Is Pride a Vice or a Virtue? Associations to Well-Being and Physical Activity

Jennifer D. Gilchrist, BA

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Under the supervision of Diane E. Mack, PhD

Faculty of Applied Health Sciences, Brock University
St. Catharines, Ontario

Abstract

The first objective of the present study was to determine patterns of association between authentic and hubristic fitness-related pride to outcomes of well-being and leisure-time physical activity (LTPA). A second objective was to examine motivation as a potential mediator of these relationships. Participants (N = 119) were young adults who completed self-report questionnaires at two time points separated by 4-weeks. Authentic and hubristic pride were associated with well-being and LTPA at Time 1 and Time 2. Changes in pride were associated with changes in well-being but not LTPA. Results of the mediation analyses highlight the role of more autonomous motives, specifically intrinsic motivation, as important mediators between pride and well-being. Motivation did not mediate the relationship between pride and LTPA. Overall, both authentic and hubristic pride seem to be important in the promotion of well-being More research is needed to elucidate the relationship between pride and LTPA.

Keywords: pride, well-being, leisure-time physical activity, motivation, Organismic Integration Theory

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The capacity to experience emotions and the functions they serve has been the topic of much discourse and empirical research for over a century (Darwin, 1872; 1998). The research thus far largely points to the direct role that emotions have on behaviour highlighting the adaptive value of emotional experiences for survival and reproduction (Levenson, 1999, 2011; Tracy & Robins, 2004). While this point of view has a long standing tradition in the literature and presents a parsimonious view of the evolutionary advantages of emotion, researchers have provided a differing perspective, one that views the influence of emotion on behaviour as indirect through cognitions (e.g., Baumeister, DeWall, Vohs, Alquist, 2010).

Basic Emotions and Self-Conscious Emotions

Emotions can generally be thought of as belonging to one of two classes--basic and self-conscious emotions--that differ fundamentally from one another. To date, the majority of the emotion focused research has investigated 'basic' emotions leaving 'self-conscious' emotions relatively neglected (Campos, 1995; Fischer & Tangney, 1995). Self-conscious emotions present a unique aspect to understanding the implications associated with emotional experiences in the modern world. In an effort to advance the extant literature and offer practical recommendations, the role of self-conscious emotions should be considered.

Basic emotions are assumed to be biologically based, shared with other primates, experienced across all cultures, and identifiable via a discrete, universal expression (Ekman & Friesen, 1971). The role of basic emotions serve adaptive value aimed at guiding appropriate responses conducive to increased survival and reproduction

(Levenson, 2011). With six core emotions (i.e., anger, fear, disgust, sadness, happiness, and surprise) identified, a review of the current literature yields some debate among theorists as to whether other emotions actually constitute inclusion in the 'basic emotion' category (e.g., contempt, love, interest, enjoyment; Ekman & Cordaro, 2011; Izard, 1971; Panksepp & Watt, 2011; Tracy & Randles, 2011).

Subsumed under the rubric of basic emotions are self-conscious emotions that result as a function of reactions about the self (Tangney & Tracy, 2012). Self-conscious emotions (i.e., embarrassment, envy, guilt, pride, and shame) have been implicated in playing a central role in motivating and regulating individual's thoughts, feelings, and behaviours (Campos, 1995; Fischer & Tangney, 1995). While basic emotions primarily serve survival goals, self-conscious emotions function to promote the attainment of social goals (e.g., getting along with others) through coordinating and motivating behaviours central to social dynamics (Keltner & Buswell, 1997; Tracy & Robins, 2004; Tracy & Robins, 2007a). Self-conscious emotions are psychologically complex (Izard, Ackerman, & Schultz, 1999; Lewis, 2000) and involve certain processes for their elicitation. More specifically, self-conscious emotions require the ability to form stable self-representations, to reflect on those representations, and finally, to generate a self-evaluation (Tracy & Robins, 2004). Taken together, these abilities function as precursors to the experience of self-conscious emotions. It is this self-evaluative process that distinguishes basic emotions from self-conscious emotions (Tangney & Tracy, 2012). That is, while basic emotions such as sadness can, and often do, involve self-evaluative processes, only self-conscious emotions must involve these processes for their elicitation (Tracy & Robins, 2004). Further, unlike basic emotions, the universality of self-conscious

emotions has been questioned. However, recent evidence supporting cross-cultural recognition and spontaneous displays amongst the congenitally blind has challenged this belief (Tracy & Randles, 2011; Tracy & Robins, 2008; Tracy & Matsomuto, 2008).

Moreover, developmental differences between basic and self-conscious emotions are thought to exist (Izard, 1971). Throughout early development basic emotions occur with minimal cognitive or behavioural regulation and are often triggered by a quick onset and automatic appraisal. As a result, these emotions are often experienced as happening 'to us' as opposed to being chosen by us. As individuals age and higher order cognitive capacities increase, emotions and cognitions operate together to regulate emotional responses. Self-conscious emotions rely on more advanced cognitive capabilities in their operation than basic emotions due to their requisite reliance on self-awareness and self-representation (Lagattuta & Thompson, 2007; Stipek, 1995). As a result, these emotions emerge later in the developmental trajectory than basic emotions.

Pride

Recent research on self-conscious emotions has provided a better understanding of the development, expressions, functions, and consequences of this class of emotions (Tracy, Cheng, Robins, & Trzesniewski, 2009). However, unlike other self-conscious emotions (i.e., shame and guilt), pride has received relatively little empirical attention (Tangney & Tracy, 2012). With shame and guilt largely elicited as a result of a failure or social transgression, pride is considered to be an emotional response to success or mastery experiences (Lazarus, 1991). More specifically, Mascolo and Fischer (1995) have defined pride as being generated by "appraisals that one is responsible for a socially valued outcome or for being a socially valued person" (p. 66). According to the Process

Model (see Figure 1; Tracy & Robins, 2004), for an event (e.g., sports game, school test) to elicit a pride response it must be deemed relevant to identity goals and attention must be turned inward and directed toward the self allowing for self-evaluations to be made. Pride results when these evaluations are considered congruent with an individual's actual or ideal self and the cause of the event is attributed to internal factors (Tracy & Robins, 2003), that is, due to the self.

Two facets of pride. Divergent perspectives about the experience of pride have persisted throughout history with both positive and negative connotations associated with its experience (Ekman, 2003; Tracy, Shariff, & Cheng, 2010). While Dante viewed pride as perhaps the deadliest of the Seven Sins (Alighieri, 2003), Aristotle considered pride as the "crown of virtues" (Aristotle, 1925). Negative connotations often depict individuals with an inflated sense of self or pride while positive connotations often refer to appropriate responses toward personal accomplishment. Beyond historical and biblical differences in the perception of pride, semantic differences may exist as well. Cross-cultural research has suggested that a unitary conceptualization of pride may conflate what might be otherwise two distinct facets (Tracy et al., 2010). Mirroring this conceptual dichotomy, varying outcomes have been associated with pride with both adaptive and maladaptive outcomes noted (Tracy et al., 2009; Tracy & Robins, 2007c). As a resolve to the seemingly paradoxical interpretation of pride, researchers have suggested that pride, rather than being a unitary construct, may actually consist of two distinct facets (Fischer & Tangney, 1995; Lewis, 2000). Empirical support for this contention exists with evidence for a distinct structure and divergent behavioural, cognitive, and interpersonal outcomes noted (Tracy et al., 2009; Tracy & Robins, 2007b).

The two facets of pride are thought to be distinct in that they have shown to differ both conceptually and empirically with the focus being on *prosocial* and *specific achievements* labeled authentic pride or on *self-aggrandizing behaviours* with a focus on *one's global self* called hubristic pride (Tracy & Robins, 2007a). Beyond the processes that allow for the experience of self-conscious emotions, causal attributions made about events distinguish the facet of pride elicited. Both authentic and hubristic pride are elicited in response to a positively appraised event (i.e., success or achievement), however authentic pride results from attributions to causes that are internal, unstable, and controllable whereas hubristic pride results from causes that are internal, stable, and uncontrollable (Tracy & Robins, 2004). Thus, authentic pride has been associated with attributions specific to effort or hard work whereas hubristic pride has been associated with attributions regarding talent or ability. It is this appraisal of the success that in part determines which facet of pride is experienced.

The experience of pride and associated outcomes. Coinciding its distinct structure, the subjective experience of authentic and hubristic pride has been found to differ as well (Tracy & Robins, 2007c). Authentic pride is thought to be more pro-social and psychologically healthy and is closely aligned with feelings of achievement, effort, and accomplishment (Tracy et al., 2009; Tracy & Robins, 2004). Hubristic pride, on the other hand, corresponds with the more narcissistic and sinful depiction of pride as it is aligned with feelings of arrogance and self-aggrandizement (Tracy & Robins, 2007c, 2009). Consistent with this dichotomy, a number of divergent personality traits have been noted. Authentic pride has been shown to be more closely aligned with adaptive personality traits such as extraversion, agreeableness, conscientiousness, emotional

stability, and openness to experience whereas hubristic pride has been shown to be negatively related to agreeableness and conscientiousness (Carver, Sinclair, & Johnson, 2010; Tracy et al., 2009; Tracy & Robins, 2007).

Building on differences in personality characteristics, the two experiences of pride may be associated with varying cognitive and behavioural outcomes. It holds then, that various thoughts, behaviours, and interpersonal interactions have been shown to differ as a function of experiencing either authentic or hubristic pride (Ashton-James & Tracy, 2012; Carver et al., 2010; Cheng et al., 2010; Tracy et al., 2009; Tracy & Robins, 2007c). For example, inverse relationships have been noted between the two facets of pride and outcomes such as antisocial behaviour (e.g., aggression), interpersonal functioning (e.g., relationship satisfaction and perceived social support), and mental health outcomes (e.g., anxiety and depression; Carver et al., 2010; Tracy et al., 2009). Further differences in other domains such as self-control and goal regulation have also been noted (Carver et al., 2010). Taken together, these results seem to suggest that the distinction between authentic and hubristic pride represents a key factor in the prediction of adaptive (or maladaptive) outcomes.

Domain Specific Pride: The Physical Self

While pride has been predominately conceptualized as a trait, support for experiences of pride in specific domains has been reported (Castonguay, Gilchrist, Mack, & Sabiston, 2013; Hart & Matsuba, 2007; Verbeke, Belschak, & Bagozzi, 2004). Trait assessments of pride reflect individuals experiences of pride in general, while investigations into pride at the domain level reflects the notion that individuals may make differing self-evaluations across different life domains. Physical self-concept represents

one sub-domain in which self-evaluations can be made (Fox, 1997; Shavelson, Hubner, & Stanton, 1976). The physical self is posited as being multidimensional and has been identified as an important component of self-concept, contributing to self-esteem, well-being, and other desirable outcomes (Fox & Wilson, 2008; Shavelson et al., 1976). It seems reasonable to suggest that pride may be associated with positive physical self-evaluations. Indeed, the ability to be self-aware allows for the development of a self-concept and for conscious self-reflection (Leary, 2007; Leary & Price Tangney, 2003). In line with this reasoning, researchers have suggested that evaluations of the dimensions of the physical self are inextricably linked with self-conscious emotions (Wilson, Mack, & Sabiston, 2012). Researchers have supported this belief that feelings of authentic and hubristic pride are experienced in relation to the physical self. For example, Castonguay et al. (2013) identified that feelings of pride can be experienced both as a reflection of evaluations of one's appearance and also as a reflection of one's physical abilities. These dimensions are in line with specific components of physical self-concept advanced by Marsh, Richards, Johnson, Roche, and Tremayne (1994).

Pride and Well-being

Well-being has been conceptualized as not simply the absence of ill-being but rather reflects the presence of optimal psychological experiences and functioning (Deci & Ryan, 2008). Well-being is generally viewed as "a dynamic and relative state where one maximizes his or her physical, mental, and social functioning in the context of supportive environments to live a full, satisfying, and productive life" (Kobau, Sneizek, & Zack, 2009, p. 4). Within this overarching definition exists different traditions of well-being suggesting that well-being is best conceived as being multidimensional in nature.

Pride is one emotion that is most strongly linked to one marker of well-being—namely self-esteem (Brown & Marshall, 2001; Leary, Tambor, Terdal, & Downs, 1995; Tracy & Robins, 2004, 2007c). Moreover, Tracy and Robins (2004) contend that the regulation of pride is intrinsically linked to self-esteem regulation and maintenance. Disparate patterns of relationships with self-esteem have been noted as authentic pride has demonstrated a pattern of positive relationships with self-esteem whereas hubristic pride is negatively related (Orth, Robins, & Soto, 2010; Tracy et al., 2009; Tracy & Robins, 2007c). It is reasonable to assume that pride may also be associated with physical self-concept given the relationship that various domains of self-concept (i.e., physical self-concept) have to self-esteem in models of the self (Sabiston, Whitehead, & Eklund, 2012).

Extending beyond self-esteem, two approaches to understanding well-being have been minimally considered in the self-conscious emotion literature. Hedonic well-being (HWB) is concerned with the outcomes of happiness or pleasure and the minimization of negative affect (Diener, 1984) while eudaimonic well-being (EWB) is concerned with living well with a focus on living a life of purpose and meaning (Ryan & Deci, 2001). Hedonic and eudaimonic markers of well-being have been minimally considered in research aimed at understanding how pride is associated with well-being. Carver et al., (2010) speculate that pride should be associated with well-being as it is a positively valenced emotion. That is, experiencing pride *feels good*. Indeed, positive affect is one index of well-being that has been linked with tendencies to experience both authentic and hubristic pride (Castonguay et al., 2013). However Carver and colleagues (2010) hypothesized that negative affect would demonstrate associations only to hubristic pride.

However this notion of *feeling good* is wholly consistent with the hedonic tradition of maximizing pleasure and minimizing pain and leaves room for the further understanding of how pride might be related to the outcomes associated with well-being consistent with the eudaimonic approach.

The consideration of eudaimonic well-being represents a logical extension of the extant literature. Williams and DeSteno (2008, 2009) contend that pride represents one avenue capable of enhancing human flourishing as it has been shown to motivate adaptive behaviour that incurs short-term hedonic costs (i.e., physical activity). However whether (and if so, how), pride is associated with human flourishing was not tested. Building on contentions advanced by Williams and DeSteno (2008), a greater sense of purpose in life has been associated with authentic but not hubristic pride (Carver et al., 2010).

Pride and Physical Activity

Physical activity has received considerable attention as a context in which emotional experiences have been investigated (Biddle & Mutrie, 2008). More specifically, investigations into negative emotional and affective experiences surrounding the body in physical activity contexts have been the prevailing focus of much of this research (Cash & Pruzinsky, 2002; Fredrickson & Branigan, 2005). Recognizing the gap in research addressing positive emotional experiences in physical activity and coinciding with increased investigations into the experience of pride, research examining the nature of the relationship between pride and physical activity has now begun to emerge. For example, results of existing studies suggest that feelings of global authentic pride demonstrate a small positive association with physical activity behaviour in female

adolescent athletes (Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011) and young female adults (Sabiston et al., 2010). A negative, but not statistically significant, relationship between physical activity and hubristic pride was noted (Mosewich et al., 2011). Findings from Castonguay et al. (2013) provide support for the importance of fitness evaluations to the pride experience. The results of this study found that evaluations of one's physical fitness/performance was one common source giving rise to the pride experience in a sample of young adults. This suggests that an evaluation of what the body can do is one domain that is capable of eliciting a pride experience. Moreover, these evaluations were both authentic and hubristic in nature with attributions made regarding either specific fitness related accomplishments or appraisals of superior fitness. The results of this study provide a sound rationale and impetus for future investigations to examine pride at the domain level of fitness and extends recent research to suggest that pride is not simply a personality characteristic as it has typically been viewed (Tracy et al., 2010).

Pride and Motivation

The functions of pride are not fully understood (Leary, 2007; Tracy & Robins, 2007a), however motives and emotions are believed to be closely linked (Lazarus, 1999; Leary, 2007). Evidence has suggested that self-conscious emotions (e.g., pride) play a central role in motivating and regulating people's thoughts, feelings, and behaviour (Campos, 1995; Fischer & Tangney, 1995) and that authentic and hubristic pride have distinct motivational orientations (Cheng et al., 2010; Fischer & Tangney, 1995; Tracy & Robins, 2007b). Authentic pride has been posited to be aligned more closely with motivation pertaining to mastery experiences, competence, and valuing activities while

hubristic pride is thought to be linked to performance goals, social validation, and external indicators of self-worth such as approval or compliments from others (Carver et al., 2010; Cheng et al., 2010; Dweck & Leggett, 1988; Tracy, Cheng, Martens, & Robins, 2011). While initial attempts to address this relationship viewed pride predominately as a unitary construct (Herrald & Tomaka, 2002; Williams & DeSteno 2008, 2009), recent attempts have been made which have differentiated the motivational forces underpinning authentic and hubristic pride (Carver et al., 2010; Damien & Robins, 2012). The results of this research provide preliminary support for divergent patterns of associations between motivation and the two facets of pride.

At present, our understanding of the pride – motivation relationship is still in its infancy (Leary, 2007) and is clouded by inconsistencies in the operationalization of relevant constructs (Carver et al., 2010; Damien & Robins, 2012; Herrald & Tomaka, 2002; Sabiston et al., 2010; Verbeke et al., 2004; Williams & DeSteno 2008; 2009). Further, studies that have addressed this relationship have generally been atheoretical in nature. Provision of theory presents a parsimonious framework that allows for an understanding not only *how* but *why* phenomena occur. Knowledge of how and why phenomena occur thus enables greater explanatory and predictive power to elucidate the specific nature of the relationship between proposed variables beyond mere description (Glanz, Lewis, & Rimer, 1997; Van Ryn & Heany, 1992). The use of a theoretical framework is needed to test the possibility that pride is associated with certain outcomes indirectly through motivational regulations and this process occurs differently for authentic and hubristic pride. Moreover, while many health behaviour change theories focus on a specific behaviour as the outcome variable (i.e., physical activity), the use of a

theory that considers both physical activity and well-being holds potential for determining the relative influence of each facet of pride on these outcomes.

Organismic Integration Theory

Theoretically-based investigations aimed at understanding health behaviours have noted certain modifiable variables, such as motivation, that have demonstrated utility in the prediction of psychological well-being and behavioural outcomes (Edmunds, Ntoumanis, & Duda, 2007; Standage, Sebire, & Loney, 2008; Wilson & Rodgers, 2002). One such theory that has drawn interest from researchers and may prove useful in attempts to help explain the relationship between pride and motivation on well-being and physical activity is Self-Determination Theory (SDT; Deci & Ryan, 1985; 2002). SDT is a macro theory of human motivation and advances an organismic perspective which posits that all humans possess inherent tendencies toward growth and development. SDT is one viable framework in which to explain the motivational determinants of well-being and physical activity as it has demonstrated utility for understanding the processes through which motivation toward health related behaviours is acquired or maintained (Deci & Ryan, 2000; Wilson, Mack, & Grattan, 2008). Moreover, researchers have stated support for links between pride and variables assessed within this theory (Assor, Vansteenkiste, & Kaplan, 2009; Deci & Ryan, 2000; Sabiston et al., 2010; Ryan, Lynch, Vansteenkiste, & Deci, 2011).

Several 'mini-theories' form SDT (Deci & Ryan, 2002) that help explain the motivational basis behind phenomena alongside healthy development and functioning. One such theory is that of Organismic Integration Theory (OIT; Deci & Ryan, 2002) which posits that behaviours are regulated for a variety of reasons. Deci and Ryan (1985)

put forward that it is the quality, not the quantity, of motivation that is important to adaptive functioning. Embedded within OIT (Deci & Ryan, 2002) is the consideration of the extent to which the regulation of a behaviour, or reasons for engaging in a behaviour, is internalized and integrated into the person's sense of self so that they feel that they are self-determined in their activities. Behavioural regulations have been conceptualized as lying along a continuum and vary in the degree to which behaviours are controlled to volitionally endorsed or self-determined.

At one end of the continuum lies amotivation and concerns the state in which an individual is without motivation or lacks any intention to engage in behaviour (Ryan & Deci, 2000). Moving beyond amotivation on the continuum, extrinsic motivation refers to engagement in an activity that is performed as a means to an end and is comprised of four different forms of regulation (external, introjected, identified, and integrated) that vary in the extent to which they are autonomous or controlled. External regulation is experienced when regulatory forces outside of the self are the driving force behind the behaviour and is the least self-determined form of extrinsic motivation. That is, the obtainment of rewards or avoidance of punishments is the primary force controlling behaviour. When these regulatory forces are absent or removed, so too is the behaviour. Introjected regulations are those that are partially internalized and more autonomous in nature. Reasons for engaging in a behaviour for introjections are contingent upon one’s self esteem or to avoid feelings of guilt and shame such that intrapersonal pressures or internal contingencies are the motivating force behind behaviours. While the behaviour is internally controlled, it is still external to the self. Moving along the continuum to the more autonomous forms of regulation, identified regulation is concerned with the

personal valuing and acceptance of behaviour. While the behaviour is relatively autonomous because it is self-endorsed, it is not fully self-determined. It is instrumental in nature in that it is viewed as a means to an end, rather than viewing it as an end in itself. Integrated regulation is the most self-determined form of extrinsic motivation and is concerned with fully assimilating behaviours into the self. Beyond personally valuing the behaviour, integrated regulation concerns complete internalization such that the behaviour coheres with, and results in, a unified sense of self. That is, behaviours are engaged in because they are consistent with one's core values and beliefs. Moving beyond extrinsic forms of motivation, behaviours that are intrinsically motivated are engaged in for the inherent enjoyment or challenge of partaking in that activity and because doing so is fully integrated into the self. Intrinsic motivation is said to be fully self-determined.

Organismic Integration Theory and Well-Being

Beyond implications for behavioural outcomes, motivational regulations have demonstrated associations to psychological well-being (Brunet & Sabiston, 2009; Wilson, Rodgers, Loitz, & Scime, 2006). Several indicators of well-being exist and while HWB is one criterion to consider, proponents of SDT contend that well-being is only partly captured through considerations of hedonic conceptions alone. Ryan and Deci (2001) maintain that certain conditions exist that may promote HWB but not EWB. That is, a person who is eudaimonically well may experience HWB, such as pleasure and happiness, but the pursuit of certain hedonic outcomes or desires, while pleasure producing, may not promote EWB. As such, it is important to consider the conditions which foster well-being and to discern the differences giving rise to HWB and EWB. As

a result, our understanding of well-being may be enhanced by considering related, yet distinct, markers of well-being.

Consistent with propositions set forth in SDT that humans are active, rather than passive, agents of their behaviour, SDT (Deci & Ryan, 2002) is strongly aligned with the eudaimonic tradition of well-being as it promotes healthy, congruent, and vital functioning. Researchers examining the motivational continuum and the relative autonomy of the regulations housed within OIT (Deci & Ryan, 2002) have demonstrated links to well-being (Deci & Ryan, 1995, Nix, Ryan, Manley, & Deci, 1999; Ryan, Deci, & Grolnick, 1995). Similar to findings noted for physical activity behaviours, autonomous motivation is associated with higher levels of positive functioning and personal adaptation relative to controlled motivation (Deci & Ryan, 2000). The promotion of eudaimonic well-being as assessed by markers of vitality, that is, feeling alive and vital, has been shown to be aligned with autonomous motivation for behaviour (Nix et al., 1999; Kasser & Ryan, 1999). The adoption of autonomous motives has also shown to relate positively to positive affect in various domains such as exercise, sport, and dance (Edmunds, Ntoumanis, & Duda, 2008; Gagnè & Blanchard, 2007; Quested & Duda, 2009). Longitudinal research also supports the propositions set out in OIT whereby autonomous motivation was found to be associated with both hedonic and eudaimonic markers of well-being (Edmunds et al., 2007; Ryan & Frederick, 1997). Further complimenting this line of inquiry, more self-determined motives have been linked with enhanced self-worth (Thøgersen-Ntoumani & Ntoumanis, 2007; Wilson & Rodgers, 2002) and self-esteem (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000).

Organismic Integration Theory and Physical Activity

Motivation has demonstrated utility for differentiating between adaptive and maladaptive outcomes in physical activity settings (Hagger & Chatzisarantis, 2007). Both conceptually and empirically, adaptive outcomes (i.e., promotion of physical self-worth, enhanced performance and persistence) have been linked with autonomous (as opposed to controlled) regulations for behaviour (Deci & Ryan, 2002). An understanding of the regulations underscoring behaviour thus holds utility for the promotion of more adaptive outcomes.

OIT has been used by researchers as an organizing framework to assess motivation towards physical activity participation. In line with Deci and Ryan's (1985, 2002) contentions and consistent with findings from other life domains (education, sport, work, voting, healthcare), more autonomous forms of motivation have been associated with greater participation in physical activity (Edmunds, Ntoumanis, & Duda, 2006; Mullan & Markland, 1997; Wilson, Rodgers, Fraser, & Murray, 2004). Moreover, suppositions advanced by Deci and Ryan (2002) outlining the importance of self-determined motives in the prediction of leisure-time physical activity (LTPA) has been supported in both cross-sectional (Brunet & Sabiston, 2009; Mullen & Markland, 1997) and longitudinal designs (Wilson & Rodgers, 2002; Edmunds et al., 2007). Beyond predicting engagement in LTPA, autonomous motivation has demonstrated utility for the prediction of engagement in LTPA at a level commensurate for health (Standage et al., 2008) and fitness (Wilson, Rodgers, Blanchard, & Gessell, 2003).

While findings generally support the role of autonomous motives in the promotion of physical activity, the findings regarding the predictive value of the

individual regulations seem to favour well-internalized external sources of motivation relative to intrinsic sources where the target behaviours are viewed as inherently uninteresting or enjoyable (Ryan, 1995). To this end, previous research has found identified regulation to be a better predictor of LTPA than intrinsic motivation (Brickell & Chatzisarantis, 2007; Wilson et al., 2004; Wilson, Sabiston, Mack, & Blanchard, 2012), however this finding has not been uniformly endorsed (Ingledew, Markland, & Ferguson, 2009; Markland, 2009). Introjected regulations have found mixed support for its association to physical activity with some studies noting positive associations with behaviour while others report no association (Edmunds et al., 2006; Ingledew & Markland, 2008; Wilson et al., 2004). Those studies reporting a relationship have often found introjected regulations to be associated with short term, rather than long term behavioural persistence in both sport and LTPA contexts (Pelletier, Fortier, Vallerand, & Briere, 2001; Wilson et al., 2004).

Research Objectives and Hypotheses

The objectives of this study build on calls for increased domain-specific research (Tangney & Tracy, 2012) and increased empirical attention to the domain specific motivating effects of pride (Leary, 2007). The primary objective of this study was to explore behavioural regulation consistent with OIT (Deci & Ryan, 2002) as one process that explains the pride – well-being and the pride – physical activity relationship. This objective was examined across two test administration periods separated by four weeks such that the relationship between changes in these variables could be assessed. How the process may differ depending on the type of pride (authentic and hubristic) reported was also considered. Based on the above, the following hypotheses were formulated:

1. Authentic pride and well-being (e.g., self-esteem, positive affect) will demonstrate a positive relationship consistent with previous research (Tracy & Robins, 2007c, Tracy et al., 2009). Further, change in authentic pride across the four week data collection period will demonstrate a positive relationship with changes in well-being.
2. Hubristic pride and well-being will demonstrate a negative relationship consistent with previous research (Tracy & Robins, 2007c; Tracy et al., 2009). Further, the change (Δ) in hubristic pride will be negatively related to (Δ) in well-being across the two time points spanning this investigation.
3. Authentic pride and physical activity will demonstrate a positive relationship consistent with cross-sectional literature (Mosewich et al, 2011; Sabiston et al., 2010). When considering change (Δ) over time, a positive relationship will be found between (Δ) in authentic pride and (Δ) in physical activity across the four weeks spanning this investigation.
4. No relationship between hubristic pride and physical activity will be observed consistent with cross-sectional literature (Mosewich et al., 2011). No relationship between (Δ) in hubristic pride and (Δ) in physical activity behaviour over the four weeks will be observed.
5. Using change scores for all variables, autonomous motives (identified, integrated, intrinsic) will mediate the *authentic* pride – physical activity relationship, whereas controlled regulations (external, introjected) for behaviour will mediate with *hubristic* pride – physical activity relationship. Similarly, autonomous motives will mediate the *authentic* pride – well-being

relationship, whereas controlled regulations for behaviour will mediate with *hubristic* pride – well-being relationship with change scores adopted to test this hypothesis.

6. Serial mediation analyses examining the sequential processing of self-determined motives for exercise are put forth to examine the relationships between pride and well-being/physical activity. Due to the exploratory nature of these analyses, no hypotheses will be advanced.

Study Significance

The present research aimed to address calls from researchers to grow the developing literature on pride (Tangney, 1999; Tangney & Tracy, 2012) and holds the potential to advance the literature in a number of ways. First, greater attention has been paid to negative emotions, both basic and self-conscious, leaving pride and its associated outcomes less understood (Tangney & Tracy, 2012; Tugade & Fredrickson, 2002). Researchers that have investigated positive self-conscious emotions have focused on pride at the dispositional level with investigations into pride experienced in particular domains limited. As a consequence our understanding of the outcomes associated with pride in a given domain are restricted. Moreover, pride has been found to be both adaptive and maladaptive (Sabiston et al., 2010; Tracy, 2007a, 2007c; Williams & DeSteno, 2008). The current study hoped to elucidate whether fitness-related authentic and hubristic pride demonstrate a divergent pattern of relationships similar to previous research which has assessed pride at the global level (Carver et al., 2010; Tracy et al., 2009).

Second, to better understand the mechanisms through which pride is associated with health outcomes, investigating the variables together over time is warranted. Tracking the trajectory of how these variables are associated with change over time addresses a significant gap in our understanding of the covariation between variables, the nature of the relationships and the mechanisms that underpin these relationships (Cole & Maxwell, 2003; Hagger & Chatzisarantis, 2008). The longitudinal nature of the present investigation is the first to examine changes in authentic and hubristic pride over time.

Third, investigations into the outcomes associated with pride have largely ignored markers of health, especially health behaviours such as physical activity. With recent support for the link between authentic pride and adaptive health behaviours demonstrated (Mosewich et al., 2011; Sabiston et al., 2010), associations with hubristic pride are less clear. The current study addresses both facets with the hopes of further understanding how authentic and hubristic pride are related to physical activity behaviour. While often linked with self-esteem (Tracy et al., 2009), other markers of well-being were assessed for their associations to pride to examine a broader range of psychological health benefits.

An understanding of the possible mechanisms underpinning the pride – well-being/behaviour relationship is warranted. It has been suggested that pride evolved as a mechanism for motivating behaviours (Tracy & Robins, 2007a) and results in adaptive outcomes through its reinforcing and motivational properties (Cheng et al., 2010; Tangney & Tracy, 2012; Williams & DeSteno, 2008). With support for the relationship between pride and motivation documented in the literature (Damien & Robins, 2012; Sabiston et al., 2010), the proposed investigation extends what is currently known

through consideration of all regulations proposed within OIT (Deci & Ryan, 2002) and both variants of pride.

Although not a primary objective, the present research offers the opportunity to provide support for the construct validity of scores for the Pride – Fitness subscales from the newly developed Body-Related Self-Conscious Emotions Instrument (Castonguay, Sabiston, Kowalski, & Wilson, under review). Construct validation is a central part of instrument development and has important implications for the conceptualization, operationalization, and further investigations aimed at better understanding fitness related pride. Messick (1995) contends that construct validation is an ongoing process in which multiple sources of evidence are required in order to infer the degree of validity of a given test score(s).

Methods

Participants

Participants were 119 men and women (n_{women} = 57; M_{age} = 20.34 years; SD_{age} = 1.48 years) enrolled in classes at a mid-size university in Southern Ontario, Canada. The majority of participants indicated that their cultural origin was "Caucasian" (n = 107; 89.90%) and their current marital status as "single" (n = 117; 98.30%). On average participant Body Mass Index (BMI; kg/m^2) values were classified as "normal" (M_{BMI} = 24.33kg/m^2; SD_{BMI} = 2.87; Health Canada, 2013). At Time 1 the majority of participants (n = 60; 50.80%) reported experiencing life events within the past week that affected what they typically do or how they typically feel. At Time 2, however, the majority of participants (n = 80; 67.20%) did not report experiencing such events in the week prior. Differences between those reporting life events at Time 1 and Time 2 on physical activity

behaviour and indices of well-being were examined using independent samples *t*-tests and estimates of effect size (Cohen's *d;* Cohen, 1988). Significant differences ($p < .05$; $d = 0.48$) were found for negative affect at Time 1. Individuals who experienced a life event in the past week reported greater negative affect compared to those who did not. All other comparisons were not significant ($p > .05$) with effect size estimates ranging from |0.05 to 0.23|. No significant differences were found at Time 2 ($p > .05$) with estimates of effect size (Cohen's *d;* Cohen, 1988) ranging from 0.03 to 0.35. Most notable, individuals reporting the influence of certain life events in the past week reported lower self-esteem than those who had not experienced such events at the second test administration period.

Instruments

Demographics. Demographic variables including gender, age, marital status, ethnicity, and education level was collected for descriptive purposes. As well, questions regarding typical exercises engaged in over the previous week were included (i.e., activity, days per week, time spent in activity, and intensity of activity). A single item (yes/no) question examining the presence of any major life events that may have affected how the participants typically feel or behave over the past week was also collected.

Height. Height was measured using a wall-mounted stadiometer (Seca 222; Seca North America East, Hanover, MD).

Weight. Weight was measured on a portable electronic scale (My Weigh PD-750).

Pride. Participants were asked to complete the Authentic and Hubristic Pride Scale (AHPS; Tracy & Robins, 2007c) which assesses proneness to experience pride. The

instrument was designed to assess both global authentic and hubristic pride (7 items each) with adjective items such as “accomplished” and “snobbish”, respectively. Participants were asked to respond on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*) the extent to which they generally feel this way. Scores for each facet of pride were computed by averaging reposes across the subscales. Structural validity for scores derived from the AHPS has been reported in previous research (Tracy et al., 2009). Furthermore, scores derived from the AHPS have been shown to demonstrate a pattern of relationships in the expected direction with constructs theoretically and empirically linked to pride (Tracy & Robins, 2007c). Support for estimates of internal consistency (Cronbach’s α, Cronbach, 1951) of scores from the AHPS have been reported (Carver et al., 2010; Sabiston, et al., 2010; Tracy & Robins, 2007c).

Fitness-Related Pride. Participants were asked to complete the 11-item Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions (BSE-FIT) instrument (Castonguay et al., under review) as a contextual measure of pride. Participants were asked to report how often they experienced either facet of pride (authentic sample item: “Proud about my effort to improve my fitness”; hubristic sample item: “Proud of my superior fitness”) on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*) with higher scores reflecting higher levels of pride. Pride subscales were computed by averaging responses across the 6-items for authentic and the 5-items for hubristic pride.

The development of the items comprising the BSE-FIT underwent an iterative process. An initial item pool was developed based on narrative responses as well as theoretical and conceptual considerations. Existing body image and self-conscious

emotion measures were also reviewed for item selection. Expert reviewers then assessed the items for wording, comprehension, and content. In addition, a small sample of young adults completed the BSE-FIT and provided feedback on item quality and comprehension. Problematic items were then deleted based on these findings. Subsequently, items were assessed for content relevance and representation via expert review. The BSE-FIT was then pilot tested on a sample of young adults. Descriptive statistics, estimates of internal consistency, Pearson bivariate correlations, internal structure, and construct validity were assessed. Finally, a third sample of young adults completed the BSE-FIT. A confirmatory factor analysis was computed to provide further support for the internal structure of the BSE-FIT which resulted in an excellent fit to the data. Support for reliability and validity of the scores were also reported.

Motivation. The Behavioural Regulation in Exercise Questionnaire-2R (BREQ-2R; Markland & Tobin, 2004; Wilson et al., 2006) was used to assess participants' motivation (i.e., the range of behavioural regulations). The BREQ-2R is a 23-item instrument assessing amotivation (4 items; "I don't see the point in exercising"), extrinsic (4 items; "because others say I should"), introjected (3 items; "I feel guilty when I don't exercise"), identified (4 items; "I value the benefits of exercise"), integrated (4 items; "I consider exercise consistent with my values"), and intrinsic (4 items; "I exercise because it's fun") regulations. The amotivation subscale was not included given the current focus on reasons for engaging in behaviour rather than a lack of intention to act. The exclusion of the amotivation subscale is consistent with previous research (Mullan, Markland, & Ingledew, 1997; Wilson et al., 2006). Items are scored on a 5-point Likert scale ranging from 0 (*not true for me*) to 4 (*very true for me*). Scores for each of the motivational

regulations were computed by averaging response options across subscales. Construct validity evidence including structural validity and convergent validity have been reported in exercise contexts (Wilson et al, 2006, Wilson, Rodgers, & Fraser, 2002). Support for estimates of internal consistency (Cronbach's α, Cronbach, 1951) of scores from each of the behavioural regulations have been reported (Standage et al., 2008; Wilson et al., 2006; Wilson et al., 2012).

Well-Being. Three instruments were used to capture aspects reflective of well-being.

Positive and Negative Affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegren, 1988) assesses the affective component of hedonic well-being. The short form of the PANAS is a 10-item instrument consisting of 5-items assessing positive affect (excited, enthusiastic, alert, inspired, and determined) and 5-items assessing negative affect (distressed, upset, scared, nervous, and afraid) with Likert scale response options ranging from 1 (*very slightly or not at all*) to 5 (extremely). Participants were asked to indicate the extent to which they generally felt the dimensions of affect when they engage in exercise with higher scores reflective of higher levels of positive and negative affect. Scores for each affective dimension were created by computing the mean value across each subscale.

Psychometric support for the use of the short form of the PANAS (Kercher, 1995) has been documented. Structural validity of the PANAS scores has been noted (Wilson, Longley, Muon, Rodgers, & Murray, 2006). Scores derived from the PANAS have found to be robust to differences in age, sex, and other demographic characteristics that have been shown to correlate with well-being (Mackinnon et al., 1999). Support for estimates

of internal consistency (Cronbach's α, Cronbach, 1951) of scores from the PANAS have been reported for both global and exercise contexts (Kercher, 1995; Mackinnon et al., 1999, Wilson, Mack, Blanchard, & Gray, 2009).

Eudaimonic Well-Being. The Subjective Vitality Scale (SVS; Ryan & Fredrick, 1997) was completed as a contextual assessment of eudaimonic well-being and concerns feeling alive, alert, and having energy available to the self. Participants were asked to respond to each of the 7- items with response options ranging from 1 (*not at all*) to 7 (*very true*) following the stem, "please respond to each of the following statements by indicating the degree to which the statement is true for you when you exercise". A portion of the original stem was modified to reflect the contextual change. An overall SVS score was created by computing a mean score from participant's responses.

Previous research has provided support for the convergent validity of the SVS scores with positive associations with self-esteem and self-actualization demonstrated (Ryan & Fredrick, 1997). Support for the structural validity of the SVS has been noted (Bostic, Rubio, & Hood, 2000). Estimates of internal consistency (Cronbach's α, Cronbach, 1951) have been reported for global (Edmunds et al., 2007; Wilson et al, 2006) and exercise contexts (Edmunds, Duda, & Ntoumanis, 2010).

Physical Self-Concept and Self-Esteem. Two subscales from the Physical Self-Description Questionnaire (PSDQ; Marsh et al., 1994) were used to assess participants' global physical self-concept as well global self-esteem. Both subscales contain declarative sentences that assess the degree to which participants feel a particular statement is true or false of themselves with response options ranging from 1 (*false*) to 6 (*true*). Higher scores reflect greater physical self-concept and self-esteem. Six-items

comprise the physical self-concept subscale and reflect the degree of positive feelings a person holds about his or her physical self (Marsh, 1996; Marsh et al., 1994). An example item is: "I feel good about who I am physically". Eight-items comprise the self-esteem subscale which reflect overall positive feelings about oneself. An example item is: "Most things I do, I do well". Items from the self-esteem subscale that are negatively worded were reverse scored. Scores were computed by averaging response options across each subscale.

Previous research has supported the structural validity of the PSDQ subscale scores along with support for the convergent and divergent validity of the scores from each subscale (Marsh, 1996; Marsh et al., 1994). Scores from the physical self-concept subscale have been shown to link with theoretically related variables such as fitness and psychological need satisfaction in the expected direction (Marsh, 1997; Wilson & Garcia Bengoechea, 2010). Support for estimates of internal consistency (Cronbach's α, Cronbach, 1951) of scores from both subscales have been reported for both global and exercise contexts (Dishman et al., 2006; Duncan et al., 2012; Marsh, Hey, Roche, & Perry, 1997; Wilson & Rodgers, 2002; Wilson et al., 2006).

Physical Activity Behaviour. Participants completed the Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1985) as a global measure of leisure time physical activity. The GLTEQ asks participants to report the number of times they engaged in mild, moderate, and strenuous physical activity for greater than 15 minutes during a typical week. A total physical activity score was calculated by estimating metabolic equivalent units (METS) by multiplying the weekly frequencies of mild, moderate and strenuous activity by three, five, and nine respectively and summing

the scores. Higher scores are reflective of greater energy expenditure. Previous research has demonstrated support for the test-retest reliability of the overall scores generated from the GLTEQ over a 1-month period as well as convergent validity based on related indices of physical fitness (Jacobs, Ainsworth, Hartman, & Leon, 1993).

Procedure

Data collection commenced following University Ethics Board Approval (see Appendix A). Employing a non-probability based longitudinal survey design and convenience sampling procedures, instructors of undergraduate and graduate courses at Brock University were asked for permission to recruit from their classes (see Appendix B). For those allowing recruitment, the principal student investigator provided those enrolled in the course with information through a standardized verbal recruitment script (see Appendix C) regarding the study and made contact information available for interested participants. Interested participants were asked to contact members of the research team to arrange for a mutually agreeable time to complete the first phase of data collection. Data collection occurred in the Behavioural Health Sciences Research Lab (Welch Hall 141) either individually or in small groups. Upon arriving to the lab, the participants received a copy of the Letter of Invitation (see Appendix D) and Informed Consent (see Appendix E) and had the opportunity to ask any questions they may have regarding the study. Written informed consent was provided prior to test administration which was expected to take between 20 – 25 minutes to complete (see Appendix F). Participants were then provided with a debriefing form (see Appendix G) should they wish to receive aggregate level summary data of the major findings of the study. At this time participants were thanked for their participation and asked to arrange a mutually

agreeable time to return for the second test administration four weeks later. The principal student investigator contacted each individual via email one week prior to their scheduled return date to provide them with a reminder of their scheduled date and time to return to the lab to complete the second test administration. Participants did not complete the Informed Consent form or provide height and weight at Time 2. The order of presentation of the measures comprising the questionnaire was randomized at the second test administration to reduce order effects.

Data Analysis

Preliminary data analysis. Inspection of missing data and non-response error was assessed. Percentage of participants omitting an entire instrument was noted. Individual cases were removed from subsequent analysis if all information beyond demographics was not provided or the individual indicated no engagement in physical activity. Individuals providing data at Time 1who did not provide data at Time 2 were classified as dropouts from the study and were removed from further analyses. Missing data was first were examined to detect any systematic patterns (Little, 1988) and then a multiple imputation procedure using an expectation-maximization (EM) algorithm was used to replace missing data.

Univariate normality (i.e., means, standard deviation, skewness and kurtosis) of the data was then inspected. Internal consistency reliability estimates (Cronbach's α, Cronbach, 1951) were computed to determine reliability for all scores from study variables with the exception of the GTLEQ. Descriptive statistics were calculated for relevant demographic and study variables. The number of participants recruited in the initial sample was compared to the number of participants who completed the final

assessment to calculate participant attrition. An independent samples *t*-test comparing those with complete data against those who did not complete the study was conducted to determine if there were any significant differences on the main variables of interest.

Main data analysis. Inspection of statistical outliers and examination of statistical assumptions was conducted. Spearman's rank order correlation coefficients were calculated to examine patterns of association between fitness-related pride and participant characteristics, namely gender and indication of stressful life events in the previous week. Pearson bivariate correlations were also calculated to determine patterns of association between both facets of pride and BMI. To determine patterns of association between primary variables of interest, Pearson bivariate correlations were reported separately at each time point and were also reported based on change scores across the two test administration periods for both facets of pride, behavioural regulations, physical activity and well-being. Variation over time was analyzed by calculating residual change scores whereby the Time 2 score for each variable was regressed onto the Time 1 score, and the standardized residual was saved as an estimate of change over time associated with each variable (Zumbo, 1999).

Using the standardized residual, multiple mediation with bootstrapping procedures advanced by Preacher and Hayes (2008) was employed to examine the role of the behavioural regulations in the pride – well-being and pride – physical activity relationship. Separate analyses were conducted for each facet of pride. Evidence for mediation in the bootstrap samples (k = 5,000) is observed with the absence of zero in the 95 per cent bias corrected and accelerated confidence interval (BCa CI; Efron, 1987; Efron & Tibshirani, 1993). Specific indirect effects and pairwise contrasts were examined

through the use of BCa CIs to examine the unique contribution and strength of each behavioural regulation in the multiple mediator model analysis.

As an exploratory analysis, multiple serial mediation analyses using the SPSS macro PROCESS (Model 6) were conducted with bootstrap methods and bias-corrected 95% confidence intervals (Hayes, 2013; see Figure 2). In the current study, we examined the extent to which participants' reasons for engaging in exercise were self-determined at Time 1 and Time 2 as serial mediators of the relationship between pride and well-being as well as between pride and physical activity. Consequently, mediators (i.e., behavioural regulations) are believed to operate in serial in a causal chain, with the first mediator affecting the second mediator (Hayes, 2013). As serial mediation does not permit the spectrum of behavioural regulations (e.g., external, introjected, identified, integrated, and intrinsic) to be imputed, the Self Determination Index (SDI; Ryan & Connell, 1989; Vallerand, Pelletier, & Koestner, 2008), which reflects the extent to which individuals reasons for engaging in exercise are more/less self-determined, was calculated. A single SDI score was computed for each time point using the subscales of the BREQ-2R which were weighted and aggregated to form an overall index. The scoring protocol was modified to exclude the amotivation subscale and include the integrated regulation subscale ($RAI_{BREQ\text{-}2R} = \sum$ ([External x -2] + [Introjected x -1] + [Identified x 1] + [Integrated x 2] + [Intrinsic x 3]). Higher scores for the SDI reflect more autonomous motivation whereas lower negative scores indicate less autonomous motivation.

Results

Preliminary Data Screening and Descriptive Statistics

Of those individuals providing data at Time 1, 4.80% (n = 6) did not provide data at the second test administration. These individuals were classified as dropouts and removed from further consideration. Differences between those providing data only at Time 1, as opposed to both time points were minimal across demographic and study variables ($p > .05$) with the exception of external regulation ($p = .003$). More specifically, dropouts reported lower external regulation than participants who provided data at both test administrations. However interpretation of effect size estimates (Cohen's *d;* Cohen, 1988) demonstrated greater variability (*Range* = 0.02 to 1.14). Differences in external regulation demonstrated both statistical and practical significance (d = 0.83). Those who were classified as dropouts reported greater positive affect (d = 0.17) but lower negative affect (d = 1.14) and physical self-concept (d = 1.08) than those who completed both test administrations. Differences were found for identified (d = 0.50), integrated regulation (d = 0.47), and intrinsic regulation (d = 0.35) with those not completing the study reporting lower scores. Greater fitness-related authentic pride (d = 0.20) was also reported by those who did not complete the study.

Initial inspection of the data indicated the presence of minimal non-response error with no more than 3.40 percent of data missing on any individual item. Missing data were deemed to be missing completely at random and replaced using an expectation maximization (EM) algorithm. Following the imputation of missing data, descriptive and internal consistencies of study variables were calculated for both Time 1 and 2 (see Table 1).

Inspection of the descriptive statistics demonstrated similar findings for both Time 1 and Time 2 for all study variables. In general, participants scored above the

midpoint of the scale on all indices of pride, with the exception of trait hubristic pride. Based on BREQ-2R scores, this sample endorsed more autonomous motives for exercise relative to more controlling motives. Participants scored above the midpoint of the response scale options on all indices of well-being with the exception of negative affect. Interpretation of LTEQ scores suggested that participants in this study engaged in more physical activity compared to normative values (M_{METS} = 45.80; Godin & Shepard, 1985).

Estimates of Internal Consistency

Estimates of internal consistency (Cronbach's α; Cronbach, 1951) were calculated for test scores derived from trait and contextual measures of pride, well-being, and behavioural regulations, with α's ranging from .66 to .97 across both test administration periods (see Table 1).

Bivariate Correlations between Dispositional and Fitness-Related Pride

Scores from the newly developed BSE-FIT were compared to Tracy and Robins (2007) AHPS designed to assess dispositional tendencies to experience authentic and hubristic pride[1]. An examination of the pattern of relationships revealed a moderate positive relationship between trait authentic pride and both facets of fitness pride (see Table 2). Trait hubristic pride was unrelated ($p > .05$) to scores for subscales to assess pride in fitness contexts at Time 1 but related to the hubristic pride subscale at Time 2 (r_{12} = .19; see Table 3). While scores from the trait measures of pride were not related to one another ($p > .05$), the contextual assessments of authentic and hubristic pride were highly correlated at Time 1 (r_{12} = .79) and Time 2 (r_{12} = .76). Changes in both facets of

fitness-related pride were positively related to changes in trait authentic (*r*'s ranged from .27 to .29), but not hubristic pride over the duration of the study (see Table 4).

Bivariate Correlations between Pride and Participant Characteristics

Spearman rank order correlation coefficients between pride and participant characteristics including gender and indication of stressful life events were calculated at both Time 1 and Time 2. Authentic pride was unrelated to gender at both Time 1 and Time 2 ($p > .05$) while hubristic pride demonstrated a pattern of small negative relationships with gender at Time 1 ($r = -.24$, $p = .01$) and Time 2 ($r = -.19$, $p = .04$) suggesting that males experienced hubristic pride more often. Neither stressful life events nor BMI were associated with either facet of pride regardless of test administration period ($p > .05$).

Bivariate Correlations between Pride, Well-Being, Physical Activity, and Behavioural Regulations

Study hypotheses were partially supported as scores from the BSE-FIT at Time 1, whether tapping authentic or hubristic pride, were moderately positively associated with well-being (*r*'s ranged from .32 to .67) and demonstrated small-to-moderate positive relationships with physical activity (*r*'s ranged from .27 to .31; see Table 2). Small associations to negative affect in the hypothesized direction with authentic ($r_{12} = -.16$) and hubristic ($r_{12} = .17$) pride were reported. Both facets of pride demonstrated moderate positive associations to more autonomous regulations (*r*'s ranged from .53 to .62). External regulations for exercise were associated with authentic pride ($r_{12} = -.20$). Integrated regulation ($r = .17$) and intrinsic regulation ($r = .15$) demonstrated small positive associations to physical activity while the other regulations were generally

unrelated ($p > .05$). Patterns of relationships between autonomous regulations and well-being were generally in the expected direction with autonomous regulations demonstrating a pattern of small to moderate relationships (r's ranged from .29 to .59). Negative affect was positively related to controlling regulations ($p < .05$) and negatively related to integrated and intrinsic regulations (r's ranged from -.19 to -.20)

The pattern of relationships between study variables at Time 2 was generally consistent with those at Time 1 (see Table 3). Differences were noted in the direction of the relationship between hubristic pride and negative affect ($r = -.15$) which approached statistical significance ($p = .06$). As well, at Time 2 a pattern of small to moderate relationships emerged between autonomous regulations and physical activity.

Extending beyond cross-sectional analyses, bivariate correlations were interpreted examining patterns of change over the four week period comprising this study (see Table 4). Changes in both facets of pride were positively associated with changes in well-being (r's ranged from .25 to .48). Greater changes in pride across the four week test administration period were associated with greater reductions in negative affect (r's ranged from -.22 to -.28). Changes in pride were not associated with changes in physical activity ($p > .05$). A similar pattern emerged for changes in identified and intrinsic regulations. Only intrinsic and identified regulation were associated with changes in physical activity (r's ranged from .18 to .20). The relationship between well-being and the behavioural regulations generally support the adaptive role of autonomous motivation as increases in well-being were associated with increases in autonomous forms of motivation while endorsing greater controlling motives was negatively associated with changes in well-being.

ΔMotivational Regulations as Mediators of the ΔBSE Pride – ΔWell-Being Relationship

Positive affect. Multiple mediation between the Δauthentic pride – Δpositive affect relationship demonstrated mediation through the Δbehavioural regulations ($R^2adj.$ = 0.25; p < .001; point estimate = 0.0955; BCa CI = 0.0097-0.2197). Intrinsic regulation emerged as a statistically meaningful indirect effect in the model (point estimate = 0.0847; BCa CI = 0.0189 to 0.2225; see Table 5). Examination of Δhubristic pride and Δpositive affect revealed that the model ($R^2adj.$ = 0.19; p < .001) was mediated by the Δbehavioural regulations (point estimate = 0.1124; BCa CI = 0.0019 to 0.2499). Once again, intrinsic regulation emerged as a statistically meaningful indirect effect in the model (point estimate = 0.0948; BCa CI = 0.0229 to 0.2269; see Table 6).

Physical self-concept. The Δbehavioural regulations mediated the relationship between Δhubristic pride and Δphysical self-concept ($R^2adj.$ = 0.24, p = <.001; point estimate = 0.1101; BCa CI = 0.0122 to 0.2502). Intrinsic regulation demonstrated a unique indirect effect in the model (point estimate = 0.0639; BCa CI = 0.0131 to 0.1608; see Table 6).

ΔMotivational Regulations as Mediators of the ΔBSE Pride –ΔPhysical Activity Relationship

Examination of results derived from the bootstrapping procedure to test for multiple mediation indicated that the relationship between Δauthentic pride and Δphysical activity was not mediated by Δbehavioural regulations ($R^2adj.$ = .01, p = > .05; point estimate = 0.0347; BCa CI = -0.0554 to 0.1267; see Table 5). Similar results were

found when Δhubristic pride was the predictor variable ($R^2adj.$ = .01, p = > .05; point estimate = 0.0300; BCa CI = -0.0792 to 0.1231; see Table 6)

Serial Mediation Analyses

Separate serial process analyses were tested to examine whether the overall degree of self-determination in the regulation of exercise at Time 1 and Time 2 sequentially mediated the influence of authentic and hubristic pride on indices of well-being. All paths for the full process model are illustrated in Figure 2 and their corresponding coefficients are provided in Tables 7 and 8. The results from each individual analysis were largely consistent across well-being indices and both facets of pride. The total indirect effect was significant for all indices with the exception of the relationship between authentic pride and negative affect. Moreover, the specific indirect effect through SDI at Time 1 (*a1b1*) or Time 2 (*a2b2*) was not significant. However, when testing serial multiple mediation, the specific indirect effect of pride through SDI at Time 1 and Time 2 (*a1a3b2*) was significant for all well-being variables which speaks to the importance of the causal flow of motivation in the promotion of well-being.

Serial mediation analyses were further conducted with physical activity serving as the criterion variable (see Tables 7 and 8). Results demonstrated that the total indirect effect was not significant, nor was the indirect effect through SDI 1 or SDI 2. Consequently no support for serial mediation was found regardless of index of pride.

Discussion

Pride is a positive emotion that provides internal feedback that an individual's self or behaviour is valued (Tracy et al., 2010). Consequently, experiencing pride not only makes people feel good, but feel good about themselves. As a result, feelings of pride are

thought to reinforce and encourage individuals to engage in future behaviours conducive to feelings of pride (Tracy & Robins, 2007a). These feelings fuel the development of self-esteem and maintenance of a positive self-concept (Tracy & Robins, 2007a). From this perspective, examining feelings of pride are particularly important because of their role in psychological functioning and motivation towards pro-social behaviours (Ashton-James & Tracy, 2012; Michie, 2009; Tracy & Robins, 2004). To date, the majority of what is known about pride and its associated outcomes stems from individuals' dispositional tendencies or proneness to experience pride (Damien & Robins, 2012; Mosewich, et al., 2011; Sabiston et al., 2010; Tracy et al., 2009; Tracy & Robins, 2007b; Williams & DeSteno, 2009). As a result, understanding of the influence of contextual assessments of pride is not well known. The first objective of the present study was to determine the pattern of association between pride contextualized to fitness with outcomes pertaining to well-being and physical activity behaviour. These relationships were examined at a single time point and again four-weeks later. While it has generally been agreed that pride functions to promote well-being and motivate individuals to engage in socially valued behaviours, until recently the proposed functionality of pride had remained largely untested (Damien & Robins, 2012; Sabiston et al., 2010; Williams & DeSteno, 2008). However, emerging research has found empirical support for this proposition and further distinguishes between the motivational profile of authentic pride and hubristic pride (Damien & Robins, 2012; Sabiston et al., 2010). Grounded in OIT (Deci & Ryan, 2002), a second objective was to examine the role of motivation as a mediator of the pride – well-being/physical activity behaviour relationship.

Pride and Well-Being

The results of this study support the hypothesis that feelings of authentic pride in fitness contexts are positively associated with well-being. Contrary to our hypothesis, increased feelings of hubristic pride also appear to be associated with increased well-being. This finding suggests that feelings of superiority or grandiosity regarding one's fitness may be adaptive for psychological health. These relationships held across the two test administration periods as changes in both facets of pride were found to be positively associated with changes in well-being. These findings support earlier conjecture that feelings of both authentic and hubristic pride are pleasurable and thus are associated with positive affect and self-esteem (Carver et al., 2010). The present study builds upon these contentions by demonstrating empirical associations to a wider range of well-being indices, including positive affect and self-esteem. Previous research also supports the adaptive role of both authentic and hubristic pride. Castonguay and colleagues (2013) contend that both body-related authentic and hubristic pride are associated with adaptive affect and cognitions over time (Castonguay et al., 2013).

As findings for hubristic pride reported in the present investigation differ from what was expected (e.g., negative relationship to well-being), additional insight as to why this was the case is warranted. The positive association between hubristic pride and well-being may, in part, be explained through consideration of Social Comparison Theory (Festinger, 1954). The primary proposition underscoring Social Comparison Theory is that people search out and utilize information about others as a means of self-assessment and self-enhancement. Downward social comparison can enhance well-being through comparison with a less fortunate other (Festinger, 1954; Wills, 1981). Hubristic pride is often thought to be a response to specific contingencies that increase self-esteem (i.e.,

evaluating one's fitness as better than others; Tracy et al., 2009). In line with this, Castonguay et al, (2013) reported that fitness related hubristic pride often results from comparisons to others whose physical abilities do not compare as favourably in comparison to their own. Taken together, hubristic pride may depend more on relative standing with others than on absolute accomplishment alone.

Pride and OIT

Existing literature examining relations between pride and motivation is limited both in quantity and in the nature of the motivational constructs examined (e.g., Damien & Robins, 2012). One study that used a measure similar to the current investigation captured the continuum of behavioural regulations for exercise (Sabiston et al., 2010). Results from this study are in line with the findings of Sabiston et al., (2010) which also found a positive relationship between authentic pride and identified and intrinsic regulation. Unlike the current results, hubristic pride when assessed at the trait level was only minimally endorsed in this sample. As a result, associations to behavioural regulations were not considered. Contrary to our hypotheses, hubristic pride was also positively related to more autonomous forms of motivation. These data suggest that feelings of hubristic pride are associated with participating in exercise because of the benefits that exercise provides, because exercising is consistent with one's identity, or because exercise is seen as enjoyable and fun. Triggers of hubristic pride often include opportunities to demonstrate superior abilities or to "show off" to others. Moreover, competitive situations have been noted as a context in which individuals experience hubristic pride (Castonguay et al., 2013). Support for these triggers in relation to more self-determined motives have been documented. Ingledew and Markland (2008) noted

that participating in exercise for competitive or social recognition purposes increased intrinsic regulation.

Of interest is the magnitude of the relationships between both facets of pride and the behavioural regulations. While Sabiston and colleagues (2010) noted a small positive relationship when adopting a global assessment tool, the magnitude of the relationships presented here are moderate-to-strong. Findings indicate that contextual indices of pride may hold stronger associations to behavioural regulations than global assessments. This finding is consistent with other literature that has examined relationships between physical activity and both global and contextual assessments of well-being (Fox, Stathi, McKenna, & Davis, 2007).

The relationship between the change in pride and the change in the behavioural regulations demonstrated a pattern of positive relationships between both facets of pride and the more autonomous regulations. Authentic and hubristic pride were also negatively related to the more controlling regulations in the expected direction. However only increases in authentic pride were associated with significant (p = .05) reductions in extrinsic regulations. That is, as feelings of pride increased over the duration of the study, engaging in exercise for more self-determined reasons such as valuing the benefits of exercise and enjoying exercise also increased. Associations between authentic pride and intrinsic motivation have previously been noted in the literature (Damien & Robins, 2012).

OIT and Well-Being

Deci and Ryan (1985) suggest that more autonomous motives are directly associated with adaptive psychological outcomes and this contention is generally upheld

in this study. Both external and introjected regulations demonstrated a similar pattern to markers of well-being. While positive affect was unrelated to controlling motives, negative relationships emerged for physical-self concept, subjective vitality, and self-esteem. A pattern of small associations to identified and integrated regulations emerged between markers of well-being. Patterns of association between intrinsic regulations and markers of well-being are consistent with existing literature (Edmunds et al., 2007; Thøgersen-Ntoumani & Ntoumanis, 2007). Taken together, these findings are in line with previous research documenting associations between self-determined motivational regulations and greater physical self-concept, self-esteem, and positive affect, and vitality (Edmunds et al., 2007; Kwan, Caldwell Hooper, Magnan, Bryan, 2011; Nix et al., 1999; Sebire et al., 2009). Moreover, these findings are consistent with recent literature documenting support for positive associations between changes in motivational regulations and subsequent changes in well-being in a sample of breast cancer survivors (Brunet, Burke, & Sabiston, 2013).

Motivation as a Mediator of the Pride – Well-Being Relationship

Consideration of behavioural regulations as mediators of the Δpride - Δwell-being relationship yielded some significant results. In particular, motivation mediated the relationship between both authentic and hubristic pride and positive affect as experienced in the context of physical activity. Consideration of the unique influence of each behavioural regulation revealed that intrinsic regulation was particularly important as a mechanism through which pride contributes to positive affect. That positive affect was linked with both authentic pride and intrinsic motivation is consistent with previous research (Carver et al., 2010; Edmunds et al., 2007; Gillet, Vallerand, Lafreniere, &

Bureau, 2012). Furthermore, results of the mediation analyses also revealed that motivation mediated the relationship between hubristic pride and physical–self concept. Again, intrinsic regulation emerged as a specific indirect effect in this relationship. This finding is in accord with previous research demonstrating a relationship between intrinsic motivation and physical self-concept (Fox, 1997; Georgiadis, Biddle, & Chatzisarantis, 2001; Martín-Albo et al., 2012; Moreno, Sicilia, & Muyor, 2008; Thøgersen-Ntoumani & Ntoumanis, 2006, 2007; Wilson & Rodgers, 2002). The results indicate that feelings of authentic and hubristic pride are associated with positive affect in exercise contexts and this influence is transmitted because of the inherent enjoyment exercise provides. Moreover, hubristic pride is associated with greater physical self-concept through engaging in exercise for the challenge and fun it affords. That intrinsic regulation seems to be of particular importance in these relationships is consistent with SDT that the most positive consequences in terms of psychological well-being is a consequence of behaviour that is engaged in purely for one's interest and enjoyment in the activity itself (Deci & Ryan, 1985; Ryan, 1995). Overlap between items assessing well-being and those from the BREQ-2R assessing intrinsic motivation (e.g. "I get pleasure and satisfaction from participating in exercise") may also be implicated in this relationship given their conceptual similarities.

Of interest is that behavioural regulations did not mediate the relationship between pride and self-esteem, subjective vitality, or negative affect. Past research has demonstrated that markers of well-being including self-esteem and vitality tend to remain relatively stable over time and are highly resistant to change (Baumeister, 1993; Kernis et al., 2000). For example, Schimmack, Krause, Wagner, and Schupp (2010) have argued

that meaningful changes in well-being may be difficult to achieve over a short duration. The authors argue that approximately half of the variation in well-being assessments is a reflection of stable components (i.e., trait) relative to more flexible state-like components. This stability may limit the likelihood of observing differences across test administrations. This likelihood is heightened through examination of naturally occurring changes in a global construct such as self-esteem rather than through the use of an intervention. Further, data from the present study is suggestive of ceiling effects (Wang Zhang, McArdle, & Salthouse, 2009) for well-being as 93.50% of participants reported scores above the midpoint of the scale for vitality.

Serial Mediation Analyses: Well-Being

Support for the relative autonomy of the regulations at Time 1 resulting from pride was found to increase participants' relative autonomy at Time 2 which in turn produced greater well-being. This finding held for both facets of pride on all indices of well-being with the exception of authentic pride and negative affect. These results are in line with previous theoretical perspectives on positive emotions. Fredrickson (2001) posits that positive emotions promote well-being not simply in the present moment, but over time through enabling various thought-action tendencies that build enduring personal resources. Notable SDT researchers hold that psychological well-being is a consequence of motivation that is more autonomous in nature (Deci & Ryan, 1985). The present study expands upon this contention to highlight the importance of maintaining autonomous motivation in physical activity contexts over time in fostering well-being. The sustainability of more self-determined motivation has been noted in previous

research. Martín-Albo and colleagues (2012) documented support for ongoing endorsement of intrinsic motivation without a manipulation at multiple points in time.

Pride and Physical Activity

Partial support for study hypotheses was found as a small positive relationship was reported for both authentic and hubristic pride and physical activity at the cross-sectional level of analysis. Study findings deviate from previous research (Mosewich et al., 2011) as physical activity was linked to authentic, but not hubristic pride. There exist a number of possible explanations for the discrepant findings. First, differences in the conceptualization of pride and the instruments used to measure this construct between studies may explain differences in conclusions advanced. Second, while the present investigation used an estimate of energy expenditure based on frequency, duration and intensity of the LTEQ, scores for physical activity adopted by Mosewich et al. (2011) used the frequency/intensity dimension of the Obligatory Exercise Scale (OEQ; Pasman & Thompson, 1988). Finally, differences in the samples under investigation are also evident between studies with Mosewich and colleagues (2011) surveying female adolescent athletes and the present study sampling male and female young adults. These differences render conclusions about the true nature of the relationship between pride and physical activity premature. An additional explanation pertains to the high correlation between scores of authentic and hubristic pride in the present investigation. The strong positive relationship between authentic and hubristic pride in this study may suggest that individuals experience both authentic and hubristic pride to a similar extent in fitness contexts. The results suggest that fitness contexts may be a unique area in which individuals engage in physical activity not only to challenge one's abilities, but also to

compare their own physical abilities to those of others. Taken together, these represent strategies capable of producing feelings of pride. Moreover, the results indicate that feelings of fitness-related authentic and hubristic pride often co-occur. This likely reflects the commonality between feelings of authentic and hubristic pride (self-evaluations, valence, contexts, and triggers; Castonguay, Brunet, Ferguson, & Sabiston, 2012; Castonguay et al., 2013; Tracy & Robins, 2004). As research investigating the extent to which health behaviours, including physical activity, are associated with pride are still in their infancy, additional investigation is warranted.

Literature grounded in participation motivation for exercise may offer additional insight in an effort to explain the observed relationship between pride and physical activity reported in the present investigation. The focus of the participation motivation literature is on what individuals aim to attain or avoid through participating in certain behaviours (Ingledew et al., 2009). Within exercise contexts a number of participation motives not unlike those underlying the two facets of pride exist. For example, motives which may underlie feelings of hubristic pride include social recognition (i.e., favorably comparing abilities to others, gaining recognition for accomplishments) and competition (i.e., enjoying physical competition). These motives may utilize engagement in physical activity as a means of self-promotion or self-enhancement through feelings of hubristic pride. Participatory motives that may underlie authentic pride on the other hand include challenging oneself such as working towards goals and developing personal skills and competence. This is consistent with the idea that feelings of authentic pride come about from attributions regarding effort and hard work (Tracy & Robins, 2004). Moreover, previous research has documented support for the endorsement of motives pertaining to

social recognition, competition, and challenge and their associations to physical activity engagement (Davey, Fitzpatrick, Garland, & Kilgour, 2009; Fredrick & Ryan, 1993; Ryan, Fredrick, Lepes, Rubio, & Sheldon, 1997; Sebire, Standage, & Vansteenkiste, 2009). Of interest, in one college aged sample, motives pertaining to challenge and competence were most highly endorsed by those classified as regular exercisers which may reflect the importance of these motives in this population (Buckworth, Lee, Regan, Schneider, & DiClemente, 2007). Indirect relationships of these motives on physical activity through behavioural regulations have also been noted (Ingledew & Markland, 2008; Ingledew et al., 2009). Further supporting this line of reasoning is research that has examined the triggers of body-related pride in young adults. Common triggers of hubristic pride included evaluating one's fitness as superior to others while common triggers of authentic pride included meeting or exceeding fitness goals (Castonguay et al., 2013).

Contrary to study hypotheses, changes in either facet of pride were not significantly ($p > .05$) associated with changes in physical activity over the duration of the study. Based on descriptive statistics, participants demonstrated fairly stable levels of both pride and physical activity between Time 1 and Time 2 which may account for the null findings observed[2]. That both pride and physical activity levels were fairly stable over the course of the study is not too surprising given the focus on naturally occurring changes in pride and physical activity, as opposed to using an intervention strategy. It is important to note that while not significant, the relationship between Δ authentic pride and Δ physical activity was in the hypothesized direction. More research is needed to

further elucidate this relationship to determine whether, and if so, how, changes in pride are associated with changes in physical activity.

OIT and Physical Activity

Some of the relationships between physical activity and the behavioural regulations were not as expected and diverge from existing literature and theory (Deci & Ryan, 2002). Associations at both time points and between the residualized changes scores demonstrate positive relations between physical activity and all behavioural regulations, regardless of the degree of self-determination. One exception to this was the relationship between physical activity and external regulation at Time 2 which demonstrated a non-significant negative relationship. Although primarily in the opposite direction than expected, the relationship between controlling motives and physical activity was not significant. This lack of association has been found in other research (Edmunds et al., 2006; Wilson et al., 2004). The positive association between the more self-determined motives is consistent with previous literature (Brunet & Sabiston, 2011; Edmunds et al., 2007; Standage et al., 2008; Thogersen-Ntoumani & Ntoumanis, 2006; Wilson et al., 2003; Wilson et al., 2004). While the positive association between autonomous regulations and physical activity is generally consistent with previous research, the magnitude of the relationships is smaller than what is typically reported.

Motivation as a Mediator of the Pride – Physical Activity Relationship

Examining motivation as a potential mechanism through which pride generates its adaptive/maladaptive outcomes was assessed in the current study using both parallel (i.e, multiple mediation) and serial mediation analyses. Past research has emphasized the motivational role of pride because these feelings are thought to encourage individuals to

acquire and demonstrate abilities in achievement domains (Damien & Robins, 2012; Sabiston et al., 2010; Tracy & Robins, 2004; Williams & DeSteno, 2008). The Δpride – Δ physical activity relationship was not collectively mediated by the behavioural regulations, nor did any of the behavioural regulations demonstrate statistically meaningful indirect effects. This finding remained regardless of the facet of pride entered in the analysis. Examination of the relationships between these variables may shed light on the lack of significant findings in this relationship. Both facets of pride were negatively related to the more controlling motives but positively related to the more autonomous motives. These relationships are consistent with initial hypotheses, at least for authentic pride. Contrary to what was hypothesized and deviating from previous theorizing, physical activity was positively associated with both controlling and autonomous motives with significance ($p < .05$) attained for identified and intrinsic regulations.[3] The stability of constructs measured in this sample may also explain the lack of mediation. The stability of the regulations and physical activity estimates from the LTEQ over longer periods of time (i.e., 3 months) have been noted in other samples (Brunet et al., 2013).

Limitations

In order to advance this line of research, it is important to acknowledge the limitations of the current study. First, despite the changes and challenges often encountered during university (Gall, Evans, & Bellerose, 2000) those enrolled in university are likely to be amongst the healthiest and highest functioning segments of the population (Keyes, 2003; Keyes et al., 2002). Consequently, the degree of stability in positive functioning may be particularly high. This stability in functioning presents

challenges for examining predictors of change. In particular, the chances of finding unique prospective effects of other hypothesized predictive factors. This can be seen with respect to the scores on the LTEQ.

Moreover, data collection procedures relied exclusively on self-report data. While self-report is the most commonly used measures of physical activity, it is not without its limitations (e.g., recall bias, social desirability; Welk, 2002). Despite potential problems, self-report measures are still deemed an acceptable method of collecting physical activity data (Welk, 2002), and correlations between objective measures have been noted for the GLTEQ (Jacobs et al., 1993). While reliance on subjective methods to assess well-being is common, a number of objective measures exist (informant reports, implicit association tests) that have been found to correlate at least moderately with subjective assessments (Kim, 2004; Schimmack, 2008). However, it's important to note that no gold standard exists for assessing well-being or physical activity as both subjective and objective assessments have limitations (Welk, 2002). With this in mind, consideration of additional modalities that act to complement one another is warranted.

This investigation followed a longitudinal design whereby participants completed measures at Time 1 and then again 4-weeks later. Pedhazur and Schmelkin (1991) argue that a two-week timeframe is necessary for demonstrating stability, as such anything longer holds potential for observing change. To date the majority of research examining changes in well-being and physical activity have relied on designs that span longer periods of time (e.g., 3-6 months; Edmunds et al., 2007; Mack et al., 2012; Brunet et al., 2013). Naturally occurring changes in pride have been found to occur over the lifespan

(Orth et al., 2010) with authentic and hubristic pride demonstrating disparate trends into old age.

Due to a lack of existing instruments to assess fitness-related pride, a newly developed, but as of yet unpublished, measure was utilized in this study. While utilizing this measure answers calls for more domain specific research into the motivating effects of pride (Leary, 2007), extensive construct validation has not yet been published. A primary concern pertains to the degree of statistical overlap between the dimensions of pride. While the magnitude of the relationship is a departure from associations between trait assessments of authentic and hubristic pride, the possibility remains that authentic and hubristic pride are experienced to a similar extent in fitness contexts. As measurement is considered to be an on-going process (Messick, 1995) additional construct validation research is recommended.

Feelings of pride are thought to be motivating (Leary, 2007; Tracy & Robins, 2007b). These motivations in turn are posited to be responsible for the outcomes associated with authentic and hubristic pride (Cheng et al., 2010; Damien & Robins 2012; Fischer & Tangney, 1995; Tracy & Robins, 2007b). The relationship illustrated in this study presents a unidirectional influence of changes in pride in the prediction of changes in physical activity and well-being. It could very well be that this relationship is bi-directional such that changes in physical activity or well-being elicit changes in feelings of pride. The model presented here merely serves as a parsimonious approximation to the underlying processes giving rise to the observed relationships. Further, presenting constructs in a given order does not ensure that they actually occur in

this order (Cole & Maxwell, 2003). As such, the relationships presented within this study should be interpreted with caution.

Finally, due to the number of variables assessed in this study there was an increased risk of making a Type I error. Type I error is defined by the alpha level and increases as a function of the number of statistical comparisons computed. Strategies exist to reduce the likelihood of making a Type I error (i.e., lowering alpha to a more conservative level, Bonferroni correction). However, a reduction in Type I error results in increasing the likelihood of making a Type II error (Pedhauzer & Schmelkin, 1991). In an attempt to attenuate such risks, confidence intervals for tests of mediation were calculated. The use of confidence intervals has been advocated for rather than sole reliance on *p* values (Cohen, 1994). Confidence intervals for the mediation analyses were bias-corrected given that this correction is believed to improve power and Type 1 error rates (MacKinnon, Lockwood, & Williams, 2004). Furthermore, bivariate correlations reflect effect size and were discussed both in terms of statistical significance as well as practical significance. While the possibility of making a Type I error is acknowledged given the number of comparisons, adopting other approaches not reliant on *p* values provides complimentary information that aid in the interpretation of study findings.

Theoretically based health promotions strategies are thought to be more effective than those that do not use theory (Painter, Borba, Hynes, Mays, & Glanz, 2008). The use of theory has a number of advantages that include, but are not limited to, guiding research geared towards both the prediction and explanation of behavioural and psychological phenomena (Van Ryn & Heany, 1992). Theories outline the important constructs and processes that are hypothesized to regulate behaviour and influence well-being. However,

limitations of using theory exist as well. Due to the predetermined nature of the constructs included in a particular theory the possibility remains that other, potentially important but unaccounted for, variables may directly or indirectly affect the proposed outcome. Because theories are designed to apply to a wide variety of circumstances they can be relatively vague and not applicable across situations (i.e., deliberate versus simplistic automatic behaviours, initiation versus maintenance of behaviours; Noar & Zimmermann, 2005).

Future Directions

Because of the novelty of the current investigation, a number of opportunities exist for future research. While this study was the first to test the mediating role of multiple regulations in the relationship between pride and well-being and pride and physical activity simultaneously, the possibility remains that other mediators (e.g., competence) are of import in these relationships. For example, the lack of significant mediation between both facets of pride and physical activity may suggest that other mechanisms account for this relationship. Preacher and Hayes (2007) argue that there are other possible mediators that may be introduced to help better understand a proposed relationship. With this in mind, future research may wish to consider alternative mechanisms through which pride is more proximally associated with engagement in physical activity. Future research should also consider uncovering the conditions (i.e., gender) that facilitate the positive outcomes associated with hubristic pride.

Secondly, while both well-being and physical activity are most commonly assed via self-report, (Sandvik, Diener, & Seidlitz, 2009; Welk, 2002), future research may wish to adopt objective measures that can act as a complement to these data (e.g.,

informant reports, motion accelerometry, pedometers). Reporting results from different instruments provides a more complete description and permits a triangulation of outcomes to help rule out potential biases in data interpretation. The use of both objective and subjective measures may also be helpful in avoiding concerns regarding shared method biases (Pedhauzer & Schmelkin, 1991).

To provide further evidence of reliability and validity, future research should aim to replicate these findings in other samples. The extant literature investigating relationships between pride and physical activity and well-being have used primarily young adult samples (Carver et al., 2010; Mosewich et al., 2011; Sabiston et al., 2010; Tracy et al., 2009). Older adults may be one sample worthy of investigation. There are marked changes that occur across the adult life span which lead to the expectation of concomitant changes in individuals perceptions of and reactions to their body's functioning. Research into body image and reasons for engaging in physical activity in older adults suggests that functional aspects of the body may be more salient for this population than for younger cohorts (Finch, 1997; Tiggemann, 2004). Thus, it appears that with age the salience of physical evaluations shift from a focus on appearance to that of physical functioning and ability (Reboussin et al., 2000). Investigating fitness-related pride in older adults is warranted as perceived well-being and engagement in physical activity is strongly related to the body's abilities in this cohort (Reboussin et al., 2000).

Lastly, this study examined changes in pride with changes in well-being and physical activity over a 4-week period. Changes in pride were associated with changes in well-being in the short term, but not physical activity. Future research should consider longitudinal designs with a larger interval between test administrations (i.e., 6 months) to

unpack the true nature of these relationships. How changes in fitness-related pride are related to changes in well-being in the long-term remains unknown. Moreover, future research may also wish to consider assessing these relationships using a shorter interval. While changes in physical activity were unrelated to changes in pride over a 4-week period, the possibility remains that this relationship is more proximal in nature and therefore only captured through repeated sampling using a shorter duration between assessments (i.e., multiple assessments over a 1-week period).

Practical Implications

The present findings involve an initial attempt at examining the role of motivation in the relationship between pride and well-being/ physical activity and have a number of interesting implications. Despite the apparent importance and adaptive function that positive emotions serve (Tugade, Fredrickson, & Barrett, 2004) the majority of research to date has focused on negative body-related emotional experiences (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Positive emotions surrounding the body are not simply the inverse of negative emotions (Tylka, 2011). Rather, positive emotions, such as pride, offer distinct value to health psychology research (Castonguay et al., 2013) and should be considered separately from negative emotions.

Consideration of positive body-related emotions allows for a more comprehensive understanding of mental health which concerns not only low levels of ill –being but the presence of well-being (Keyes & Lopez, 2002). Aside from self-esteem, psychological health outcomes associated with pride have largely focused on markers of ill-being (i.e., anxiety, depression). Specifically, authentic pride is negatively related to ill-being while hubristic pride is positively related (Tracy et al., 2009). While this provides insight into

associations to ill-being, additional indices of well-being should be considered to fully capture the associations to mental health. The results of the current program of research support that assessments of both domain-specific authentic and hubristic pride contribute to psychological well-being. Taken together, increasing feelings of pride appears to be a useful avenue in the promotion of adaptive psychological functioning. Moreover, consistent with ideas advanced by positive emotion scholars (Fredrickson & Levenson, 1998; Lazarus, 1991) feelings of pride were associated more with psychological as opposed to behavioural outcomes.

Investigations into the mechanisms through which pride leads to its adaptive (maladaptive) outcomes are limited by the lack of empirical tests into this contention. This study aimed to empirically test the assertion that feelings of pride are motivating (Tracy & Robins, 2007b). In general, both facets of pride were associated with more self-determined forms of motivation. Despite previous reports (Cheng et al., 2010; Tracy & Robins, 2007b; Williams & DeSteno, 2008) that pride motivates individuals to engage in socially valued behaviours (e.g., physical activity), motivation did not mediate the relationship between pride and physical activity. As such, investigations aimed at uncovering other mechanisms underpinning this relationship should be considered. Conversely, the present line of inquiry does support the notion that motivation that is self-determined in nature is important for well-being (Deci & Ryan, 2008). As a result, additional insight into the relative importance of the regulations in the relationship between pride and well-being can be gleaned from this study. More specifically, the results help to clarify the specific processes that give rise to the relationship between pride and well-being. Results derived from this investigation suggest that intrinsic

motivation plays a particularly important role in this relationship. As such, intervention strategies aimed at improving well-being should focus on participation for more self-determined reasons such as the inherent enjoyment exercise provides.

Although trait assessments of authentic pride have demonstrated positive associations to indices of well-being and physical activity (Carver, et al., 2010; Mosewich, et al., 2011; Sabiston et al., 2010; Tracy et al., 2009), its stable and presumably unchanging nature can make it a difficult target for intervention by practitioners. Thus, more context-specific factors such as fitness-related pride may prove to be a better target for intervention purposes. Moreover, investigations into contextual assessments of pride have been called for (Tangney & Tracy, 2012). Various researchers have developed measures to assess self-conscious emotions with respect to specific domains, such as the body (Conradt, et al., 2007; McKinley & Hyde, 1996) and have been useful in providing insight into the outcomes associated with their experience. For example, feelings of body shame or weight-related shame and guilt have been linked to disordered eating, problem focused coping, depressed mood, decreased self-esteem, and dietary restraint (e.g., Calogero, 2009; Conradt, et al., 2008;Lowery, et al., 2005; Mercurio & Landry, 2008; Slater & Tiggemann, 2010; Tiggemann & Boundy, 2008; Tiggemann & Kuring, 2004; Tylka & Hill, 2004; Wiseman & Moradi, 2010). Findings of the present research help to expand the literature on pride through the use of a domain specific measure of pride to attain a better understanding of the outcomes associated with pride, similar to those using domain specific measures of guilt and shame.

Of particular interest in this study were the adaptive outcomes associated with hubristic pride. The results of this study support that while unconditional positive regard

for oneself is not adaptive in general (Tracy et al., 2007b; 2009), adaptive outcomes were associated with positive regard for oneself in the domain of fitness. However, further research is needed to replicate these findings. Thus, while implications for practitioners regarding authentic pride are consistent with previous research, strategies aimed at self-appraisals that generate feelings of hubristic pride may also be useful in particular domains, at least in the short-term.

Finally, implications stemming from these findings exist for intervention studies wishing to increase well-being. Programs should consider targeting strategies that foster sustained self-determined forms of motivation as this seems to represent an important avenue to increased well-being. Moreover, these results were found to occur in a relatively short time period (i.e., 1 month). As such, this offers added value to practitioners wishing to promote well-being when a longer duration of time is not feasible.

Conclusion

Understanding the outcomes associated with perceptions of fitness-related pride represent a new direction within the self-conscious emotions literature (Tangney & Tracy, 2012). Despite the negative connotations and maladaptive outcomes often associated with hubristic pride, both facets of pride were positively associated with adaptive psychological and behavioural correlates. Engaging in exercise because of the enjoyment and challenge it provides seems particularly salient in the relationship between both facets of pride and well-being. Moreover, sustained motivation acts as a vehicle whereby feelings of pride are associated with greater well-being. This study supports the contention that feelings of pride have motivational salience as naturally occurring

changes in pride were positively associated with more adaptive forms of motivation. However, feelings of pride did not motivate engagement in physical activity. Future research should consider other mechanisms through which pride is associated engagement in physical activity.

Endnotes

1. Analyses were conducted and presented for both the AHPS and BSE-FIT. Only results using the BSE-FIT as the index of pride was reported in the Results and interpreted in the Discussion with the exception of bivariate correlations between AHPS and BSE-FIT scores. Results and Tables from the AHPS addressing study hypotheses can be found in Appendix H. No interpretation of results from the APHS are presented.
2. Consistency of scores from the BSE-FIT and LTEQ were analyzed to compute the intraclass correlation coefficient (ICC) for authentic pride (ICC = .81), hubristic pride (ICC = .89), and physical activity (ICC = .68) over the duration of the study.
3. These results are contrary to propositions set forth in SDT (Deci & Ryan, 1985; 2002) and existing literature. In an effort to further try and explain these findings, bivariate correlations between the behavioural regulations and physical activity were analyzed separately by gender. Results revealed a disparate pattern of relationships between males and females. Males fit the expected pattern based on study hypotheses and previous research. However, women deviated from study hypotheses. Specifically, autonomous motives were not associated with physical activity while controlling motives were positively associated. While some studies have reported a similar pattern of relationships for both males and females (Duncan, Hall, Wilson, & O, 2010), support for differences across gender has also been reported (Standage et al., 2008; Wilson et al., 2004). Analyzing the relationships between OIT and physical activity together for both males and females may have obfuscated the true nature of this relationship.

References

Alighieri, D. (2003). *The divine comedy* (J. Ciardi, Trans.). New York: New American Library.

Aristotle (1925). *The Nicomachean ethics* (D. Ross, Trans.). New York: Oxford University Press.

Ashton-James, C. E., & Tracy, J. L. (2012). Pride and prejudice: Feelings about the self influence judgments of others. *Personality and Social Psychology Bulletin, 38*, 466-476.

Assor, A., Vansteenkiste, M., & Kaplan, A. (2009). Identified and introjection approach and introjection avoidance motivations in school and in sport: The limited benefits of self-worth strivings. *Journal of Educational Psychology, 101*, 482-497.

Baumeister, R. (1993). *Self-esteem: The puzzle of low self-regard*. New York: Plenum.

Baumeister, R. F., DeWall, C. N., Vohs, K. D., & Alquist, J. L. (2010). Does emotion cause behavior (apart from making people do stupid, destructive things). In C. R. Agnew, D. E. Carlston, W. G. Graziano & J. R. Kelly (Eds.), *Then a miracle occurs: Focusing on behavior in social psychological theory and research* (pp. 12-27). New York: Oxford University Press.

Biddle, S. J. H., & Mutrie, N. (2008). *Psychology of physical activity: Determinants, well-being and interventions* (2nd Edition). London: Routledge

Bostic, T. J., Rubio, D. M., & Hood, M. (2000). A validation of the subjective vitality scale using structural equation modeling. *Social Indicators Research, 52*, 313-324.

Brickell, T., & Chatzisarantis, N. (2007). Using self-determination theory to examine the motivational correlates and predictive utility of spontaneous exercise implementation intentions. *Psychology of Sport and Exercise , 8*, 758-770.

Brown, J. D., & Marshall, M. A. (2001). Self-esteem and emotion: Some thoughts about feelings. *Personality and Social Psychology Bulletin, 27*, 575-584.

Brunet, J., Burke, S. M., & Sabiston, C. M. (2013). The benefits of being self-determined in promoting physical activity and affective well-being among women recently treated for breast cancer. *Psycho-Oncology*, doi: 10.1002/pon.3287.

Brunet, J., & Sabiston, C. M. (2009). Social physique anxiety and physical activity: A self-determination theory perspective. *Psychology of Sport and Exercise, 10*, 329-335.

Brunet, J., & Sabiston, C. (2011). Exploring motivation for physical activity across the adult life span. *Psychology of Sport and Exercise, 12*, 99-105.

Buckworth, J., Lee, R. E., Regan, G., Schneider, L. K., & DiClemente, C. C. (2007). Decomposing intrinsic and extrinsic motivation for exercise: Application to stages of motivational readiness. *Psychology of Sport and Exercise, 8*, 441-461.

Calogero, R. (2009). Objectification processes and disordered eating in British women and men. *Journal of Health Psychology, 14*, 394-402.

Campos, J. J. (1995). Foreward. In J. P. Tangney & K. W. Fischer (Eds), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. ix-xi). New York: Guilford.

Carver, C. S., Sinclair, S., & Johnson, S. L. (2010). Authentic and hubristic pride: Differential relations to aspects of goal regulation, affect, and self-control. *Journal of Research in Personality, 44*, 698-703.

Cash, T. F., & Pruzinsky, T. (2002). *Body image: A handbook of theory, research and clinical practice*. New York, NY, Guilford Press.

Castonguay, A. L., Brunet, J., Ferguson, L., & Sabiston, C. M. (2012). Weight-related actual and ideal self-states, discrepancies, and shame, guilt, and pride: Examining associations within the process model of self-conscious emotions. *Body Image, 9*, 488-494.

Castonguay, A., Gilchrist, J. D., Mack, D. E., & Sabiston, C. M. (2013). Body-related pride in young adults: An exploration of the triggers, contexts, outcomes and attributions. *Body Image, 10*, 335-343.

Castonguay, A. L., Sabiston, C. M., Kowalski, K., & Wilson, P. M. (under review). Introducing an instrument to measure body and fitness-related self-conscious emotions: The BSE-FIT. *Journal of Sport & Exercise Psychology.*

Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior, 31*, 334-347.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159.

Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist, 49*, 997-1003.

Cole, D. A., & Maxwell, S. E. (2003). Testing meditational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558-577.

Conradt, M., Dierk, J. M., Schlumberger, P., Rauh, E., Hebebrand, J., & Rief, W. (2007). Development of the Weight- and Body-Related Shame and Guilt Scale (WEB-SG) in a non-clinical sample of obese subjects. *Journal of Personality Assessment, 88*, 317-327.

Conradt, M., Dierk, J. M., Schlumberger, P., Rauh, E., Hebebrand, J., & Rief, W. (2008). Who copes well? Obesity-related coping and its associations with shame, guilt, and weight loss. *Journal of Clinical Psychology, 64*, 1129-1144.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

Damien, R. I., & Robins, R. W. (2012). Aristotle's virtue or Dante's deadliest sin? The influence of authentic and hubristic pride on creative achievement. *Learning and Individual Differences*, doi:10.1016/j.lindif.2012.06.001.

Darwin, C. (1872). *The expression of the emotions in man and animals* (3rd ed.). New York: Oxford University Press.

Darwin, C. (1998). *The expression of the emotions in man and animals*. New York: Oxford University Press. (Original work published in 1872).

Davey, J., Fitzpatrick, M., Garland, R., & Kilgour, M. (2009). Adult participation motives: Empirical evidence from a workplace exercise program. *European Sport Management Quarterly, 9*, 141-162.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and the "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.

Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester: The University of Rochester Press.

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology, 49*, 14-23.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575.

Dillman, D. A. (2007). *Mail and Internet Surveys: The Tailored Design Method* (2nd Ed.). New York: John Wiley & Sons, Inc.

Dishman, R. K., Hales, D. P., Pfeiffer, K. A., Felton, G. A., Saunders, R., Dowda, M., . . . & Felton, G. A. (2006). Physical self-concept and self-esteem mediate cross-sectional relations of physical activity and sport participation with depression symptoms among adolescent girls. *Health Psychology, 25*, 396-407.

Duncan, L. R., Hall, C. R., Fraser, S. N., Rodgers, W. M., Wilson, P. M., & Loitz, C. C. (2012). Re-examining the dimensions of obligatory exercise. *Measurement in Physical Education and Exercise Science, 16*, 1-22.

Duncan, L. R., Hall, C. R., Wilson, P. M., & O, J. (2010). Exercise motivation: A cross-sectional analysis examining its relationships with frequency, intensity, and duration of exercise. *International Journal of Behavioral Nutrition and Physical Activity, 7*, 7.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.

Edmunds, J., Duda, J. L., & Ntoumanis, N. (2010). Psychological needs and the prediction of exercise-related cognitions and affect among an ethnically diverse cohort of adult women. *International Journal of Sport and Exercise Psychology, 8*, 446-463.

Edmunds, J., Ntoumanis, N., & Duda, J.L. (2006). A test of self-determination theory in the exercise domain. *Journal of Applied Social Psychology, 36*, 2240-2265.

Edmunds, J. K., Ntoumanis, N., & Duda, J. L. (2007). Adherence and well-being in overweight and obese patients referred to an exercise prescription scheme: A self-determination theory perspective. *Psychology of Sport and Exercise, 8*, 722-740.

Edmunds, J., Ntoumanis, N., & Duda, J. (2008). Testing a self-determination theory-based teaching style intervention in the exercise domain. *European Journal of Social Psychology, 38*, 375-388.

Efron, D. (1987). Better bootstrap confidence intervals. *Journal of the American Statistical Association, 82,* 171-185.

Efron, D., & Tibshirani, R. J. (1993). *An introduction to the bootstrap*. Boca Raton, FL: Chapman & Hall.

Ekman, P. (2003). *Emotions revealed*. New York, NY: Holt Paperbacks.

Ekman, P., & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review, 3*, 364-370.

Ekman P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology, 17*, 124-129.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140.

Finch, H. (1997). *Physical activity at our age: Qualitative research among older people*. London, UK: Health Education Authority.

Fischer, K. W., & Tangney, J. P. (1995). Self-conscious emotions and the affect revolution: Framework and overview. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: Shame, guilt, embarrassment, and pride* (pp. 3-22). New York: Guilford Press.

Fox, K. R. (1997). *The physical self: From motivation to well-being*. Champaign, IL*:* Human Kinetics.

Fox, K. R., Stathi, A., McKenna, J., & Davis, M. G. (2007). Physical activity and mental well-being in older people participating in the Better Ageing Project. *European Journal of Applied Physiology, 100,* 591-602.

Fox, K. R., & Wilson, P. M. (2008). *Self-perceptual systems and physical activity*. In T. Horn (Ed.), *Advances in sport psychology-3rd edition* (pp.49-64). Champaign, IL: Human Kinetics.

Frederick, C. M., & Ryan R. M. (1993). Differences in motivation for sport and exercise and their relations with participation and mental health. *Journal of Sport Behavior, 16,* 124-146.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218-226.

Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion, 19*, 313-332.

Gagnè, M., & Blanchard, C. (2007). Self-determination theory and well-being in athletes. In M. S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in exercise and sport* (pp. 243-254). Champaign, IL: Human Kinetics.

Gall, T. L., Evans, D. R., & Bellerose, S. (2000). Transition to first-year university: Patterns of change in adjustment across life domains and time. *Journal of Social and Clinical Psychology, 19,* 544-567.

Georgiadis, M. M., Biddle, S. J. H., & Chatzisarantis, N. L. (2001). The mediating role of self determination in the relationship between goal orientations and physical self-worth in Greek exercisers. *European Journal of Sport Science, 1*, 1-8.

Gillet, N., Vallerand, R. J., Lafreniere, M. A. K., & Bureau, J. S. (2012). The mediating role of positive and negative affect in the situational motivation-performance relationship. *Motivation and Emotion*. *doi:* 10.1007/s11031-012-9314-5.

Glanz, K., Lewis, F. M., & Rimer, B. K. (1997). Linking theory, research and practice *(2nd Ed)*. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research and practice*. (pp. 19-35). San Francisco, CA, Jossey-Bass.

Godin, G., & Shephard, R. J. (1985). A simple method to assess exercise behaviour in the community. *Canadian Journal of Applied Sport Sciences, 10,* 141-146.

Gruber, J., & Johnson, S. L. (2009). Positive emotional traits and ambitious goals among people at risk for mania: The need for specificity. *International Journal of Cognitive Therapy, 2*, 179-190.

Hagger, M. S., & Chatzisarantis, N. L. D. (2007). *Intrinsic motivation and self-determination in exercise and sport.* Leeds, United Kingdom: Human Kinetics Europe.

Hagger, M. S., & Chatzisarantis, N. L. D. (2008). Self-determination theory and the psychology of exercise. *International Review of Sport and Exercise Psychology, 1*, 79-103.

Hart, D., & Matsuba, M. K. (2007). The development of pride and moral life. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 114-133). New York: Guilford Press.

Hawthorne, G., & Elliot, P. (2005). Imputing cross-sectional missing data: Comparison of common techniques. *Australian and New Zealand Journal of Psychiatry, 39*, 583-590.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis.* New York: Guildford Press.

Health Canada (2013). Canadian Guidelines for Body Weight Classification in Adults. Retrieved 7 February 2013, from http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/index-eng.php

Herrald, M. M., & Tomaka, J. (2002). Patterns of emotion-specific appraisal, coping, and cardiovascular reactivity during an ongoing emotional episode. *Journal of Personality and Social Psychology, 83*, 434-450.

Ingledew, D. K., & Markland, D. (2008). The role of motives in exercise participation. *Psychology and Health, 23,* 807-828.

Ingledew, D. K., Markland, D., & Ferguson, E. (2009). Three levels of exercise motivation. *Applied Psychology: Health and Well-Being, 1,* 336-355.

Izard, C. E. (1971). *The face of emotion.* East Norwalk, CT: Appleton-Century-Crofts.

Izard, C. E., Ackerman, B. P., & Schultz, D. (1999). Independent emotions and consciousness: Self-consciousness and dependent emotions. In J. A. Singer & P. Salovey (Eds.), *At play in the fields of consciousness: Essays in honor of Jerome L. Singer*. (pp. 83-102). Mahwah, NJ: Lawrence Erlbaum Associates.

Jacobs, D. R., Ainsworth, B. E., Hartman, T. J., & Leon, A. S. (1993). A simultaneous evaluation of 10 commonly used physical activity questionnaires. *Medicine & Science in Sports & Exercise, 25,* 81-91.

Kasser, V. G., & Ryan, R. M. (1999). The relation of psychological needs for autonomy and relatedness to vitality, well-being, and mortality in a nursing home. *Journal of Applied Social Psychology*, *29,* 935-954.

Keltner, D., & Buswell, B. N. (1997). Embarrassment: Its distinct form and appeasement functions. *Psychological Bulletin*, *122,* 250-270.

Kercher, K. (1995). Assessing subjective well-being in the old-old. *Research on Aging, 14,* 131-168.

Kernis, M. H., Paradise, A. W., Whitaker, D. J., Wheatman, S. R., & Goldman, B. N. (2000). Master of one's psychological domain? Not likely if one's self-esteem is unstable. *Personality and Social Psychology Bulletin, 26,* 1297-1305.

Keyes, C, L. M. (2003). Complete mental health: An agenda for the 21st century. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well lived* (pp. 293-312). Washington, DC: American Psychological Association.

Keyes, C. L. M., & Lopez, S. J. (2002). Toward a science of mental health: Positive directions in diagnosis and interventions. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 45-59). Oxford: University Press.

Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality & Social Psychology, 82*, 1007-1022.

Kim, D. Y. (2004). The implicit life satisfaction measure. *Asian Journal of Social Psychology, 7*, 236-262.

Kobau, R., Sneizek, J., & Zack, M. M. (2009). *US Centers for Disease Control and Prevention's well-being initiative: An overview*. ISQOLS Conference: Measures and goals for the progress of societies, Florence, 23-24 July. Retrieved 30 July 2013, from http://www.isqols2009.istitutodeglinnocenti.it/Content_en/KOBAU_CDC%20We ll%20Being%20Initiative%20with%20cover%20page.pdf

Kwan, B. M., Caldwell Hooper, A. E., Magnan, R. E., & Bryan, A. D. (2011). A longitudinal diary study of the effects of causality orientations on exercise related affect. *Self and Identity, 10*, 363-374.

Lagattuta, K. H., & Thompson, R. T. (2007). The development of self-conscious emotions: Cognitive processes and social influences. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 91-113). New York: Guilford.

Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.

Lazarus, R.S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.

Leary, M. R. (2007). Motivational and emotional aspects of the self. *Annual Review of Psychology, 58,* 317-344.

Leary, M. R., & Price Tangney, J. (2003). *The self as an organizing construct in the behavioral and social sciences*. In M. R. Leary, & J. P. Tangney (Eds.), Handbook of self and identity (pp. 3-14). New York: Guilford Press.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology, 68*, 518-530.

Levenson, R. W. (1999). The intrapersonal functions of emotion. *Cognition & Emotion, 13*, 481-504.

Levenson, R. W. (2011). Basic emotion questions. *Emotion Review, 3,* 379-386.

Lewis, M. (2000). Self-conscious emotions: Embarrassment, pride, shame, and guilt. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd ed., pp. 623-636) New York, NY: Guilford.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202.

Lowery, S. E., Kurpis, S. E., Befort, C., Banks, E., Sollenberger, S. Nicpon, M. F., & Huser, L. (2005). Body image, self-esteem, and healthrelated behaviors among male and female first year college students. *Journal of College Student Development, 46*, 612-623.

Mack, D. E., Wilson, P. M., Gunnell, K. E., Gilchrist, J. D., Kowalski, K. C., & Crocker, P. R. E. (2012). Health-enhancing physical activity: Associations with markers of well-being. *Applied Psychology: Health and Well-Being, 4,* 127-150.

Mackinnon, A., Jorm, A. F., Christensen, H., Korten, A. E., Jacomb, P. A., & Rodgers, B. (1999). A short form of the Positive and Negative Affect Schedule: Evaluation of factorial validity and invariance across demographic variables in a community sample. *Personality & Individual Differences, 27,* 405-416.

Mackinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39,* 99-128.

Markland, D. (2009). The mediating role of behavioural regulations in the relationship between perceived body size discrepancies and physical activity among adult women. *Hellenic Journal of Psychology, 6*,169-182.

Markland, D., & Tobin, V. (2004). A modification of the Behavioral Regulation in Exercise Questionnaire to include an assessment of amotivation. *Journal of Sport & Exercise Psychology, 26,* 191-196.

Marsh, H. W. (1996). Construct validity of Physical Self-Description Questionnaire responses: Relations to external criteria. *Journal of Sport & Exercise Psychology, 18*, 111-131.

Marsh, H. W. (1997). The measurement of physical self-concept: A construct validation approach. In K. R. Fox (Ed.), *The physical self: From motivation to well-being* (pp. 27-58). Champaign, IL: Human Kinetics.

Marsh, H.W., Hey, J., Roche, L.A., & Perry, C. (1997). Structure of physical self-concept: Elite athletes and physical education students. *Journal of Educational Psychology, 89,* 369-380.

Marsh, H. W., Richards, G. E., Johnson, S. Roche, L., & Tremayne, P. (1994). Physical Self Description Questionnaire: Psychometric properties and a multitrait-multimethod analysis of relations to existing instruments. *Sport and Exercise Psychology, 16,* 270-305.

Martín-Albo, J., Núñez, J. L., Domínguez, E., León, J., & Tomás, J. M. (2012). Relationships between intrinsic motivation, physical self-concept and satisfaction with life: A longitudinal study, *Journal of Sports Sciences, 30,* 337-347.

Mascolo, M. F., & Fischer, K. W. (1995). Developmental transformations in appraisals for pride, shame, and guilt. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. 64-113). New York: Guilford Press.

McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale. *Psychology of Women Quarterly, 20*, 181-215.

Mercurio, A. E., & Landry, L. J. (2008). Self-objectification and well-being: The impact of self-objectification on women's overall sense of self-worth and life satisfaction. *Sex Roles, 58,* 458-466.

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist, 50*, 741-749.

Michie, S. (2009). Pride and gratitude: How positive emotions influence the prosocial behaviors of organizational leaders. *Journal of Leadership and Organizational Studies, 15,* 393-403.

Moreno, J. A., Sicilia, A., & Muyor, J. M. (2008). Prognostic of the perceived competence through motivation in practitioners of physical exercise. *Fitness and Performance Journal, 7,* 357-365.

Mosewich, A. D., Kowalski, K. C., Sabiston, C. M., Sedgwick, W. A., & Tracy, J. L. (2011). Self-compassion: A potential resource for young women athletes. *Journal of Sport & Exercise Psychology, 33,* 103-123.

Mullan, E., & Markland, D. (1997). Variations in self-determination across the stages of change for exercise in adults. *Motivation and Emotion, 21,* 349-362.

Mullan, E., Markland, D., & Ingledew, D. (1997). A graded conceptualisation of self-determination in the regulation of exercise behaviour: Development of a measure using confirmatory factor analytic procedures. *Personality and Individual Differences, 23,* 745-752.

Nix, G., Ryan, R. M., Manly, J. B., & Deci, E. L. (1999). Revitalization through self-regulation: The effects of autonomous and controlled motivation on happiness and vitality. *Journal of Experimental Social Psychology, 35,* 266-284.

Noar, S. M., & Zimmermann, R. S. (2005). Health behavior theory and cumulative knowledge regarding health behaviors: Are we moving in the right direction? *Health Education Research, 20,* 275-290.

Orth, U., Soto, C., & Robins, R. W. (2010). Tracking the trajectory of shame, guilt, and pride across the life span. *Journal of Personality and Social Psychology, 99*, 1061-1071.

Painter, J. E., Borba, C. P. C., Hynes, M., Mays, D., & Glanz, K. (2008). The use of theory in health behaviour research from 2000 to 2005: A systematic review. *Annals of Behavioral Medicine, 35*, 358-362.

Panksepp, J., & Watt, D. (2011). What is basic about basic emotions? Lasting lessons from affective neuroscience. *Emotion Review, 3*, 387-396.

Pasman, L., & Thompson, J.K. (1988). Body image and eating disturbance in obligatory runners, obligatory weightlifters, and sedentary individuals. *The International Journal of Eating Disorders, 7,* 759-769.

Pedhauzer, E., & Schmelkin, L. (1991). *Measurement, design, and analysis: an integrated approach*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Pelletier, L. G., Fortier, M. S.,Vallerand, R. J., & Brière, N. M. (2001). Associations among perceived autonomy support, forms of self-regulation, and persistence: A prospective study. *Motivation and Emotion, 25*, 279-306.

Preacher, K. J., & Hayes, A. F. (2007). Contemporary approaches to assessing mediation in communication research. In A. F. Hayes, M. S. Slater, & L. B. Snyder (Eds.), *The SAGE Sourcebook of Advanced Data Analysis Methods for Communication Research* (pp. 13-54). Thousand Oaks, CA:Sage Publications, Inc.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, Instruments, & Computers, 40*, 879-891.

Puente, R., & Anshel, M. H. (2010). Exercisers' perceptions of their fitness instructor's interacting style, perceived competence, and autonomy as a function of self-determined regulation to exercise, enjoyment, affect, and exercise frequency. *Scandinavian Journal of Psychology, 51*, 38-45.

Quested, E., & Duda, J. L. (2009). Perceptions of the motivational climate, need satisfaction, and indices of well- and ill-being among hip hop dancers. *Journal of Dance Medicine and Science, 13*, 10-19.

Reboussin, B. A., Rejeski, W. J., Martin, K. A., Callahan, K., Dunn, A. L., King, A. C., & Sallis, J. F. (2000). Correlates of satisfaction with body function and body appearance in middle and older aged adults: The activity counseling trial (ACT). *Psychology and Health, 15*, 239-254.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*, 397-428.

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality & Social Psychology, 57*, 749-761.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54-56.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.

Ryan, R. M., Deci, E. L., & Grolnick, W. S. (1995). Autonomy, relatedness, and the self: Their relation to development and psychopathology. In D. Cicchetti & D. J.

Cohen (Eds.), *Developmental psychopathology: Theory and methods* (pp. 618-655). New York: Wiley.

Ryan, R. M., & Frederick, C. M. (1997). On energy, personality and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality, 65*, 529-565.

Ryan, R. M., Frederick, C. M., Lepes, D., Rubio, N., & Sheldon, K. M. (1997). Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology, 28*, 335-354.

Ryan, R. M., Lynch, M. F., Vansteenkiste, M., & Deci, E. L. (2011). Motivation and autonomy in counseling, psychotherapy, and behavior change: A look at theory and practice. *The Counseling Psychologist, 39*, 193-260.

Sabiston, C. M., Brunet, J., Kowalski, K. C., Wilson, P. M., Mack, D. E., & Crocker, P. R. E. (2010). The role of body-related self-conscious emotions in motivating physical activity among women. *Journal of Sport & Exercise Psychology, 32*, 417-437.

Sabiston, C. M., Whitehead, J. R., & Eklund, R. C. (2012). Exercise and self-perception constructs. In R. Eklund, G. Tenenbaum, & A. Kamata (Eds.), *Measurement in Sport and Exercise Psychology* (pp. 227-235). Champaign, IL: Human kinetics.

Sandvik, E., Diener, E., & Seidlitz, L. (2009). Subjective well-being: The convergence and stability of self-report and non-self-report measures. *Assessing Well-Being, 39*, 119-138.

Schimmack, U. (2008). The structure of subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 97-123). New York: Guilford Press.

Schimmack, U., Krause, P., Wagner, G. G., & Schupp, J. (2010). Stability and change of well being: An experimentally enhanced latent state-trait-error analysis. *Social Indicators Research, 95*, 19-31.

Sebire, S., Standage, M., & Vansteenkiste, M. (2009). Examining intrinsic versus extrinsic goals: Cognitive, affective, and behavioural outcomes. *Journal of Sport & Exercise Psychology*, *31,* 189-210.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research, 46*, 407-441.

Slater, A., & Tiggemann, M. (2010). Body image and disordered eating in adolescent girls and boys: A test of objectification theory. *Sex Roles, 63*, 42-49.

Standage, M., Sebire, S.J., & Loney, T. (2008). Does exercise motivation predict engagement in objectively assessed bouts of moderate-intensity exercise? A self-determination theory perspective. *Journal of Sport & Exercise Psychology, 30,* 337-352.

Stipek, D. (1995). The development of pride and shame in toddlers. In J. P. Tangney & K.W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. 237-252). New York, NY: The Guilford Press

Tangney, J. P. (1999). The self-conscious emotions: Shame, guilt, embarrassment and pride. In T. Dalgleish & M. J. Power (Eds.), *Handbook of cognition and emotion* (pp. 541–568). Chichester, England: Wiley.

Tangney, J. P., & Tracy, J. L. (2012). Self-conscious emotions. In M. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 446-478). New York, NY: The Guildford Press.

Thøgersen-Ntoumani, C., & Ntoumanis, N. (2006). The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions, and physical self-evaluations. *Journal of Sports Sciences, 24,* 393-404.

Thøgersen-Ntoumani, C., & Ntoumanis, N. (2007). A self-determination theory approach to the study of body image concerns, self-presentation and self-perceptions in a sample of aerobic instructors. *Journal of Health Psychology, 12,* 301-315.

Tiggemann, M. (2004). Body image across the adult life span: Stability and change. *Body Image, 1,* 29-41.

Tiggemann, M., & Boundy, M. (2008). Effect of environment and appearance compliment on college women's self-objectification, mood, body shame, and cognitive performance. *Psychology of Women Quarterly, 32*, 399-405.

Tiggemann, M., & Kuring, J. K. (2004). The role of body objectification in disordered eating and depressed mood. *British Journal of Clinical Psychology, 43,* 299-311.

Tracy, J. L., Cheng, J. T., Martens, J. P., & Robins, R. W. (2011). The emotional dynamics of narcissism: Inflated by pride, deflated by shame. In W. K. Campbell & J. D. Miller (Eds.), *The handbook of narcissism and narcissistic personality disorder* (pp. 331-343). Hoboken, NJ: John Wiley & Sons, Inc.

Tracy, J. L., Cheng, J., Robins, R. W., & Trzesniewski, K. (2009). Authentic and hubristic pride: The affective core of self-esteem and narcissism. *Self and Identity, 8,* 196-213.

Tracy, J. L., & Matsumoto, D. (2008). The spontaneous expression of pride and shame: Evidence for biologically innate nonverbal displays. *Proceedings of the National Academy of Sciences, 105,* 11655-11660.

Tracy, J. L., & Randles, D. (2011). Four models of basic emotions: A review of Ekman and Cordaro, Izard, Levenson,and Panksepp and Watt. *Emotion Review, 3,* 397-405.

Tracy, J. L., & Robins, R. W. (2003). Does pride belong in the pantheon? *Emotion Researcher: Newsletter for the Society of Research on Emotion*, 7.

Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry, 15,* 103-125.

Tracy, J. L., & Robins, R. W. (2006). Appraisal antecedents of shame and guilt: Support for a theoretical model. *Personality and Social Psychology Bulletin, 32,* 1339-1351.

Tracy, J. L., & Robins, R. W. (2007a). Emerging insights into the nature and function of pride. *Current Directions in Psychological Science, 16,* 147-150.

Tracy, J. L., & Robins, R. W. (2007b). The nature of pride. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 263-282). New York: Guilford.

Tracy, J. L., & Robins, R. W. (2007c). The psychological structure of pride: A tale of two facets. *Journal of Personality and Social Psychology, 92,* 506-525.

Tracy, J. L., & Robins, R. W. (2008). The nonverbal expression of pride: Evidence for cross-cultural recognition. *Journal of Personality and Social Psychology, 94,* 516-530.

Tracy, J. L., Shariff, A. F., & Cheng, J. T. (2010). A naturalist's view of pride. *Emotion Review, 2,* 163-177.

Tugade, M. M., & Fredrickson, B. L. (2002). Positive emotions and emotional intelligence. In L. Feldman-Barrett & P. Salovey (Eds.), *The wisdom of feelings: Psychological processes in emotional intelligence* (pp. 319-340). New York: Guilford.

Tugade, M. M., Fredrickson, B. L., & Barrett, L. F. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*, 1161-1190.

Tylka, T. L. (2011). Positive psychology perspectives on body image. In T. F. Cash & L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention* (2nd ed., pp. 56-64). New York, NY: The Guilford Press.

Tylka, T. L., & Hill, M. S. (2004). Objectification theory as it relates to disordered eating among college women. *Sex Roles, 51*, 719-730.

Vallerand, R. J., Pelletier, L. G., & Koestner, R. (2008). Reflections on self-determination theory. *Canadian Psychology, 49,* 257-262.

Van Ryn, M., & Heany, C. A. (1992). What's the use of theory? *Health Education Quarterly, 19*, 315-330.

Verbeke, W., Belschak, F., & Bagozzi, R. P. (2004). The adaptive consequences of pride in personal selling. *Journal of the Academy of Marketing Science, 32*, 386-402.

Wang, L., Zhang, Z., McArdle, J. J., & Salthouse, T. A. (2009). Investigating ceiling effects in longitudinal data analysis. *Multivariate Behavioral Research, 43*, 476-496.

Watson, D., Clark, L. A., & Tellegren, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality & Social Psychology, 54,* 1063-1070.

Welk, J. G. (2002). *Physical activity assessments for health-related research*. Champaign, IL: Human Kinetics.

Williams, L. A., & DeSteno, D. (2008). Pride and perseverance: The motivational role of pride. *Journal of Personality and Social Psychology, 94*, 1007-1017.

Williams, L. A., & DeSteno, D. (2009). Pride: Adaptive social emotion or seventh sin? *Psychological Science, 20,* 284-288.

Wills, T. A. (1981). Downward comparison principles in social psychology. P*sychological Bulletin, 90,* 245-271.

Wilson, P. M., & Garcia Bengoechea, E. (2010). The Relatedness to Others in Physical Activity Scale: Evidence for structural and criterion validity. *Journal of Applied Biobehavioral Research, 15,* 61-87.

Wilson, P. M., Longley, K., Muon, S., Rodgers, W. M., & Murray, T. C. (2006). Examining the contributions of perceived psychological need satisfaction to well-being in exercise. *Journal of Applied Biobehavioral Research, 11*, 243-264.

Wilson, P. M., Mack, D. E., Blanchard, C. M., & Gray, C. E. (2009). The role of perceived psychological need satisfaction in exercise-related affect. *Hellenic Journal of Psychology, 6,* 183-206.

Wilson, P. M., Mack, D. E., & Grattan, K. P. (2008). Understanding motivation for exercise: A self-determination theory perspective. *Canadian Psychology, 49,* 250-256.

Wilson, P. M., Mack, D. E., & Sabiston, C. M. (2012). Measurement of physical self-confidence/competence. In T. Cash (Ed.), *Encyclopaedia of body image and human appearance*, Vol. 2, (pp. 533-539). San Diego: Academic Press.

Wilson, P. M., & Rodgers, W. M. (2002). The relationship between exercise motives and physical self-esteem in female exercise participants: An application of self-determination theory. *Journal of Applied Biobehavioral Research, 7,* 30-43.

Wilson, P. M., Rodgers, W. M., Blanchard, C. M., & Gessell, J. (2003). The relationship between psychological needs, self-determined motivation, exercise attitudes, and physical fitness. *Journal of Applied Social Psychology, 33,* 2373-2392.

Wilson, P. M., Rodgers, W. M., & Fraser, S. N. (2002). Examining the psychometric properties of the Behavioral Regulation in Exercise Questionnaire. *Measurement in Physical Education and Exercise Science, 6*, 1-21.

Wilson, P. M., Rodgers, W. M., Fraser, S. N., & Murray, T. C. (2004). Relationships between exercise regulations and motivational consequences in university students. *Research Quarterly for Exercise & Sport, 75,* 81-91.

Wilson, P. M., Rodgers, W. M., Loitz, C. C., & Scime, G. (2006). "It's who I am...Really!" The importance of integrated regulation in exercise contexts. *Journal of Applied Biobehavioral Research, 11,* 79-104.

Wilson, P. M., Sabiston, C. M., Mack, D. E., & Blanchard, C. M. (2012). On the nature and function of scoring protocols used in exercise motivation research: An empirical study of the behavioral regulation in exercise questionnaire. *Psychology of Sport and Exercise, 13*, 614-622.

Wiseman, M. C., & Moradi, B. (2010). Body image and eating disorder symptoms in sexual minority men: A test and extension of objectification theory. *Journal of Counseling Psychology, 57*, 154-166.

Wood-Barcalow, N. L., Tylka, T. L., & Augustus-Horvath, C. L. (2010). But I like my body: Positive body image characteristics and a holistic model for young-adult women. *Body Image, 7*, 106-116.

Zumbo, B. D. (1999). The simple difference score as an inherently poor measure of change: Some reality, much mythology. In Bruce Thompson (Ed.), *Advances in Social Science Methodology*, (Vol. 5, pp. 269-304). Greenwich, CT: JAI Press.

Zumbo, B. D. (2007). Validity: Foundational issues and statistical methodology. In C.R. Rao & S. Sinharay (Eds.) *Handbook of Statistics, Vol. 26: Psychometrics*, (pp. 45-79). Elsevier Science B.V.: The Netherlands.

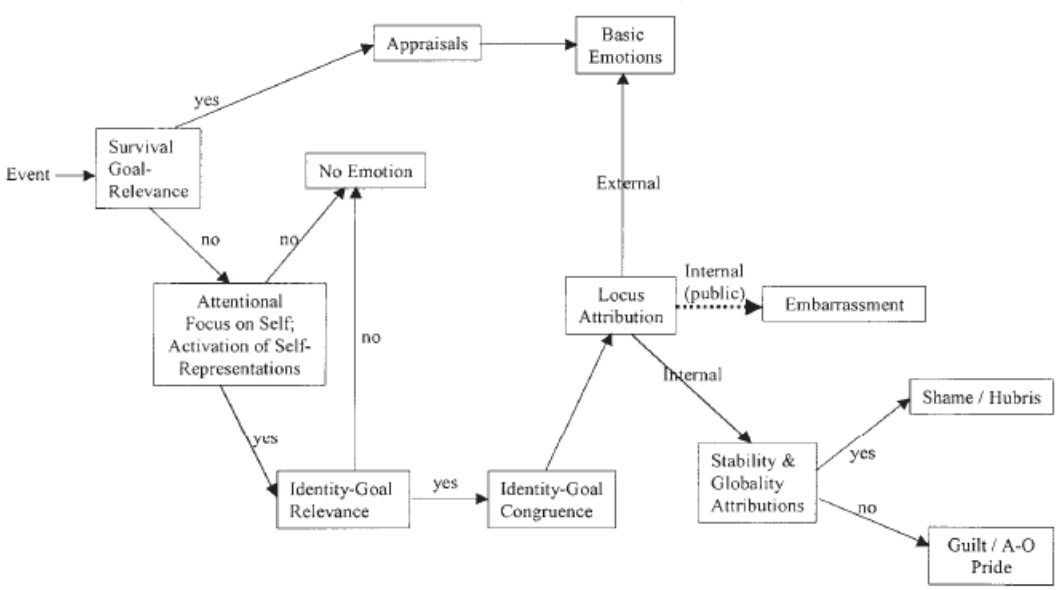

Figure 1. Process Model of Self-Conscious Emotions (Tracy & Robins, 2004).

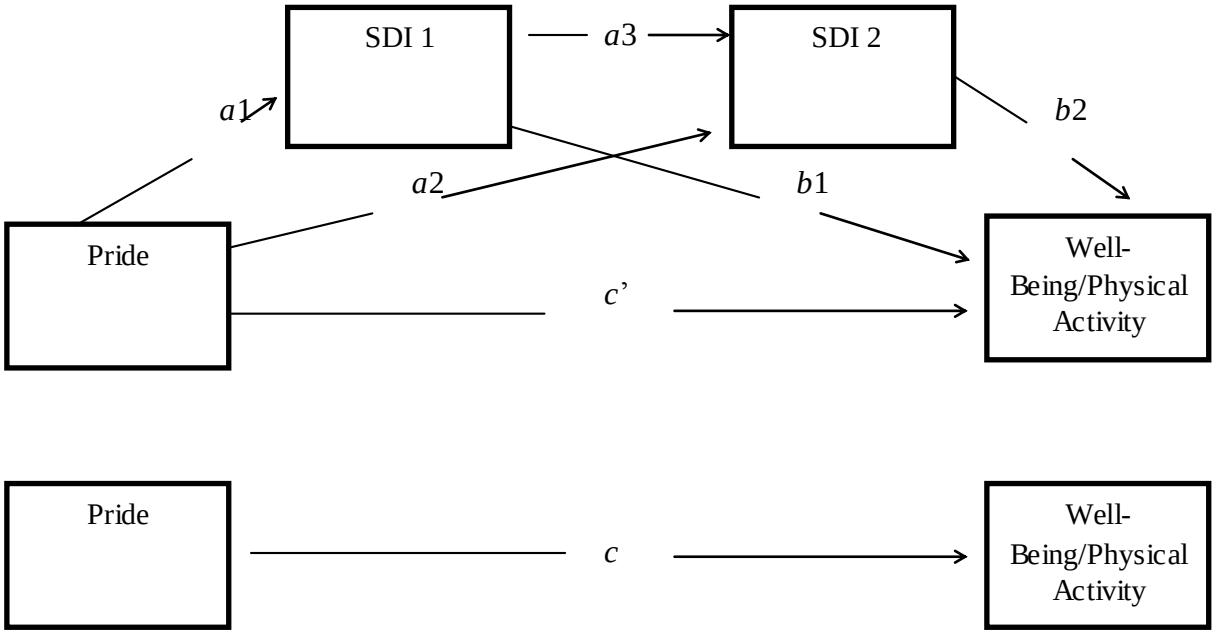

Figure 2. A serial multiple mediation model with SDI 1 and SDI 2 as proposed mediators of pride on well-being/behaviour. *c* = total effect of pride on well-being/physical activity; *c*' = total direct effect of pride on well-being/physical activity; *a*1 = relationship between pride and SDI Time 1; *a*2 – relationship between pride and SDI at Time 2; *a*3 = relationship between SDI at Time 1 and Time 2; *b*1 = relationship between SDI at Time 1 and well-being/physical activity; *b*2 = relationship between SDI at Time 2 and well-being/physical activity.

Table 1

Descriptive Statistics and Internal Consistency Reliability Estimates

Variable	*M*	*SD*	*Range*	*Skew.*	*Kurt.*	α
Time 1						
1. AHPS – Authentic	3.46	0.53	1-5	-0.47	0.31	0.81
2. AHPS – Hubristic	1.64	0.53	1-5	0.93	0.64	0.80
3. BSE-FIT – Authentic	3.37	0.90	1-5	-0.36	-0.28	0.92
4. BSE-FIT – Hubristic	3.13	0.89	1-5	0.07	-0.39	0.92
5. Positive Affect	3.84	0.62	1-5	-0.92	2.05	0.77
6. Negative Affect	1.59	0.55	1-5	1.76	4.40	0.66
7. Physical Self-Concept	4.35	1.11	1-6	-0.75	0.33	0.97
8. Subjective Vitality	5.09	1.04	1-7	-0.60	0.42	0.87
9. Self-Esteem	5.16	0.56	1-6	-1.40	4.16	0.84
10. BREQ 2R – External	.85	0.90	0-4	1.42	1.75	0.88
11. BREQ 2R – Introjected	2.13	1.02	0-4	-0.06	-0.91	0.82
12. BREQ 2R – Identified	3.22	0.65	0-4	-1.10	1.33	0.72
13. BREQ 2R - Integrated	2.94	0.89	0-4	-0.95	0.84	0.90
14. BREQ 2R - Intrinsic	2.97	0.79	0-4	-0.60	-0.47	0.89
15. LTEQ METS	77.50	52.15	0-∞	3.27	17.76	--
Time 2						
1. AHPS – Authentic	3.56	0.60	1-5	-0.03	-0.30	0.86
2. AHPS – Hubristic	1.54	0.54	1-5	1.30	1.68	0.83
3. BSE-FIT – Authentic	3.49	0.87	1-5	-0.58	0.47	0.92

Note: *M* = Mean. *SD* = Standard deviation. *R* = Range. *Skew*. = Univariate Skewness. *Kurt*. = Univariate Kurtosis. α = Cronbach's (1951) internal consistency reliability coefficient. AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS.

(continued)

Table 1 (continued)

Descriptive Statistics and Internal Consistency Reliability Estimates

Variable	*M*	*SD*	*Range*	*Skew.*	*Kurt.*	α
4. BSE-FIT – Hubristic	3.19	0.88	1-5	-0.24	-0.09	0.93
5. Positive Affect	3.73	0.81	1-5	-0.53	0.08	0.86
6. Negative Affect	1.48	0.60	1-5	2.30	6.87	0.79
7. Physical Self-Concept	4.43	0.94	1-6	-0.49	0.34	0.96
8. Subjective Vitality	5.12	1.07	1-7	-0.66	0.58	0.85
9. Self-Esteem	5.06	0.66	1-6	1.18	1.96	0.87
10. BREQ 2R – External	.82	0.88	0-4	1.40	1.92	0.92
11. BREQ 2R – Introjected	2.14	1.06	0-4	-0.20	-0.62	0.81
12. BREQ 2R – Identified	3.18	0.59	0-4	-1.09	1.67	0.72
13. BREQ 2R - Integrated	3.03	0.86	0-4	-0.97	0.90	0.92
14. BREQ 2R - Intrinsic	2.98	0.83	0-4	-0.98	1.21	0.91
15. LTEQ METS	79.20	47.32	0-∞	1.63	4.47	--

Note: *M* = Mean. *SD* = Standard deviation. *R* = Range. *Skew*. = Univariate Skewness. *Kurt*. = Univariate Kurtosis. α = Cronbach's (1951) internal consistency reliability coefficient. AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS.

Table 2

Bivariate Correlations between Study Variables – Time 1

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. AHPS-Authentic	--	.10	.54	.61	.58	-.20	.60	.47	.53	-.08	-.03	.36	.46	.43	.14
2. AHPS-Hubristic		--	-.00	.12	-.14	.13	.00	-.02	-.02	.19	.09	.02	.06	-.16	-.01
3. BSE-FIT Authentic			--	.79	.52	-.16	.67	.50	.32	-.20	.06	.53	.57	.55	.31
4. BSE-FIT Hubristic				--	.48	.17	.66	.44	.42	-.11	.12	.55	.62	.53	.27
5. Positive Affect					--	-.25	.56	.67	.35	-.12	.01	.42	.45	.59	.25
6. Negative Affect						--	-.30	-.29	-.37	.24	.18	-.11	-.19	-.20	.01
7. Physical Self-Concept							--	.55	.57	-.26	-.11	.43	.54	.51	.20
8. Subjective Vitality								--	.46	-.13	.04	.44	.46	.52	.13

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.15| significant at $p <$ .05 (one-tailed) and |.24| significant at $p <$ .01 (one-tailed).

(continued)

Table 2 (continued)

Bivariate Correlations between Study Variables – Time 1

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
9. Self-Esteem									--	-.18	-.09	.29	.35	.33	.01
10. BREQ 2R – External										--	.36	-.07	-.16	-.21	.09
11. BREQ 2R – Introjected											--	.34	.15	.04	.11
12. BREQ 2R – Identified												--	.73	.52	.14
13. BREQ 2R – Integrated													--	.60	.17
14. BREQ 2R – Intrinsic														--	.15
15. LTEQ METS															--

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.15| significant at $p <$ .05 (one-tailed) and |.24| significant at $p <$ .01 (one-tailed).

Table 3

Bivariate Correlations between Study Variables – Time 2

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1. AHPS-Authentic	--	.19	.50	.51	.64	-.17	.60	.59	.58	-.11	-.02	.28	.32	.41	.23
2. AHPS-Hubristic		--	.03	.19	.06	.28	.04	-.03	.01	.18	.09	.06	.13	.01	.05
3. BSE-FIT Authentic			--	.76	.44	-.21	.66	.45	.41	-.17	.02	.38	.44	.48	.36
4. BSE-FIT Hubristic				--	.41	-.15	.70	.35	.39	-.12	.04	.47	.50	.48	.31
5. Positive Affect					--	-.05	.45	.51	.39	-.14	.04	.32	.35	.46	.23
6. Negative Affect						--	-.31	-.33	-.36	.31	.26	.09	-.04	-.03	-.10
7. Physical Self-Concept							--	.58	.67	-.33	-.14	.38	.51	.46	.23
8. Subjective Vitality								--	.63	-.24	-.17	.19	.25	.35	.14

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.16| significant at $p < .05$ (one-tailed) and |.21| significant at $p < .01$ (one-tailed).

(continued)

Table 3 (continued)

Bivariate Correlations between Study Variables – Time 2

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
9. Self-Esteem									--	-.27	-.17	.19	.28	.28	.05
10. BREQ 2R – External										--	.36	-.07	-.16	-.21	-.07
11. BREQ 2R – Introjected											--	.34	.15	.04	.08
12. BREQ 2R – Identified												--	.73	.52	.32
13. BREQ 2R – Integrated													--	.60	.34
14. BREQ 2R – Intrinsic														--	.18
15. LTEQ METS															--

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.16| significant at $p < .05$ (one-tailed) and |.21| significant at $p < .01$ (one-tailed).

Table 4

Bivariate Correlations between Standardized Residuals

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
1. AHPS-Authentic	--	.17	.29	.27	.46	-.24	.40	.32	.36	-.10	-.11	.16	.20	.49	.05
2. AHPS-Hubristic		--	-.02	.04	.11	.18	.00	.06	-.02	.09	.09	.11	.11	-.00	-.02
3. BSE-FIT Authentic			--	.59	.38	-.22	.48	.36	.40	-.15	-.02	.17	.12	.25	.11
4. BSE-FIT Hubristic				--	.25	-.28	.43	.27	.32	-.13	-.03	.13	.31	.26	.11
5. Positive Affect					--	-.06	.29	.36	.22	.01	.06	.28	.24	.45	.17
6. Negative Affect						--	-.30	-.37	-.37	.33	.17	.06	.06	-.16	-.06
7. Physical Self-Concept							--	.39	.49	-.19	-.12	.03	.25	.31	.07
8. Subjective Vitality								--	.28	-.30	-.20	-.10	.04	.27	.06

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.15| significant at $p < .05$ (one-tailed) and |.22| significant at $p < .01$ (one-tailed).

(continued)

Table 4 (continued)

Bivariate Correlations between Standardized Residuals

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
9. Self-Esteem									--	-.21	-.12	.11	.05	.15	.13
10. External Regulation										--	.39	.13	.11	.00	.11
11. Introjected Regulation											--	.35	.21	.18	.10
12. Identified Regulation												--	.43	.44	.20
13. Integrated Regulation													--	.38	.13
14. Intrinsic Regulation														--	.18
15. LTEQ METS															--

Note: AHPS = Authentic and Hubristic Pride Scale (Tracy & Robins, 2007b); BSE-FIT = Authentic and Hubristic Pride-Fitness subscales of the Body-Related Self-Conscious Emotions instrument (Castonguay et al., under review); BREQ-2R = Behavioral Regulation in Exercise Questionnaire-2 Revised (Markland & Tobin, 2004; Wilson et al., 2006); LTEQ METS = reflect estimates of energy expenditure expressed in METS. Sample size (N = 119) is consistent across each element in the upper diagonal. All r's greater than |.15| significant at $p < .05$ (one-tailed) and |.22| significant at $p < .01$ (one-tailed).

Table 5

Bootstrapped Indirect Effects of Standardized Residuals - BSE Authentic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
Positive Affect			.25**
TOTAL	.0955	.0097-.2197	
External Regulation	-.0087	-.0648-.0100	
Introjected Regulation	.0011	-.0145-.0341	
Identified Regulation	.0115	-.0320-.0699	
Integrated Regulation	.0069	-.0117-.0783	
Intrinsic Regulation	.0847	.0189-.2225	
Negative Affect			.12**
TOTAL	-.0668	-.2135-.0101	
External Regulation	-.0402	-.1844-.0007	
Introjected Regulation	-.0010	-.0296-.0134	
Identified Regulation	.0141	-.0189-.0859	
Integrated Regulation	.0084	-.0120-.0664	
Intrinsic Regulation	-.0480	-.1968-.0117	
Subjective Vitality			.25**
TOTAL	.0700	-.0169-.1989	
External Regulation	.0290	-.0051-.1025	
Introjected Regulation	.0008	-.0224-.0350	
Identified Regulation	-.0353	-.1221--.0023	
Integrated Regulation	.0028	-.0267-.0482	
Intrinsic Regulation	.0727	.0192-.1703	
Physical Self-Concept			.31**
TOTAL	.0669	-.0222-.1842	
External Regulation	.0143	-.0073-.0671	
Introjected Regulation	.0020	-.0180-.0401	
Identified Regulation	-.0322	-.0945--.0015	
Integrated Regulation	.0271	-.0092-.1049	
Intrinsic Regulation	.0556	.0067-.1520	
Self-Esteem			.16**
TOTAL	.0461	-.0222-.1458	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

(continued)

Table 5 (continued)

Bootstrapped Indirect Effects of Standardized Residuals - BSE Authentic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
External Regulation	.0187	-.0046-.0876	
Introjected Regulation	.0021	-.0204-.0420	
Identified Regulation	.0133	-.0442-.0749	
Integrated Regulation	-.0007	-.0474-.0366	
Intrinsic Regulation	.0127	-.0399-.1316	
METS			.01
TOTAL	.0347	-.0554-.1267	
External Regulation	-.0145	-.1103-.0223	
Introjected Regulation	.0000	-.0385-.0159	
Identified Regulation	.0214	-.0036-.0982	
Integrated Regulation	.0018	-.0189-.0420	
Intrinsic Regulation	.0262	-.0139-.1140	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

Table 6

Bootstrapped Indirect Effects of Standardized Residuals - BSE Hubristic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
Positive Affect			.19**
TOTAL	.1124	.0019-.2499	
External Regulation	-.0042	-.0683-.0144	
Introjected Regulation	.0015	-.0147-.0425	
Identified Regulation	.0130	-.0177-.0722	
Integrated Regulation	.0074	-.0609-.0872	
Intrinsic Regulation	.0948	.0229-.2269	
Negative Affect			.16**
TOTAL	-.0280	-.1688-.0638	
External Regulation	-.0322	-.1699-.0138	
Introjected Regulation	-.0011	-.0313-.0136	
Identified Regulation	.0071	-.0143-.0735	
Integrated Regulation	.0436	-.0058-.1527	
Intrinsic Regulation	-.0455	-.1697-.0101	
Subjective Vitality			.20**
TOTAL	.0807	-.0247-.2484	
External Regulation	.0264	-.0146-.1140	
Introjected Regulation	.0018	-.0206-.0407	
Identified Regulation	-.0221	-.1218-.0055	
Integrated Regulation	-.0075	-.0856-.0589	
Intrinsic Regulation	.0821	.0207-.1871	
Physical Self-Concept			.24**
TOTAL	.1101	.0122-.2502	
External Regulation	.0145	-.0099-.0830	
Introjected Regulation	.0024	-.0234-.0450	
Identified Regulation	-.0165	-.0858-.0058	
Integrated Regulation	.0458	-.0084-.1340	
Intrinsic Regulation	.0639	.0131-.1608	
Self-Esteem			.11**
TOTAL	.0293	-.0894-.1432	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

(continued)

Table 6 (continued)

Bootstrapped Indirect Effects of Standardized Residuals - BSE Hubristic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
External Regulation	.0176	-.0100-.0901	
Introjected Regulation	.0025	-.0254-.0496	
Identified Regulation	.0160	-.0226-.0806	
Integrated Regulation	-.0254	-.1520-.0348	
Intrinsic Regulation	.0186	-.0304-.1472	
METS			.01
TOTAL	.0300	-.0792-.1231	
External Regulation	-.0121	-.1183-.0195	
Introjected Regulation	-.0001	-.0260-.0282	
Identified Regulation	.0170	-.0047-.0759	
Integrated Regulation	-.0018	-.0747-.0512	
Intrinsic Regulation	.0269	-.0106-.1192	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

Table 7.

Serial Mediation for BSE Authentic Pride

Variable	Point Estimate	BC CI
Positive Affect		
TOTAL	.2347	.1158-.3623
a1b1	-.0405	-.2109-0898
a2b2	.0106	-.0845-.1041
a1a3b2	.2646	.1449-.4685
Negative Affect		
TOTAL	-.0717	-.1980-.0433
a1b1	.0343	-.0672-.1853
a2b2	-.0041	-.0420-.0360
a1a3b2	-.1019	-.2504--.0064
Subjective Vitality		
TOTAL	.2489	.0872-.4618
a1b1	-.0456	-.2672-.1494
a2b2	.0179	-.0930-.1056
a1a3b2	.2766	.0966-.5388
Physical Self-Concept		
TOTAL	.2756	.1400-.4501
a1b1	.0008	-.1585-.1438
a2b2	.0106	-.1022-.0907
a1a3b2	.2642	.1246-.4715
Self-Esteem		
TOTAL	.1538	.0639-.2741
a1b1	.0031	-.1111-.1073
a2b2	.0058	-.0514-.0559
a1a3b2	.1449	.0458-.3013
METS		
TOTAL	.6398	-4.4004-5.1979
a1b1	-2.5654	-10.3946-4.4751
a2b2	.1237	-.9318-2.2038
a1a3b2	3.0815	-2.5408-9.8603

Note: Number of bootstrap resamples = 5,000. BC CI = Bias Corrected Confidence Intervals.

Table 8.

Serial Mediation for BSE Hubristic Pride

Variable	Point Estimate	BC CI
Positive Affect		
TOTAL	.1887	.0575-.3170
a1b1	-.0738	-.2318-.0467
a2b2	.0133	-.0729-.1078
a1a3b2	.2492	.1360-.4152
Negative Affect		
TOTAL	-.1040	-.2154--.0041
a1b1	.0002	-.9864-.1198
a2b2	-.0053	-.0386-.0313
a1a3b2	-.0989	-.2268--.0116
Subjective Vitality		
TOTAL	.2539	.1103-.4348
a1b1	-.0280	-.2032-.1457
a2b2	.0184	-.0881-.1091
a1a3b2	.2635	.1171-.4794
Physical Self-Concept		
TOTAL	.2379	.1086-.3965
a1b1	-.0232	-.1517-.1086
a2b2	.0132	-.0820-.0962
a1a3b2	.2478	.1237-.4072
Self-Esteem		
TOTAL	.1276	.0436-.2411
a1b1	-.0158	-.1234-.0854
a2b2	.0073	-.0469-.0580
a1a3b2	.1362	.0444-.2776
METS		
TOTAL	3.4887	-.5972-7.8997
a1b1	.3529	-6.5933-7.8888
a2b2	2.9771	-.8369-2.8149
a1a3b2	.1588	-2.8739-9.5707

Note: Number of bootstrap resamples = 5,000. BC CI = Bias Corrected Confidence Intervals.

Appendix A

Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE:	7/30/2012		
PRINCIPAL INVESTIGATOR:	MACK, Diane - Kinesiology		
FILE:	12-006 - MACK		
TYPE:	Masters Thesis/Project	STUDENT:	Jenna Gilchrist
		SUPERVISOR:	Diane Mack

TITLE: The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW Expiry Date: 7/31/2013

The Brock University Social Sciences Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 7/30/2012 to 7/31/2013.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 7/31/2013. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at http://www.brocku.ca/research/policies-and-forms/research-forms.

In addition, throughout your research, you must report promptly to the REB:

a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
c) New information that may adversely affect the safety of the participants or the conduct of the study;
d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

Jan Frijters, Chair
Social Sciences Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

Appendix B

Recruitment Script for Professors

The following written information is a sample template that will be used in contact with professors as a request to recruit interested participants from his/her courses.

Good Morning/Evening:

I am contacting you on behalf of myself and Dr. Mack who is a faculty member in the Department of Kinesiology in the Faculty of Applied Health Sciences at Brock University. We are currently in the process of recruiting participants for our study entitled "The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity". The goal of this study is to better understand the role emotions play on exercise motives, behaviour, and well-being. We cordially ask if you would be willing to allow us to come to your class, at a mutually convenient and agreed upon time, to present students with the opportunity to participate in our study. This would only take a few minutes as we outline the purpose of the study, what the study entails, and how interested participants would be able to contact us.

Thank you for your time and consideration. Please direct any questions or concerns to either myself or Dr. Mack via e-mail at jg05ym@brocku.ca or dmack@brocku.ca

Thank you for your time and effort. This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board (File: 12-006)

Appendix C

Recruitment Script

The following verbal instructions will be used to guide the data collection and is consistent with Dillman's (2006) Tailored Design Method for participant recruitment and retention.

Good Morning/Evening:

I am contacting you on behalf of myself and Dr. Mack who is a faculty member in the Department of Kinesiology in the Faculty of Applied Health Sciences at Brock University. You are being invited to participate in this project entitled "The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity". The project is designed to enhance our understanding about how your emotions about your fitness influence your physical activity and well-being. Should you choose to participate, the information that you provide will help us gain a greater understanding of why you engage in exercise and how your reasons are associated with health. Your participation in this study will involve completing a series of questions that will take approximately 20-25 minutes of your time on two occasions. Your participation is voluntary and all of the information that you provide will remain confidential which means that we will not be sharing your personal information with any other person or party in such a manner that you could be identified as a consequence of participating in this project.

Please direct any questions or concerns to either myself or Dr. Mack via e-mail at jg05ym@brocku.ca or dmack@brocku.ca

Thank you for your time and effort. This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board (File: 12-006)

Appendix D

Letter of Invitation

Brock University, Faculty of Applied Health Sciences
Letter of Invitation
Title of Study: The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity
Principal Student Researcher: Jenna Gilchrist, MA Candidate, Faculty of Applied Health Sciences, Brock University
Faculty Supervisor: Dr. Diane E. Mack, Associate Professor, Department of Kinesiology, Faculty of Applied Health Sciences, Brock University

Dear Participant,

Introduction: The research project that you are being invited to participate in is entitled, "The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity". The investigators are members of the Behavioural Health Sciences Research Lab at Brock University with an interest physical activity behaviour and well-being.

Purpose: The purpose of this study is to examine the association between your exercise behaviour and well-being, how you feel about your fitness, and why you engage in exercise. Attention to these important markers of health and associated reasons for engagement are important for health promotion efforts.

Involvement: Your involvement would be greatly appreciated and will help to further our understanding of how you feel about your fitness and how this is associated with well-being and behaviour. Should you choose to participate, we will ask that you come to the Behavioural Health Sciences Research Lab on Brock University's campus and ask that you complete a questionnaire on two separate occasions separated by 4 weeks. The 86-item questionnaire is expected to take approximately 20-25 minutes to complete. One sample question is: "... I exercise because it is consistent with my values*"*. Relevant demographic questions will also be queried such as age, height, and gender to ensure that the people who participate in this project are representative of Canadian university students.

Benefits: There are a number of benefits associated with participating in this study. First, participation in this research study may translate into increased knowledge regarding your reasons for exercise. Second, it is likely that through participation in this research project you will become more aware of your own exercise, reasons for engagement, and well-being. Such information may be useful in promoting your own health and well-being. Third, information gained may benefit the larger community by providing information that will likely be used to improve the lives of university students.

Feedback: A written summary of our results from this study will be made available to you at your request. Should you wish to receive a summary, please complete the

Debriefing Form located at the end of the questionnaire. Our findings will also be disseminated in academic journals and conference presentations; however, the specific identity the participants in the study will not be disclosed.

Confidentiality: Any information that is provided from participants will be treated with confidentiality and access to all information that might identify participants will be limited to members of the research team named above. All data provided are not anonymous in nature but will be treated with the utmost confidentiality. Once the data any participant submits as a function of their involvement in this study have been de-identified, they can no longer be removed from the database upon request. All recorded data will be kept in a locked cabinet accessible only to members of the research team. Consistent with guidelines that control the collection and storage of scientific information in Canada, all data collected for this study will be destroyed five years following the completion of the investigation.

Participation: Participation in this study is voluntary and individuals may decline answering any question(s) that you choose. There are no known psychological or physical risks associated with participation. You may choose to decline or withdraw your participation at any time throughout the course of the study. However, your participation is needed and would be appreciated as it will improve the conclusions derived from this investigation. The following inclusion/exclusion criteria will be used guide participant recruitment for this study: (a) Adults (aged 17 years or older at the time of data collection) with no acute ambulatory restrictions that would impair regular physical activity participation; (b) Willing to commit to the length of the study; and (c) Able to read and write in English.

Sponsorship: The study has been reviewed and has received ethics clearance through the Research Ethics Board at Brock University (File # 12-006).

Should you have any further questions concerning the study in general, please feel free to contact members of the research team. Diane Mack can be reached at: (905) 688-5550 extension 4360 or by e-mail at dmack@brocku.ca. Jenna Gilchrist can be reached at jg05ym@brocku.ca. Additionally, concerns about your involvement in the study may also be directed to the Research Ethics Officer in the Office of Research Services at (905) 688-5550 extension 3035.

Thank you for your interest and involvement in this study.

Sincerely,

Diane Mack, Ph.D.
Associate Professor

Jenna Gilchrist, B.A.
MA Candidate

Appendix E

Informed Consent

Title of Study: The Role of Self-Perceptions in the Promotion of Well-Being and Physical Activity

Principal Student Researcher: Jenna Gilchrist, MA Candidate, Faculty of Applied Health Sciences, Brock University; jg05ym@brocku.ca

Faculty Supervisor: Dr. Diane E. Mack, Associate Professor, Department of Kinesiology, Faculty of Applied Health Sciences, Brock University; dmack@brocku.ca

You have been invited to participate in a research study. The purpose of this study is to examine the association between your exercise behaviour and well-being, how you feel about your fitness, and reasons for engaging in exercise.

I understand that:

- I have received and read the Letter of Invitation provided to me through members of the research team conducting the research.
- I understand that participation will involve completing an 86-item questionnaire that will take approximately 20-25 minutes on two occasions separated by 4 weeks.
- The purpose of this study is to investigate the association of exercise behaviour and well-being, how you feel about your fitness, and the reasons for your engagement in exercise.
- I understand that no known psychological or physical risks are associated with participation.
- I understand that background information requires the disclosure of personal information.
- I understand that there is no obligation to answer any question that I do not wish to answer.
- I understand that members of the research team have secured procedures to ensure participant confidentiality.
- I understand that all personal information will be kept strictly confidential and that all information will be assigned a unique alphanumeric code so that the name of individual participants will not be associated with their specific answers.
- I understand that my participation in this study is voluntary and that I may withdraw from the study at any time and for any reason without penalty.
- I understand that only members of the research team named above will have access to the data.
- I understand that data will be destroyed five years following completion of the study.

- I understand that participants may gain a better understanding of the reasons why you exercise and insight into varied approaches to conducting research at the university-level which may assist in informing future research endeavours that you may wish to pursue.
- I understand that the results of this study will be distributed in academic journal articles and conference presentations and a summary of the results will be made available to the participants in the study at their request.
- As indicated by my consent below, I acknowledge that I am participating freely and willingly.

I agree to participate in this study described above. I have made this decision based on the information I have read in the Informed-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time. Please retain a copy of this form for your own records.

❑	I consent to participate in this study by checking this box	Date:	
If you have any questions about this study or require further information, please contact the Principal Student Investigator or the Principal Investigator using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (File# 12-006). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.			

Appendix F

Section 1: This first part of the questionnaire is designed to describe the people participating in this study. All information received is held in confidence. Please provide your…

1. Age YEARS

2. What is your gender? ❑ Male ❑ Female

3. What is your current marital status?

❑ Married/ Common Law ❑ Widowed ❑ Separated/ Divorced ❑ Single/ Never married

4. How would you describe your ethnic origin?

❑ Aboriginal ❑ Caucasian/White ❑ Asian ❑ Other

5. Please think about the typical exercises you have engaged in over the past **7 days**. Pleas indicate what activities you did, how many days per week you engaged in these behaviour how much time on average you spent engaged in these behaviours, and (if applicable) how strenuous this activity was for you.

Activity (ex: tennis, swimming, aerobics, weight training)	**Days per Week**	**Average Time *per day* (minutes)**	**Effort (please circle one)**
1.		MINUTES	light/moderate/intense
2.		MINUTES	light/moderate/intense
3.		MINUTES	light/moderate/intense
4.		MINUTES	light/moderate/intense
5.		MINUTES	light/moderate/intense
6.		MINUTES	light/moderate/intense

6. Please indicate if there were any major life events (e.g., death in the family, exams, relationship conflict) over the past seven days that may have affected what you typically do or how you typically feel.

❑ Yes ❑ No

Section 2: Below are a number of words and phrases that describe different feelings and emotions. Read each item and then indicate the extent to which you generally feel this way (i.e., how you feel on the average) using the scale shown below:

	Not at all	Somewhat	Moderately	Very Much	Extremely
1. Accomplished	1	2	3	4	5
2. Pompous	1	2	3	4	5
3. Successful	1	2	3	4	5
4. Snobbish	1	2	3	4	5
5. Conceited	1	2	3	4	5
6. Egotistical	1	2	3	4	5
7. Arrogant	1	2	3	4	5
8. Fulfilled	1	2	3	4	5
9. Like I am Achieving	1	2	3	4	5
10. Smug	1	2	3	4	5
11. Productive	1	2	3	4	5
12. Confident	1	2	3	4	5
13. Stuck-Up	1	2	3	4	5
14. Like I have Self-Worth	1	2	3	4	5

Section 3: We are interested in people's emotions. Listed below are a variety of statements. Using a 5 point scale (1 = never, 2 = rarely, 3 = occasionally, 4 = frequently, 5 = always), please indicate how often you have generally experienced the emotions *over the past* **7 days**. There are no 'right' or 'wrong' answers.

Over the past 7 days, I have felt...

	Never	Rarely	Occasionally	Frequently	Always
1. Proud of the effort I place on my fitness	1	2	3	4	5
2. Proud that I am an extremely fit person	1	2	3	4	5
3. Proud of my superior fitness	1	2	3	4	5
4. Proud that I am a person of great fitness	1	2	3	4	5
5. Proud that I am more physically fit than others	1	2	3	4	5
6. Proud of my fitness efforts	1	2	3	4	5
7. Proud of myself when I compare my fitness to others	1	2	3	4	5
8. Proud about my effort to improve my fitness	1	2	3	4	5
9. Proud that I am a person who is fit	1	2	3	4	5
10. Proud of my fitness accomplishments	1	2	3	4	5
11. Proud of my effort to maintain my fitness	1	2	3	4	5

Section 4: Why do you exercise? The following list identifies reasons why people exercise. Thinking only about the past **7 days**, please indicate on the scale provided how true each statement is for YOU with (0) = Not true for me and (4) = Very true for me.

	Not true for me	Sometimes true for me	Moderately true for me	Often true for me	Very true for me
1. I feel like a failure when I haven't exercised in a while.	0	1	2	3	4
2. I get restless if I don't exercise regularly.	0	1	2	3	4
3. I participate in exercise because it has become a fundamental part of who I am.	0	1	2	3	4
4. I exercise because it is consistent with my values.	0	1	2	3	4
5. I think it is important to make the effort to exercise regularly.	0	1	2	3	4
6. I find my exercise a pleasurable activity.	0	1	2	3	4
7. It's important to me to exercise regularly.	0	1	2	3	4
8. I take part in exercise because it is consistent with my life goals.	0	1	2	3	4
9. I consider exercise to be an important part of my identity.	0	1	2	3	4
10. I get pleasure and satisfaction from participating in exercise.	0	1	2	3	4

11. I feel under pressure from my friends/family to exercise.	0	1	2	3	4
12. I exercise because it is fun.	0	1	2	3	4
13. I exercise because other people say I should.	0	1	2	3	4
14. I feel ashamed when I miss an exercise session.	0	1	2	3	4
15. I exercise because others will not be pleased with me if I don't.	0	1	2	3	4
16. I enjoy my exercise sessions.	0	1	2	3	4
17. I feel guilty when I don't exercise.	0	1	2	3	4
18. I take part in exercise because my friends/family/spouse say I should.	0	1	2	3	4
19. I value the benefits of exercise.	0	1	2	3	4

Section 5: The following statements represent different feelings people have when they engage in exercise. Thinking only about the past **7 days**, please answer the following questions by considering how you typically feel when you engage in exercise. Use the following scale:

	False	Mostly false	More False than True	More True than False	Mostly True	True
1. I feel that I am able to complete exercises that are personally challenging.	1	2	3	4	5	6
2. I feel attached to my exercise companions because they accept me for who I am.	1	2	3	4	5	6
3. I feel like I share a common bond with people who are important to me when we do exercise together.	1	2	3	4	5	6
4. I feel confident I can do even the most challenging exercises.	1	2	3	4	5	6
5. I feel a sense of camaraderie with my exercise companions because we do physical activity for the same reasons.	1	2	3	4	5	6
6. I feel confident in my ability to perform exercises that personally challenge me.	1	2	3	4	5	6
7. I feel close to my exercise companions who appreciate how difficult physical activity can be.	1	2	3	4	5	6

8. I feel free to do exercise in my own way.	1	2	3	4	5	6
9. I feel free to make my own exercise program decisions.	1	2	3	4	5	6
10. I feel capable of completing exercises that are challenging to me.	1	2	3	4	5	6
11. I feel like I am in charge of my exercise program decisions.	1	2	3	4	5	6
12. I feel like I am capable of doing even the most challenging exercises.	1	2	3	4	5	6
13. I feel like I have a say in choosing my exercises that I do.	1	2	3	4	5	6
14. I feel connected to the people who I interact with while we do exercise together.	1	2	3	4	5	6
15 I feel good about the way I am able to complete challenging exercises.	1	2	3	4	5	6
16. I feel like I get along well with other people who I interact with while we do exercise together.	1	2	3	4	5	6
17. I feel free to choose which exercises I participate in.	1	2	3	4	5	6
18. I feel like I am the one who decides what exercises I do.	1	2	3	4	5	6

Section 6: This scale contains a number of words describing different feelings and emotions. Thinking only about the last **7 days**, please indicate to what extent YOU generally feel this way when YOU engage in exercise. That is, how you felt on average when you exercised over the last 7 days.

	1 Very slightly or not at all	2 A little	3 Moderately	4 Quite a bit	5 Extremely
1. Excited	❑	❑	❑	❑	❑
2. Enthusiastic	❑	❑	❑	❑	❑
3. Alert	❑	❑	❑	❑	❑
4. Inspired	❑	❑	❑	❑	❑
5. Determined	❑	❑	❑	❑	❑
6. Distressed	❑	❑	❑	❑	❑
7. Upset	❑	❑	❑	❑	❑
8. Scared	❑	❑	❑	❑	❑
9. Nervous	❑	❑	❑	❑	❑
10. Afraid	❑	❑	❑	❑	❑

Section 7: Thinking only about the last **7 days**, please respond to each of the following statements by indicating the degree to which the statement is true for you when you exercise.

	Not at all			Somewhat true			Very true
1. I feel alive and vital	1	2	3	4	5	6	7
2. I don't feel very energetic	1	2	3	4	5	6	7
3. Sometimes I feel so alive I just want to burst	1	2	3	4	5	6	7
4. I have energy and spirit	1	2	3	4	5	6	7
5. I look forward to each new day	1	2	3	4	5	6	7
6. I nearly always feel alert and awake	1	2	3	4	5	6	7
7. I feel energized	1	2	3	4	5	6	7

Section 8: These statements describe how people feel about themselves. Please circle the number next to the statement that best describes how you felt about yourself ***over the last 7 days.***

	False	Mostly False	More False than true	More true than false	Mostly true	True
1. I am satisfied with the kind of person I am physically	1	2	3	4	5	6
2. Physically, I am happy with myself	1	2	3	4	5	6
3. I feel good about the way I look and what I can do physically	1	2	3	4	5	6
4. Physically I feel good about myself	1	2	3	4	5	6
5. I feel good about who I am and what I can do physically	1	2	3	4	5	6
6. I feel good about who I am physically	1	2	3	4	5	6
7. Overall, most things I do turn out well	1	2	3	4	5	6
8. I don't have much to be proud of	1	2	3	4	5	6
9. I feel that my life is not very useful	1	2	3	4	5	6
10. Overall, I am no good.	1	2	3	4	5	6
11. Most things I do, I do well	1	2	3	4	5	6
12. Overall, I have a lot to be proud of	1	2	3	4	5	6
13. Overall, I am a failure	1	2	3	4	5	6

14. Nothing I do ever seems to turn out right	1	2	3	4	5	6

Section 9: During a typical **7-Day period** (a week), how many times on average do you do the following kinds of exercise for **more than 15 minutes** during your free time (write in each space the appropriate number).

Intensity of Activity	**Times Per Week**
• **Strenuous Exercise** (Heart beats rapidly) Examples of strenuous exercise include: heavy lifting, aerobics, fast bicycling, carrying heavy objects or groceries (25+ lbs) upstairs, shovelling snow, etc.	
• **Moderate Exercise** (Not exhausting) Examples of moderate exercise include: carrying light loads, bicycling at a regular pace, easy swimming, dancing, heavier house cleaning (i.e., washing windows, scrubbing floors), heavier outdoor work(digging, mowing, snowblowing), etc.	
• **Mild Exercise** (Minimal effort) Examples of mild exercise include: yoga, easy walking, slow dancing, fishing, bowling, golf, light housekeeping, light home repairs, light gardening, shopping, etc.	

During a typical **7-day period** (a week), in your leisure time, how often do you engage in any regular activity long enough to work up a sweat (heart beats rapidly)?

Often	**Sometimes**	**Never/Rarely**
❑	❑	❑

Thank you for taking the time to participate in our study today. Your information is important to us.

To be completed by the researcher:

Height: _____

Weight: _____

Appendix G

Debriefing Form

Brock University, Faculty of Applied Health Sciences

Debriefing Form

If you wish to receive a summary of the major findings from this study, please provide either your mailing address or your e-mail in the space provided below:

E-mail Address: _____

OR

Mailing Address: _____

_____

_____

_____

_____

Appendix H

Bivariate Correlations between Dispositional Pride, Well-Being, Physical Activity, and Behavioural Regulations

Authentic pride was positively related to indices of well-being (*r*'s ranged from .47 to .60), save for negative affect. Hubristic pride was generally unrelated to markers of well-being examined in this study (*r*'s ranged from -.14 to .13, $p > .05$). Associations to negative affect were in the hypothesized direction. There was a small negative association with authentic pride ($r_{12} = -.20$) and small positive association with hubristic pride ($r_{12} = .13$). Neither facet of pride was associated with engagement in physical activity ($p > .05$). Greater endorsement of hubristic pride was related to greater external ($r_{12} = .19$) and lower intrinsic ($r_{12} = -.16$) regulations for exercise. Authentic pride demonstrated moderate positive associations to more autonomous regulations (*r*'s ranged from .36 to .43).

Findings were generally consistent between Time 1 and Time 2 with a few exceptions. Second, a small positive relationship was found between trait authentic pride and physical activity behaviour ($r = .23$). As well, hubristic pride was not significantly associated with intrinsic regulations for exercise.

Extending beyond cross-sectional analyses, bivariate correlations were interpreted examining patterns of change over the four week period comprising this study (see Table 4). Changes in both contextual facets of pride were positively related to changes in trait authentic (*r*'s ranged from .27 to .29), but not hubristic pride. Changes in trait authentic pride were positively associated with changes in well-being (*r*'s ranged from .32 to .46). Trait hubristic pride was generally unrelated to well-being ($p > .05$). As hypothesized,

divergent patterns with negative affect were noted between hubristic (r_{12} = .18) and authentic pride (r_{12} = -.24). Changes in trait facets of pride were not associated with changes in exercise behaviour (p > .05). **ΔMotivational Regulations as Mediators of the ΔAHPS Pride – ΔWell-Being Relationship**

Positive Affect. Results of the bootstrapping procedure to test for multiple mediation revealed that the Δbehavioural regulations did mediate the Δauthentic pride with Δpositive affect relationship ($R^2_{adj.}$ = 0.25, p < .001; point estimate = 0.1335; BCa CI = 0.0215 to 0.2752). Further inspection revealed that intrinsic regulation was the only significant unique mediator in this relationship (point estimate = 0.1106; BCa CI = 0.0015 to 0.2630; see Table 9).

Physical Self-Concept. The Δbehavioural regulations mediated the Δauthentic pride - Δphysical self-concept relationship ($R^2_{adj.}$ = 0.21, p < .001; point estimate = 0.1227, BCa CI = 0.0107 to 0.2672; see Table 9). Interpretation of the specific indirect effects indicated that there were no statistically meaningful indirect effects in the model.

Subjective Vitality. Results revealed that the relationship between Δauthentic pride and Δsubjective vitality was mediated by the Δbehavioural regulations ($R^2_{adj.}$ = 0.20, p <.001; point estimate = 0.1378, BCa CI = 0.0236 to 0.3121). Intrinsic regulation emerged as the only specific unique mediator in the model (point estimate = 0.1318, BCa CI = 0.0428 to 0.2710; see Table 9).

ΔMotivational Regulations as Mediators of the ΔAHPS Pride – ΔPhysical Activity Relationship

Consistent with the findings stemming from the mediation analysis using contextual assessments of pride, the Δtrait authentic pride and Δphysical activity was not mediated by the Δbehavioural regulations ($R^2_{adj.}$ = 0.01, p > .05; point estimate = 0.0818; BCa CI = -0.0101 to 0.2173; see Table 9). Examination of the results between Δhubristic pride and Δphysical activity yielded similar findings. This model was not mediated by the Δbehavioural regulations ($R^2_{adj.}$ = 0.01, p > .05; point estimate = 0.0243; BCa CI = -0.0298 to 0.1445; see Table 10).

Serial Mediation Analyses: AHPS – Well-Being

Serial mediation analyses were also conducted for trait assessments of pride and revealed similar findings to the contextual assessments. The sequential mediation of motivation at Time 1 and motivation at Time 2 was significant between authentic pride and all indices of well-being. The total indirect effect was significant for all variables except self-esteem. Neither the total or specific indirect effects of motivation were significant for hubristic pride. There was no support for serial mediation between hubristic pride and any of the well-being indices (for total, direct, and path coefficients see Tables 11 and 12).

Serial Mediation Analyses: AHPS – Physical Activity

The total indirect effect of motivation on the relationship between authentic pride and physical activity was significant with a point estimate of 7.8327 and 95% confidence interval between 2.6533 and 15.1145. No support was found for specific indirect effects through either SDI 1 or SDI 2. Further, the findings did not support the model of serial mediation (see Table 11)

The results of the serial mediation analysis conducted using hubristic pride revealed non-significant findings. The indirect effect that would indicate serial multiple mediation included zero within the 95% bias corrected confidence intervals (*a1a3b2* = –0.1082; CI = –.2898 to .0234). The total indirect and specific indirect paths were also not significant (see Table 12).

Table 9

Bootstrapped Indirect Effects of Standardized Residuals - AHPS Authentic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
Positive Affect			.25**
TOTAL	.1335	.0215-.2752	
External Regulation	-.0023	-.0464-.0128	
Introjected Regulation	.0002	-.0279-.0299	
Identified Regulation	.0161	-.0193-.0816	
Integrated Regulation	.0088	-.0228-.0780	
Intrinsic Regulation	.1106	.0015-.2630	
Negative Affect			.12**
TOTAL	-.0720	-.2651-.0534	
External Regulation	-.0281	-.1275-.0082	
Introjected Regulation	-.0025	-.0368-.0165	
Identified Regulation	.0096	-.0146-.0897	
Integrated Regulation	.0153	-.0186-.0752	
Intrinsic Regulation	-.0663	-.2199-.0405	
Subjective Vitality			.20**
TOTAL	.1378	.0236-.3121	
External Regulation	.0227	-.0131-.0982	
Introjected Regulation	.0077	-.0085-.0512	
Identified Regulation	-.0294	-.1470-.0061	
Integrated Regulation	.0049	-.0431-.0570	
Intrinsic Regulation	.1318	.0428-.2710	
Physical Self-Concept			.21**
TOTAL	.1227	.0107-.2672	
External Regulation	.0148	-.0076-.0717	
Introjected Regulation	.0065	-.0118-.0493	
Identified Regulation	-.0211	-.1370-.0056	
Integrated Regulation	.0436	-.0003-.1203	
Intrinsic Regulation	.0790	-.0098-.2082	
Self-Esteem			.13**
TOTAL	.0093	-.1227-.1278	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

(continued)

Table 9 (continued)

Bootstrapped Indirect Effects of Standardized Residuals - AHPS Authentic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
External Regulation	.0166	-.0076-.0811	
Introjected Regulation	.0050	-.0203-.0439	
Identified Regulation	.0191	-.0265-.0965	
Integrated Regulation	-.0039	-.0611-.0458	
Intrinsic Regulation	-.0276	-.1545-.1031	
METS			.01
TOTAL	.0818	-.0101-.2173	
External Regulation	-.0084	-.0970-.0151	
Introjected Regulation	.0008	-.0344-.0324	
Identified Regulation	.0203	-.0059-.0912	
Integrated Regulation	.0036	-.0323-.0473	
Intrinsic Regulation	.0654	-.0212-.2024	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

Table 10

Bootstrapped Indirect Effects of Standardized Residuals - AHPS Hubristic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
Positive Affect			.18**
TOTAL	.0097	-.0921-.1292	
External Regulation	.0009	-.0158-.0327	
Introjected Regulation	-.0061	-.0628-.0093	
Identified Regulation	.0096	-.0134-.0935	
Integrated Regulation	.0059	-.0113-.0834	
Intrinsic Regulation	-.0005	-.0886-.0962	
Negative Affect			.12**
TOTAL	.0406	-.0274-.1867	
External Regulation	.0241	-.0104-.1581	
Introjected Regulation	.0045	-.0085-.0473	
Identified Regulation	.0057	-.0136-.1047	
Integrated Regulation	.0060	-.0151-.0642	
Intrinsic Regulation	.0003	-.0590-.0613	
Subjective Vitality			.18**
TOTAL	-.0477	-.1590-.0403	
External Regulation	-.0204	-.0875-.0173	
Introjected Regulation	-.0094	-.0655-.0078	
Identified Regulation	-.0244	-.1797-.0061	
Integrated Regulation	.0027	-.0218-.0556	
Intrinsic Regulation	.0038	-.0749-.0934	
Physical Self-Concept			.14**
TOTAL	-.0145	-.1044-.0844	
External Regulation	-.0135	-.0681-.0113	
Introjected Regulation	-.0101	-.0671-.0087	
Identified Regulation	-.0155	-.1490-.0051	
Integrated Regulation	.0251	-.0133-.1219	
Intrinsic Regulation	-.0004	-.0693-.0783	
Self-Esteem			.03
TOTAL	-.0129	-.0970-.0583	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

(continued)

Table 10 (continued)

Bootstrapped Indirect Effects of Standardized Residuals - AHPS Hubristic Pride

Variable	*Point Estimate*	*BCa CI*	$R^2_{adj.}$
External Regulation	-.0152	-.0801-.0096	
Introjected Regulation	-.0102	-.0759-.0115	
Identified Regulation	.0126	-.0239-.0941	
Integrated Regulation	.0001	-.0380-.0495	
Intrinsic Regulation	-.0002	-.0431-.0510	
METS			.01
TOTAL	.0243	-.0298-.1445	
External Regulation	.0075	-.0139-.0835	
Introjected Regulation	.0001	-.0236-.0461	
Identified Regulation	.0147	-.0053-.1057	
Integrated Regulation	.0021	-.0171-.0436	
Intrinsic Regulation	-.0002	-.0397-.0386	

Note: Number of bootstrap resamples = 5,000. BCa CI = Bias Corrected and Accelerated Confidence Intervals. * p = .01; ** p = .001.

Table 11.

Serial Mediation for AHPS Authentic Pride

Variable	Point Estimate	BC CI
Positive Affect		
TOTAL	.1859	.0365-.3830
a1b1	-.1578	-.4085--.0032
a2b2	-.0061	-.1393-.1303
a1a3b2	.3498	.1703-.6410
Negative Affect		
TOTAL	-.1074	-.2448--.0050
a1b1	.0238	-.0803-.1834
a2b2	.0023	-.0479-.0805
a1a3b2	-.1335	-.3468--.0134
Subjective Vitality		
TOTAL	.2213	.0499-.4610
a1b1	-.1376	-.3764-.0467
a2b2	.0064	-.1422-.1455
a1a3b2	.3524	.1514-.7100
Physical Self-Concept		
TOTAL	.3389	.1713-.5676
a1b1	-.0104	-.2082-.1300
a2b2	-.0062	-.1602-.1276
a1a3b2	.3554	.1697-.6643
Self-Esteem		
TOTAL	.1090	-.0044-.2577
a1b1	-.0813	-.2800-.0415
a2b2	-.0034	-.0982-.0661
a1a3b2	.1937	.0656-.4242
METS		
TOTAL	7.8327	2.6533-15.1145
a1b1	3.3946	-8.1604-14.3005
a2b2	-.0785	-3.5816-1.9826
a1a3b2	4.5166	-4.0024-16.2443

Note: Number of bootstrap resamples = 5,000. BC CI = Bias Corrected Confidence Intervals.

Table 12.

Serial Mediation for AHPS Hubristic Pride

Variable	Point Estimate	BC CI
Positive Affect		
TOTAL	-.1295	-.2845-.0176
a1b1	.0141	-.0265-.1290
a2b2	-.0353	-.1675-.0953
a1a3b2	-.1082	-.2898-.0234
Negative Affect		
TOTAL	.0370	-.0037-.1348
a1b1	-.0148	-.1153-.0104
a2b2	.0127	-.0258-.0854
a1a3b2	.0391	-.0022-.1623
Subjective Vitality		
TOTAL	-.1486	-.3362-.0135
a1b1	.0011	-.0879-.0919
a2b2	-.0382	-.1846-.0989
a1a3b2	-.1115	-.3237-.0212
Physical Self-Concept		
TOTAL	-.1842	-.3789-.0142
a1b1	-.0397	-.1749-.0069
a2b2	-.0355	-.1680-.0979
a1a3b2	-.1089	-.3005-.0225
Self-Esteem		
TOTAL	-.0888	-.1933-.0027
a1b1	-.0095	-.0991-.0270
a2b2	-.0195	-.1006-.0512
a1a3b2	-.0599	-.1878-.0064
METS		
TOTAL	-3.8996	-10.5220--.4929
a1b1	-1.9326	-9.0001-.6536
a2b2	-.4389	-4.4188-1.1728
a1a3b2	-1.8431	-8.6399-.6341

Note: Number of bootstrap resamples = 5,000. BC CI = Bias Corrected Confidence Intervals.