *Journal of Personality and Social Psychology*, *72*(6), 1373–1395.

Vannini, P., Waskul, D., & Gottschalk, S. (2012). *The senses in self, society, and culture: A sociology of the senses*. Routledge.

Vansteenkiste, M., Ryan, R. M., & Dunantlaan, H. (2013). On Psychological Growth and Vulnerability: Basic Psychological Need Satisfaction and Need Frustration as a Unifying Principle. *Psyhcotherapy Integration*, *23*(3), 263.

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems. *MIS Quarterly*, *37*(1), 21–54.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. https://doi.org/10.1037/0022-3514.54.6.1063

Waytz, A., Cacioppo, J., & Epley, N. (2010). Who Sees Human? *Perspectives on Psychological Science*, *5*(3), 219–232. https://doi.org/10.1177/1745691610369336

Waytz, A., & Epley, N. (2012). Social connection enables dehumanization. *Journal of Experimental Social Psychology*, *48*(1), 70–76. https://doi.org/10.1016/j.jesp.2011.07.012

Waytz, A., Epley, N., & Cacioppo, J. T. (2010). Social cognition unbound: Insights into anthropomorphism and dehumanization. *Current Directions in Psychological Science*, *19*(1), 58–62. https://doi.org/10.1177/0963721409359302

Waytz, A., Morewedge, C. K., Epley, N., Monteleone, G., Gao, J.-H., & Cacioppo, J. T. (2010). Making sense by making sentient: Effectance motivation increases anthropomorphism. *Journal of Personality and Social Psychology*, *99*(3), 410–435. https://doi.org/10.1037/a0020240

Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-Short Form: Reliability, Validity, and Factor Structure. *Journal of Personality Assessment*, *88*(2), 187–204. https://doi.org/10.1080/00223890701268041

Weick, K. E. (1969). *The social psychology of organizing*.

Weiss, M. R., & Smith, A. L. (2002). Moral development in sport and physical activity: Theory, research, and intervention. In *Advances in sport psychology*. Human Kinetics.

Wicks, A. C., & Freeman, R. E. (1998). Organization Studies and the New Pragmatism: Positivism, Anti-positivism, and the Search for Ethics. *Organization Science*, *9*(2), 123–140. https://doi.org/10.1287/orsc.9.2.123

Wiese-bjornstal, D. M., Smith, A. M., Shaffer, S. M., & Morrey, M. A. (1998). An integrated model of response to sport injury: Psychological and sociological dynamics. *Journal of Applied Sport Psychology*, *10*(1), 46–69. https://doi.org/10.1080/10413209808406377

Willard, D. (1984). *In search of guidance: Developing a conversational relationship with God*. Regal Books.

Wilson, P. M., & Bengoechea, E. G. (2010). The Relatedness to Others in Physical Activity Scale: Evidence for Structural and Criterion Validity. *Journal of Applied Biobehavioral Research*, *15*(2), 61–87. https://doi.org/10.1111/j.1751-9861.2010.00052.x

Winnicott, D. W. (1971). Creativity and its Origins. In *Playing and Reality* (pp. 65–85). Brunner-Routledge.

Wlodarski, R., & Pearce, E. (2016). The God Allusion: Individual Variation in Agency Detection, Mentalizing and Schizotypy and Their Association with Religious Beliefs and Behaviors. *Human Nature*, *27*(2), 160–172. https://doi.org/10.1007/s12110-016-9256-9

Wu, C., & Yao, G. (2008). Psychometric analysis of the short-form UCLA Loneliness Scale (ULS-8) in Taiwanese undergraduate students. *Personality and Individual Differences*, *44*(8), 1762–1771. https://doi.org/10.1016/j.paid.2008.02.003

Wylleman, P. (2000). Interpersonal relationships in sport: Uncharted territory in sport psychology research. *International Journal of Sport Psychology*.

Wylleman, P., & Lavallee, D. (2004). A Developmental Perspective on Transitions Faced by Athletes.

Zilcha-Mano, S., Mikulincer, M., & Shaver, P. R. (2011). An attachment perspective on human-pet relationships: Conceptualization and assessment of pet attachment orientations. *Journal of Research in Personality*, *45*(4), 345–357. https://doi.org/10.1016/j.jrp.2011.04.001

Zilcha-Mano, S., Mikulincer, M., & Shaver, P. R. (2012). Pets as safe havens and secure bases: The moderating role of pet attachment orientations. *Journal of Research in Personality*, *46*(5), 571–580. https://doi.org/10.1016/j.jrp.2012.06.005