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**Affective and Self-Presentational Responses to an Exercise Identity Challenge: Investigating Identity
Theory and the Role of the Other**

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Affective and Self-Presentational Responses to an Exercise Identity Challenge: Investigating
Identity Theory and the Role of the Other

by

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Thesis

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Abstract

According to Identity Theory (IT), identity-inconsistent feedback is associated with negative affect and motivation to change the situation to match identity. Responses to identity-relevant feedback from others remains an understudied IT tenet. The affective and self-presentational responses of high-identity exercisers provided with identity confirming or disconfirming feedback in the presence of another person were examined in a randomized experiment. MANCOVA procedures revealed that compared to confirmed individuals, disconfirmed individuals demonstrated greater negative affect, desire to self-present, and attempts to self-present. Regression analyses determined that among disconfirmed individuals, satisfaction with self-presentation was negatively related to negative affect. Findings support IT predictions.

KEYWORDS: identity; Identity Theory; affect; role of the other; public; self-presentation; MANCOVA; bivariate regression

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This thesis is dedicated to those whom my most salient identities have been formed.

To my God, my Jesus, in whom my identity comparisons will never prove fruitful; for I have learned (slowly) that there is nothing that I can do that will make You love me more and nothing that I can do that will make You love me less.

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('Master') Gwen

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Chapter I

Introduction

According to Health Canada (2010), physical activity improves health and well-being, reduces stress, strengthens the heart and lungs, increases energy levels, helps maintain and achieve a healthy body weight, and improves one's outlook on life. Furthermore, physical fitness allows people to meet the demands of daily life and provides them with the basis for sport performance (Warburton, Nicol & Bredin, 2006*b*). Moreover, physical activity is thought to reduce the risk of 25 chronic conditions (Bouchard & Shephard, 1994), including coronary heart disease, stroke, hypertension, breast cancer, colon cancer, type-2 diabetes, and osteoporosis (Warburton, Nicol & Bredin, 2006*b*; Warburton et al., 2007). Warburton et al. (2007) also assert that there is overwhelming evidence supporting the importance of physical activity not only in the primary but also secondary prevention of several chronic diseases, and findings supporting this claim are abundant (Blair & Brodney, 1999; Blair et al., 2001; Gomez-Cabrera, Domenech, & Viña, 2008; Lee & Skerrett, 2001; Shephard, 2001; Taylor et al., 2004; *US Department of Health and Human Services*, 1991; Warburton et al., 2001; 2006*a*; 2006*b*).

Despite the countless benefits associated with physical activity the prevalence of physical inactivity among Canadians (Warburton, Nicol & Bredin, 2006*a*), as well American, adults is unprecedented (Hamilton, Hamilton & Zderic, 2007; Trojano et al., 2007). According to Warburton, Nicol, and Bredin (2006*a*), 51 percent of Canadian adults are physically inactive based on Health Canada's physical activity guidelines (*Canadian Fitness and Lifestyle Research Institute*, 2008). Astoundingly, this level of inactivity constitutes the highest incidence rate for a modifiable risk factor for chronic disease prevention, which includes diabetes mellitus, cancer

(colon and breast), obesity, hypertension, bone and joint diseases (osteoporosis and osteoarthritis), and depression (Kruk, 2009).

Given the numerous benefits associated with physical activity it is surprising that so few Canadians meet the minimal physical activity recommendations (Warburton, Nicol & Bredin, 2006a). However, literature stills presents a hopeful tone for the adoption of such beneficial health behaviour practices. For instance, Grudy et al. (1999) contend that physical activity is a modality for coping with the obesity epidemic in the United States, as well as other nations, which is an assertion that is consistently validated in literature (e.g., Blair, LaMonte & Nichaman, 2004; Ross & Janssen, 2001; Speiser et al., 2005). Furthermore, according to Warburton et al. (2007):

Current literature suggests that if the entire Canadian population followed existing physical activity guidelines, approximately one third of deaths related to coronary heart disease, one quarter of deaths related to stroke and osteoporosis, 20% of deaths related to colon cancer, hypertension, and type-2 diabetes, and 14% of deaths related to breast cancer could be prevented. (p. S16)

In addition, Müller-Riemenschneider et al. (2008) are in agreement with Warburton et al. (2007) reporting that the initiation and maintenance of exercise among adults, adolescents, and children is an important objective for the promotion of health and crucial in the prevention of the increasing burden of chronic diseases amongst industrialized nations. Müller-Riemenschneider et al. further assert that in view of the public health importance, many countries are aiming to increase the uptake of physical activity and participation in leisure time activity within those populations (*Healthy People 2010*, 2000). Therefore, it can be deduced that physical activity adoption is imperative to health. However, it should be noted that even inactive individuals who adopt physical activity regimens often do not adhere or maintain these new behaviours (Dishman, 1994; Meichenbaum & Turk, 1987; Wing, 2000). Accordingly, understanding the

factors associated with adherence to health behaviours has recently taken theoretical precedence in the literature (Orleans, 2000).

Understanding the *psychological* variables underlying low rates of physical activity adoption and adherence is recommended as one avenue for addressing this multidimensional problem (Orleans, 2000). Pertinent psychological variables fall under the rubric of self, which has been identified as a promising avenue for health behaviour research (Fox & Wilson, 2008). One self-related variable that is receiving increased research attention is identity (Contrada & Ashmore, 1999). Identity is the meaning one attributes to his/her role as a group member, a role holder, or a person (Stets & Burke, 2003). Burke (1980) attempts to explain how the possession of identity promotes congruent identity-relevant behaviour through his conceptualization of Identity Theory and adoption of the cybernetic model of perceptual control. Specifically, Identity Theory illustrates how individuals seek identity congruence through behaviour (Gecas & Burke, 1995; Stets & Burke, 2003); therefore, enabling the Theory's use in understanding a multitude of health-related behaviours, one example being exercise behaviours.

The exercise identity literature has established a link between exercise identity and exercise behaviours (Anderson & Cychosz, 1994; Anderson, Cychosz & Franke, 1998; Miller, Ogletree & Welshimer, 2002; Petosa, Suminski & Hertz, 2003); however, few studies have directly employed Identity Theory to guide research. According to Painter et al. (2008) this is common in health behaviour research, as only one third of health behaviour publications use theory and an even smaller proportion rigorously apply it.

Strachan et al. (2008, 2009b) have produced the only known research directly employing Identity Theory in the exercise domain. Their findings support Identity Theory's tenets (Strachan & Brawley, 2008; Strachan, Brawley, Spink & Jung, 2009b). Strachan et al.'s work has also

suggested that individuals with a strong exercise identity respond to pertinent identity challenges with negative affect and in a manner that suggests they are seeking identity-behaviour congruence (Strachan et al., 2009b).

However, as the studies by Strachan et al. illustrate, exercise identity research has mainly focused on *individual* judgments about personal exercise identity consistency. Riley and Burke (1995) concur, asserting that few studies that employ Identity Theory acknowledge the importance of the role of the other as it applies to identity-congruent behaviour. This is surprising as Stets and Burke (2003) have suggested that an individual learns the meanings of his/her role identity *through* the reactions of others while interacting with them in a given situation. Therefore, this thesis employed Identity Theory and the use of an experimental design to examine the role of the other, by specifically exploring affective and self-presentational reactions to public exercise identity challenges.

Chapter II

Comprehensive Literature Review and Theoretical Perspective

Self.

The self is an integral aspect of modern psychology. For instance, the seminal work of William James (1898) included the idea of the *self*-director, which presented the concepts of “I” and “Me” to differentiate between the subjective and objective conceptions of self (Fox & Wilson, 2008). Sustained academic study of the self commenced in the 1950s with the fall of behaviorism as the prominent conceptual framework for scholarly works in psychological science (Leary & Price Tangney, 2003). Since that time, the academic community has vigorously studied the self in such diverse fields as anthropology, theology, psychology, and sociology (Fox & Wilson, 2008). Such scholarship has produced much knowledge about the complexities of self, generating more than 50 self-related variables (Leary & Price Tangney, 2003). However, with such a broad research scope (Fox & Wilson, 2008), the concept of self has been described as indefinite and vague in nature (Leary & Price Tangney, 2003).

However ambiguous the concept of self has become, at its most basic level self is the human capacity to think about and reflect on oneself (Leary & Price Tangney, 2003). According to Leary and Price Tangney (2003), the concept of self has three distinct components; they are attentional, cognitive, and regulatory in nature. In terms of the attentional component, the possession of self allows people to direct their conscious attention towards themselves (Leary & Price Tangney, 2003); which is imperative for the self-relevant processes of thought, emotion, and behaviour (Leary & Price Tangney, 2003). The cognitive component provides the capacity for self-relevant thought. In turn, this capacity underlies the construction of a self-concept and the development of standards that guide people’s behaviour and influences their emotions (Leary

& Price Tangney, 2003). The ability to attend to and think about oneself allows human beings to self-regulate (Leary & Price Tangney, 2003) which in turn allows for the possibility that, “one can escape the influence of one’s environment, history, and internal state to act in autonomous, self-directed ways” (Leary & Price Tangney, 2003, p. 9). Although, the self is theoretically composed of attentional, cognitive, and regulatory components, these processes are undoubtedly interrelated – as are all parts of the self – thus, they must be studied collectively (Leary & Price Tangney, 2003).

Self and health.

Shavelson, Hubner, and Stanton (1976) present a hierarchical model of self where this construct is differentiated into the four life domains of the physical, social, emotional, and academic selves. Consequently, health, exercise, and physical activity have been categorized and are measured under the research generated in the life domain of the physical self (Fox & Wilson, 2008). Therefore, for the purposes of this thesis, health behaviours are understood through the conceptual apparatus of the physical self.

According to Leary and Price Tangney (2003), understanding the self is integral to understanding the complexities of human behaviour, as there is a bidirectional flow of causative energy between self-perceptions and behaviours (Marsh, 1990). Marsh and Perry (2005) contend that this pattern is also true for the physical self and its related behaviours. Contrada and Ashmore (1999) support this assertion when explicitly stating that there exists a reciprocal relationship between the self and health. Kowalski et al.’s work with adolescent girls’ self-perceptions of their physical selves (2003) demonstrates this reciprocal relationship between self and health. For example, the expression of self can underlie health-related behavioural choices, such as sport and exercise participation, substance use (Martin, Leary & O’Brien, 2001), eating

practices, and risk-taking behaviour (Leary, Tchividigian & Kranberger, 1994; Martin Ginis & Leary, 2004). Reciprocally, health status can influence how the self is experienced (e.g., Hormes et al., 2008). For example, the experience of breast cancer and its treatment often leave patients physically disfigured and physiologically changed which can affect how these patients view themselves. Mastectomies and reconstructive surgeries, specifically, are highly associated with body image issues, especially in younger and sexually active women (Hormes et al., 2008). Moreover, Fox and Wilson (2008) posit that understanding the self is vital to understanding health behaviours, given the synergistic nature they explicate between the physical self and health behaviours. Thus, Fox and Wilson put forth the proposition that the self-system is the primary determinant of health-related activity choice and behaviour.

Given the acknowledged bidirectional relationship between self and health, self-related variables (e.g., self-efficacy and identity) have understandably been incorporated into theories and models employed to understand health behaviour (e.g., Social Cognitive Theory; Theory of Planned Behavior). Recently, much research has been conducted regarding links between the physical self and health and Fox and Wilson (2008) encourage the continuance of such research. For example, research pertaining to the physical self has emerged in the area of *identities* (Fox & Wilson, 2008). Before reviewing identity research in the area of physical self, the concept of identities and their theoretical background will be addressed in general.

Identity.

Identity is a self-related variable that has received a flood of research attention since the late 1980s (Hogg, 2006). Specifically, identities are the meanings an individual attributes to his/her role as a group member, role holder, or person (Stets & Burke, 2003). An individual may view him or herself as, for example, a student, vegetarian, or health-conscious individual and

individuals endorse expectations about what it means to be in these various roles (e.g., students attend classes and complete course work; Burke & Stets, 2009). According to Stryker and Burke (2000), “persons have as many identities as distinct networks of relationships in which they occupy positions and play roles” (p. 286). These meanings, which accompany a given identity, are formed through social interactions and expectations of both the self (internal) and others (external) (Stets & Burke, 2003). Of particular interest to the field of psychology is that identities have implications for behaviour, cognitions, and emotions (Burke & Stets, 2009). Identity Theory (Burke, 1980; Stryker, 1968) provides a theoretical framework that aims to explain these implications.

Identity Theory.

Identity Theory is based on the structural symbolic interactionism perspective of Mead (1934) and Cooley (1902), which fundamentally posits that people share meanings and communicate with one another through significant symbols (Blumer, 1969). Specifically, Cooley argued that individuals adopt a ‘looking glass self’, which reflects how they perceive others see them, and that the self is then defined through a fragmented set of social roles based on these perceptions (Fox & Wilson, 2008). According to Cooley (1909) ‘human nature’ is only birthed from social interaction and that isolation deters development of said ‘human nature’ (McCall, 2006).

However, more recently Identity Theory has been contemporarily formulated through the work of two separate, yet related research streams. The work of Stryker et al. employs a sociological lens and focuses on the identity situated within the societal structure and the relations between identity and society (Stryker & Burke, 2000). Stryker views society (social structure) as created by the actions of individuals and further that these individuals’ actions are

produced in the context of the social structure they create and therefore are influenced by this context (Burke & Stets, 2009). Alternatively, Burke et al.'s work, which emphasizes the internal dynamics within the self which influence behaviour (Stets & Burke, 2003), is considered more psychological in nature, and will be employed for the purposes of this thesis.

According to Burke (1980), identities are the categorization of the self as an occupant of a role (e.g., self as an exerciser). Identities have accompanying meanings and/or expectations (e.g., exercisers are physically active on a regular basis), which are learned through observation with others in a shared social structure (Stets & Burke, 2003). Specifically, identity meanings for a particular role are learned through observation of socially acceptable patterns of action and social interaction inherent to the shared social structure (Stets & Burke, 2003). When individuals endorse an identity, they incorporate learned identity meanings into personal conceptualizations of self (Stets & Burke, 2003). Given that identities are important self-related variables, they serve as a personally-relevant standard for behaviour (Stryker & Burke, 2000). Specifically, individuals seek to match identity meanings (e.g., exercisers engage in regular high intensity exercise) with situational meanings (e.g., I ran at a high intensity for 30 minutes today; Stets & Burke, 2003).

To develop the proposition that identities have implications for behaviour Burke (1980) adopted the cybernetic model of perceptual control (Powers, 1973; Gecas & Burke, 1995). Through this model Burke (1980) posited that four sequential components link identity to identity-relevant behaviour. The first component of this model is the *identity standard* or the expectations held for that identity (Stets & Burke, 2003; Stryker & Burke, 2000). The second component is the individual's perceptions of *identity-relevant situational meanings* (Gecas & Burke, 1995), which are gathered through self-evaluative feedback and feedback from others

(Riley & Burke, 1995). The *comparison* between the identity standard and the identity-relevant situational meanings makes up the third component (Gecas & Burke, 1995). The final component of the model takes the form of *behavioural output* and seeks to bring about congruence between the identity standard and situational meanings. This behavioural output is influenced by the results of the comparison in component three (Stets & Burke, 2003). For instance, if an individual's identity standard matches his/her perceptions of situational meanings, then the individual's identity has been verified; no alteration to his/her behaviour is necessary. Conversely, if there is discrepancy between that individual's identity standard and his/her perceptions of situational meanings, then the individual's identity has not been verified; his/her behaviour is changed in an attempt to elicit a match between his/her identity standard and his/her perceptions of situational meanings (Burke & Stets, 2009; Gecas & Burke, 1995; Stets & Burke, 2003).

The identity verification process, as outlined by Burke's (1980) cybernetic model of perceptual control, is influenced by and has implications for individuals' emotional response (Burke, 1991, 1996). Identity Theory posits that when a discrepancy between the identity standard and situational meanings occurs during the comparison process, people react both behaviourally and affectively (Burke & Harrod, 2005). According to Burke and Stets, "emotions signal the degree of correspondence between perceptions of the self in the situation and identity-standard meanings" (2009, p. 163). Specifically, identity-verification produces positive emotions and identity-nonverification produces negative emotions (Burke & Stets, 2009). In turn, a negative affective state motivates individuals to bring their identity-verification process under conscious control in order to remedy the identity-nonverification (Burke, 1991). This can be done through the employment of various behavioural (e.g., engage in identity-relevant

behaviour, talking about involvement in behaviour) and cognitive strategies (e.g., rationalization of identity-inconsistent behaviour or feedback) – coined coping responses (Burke, 1996) – in the form of *identity-relevant behaviour*, disattending others' feedback or reinterpreting others' feedback so as to allow for identity-verification (Burke, 1996). An experiment by Swann and Hill (1982) illustrates how individuals take steps to counter self-concept discrepancy (Burke & Stets, 2009). They found that individuals who were provided with self-concept-nonverifying feedback acted in manner that overemphasized their self-concept. Burke and Stets (2009) further posited that Swann and Hill's experimental protocol was an excellent prototype for testing the Identity Theory model.

An example of how Burke's (1980) Identity Theory would play out in the context of exercise is instructive for understanding the theory's propositions. Jane views herself as an exerciser (exercise identity) and for her, being an exerciser means exercising at a moderate intensity five times each week for a minimum of 45 minutes. This meaning creates her exercise-identity standard. In a given week Jane perceives self-relevant aspects of her scheduled time, such as the fact that she has exercised five times that week at her specified levels of intensity and duration (her perception of situational meanings). Upon comparing the meaning of her behaviour in the situation with her exercise-identity standard, no discrepancy is detected. Her exercise-identity has been verified, she experiences positive affect and there is no change in her behavioural output. However, if Jane only exercises twice in a given week, she perceives this level of exercise (which constitutes her perceptions of the situational meaning) and upon comparison with her standard her exercise-identity is not confirmed. This inconsistency should lead to negative affect, according to Identity Theory, and Jane should attempt to realign her future behaviour with her identity standard through increasing her subsequent exercise.

Identity and behaviour.

Stemming from the structural symbolic interactionism perspective early identity researchers conducted pioneering research to identify and make researchable pertinent psychological concepts to identity and the self (e.g., Burke & Tully, 1977; McCall & Simmons, 1966; Stryker, 1968, 1980). For instance, Burke and Reitzes' (1981) research with college students established the relevance of identity meanings' implications for identity-related behaviour. Specifically, Burke and Reitzes found that the strength of college students' role identities in the academic responsibility, intellectualism, sociability, and personal assertiveness domains, influenced their present (participation in campus social activities) and future (plans for future education in the form of an advanced degree) behaviour; thus, establishing that identity roles have a set of associated *meanings* and expectations for the self. On the whole, these early identity researchers demonstrated that through the internalization of identity meanings, identities serve as self-related standards that have implications for behaviour (Riley & Burke, 1995; Stets & Burke, 2003).

Other early Identity Theory research examined the established link between possessing an identity and behaving in congruent ways. For example, Stryker and Serpe (1982) examined the religious role identity and found that the level of commitment one had to his/her religious role identity predicted that identity's salience¹, as well as the amount of time he/she spent participating in religious behaviours. Callero (1985) examined the blood donor role identity and found that individuals with a highly salient blood donor identity were more apt to self-define as

¹Salience refers the importance an individual places on an identity or role-identity in relation to other identities or role-identities. For example, an individual has an identity as a mother, professor, wife, sister, blood donor, exerciser, and advisor. If she deems her identity as an exerciser as more important than her identity as a blood donor, than her exercise identity is more salient.

regular blood donors and consequently gave more blood over a six month period compared to individuals with a less salient blood donor identity. Hoelter (1983) and Serpe (1987) also established an important link between identity and relevant behaviour with respect to undergraduate college students' academic, athletic/recreational, extracurricular activity, and relational (familial, friend, and romantic) identities. Specifically, Hoelter found that college students' identity salience is positively related to the degree of commitment they have to each of their role identities and further, that the degree of commitment to each role identity is evaluated through their performance (behaviour) pertaining to that identity. Also, Serpe (1987) found that there is a general pattern of stability with respect to identity salience amongst identities associated with college life. Thus, it has been well-established that identity is linked to behaviour in a variety of domains.

Identity and health behaviour.

Identity has also been linked to *health* behaviours (e.g., Petosa et al., 2003). Contrada and Ashmore (1999) deem health behaviour and identity research as productive and with the ability to produce great academic and practical advances. Health behaviour research is accumulating that supports this assertion. For example, Strachan and Brawley (2008, 2009b) found that individuals' healthy-eater identity significantly predicted fruit and vegetable consumption, as well as consumption of low-nutritional foods. The work of Anderson et al. (Anderson & Cychosz, 1994; Anderson et al., 1998; Storer, Cychosz & Anderson, 1997) demonstrated that unhealthy identities also have implications for health behaviour. For instance, Storer et al. (1997) found that the wellness-rejecter-identity is positively related to participation in unhealthy behaviours, such as smoking and drinking, and inversely related to health enhancing behaviours.

Identity, as it relates to health behaviour, has also been studied in conjunction with the Theory of Planned Behavior. For example, Fekadu and Kraft (2001) used identity and the Theory of Planned Behavior to predict condom use amongst sexually active female adolescents in Ethiopia. In this research, identity made a significant contribution to the prediction of intention for condom use. Armitage and Conner (1999) also employed the Theory of Planned Behavior and identity to investigate dietary habits. They discovered that dietary intentions of health conscious individuals' predicted adherence to a low fat diet. Finally, Sparks and Guthrie (1998) found that self-identification as a health-conscious consumer predicts intentions related to healthy eating behaviours.

Self-schemas are ideologically similar to the identity construct, but while identities are based on a sociological tradition, self-schemas are influenced by an information-processing perspective. According to Markus (1977) self-schema is a mental representation of the self that influences the processing of information and future behaviour; thus, given the similarity of these constructs, self-schema work has relevance to related identity research. Avants, Beitel, and Margolin (2005) found that a shift in the spiritual self-schema of cocaine- and opioid-dependent drug users decreased drug use and other HIV risk behaviours. Kendzierski and Costello (2004) found that individuals with healthy-eater-schematics consumed more fibre and less total fat than individuals who did not have healthy-eater-schematics. Nouredine and Stein (2009) came to similar conclusions with middle-aged American adults. They found that individuals with healthy-eater-schematics had significantly healthier diets than non-schematics, as well as greater diet-health association knowledge. Furthermore, Kendzierski (2007) applied the self-schema approach to understand that the nutritional habits of psychiatric patients finding that, "understanding how...people define themselves in terms of their eating habits affects their

thoughts and behavior” (p. 350). Kendzierski (2007) further posited that such findings indicate that the self-schema approach has practical implications for medical screening. These findings from self-schema research are consistent with Identity Theory research in suggesting that health-related identities are associated with health behaviour engagement².

Identity and exercise behaviour.

Anderson (2004) asserts that the study of self-schema and identity could yield useful research in further understanding exercise participation and termination decisions. Indeed, literature asserts that exercise and physical activity behaviours highly correspond to the exercise identity construct (Anderson & Cychosz, 1994; Anderson et al., 1998; Lorentzen, Ommundsen & Holme, 2007; Miller et al., 2002; Petosa et al., 2003; Plotnikoff, Brez & Hotz, 2000).

Specifically, the exercise identity, or *exerciser*-identity, is significantly related with execution of exercise behaviours. According to Anderson et al. (1998) the strength of an individual’s exercise identity is significantly associated with exercise participation. Lorentzen, Ommundsen, and Holme (2007) found that the physical activity identity is a strong predictor of physical activity behaviour change. Exercise identity is also correlated to perceived level of exertion, muscular endurance, percent body fat, fitness levels, and exercise duration (Anderson & Cychosz, 1994; Anderson et al., 1998; Storer et al., 1997; Strachan et al., 2005). Specifically, Strachan, Brawley, Woodgate, and Tse (2005) found that runner identity in maintenance runners predicted running duration. Furthermore, Strachan et al. found that high identity maintenance runners possessed

²Although self-schemas and identity share similarities it is important to acknowledge ideological differences. Identities incorporate expectations and meanings, and are often studied in association with affect. Conversely, self-schematics are more often studied in association with cognitive outcomes such as the processing of information, than those associated with identity findings. However, despite these theoretical differentiations, application of differing theoretical perspectives, and use of different health behaviours in both the identity and self-schematic literature indicates that identity – and its related constructs – inherently correspond to health-related behavioural patterns.

higher task and scheduling self-efficacy towards running, ran more frequently, and for longer durations than low identity runners. Moreover, Anderson and Cychosz (1994) found that as the strength of the exercise identity consistently increased with the progression through exercise participation levels, such as progressing from a non-exerciser to a walker to a vigorous exerciser. Cardinal and Cardinal (1997) found that such an increase in exercise identity salience can occur over the course of an exercise program.

Kendzierski (1988) determined that exercise-schematics exercised more frequently, participated in more exercise on a more regular basis, were more interested in maintaining high exercise levels in the future, and actively strategized to overcome exercise barriers, compared with non-exerciser-schematics and aschematics. Furthermore, Kendzierski (1990) found that *exercise*-schematics were more likely to report that they had adopted an exercise program than were individuals without such a self-schema. Kendzierski (1994) also found that exercise-schematics demonstrate greater exercise behaviour and related cognitions, than aschematics. Similarly, Sheeran and Orbell (2000) found that the exerciser self-schema moderated the intention-behaviour relationship using the Theory of Planned Behavior. The concept of identity focuses on both the expectations and meanings that create that identity and further dictate affect and behaviour. Alternately, self-schematic literature is more related to cognitive outcomes, such as intentions for healthy eating (Armitage & Conner, 1999; Sparks & Guthrie, 1998). However, self-schematic findings indicate that people with high exercise self-schema have greater positive exercise behaviour than exercise non-schematics, which is consistent with exercise-identity research that finds a similar relationship between exercise identity and exercise behaviour. In summary, like other health behaviours, viewing oneself as an exerciser is associated with exercise behaviour and related outcomes.

Identity research in the exercise domain has established that one's identity contributes to his/her exercise behaviour; however, few studies have drawn upon Identity Theory's framework for guidance. This is surprising given that Identity Theory puts forward many testable hypotheses about how identities are theorized to be related to behaviour, affect, and cognitions.

Exceptionally, Strachan and Brawley (2008; Strachan et al., 2009b) have examined Identity Theory tenets in the context of exercise. Their 2008 study exposed strong and moderate exercise-identity individuals to vignettes that described situations which disconfirmed their exercise identity. Strong identity exercisers reported greater negative affect and less positive affect relative to the identity-disconfirming situation. Further, these high exercise identity individuals also reported greater self-efficacy and intentions for future exercise as well as greater intentions to use self-regulatory strategies related to exercise during a hypothetically busier than normal week compared to moderate identity exercisers. These findings are consistent with Identity Theory's notion that individuals respond with negative affect when their behaviour does not match their identity and seek identity-behaviour congruency (Burke & Harrod, 2005; Burke & Stets, 2009).

Strachan, Brawley, Spink, and Jung (2009b) also examined affective reactions to identity-behaviour consistency by having participants reflect on their recent exercise behaviour and determine to what extent it had been consistent with their view of themselves as an exerciser (also known as their exercise identity meaning; Strachan, Brawley, Spink & Jung, 2009b). They found that negative affect increased as perceptions of consistency decreased and the strength of this relationship was stronger for high identity individuals than low identity individuals. Taken together, these studies support Identity Theory predictions in the context of exercise. However, these studies are not without limitations. This preliminary research employs hypothetical identity

challenge scenarios which allow for all participants to react to a common identity challenge. However, the use of hypothetical scenarios may not be perceived to be as challenging to participants' identities as one perceived to be real rather than hypothetical. Further, the extant research on exercise identity challenge has not employed an experimental design using random assignment to conditions to examine reactions to challenged exercise identities. The use of such a design would allow for a more rigorous examination of reactions to identity challenges and therefore, Identity Theory predictions.

Furthermore, although it is noted above that exercise research is beginning to utilize Identity Theory to inform research questions Identity Theory's application to the exercise identity still remains largely understudied. For example, Identity Theory possesses propositions that have yet to be adequately addressed and are therefore of particular interest to this study. For example, Identity Theory acknowledges the importance of the *role of others* as it applies to identity-congruent behaviour, but examination of identities and how they function in this context has remained largely unstudied, especially in the exercise context. The following section outlines this understudied aspect of Identity Theory.

Identity Theory and the role of the other.

According to Identity Theory individual's *own* perceptions of self serve as a source of information regarding situationally-relevant meanings and the extent to which identity-behaviour congruence is achieved (Stets & Burke, 2003). For example, individuals may personally reflect on their exercise behaviour relative to their exercise identity meaning to determine if their identity as an exerciser has been verified. Furthermore, Identity Theory acknowledges that individuals *also* derive information about situationally-relevant meanings from the feedback they receive from *others* (Riley & Burke, 1995). The Theory further posits that individuals should

react to this source of situational meaning in a manner that pursues identity-meaning congruence. However, Riley and Burke point out that few studies have analyzed the relationship between identities and role performances in public situations. This is surprising as Stets and Burke (2003) have suggested that an individual learns the meanings of his/her role identity *through* the reactions of others while interacting with them in a given situation.

Continuing the foregoing “Jane” example will help illustrate how feedback from others may serve as a source of identity-relevant information and be associated with affective and behavioural responses. Jane may receive identity-relevant feedback from others regarding situational meanings. For example, Jane meets with a personal trainer for the first time and he makes a comment that suggests he thinks Jane is a “beginner exerciser.” According to Identity Theory, if Jane perceives this feedback from an other (the trainer) as inconsistent with her identity standard (as a regular, seasoned exerciser) she should experience negative affect and seek to change the meaning of the situation such that it conforms to her identity standard. Indeed, Jane may take steps to change the impression the personal trainer has of her by, for example, referring to her past exercise experiences in conversation.

Most Identity Theory research examines the relationship between the self and responsive behavioural choices to self perceptions (Burke & Hoelter, 1988; Burke & Reitzes, 1981, 1991; Burke & Tully, 1977; Swann, 1987). In light of Riley and Burke’s (1995) assertion that, in general, Identity Theory is primarily concerned with individuals’ perceptions of their own behaviour, this statement makes explicit sense, as Burke’s (1980) Identity Theory is psychological in nature. However, Riley and Burke proposed to expand our perception of Identity Theory to include others into our conceptualization of identity confirmation. Only a few studies have assessed Identity Theory tenets relative to identity feedback being derived by others.

Swann and Hill (1982) and Riley and Burke (1995) present two experiments that Burke and Stets (2009) exude are excellent prototypes for testing and understanding the identity model. Swann and Hill conducted an experiment that examined the behavioural and psychological responses of female undergraduate students after receiving disconfirming self-concept feedback. They found that individuals who received self-discrepant feedback from a confederate participant and did *not* have an opportunity to reject or refute it publically changed their self-ratings. Conversely, individuals who received self-discrepant feedback from a confederate participant and had an opportunity to reject or refute it publically did *not* change their self-ratings. This study has implications for the current thesis, in that it exemplifies i) the use of an experimental protocol where identity-relevant feedback is presented by a confederate participant, and ii) the study of individuals' behavioural reactions to this identity-relevant feedback.

Also employing an experimental protocol, Riley and Burke (1995) tested the leadership identity, identity meanings, and pertinent identity-relevant behaviour; which was captured by both the self and others. They found that a shared identity meaning structure is often established between the individual and the group in public settings. More specifically, Riley and Burke found that group members share role-identity meanings that have implications for identity-relevant behaviour. Both the individual and others in his/her group can compute similar identity assessments based on that individual's identity-relevant performances in a group setting. Additionally, Riley and Burke found that when discrepancies regarding identity meaning persisted between individuals and fellow group members the individual was less satisfied with his/her role performance in the group. These findings support Identity Theory's tenets, as both individual perceptions of the self (Stets & Burke, 2003) and feedback from others serve as a source of information regarding situationally-relevant meanings and the extent to which identity-

behaviour congruence is achieved (Riley & Burke, 1995). Additionally, these findings have implications for this thesis' experimental design and the assessment of the role others play in identity research.

To date, no exercise studies have examined exercise identities when challenged with others present. The present thesis addresses this gap in the literature through the unique employment of real identity-challenges and a strict experimental protocol, thus, improving upon identity research. It also uniquely assesses the affective responses of individuals throughout identity-verification or nonverification. Indeed, Identity Theory (1980) posits that individuals should respond affectively to identity verification feedback. Through addressing these gaps in the literature, the present investigation contributes to both the Identity Theory literature generally and the exercise identity literature specifically.

Self-presentation.

According to Identity Theory when individuals receive identity-disconfirming feedback from others or in the presence of others they should seek to influence the perceptions that other people in the situation have of them (e.g., as someone unlikely to adhere to exercise over the long-term) in an attempt to re-establish congruence between perceptions in the situation and identity meanings (e.g., as someone who will be successful at exercise). Indeed, this response to an identity challenge was demonstrated in the above-cited work of Swann and Hill (1982) where participants given the chance to verbally refute their challenged identity took advantage of the opportunity. Specifically, identity-challenged individuals may engage in *self-presentation* to try to change the situation. Self-presentation is a social-psychological construct that conceptualizes individual attempts to influence the attitudes and behaviours of others through the presentation of self-relevant information (Schlenker, 2003). Indeed, self-presentational behaviour has been

identified as aiding in the self-verification process of a self-relevant identity at the individual level (Swann, 1983). In the present study, self-presentation will be employed as a means of assessing individuals' attempts to realign perceptions of the situation with exercise-identity meanings.

Particularly relevant to the purposes of this study, self-presentation effects health behaviour (Martin & Leary, 2001). Martin and Leary (2001) found that first-year students participate in a variety of health risk behaviours with the sole purpose of impressing others. Specifically, they found that undergraduate students' are primarily concerned with public self-consciousness, attracting college peers, and fear the negative evaluation from others; therefore, are likely to participate in behaviours they deem risky (Martin & Leary, 2001). Martin and Leary (1999), as well as other researchers (Gollwitzer & Wicklund, 1985; Olsen, Hafer, Couzens & Kramins, 2000), utilized self-presentation as an identity confirming construct, which was mirrored in this study's experimental design.

Purpose and Hypotheses

The purpose of this thesis was to examine the affective and self-presentational reactions of individuals with a high exercise identity exposed to either an exercise identity i) confirming or ii) disconfirming public situation. This experimental study specifically sought to examine a tenet of Identity Theory (Burke, 1980) – the role of the other – through the assessment of how individuals with strong exercise identities reacted when others provided them with feedback that either confirmed or disconfirmed their exercise identity. It was hypothesized that, compared to people who were provided with identity confirming feedback, people provided with identity disconfirming feedback in a public domain will respond to this situation with i) greater negative affect, ii) greater desire to self-present, and iii) greater attempts to self-present themselves as

exercisers. Furthermore, individuals in the disconfirming condition who reported satisfaction with their ability to self-present as an exerciser are hypothesized to report less negative affect than individuals who remained unsatisfied with their ability to self-present.

Chapter III

Methods

Design Overview.

In order to test the purpose of this thesis, to examine the affective and self-presentational reactions of individuals with a high exercise identity exposed to either exercise identity confirming or disconfirming information provided in the presence of another person, an experimental design and elements of deception were employed. In terms of the experimental design, participants were randomly assigned to either the identity confirming or disconfirming condition. Deception was employed in terms of i) the true purpose of the study, ii) feedback provided to participants, and iii) the use of a confederate participant. Participants were deceptively told that the study's purpose was to assess the link between personality characteristics and future success in academic and exercise behaviours and were given bogus feedback designed to either confirm (i.e., you have the personality traits associated with being a successful exerciser) or disconfirm (i.e., you have the personality traits associated with an unsuccessful exerciser) their exercise identity. Participants were also led to believe that the experimental session was run with pairs of participants, but in reality, the other participant was a confederate. The use of a confederate allowed for the added element of identity feedback being delivered by and in the presence of another similar individual (i.e., a public situation) which was a part of the study's purpose. Further, while the participant believed that each participant in a pair was 'randomly' assigned to receive feedback about their projected future success in either the academic or exercise domain, in reality, the real participant was always assigned to the exercise feedback condition and the confederate was assigned to the academic feedback condition. Additionally, the real participant always received feedback regarding his/her personal

likelihood of exercise-adherence success; whereas, the confederate always received neutral feedback pertaining to a different domain, namely academic success, in order to alleviate the potential for a social comparison confound. Thus, in reality the real participant was randomly assigned to either the exercise identity confirming or disconfirming condition and provided with exercise identity feedback catering to the appropriate condition. Affective and self-presentational reactions to these public exercise identity challenges were examined.

Participants.

One hundred and one self-identified exercisers were recruited from academic and fitness classes, as well as through on-campus posters, at the University of Ottawa, Carleton University, and Algonquin College. Eligible participants ranged in age from 18 to 50 years ($M_{\text{age}} = 22.2$ years, $SD = 5.49$), were enrolled in a post-secondary institution, and scored at or above the midpoint on the Exercise Identity Scale (Anderson & Cychosz, 1994).

Procedures³.

Study description and eligibility screening measures.

Potential participants logged onto a study website to learn about study participation and fill out measures which were used to screen potential participants. As ignorance regarding the true purpose of the study was imperative to the study's success, the website informed the potential participants of the study's *pseudo*-purposes, which were: (1) To assess the link between personality characteristics and success in academics and exercise, as well as (2) to determine if brainstorming activities pertaining to overcoming barriers to exercise adherence and academic success facilitate more favourable behaviours during the week following the lab session.

Potential participants were also informed that participation included: (1) filling out an online

³ Please refer to a flowchart in Appendix K, which summarizes the measures employed during each lab session.

baseline questionnaire, (2) attending a forty-five minute to one-hour lab-based research session at the University of Ottawa's Psychology of Physical Activity Laboratory, as well as (3) filling out an online follow-up questionnaire one week after completing the lab session⁴. If potential participants agreed to the terms of the study, as evidenced by the selecting that they consented to the terms of participation, as outlined on the website, they would proceed to the online baseline questionnaire (see Appendix A for the online baseline questionnaire).

Baseline measures.

Baseline measures (Appendix A) consisted of: (i) a consent form (Appendix A, Measure 1), (ii) self-reported recent exercise behaviour (Godin Leisure Time Exercise Questionnaire (GLTEQ); Appendix A, Measure 6)), (iii) exercise intentions (Appendix A, Measure 7), and (iv) the Exercise Identity Scale (Anderson & Cychosz, 1994; Appendix A, Measure 8). In order to maintain the guise of the study the following measures were also included in the baseline measures: (i) a personality trait measure (Self-Control Scale; Appendix A, Measure 2), (ii) self-reported recent academic behaviour (Appendix A, Measure 3), (iii) academic intentions (Appendix A, Measure 4), and (iv) an Academic Identity measure (Appendix A, Measure 5). Potential participants who met all eligibility requirements (i.e., met cut off for Appendix A, Measure 8) were prompted to fill out pertinent demographic information, including their contact information for lab scheduling purposes (see Appendix A, Measure 9). Conversely, ineligible potential participants were notified of their ineligibility and thanked for their interest in the study.

⁴ In reality participation did not include (3) filling out an online follow-up questionnaire one week after completing the lab session. Participants were debriefed about this at the deception debriefing following the lab-based research session (see Appendix I for the deception debriefing forms).

Assignment to conditions.

Real participants were randomly assigned to either an exercise identity confirming or disconfirming condition by the random-numbers assignment method (Pocock, 1983; Keppel, 1979). Stratified sampling was employed to ensure that equal numbers of males and females were assigned to each condition, in order to control the potential effects of gender on the present study (Baumgartner & Hensley, 2006).

Feedback.

Participants received relevant exercise identity feedback in the presence of – and delivered by – a confederate participant. Confederates were gender-matched to participants and were chosen to be similar to participants in that they represented the “typical student” in terms of dress, age, and general appearance. The inclusion of this public provision of feedback allowed us to examine an aspect of our study’s purpose: to examine reactions to other-provided identity-relevant feedback. The exercise identity feedback was falsely based on results of a personality trait measure filled out at baseline (see Appendix A, Measure 2). The feedback was thus designed to explicitly confirm or disconfirm the real participants’ exercise identities. First of all, to stress the credibility of the participants’ feedback the researcher explained that the feedback to be received was based on current extensive and rigorously tested studies. More specifically, participants were informed that their personality scores were a computation of the personality measure they filled out online and would be compared to personality profiles of ideal academics or ideal exercisers (see Appendix B for a specific script). Furthermore, if the real participant was in the confirming condition he/she would receive extremely affirming exercise-identity feedback speaking to his/her ability to overcome barriers to physical activity throughout his/her lifetime (see Appendix B). Conversely, if the real participant was in the disconfirming condition he/she

would receive extremely disconfirming exercise identity feedback citing that he/she would very likely struggle with remaining physically active throughout his/her lifetime, because he/she possesses a personality that is prone to perceiving exercise barriers as insurmountable and plentiful (see Appendix B). Note that the confederate also received identity feedback (in the academic domain) to maintain the believability of the study's *pseudo*-purpose. The confederate received neutral feedback from a different domain than the real participant in order to allow us to rule out social comparison a possible alternative explanation for our hypothesized findings.

Social comparison is the notion that an individual considers information about others when evaluating oneself and his/her abilities (Festinger, 1954). In the present study, if the participant received exercise identity *disconfirming* feedback while the confederate received exercise identity *confirming* feedback, the participant may have yielded the hypothesized responses because he/she was comparing him/herself to the confederate (social comparison) rather than because he/she was reacting to an identity challenge. In order to guard against this potential confound, both the participant and confederate were provided with identity feedback; however, from different domains, namely, the real participant received exercise feedback while the confederate received academic feedback. This design feature should preserve a believable public situation (as the participant is led to believe that the confederate is also a participant who is aware of the real participant's feedback) and allow for the results to be attributed to reactions to an identity challenge rather than social comparison.

Lab sessions.

Experimental sessions took place at the University of Ottawa's Psychology of Physical Activity Laboratory. Upon arrival to the lab, the real participant and the confederate (hitherto referred to as 'the participants') were greeted by the researcher and seated in a secluded room at

a table opposite the researcher. The researcher immediately reminded the participant of the *pseudo*-purposes of the study, specifying that they ask clarification questions if needed (see Appendix B for lab session script). They were also notified that the lab session would be audio-recorded⁵. Then the participants filled out an informed consent form (Appendix C) and returned it to the researcher.

The participants were then informed that they would receive feedback regarding how similar their personality profiles were to the profiles of either an ‘ideal’ exerciser or ‘ideal’ academic depending on which condition they were ‘randomly’ assigned. As above, real participants always received feedback pertaining to a comparison with the ‘ideal’ exerciser and confederates received feedback regarding the academic domain. Moreover, the researcher explained that the personality profiles were computed from the information provided on the online baseline questionnaire.

The researcher then produced the personality profiles (Appendix D), immediately informing the participants that the final scores required tallying, as ‘random’ assignment was based on lab session attendance and was therefore, only established for each participant on the day he/she attended his/her lab session. The researcher directed the participant and the confederate to exchange personality profiles for tallying, as research indicated that tallying one’s own personality profile may lead to swayed marking (see Appendix B for script).

Next, the researcher verbally provided instructions to tally the personality profiles (see Appendix D, Measure 7 for specific instructions). Note that the formula and method employed to tally the personality profile scores allowed the participants to determine a numeric value that summarized the *other* person’s personality profile score in relation to the ideal personality

⁵ Lab sessions were audio-recorded to ensure that the self-presentational opportunities are consistently coded post-experiment.

profiles for exercise and academics. Each numeric score corresponded to a category (see Appendix D, Measures 2, 4, and 6) which allowed the participants to clearly see how similar or dissimilar the other person's personality profile score was to the 'ideal' exerciser and 'ideal' academic personality profiles as the categorical descriptions were provided for the participants to read along with the researcher as she read them out loud. Participants randomized to the disconfirming condition received personality profiles (Appendix D, Measure 1) that indicated a large discrepancy between their personality profiles and the 'ideal' exerciser personality profiles (as indicated in Appendix D, Measure 1 by a numerical score of 43). Conversely, participants randomized to the confirming condition received personality profiles (Appendix D, Measure 3) that were very close to the 'ideal' exerciser personality profiles (as indicated in Appendix D, Measure 3 by a numerical score of 15). The provision of the above disconfirming or confirming feedback was designed to be inconsistent and consistent with participants' exercise identity respectively. The confederate observed these scores closely when tallying the participant's personality profile score. The confederate always received an average academic score to avoid the potential social comparison confound as indicated in Appendix D, Measure 5 as being neither similar nor dissimilar to the 'ideal' academic; which was clearly observed by the participant when he/she was tallying the confederate's personality profile.

When the personality profiles were tallied the researcher prompted the confederate to announce the tallied numerical score of the participant publicly. Then, the researcher provided verbal feedback to the participant, in the presence of the confederate, regarding the meaning of his/her numerical score in relation to the 'ideal' exerciser personality profile (see Appendix D, Measures 2 (disconfirming feedback) and 4 (confirming feedback)). Secondly, the researcher prompted the participant to announce the tallied numerical score of the confederate publicly.

Subsequently the confederate was provided with feedback pertaining to his/her numerical score in relation to the 'ideal' academic to uphold the believability of the study (see Appendix D, Measure 6 for the confederate's feedback). Note that this information provided in a public domain was designed to further verify or challenge the participant's exercise identity.

Directly following this task the researcher announced that she 'forgot' at least one measure in her office, which required she promptly leave the secluded room the lab session was taking place in order to collect the missing measures. During the researcher's absence (of precisely 90 seconds) the confederate casually asked the participant if he/she agreed with his/her personality assessment (self-presentational opportunity 1 (SP1)) and allowed conversation to flow accordingly. The confederate reacted to the participant's protestations, statements, and/or queries as neutrally and nondirectively as possible. The participant's responses to this interaction were assessed post-experiment⁶.

Upon the researcher's return the participants filled out measures of affect related to the feedback and a manipulation check designed to measure the real participant's level of agreement with and perceived consistency of the personality feedback he/she just received (Measure Set 1; Appendix E) and returned it to the researcher. Then the researcher reminded the participants of the second *pseudo*-purpose of the study, which was to determine if brainstorming activities pertaining to overcoming barriers to exercise adherence and academic success facilitate more favourable behaviours during the week following the lab session. The participant and the confederate were also reminded that the researcher would send a follow-up email and link to the study's website one week from the day of the lab session, in order to capture their reactions to this activity (although, in reality this email would never be sent). Further, the researcher

⁶ The recorded SP1 segment was assessed by three interraters post-experiment to retrieve pertinent data.

explained that both the participant and the confederate would individually brainstorm solutions to barriers presented for their specified domains, but that one participant (always the true participant) would be ‘randomly’ selected to go first. The researcher then looked at her notes (see Appendix F, Measure) and announced that the participant was ‘randomly’ selected to go first. The researcher instructed the confederate to help facilitate the activity by reading aloud the list of proposed barriers to exercise adherence (Appendix G, Measure 1) to the participant. The participant was instructed to verbally present to the group personally relevant solutions to each of the five barriers presented to him/her by the confederate. There was no time limit specified for this activity. The purpose of this exercise was to provide an opportunity for self-presentation wherein participants were given an opportunity to publically demonstrate their ability to find solutions for real-life obstacles to exercise adherence.

Upon completion of this activity, the researcher provided a second item to the confederate to read aloud (Appendix G, Measure 2) to the participant. This item asked the participant to state his/her exercise intentions for the week following the lab session. Again, there was no time limit for this activity. The purpose of this exercise was to provide an opportunity for self-presentation wherein participants’ were given the chance to publically state their intentions for exercise and these publically stated intentions were compared to baseline exercise intentions to determine if challenged participants may feel the need to overstate their intentions to exercise more so than confirmed participants.

When the real participant had completed both brainstorming activities the researcher instructed the confederate to leave the secluded room where the lab session was taking place in order to provide a more private setting for the researcher to thoroughly debrief the participant about his/her personality profile and the brainstorming session he/she had just completed. The

researcher further explained that the confederate would return after this debriefing session with the participant in order for him/her to complete the brainstorming portion of his/her lab session. The confederate was instructed simply to step out of the secluded room and wait in the researcher's office area. In reality, the confederate would not return to the secluded room where the lab session was taking place, as these instructions were noted to maintain the believability of the study's *pseudo*-purposes.

When the confederate had stepped out, the participant filled out measures of affect related to self-presentation (Appendix H, Measure 1) as well a measure of situational satisfaction (Appendix H, Measure 2) and returned it to the researcher. Then the researcher debriefed the participant about the deception involved in the study, as well as the actual purpose of the study (Appendix I, Measure 1). Furthermore, the participant was asked if he/she caught onto its true purpose as a final manipulation check (Appendix I, Measure 2).

Measures

Baseline measures.

Recent physical activity.

A portion of the Godin Leisure Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1985) was measured at baseline to assess recent physical activity for participant description purposes. Participants were asked to report the number of strenuous, moderate, and mild 30-minute exercise sessions they engaged in during the past week (see Appendix A, Measure 6). This scale's reliability has been demonstrated in a healthy adult sample (Godin & Shephard, 1985). As well, it has been previously validated against objective measures, such as V_{O_2} max (Godin & Shephard, 1985) and kilocalorie estimates (Miller, Freedson & Kline, 1994).

Exercise identity.

The nine-item Exercise Identity Scale (Anderson & Cychosz, 1994) was used to measure the extent to which participants view themselves as exercisers. It was included in the online baseline questionnaire and used to screen participants for eligibility. This scale required participants to rate the extent to which each item applies to them, using a seven-point Likert scale, where 1 = “*strongly disagree*” and 7 = “*strongly agree*” (see Appendix A, Measure 8). Sample items include, “*I consider myself an exerciser*” and “*I have numerous goals related to exercising.*” Test-retest reliability and internal consistency of this scale has been demonstrated among samples of healthy adult students (e.g., Anderson & Cychosz, 1994; Strachan & Brawley, 2008). This scale was shown to be reliable in the current study as well (Cronbach’s alpha = .859).

Exercise intentions.

At baseline, participants also indicated their intentions for exercise over the next week in terms of the frequency, duration, and intensity of exercise relative to strenuous, moderate, and mild exercise intensity categories (see Appendix A, Measure 7). Participants also indicated the strength of these intentions using a nine-point Likert scale, where 1 = “*definitely will engage in intended exercise*” and 9 = “*definitely will not engage in intended exercise.*” This method is consistent with suggestions in published research concerning the measurement of goals and intentions (e.g., Courneya & McAuley, 1993; Dawson, Brawley & Maddux, 2000; Shields & Brawley, 2006). This measure of exercise intentions provided a baseline level of participants’ exercise intentions for the next week.

Personality (pseudo measure).

Participants completed what they were led to believe was a personality trait measure in the online baseline questionnaire (see Appendix A, Measure 2). This measure was included to maintain the guise of the *pseudo*-purpose of the study, which was to assess the link between personality characteristics and success in the domains of exercise and academics. Specifically, participants filled out the 33-item Self-Control Scale (Tangy, Baumeister & Boone, 2004). This scale employs a five-point Likert scale, where 1 = “*not at all like me*” and 5 = “*very much like me*” and indicates the degree to which each item applies to the individual participant⁷. When provided with identity-relevant feedback, participants were told that the extent to which their personality traits are similar/dissimilar to that of a successful exerciser is based on their scores on this personality questionnaire.

Academic habits (pseudo measure).

This measure was designed to capture the academic habits of participants and was included in the online baseline questionnaire. It was created solely for the sustained deception of the participants throughout the study. This measure was loosely modeled after the GLTEQ in order to maintain believability and required participants to report the amount of time dedicated to academic pursuits (such as class time, class work/research time, and studying time) as part of the past week’s behaviours during the school year (see Appendix A, Measure 3).

Academic intentions (pseudo measure).

A measure of academic intentions was crafted to maintain participant deception. This measure mirrors the Exercise Intentions Questionnaire; however, it alternatively measures one’s

⁷ The Self-Control Scale is not utilized by psychologists as a personality trait measure, but was employed solely for the purposes of deception.

academic intentions and strength of these academic intentions with respect to class time, class work/research, and studying. Therefore, please refer to the Exercise Intentions Questionnaire (see above and Appendix A, Measure 7), as well as Appendix A, Measure 4 for further description of this measure.

Academic identity (pseudo measure).

A *pseudo*-measure of academic identity was also included in the online baseline questionnaire (see Appendix A, Measure 5), in order to maintain the deception element of the study. This measure mirrors the Exercise Identity Scale (as above; see Anderson & Cychosz (1994) and Appendix A, Measure 8) and therefore employed a seven-point Likert scale, where 1 = “strongly disagree” and 7 = “strongly disagree.” Sample items include, “I consider myself a good student” and “I have numerous goals related to my academic success.”

Self-presentation opportunity 1 (SP1): post public personality assessment – agreement of feedback.

Participants’ responses to the confederate’s question regarding whether or not the participant agreed with their personality feedback (that occurred during the researcher’s 90 second absence) were audio-recorded and assessed for self-presentational responses post-lab session by three trained raters. It was reasoned that participants may use the opportunity to self-present as being similar or dissimilar to the feedback they received (a successful or unsuccessful exerciser) by expressing their level of agreement (e.g., “Ya, to see [obstacles to exercise] as minor setbacks, rather than long-term barriers is definitely right on”) with the feedback. The raters specifically assessed the extent to which participants’ statements (provided during the first self-presentation opportunity) reflected agreement with his/her exercise identity feedback using a nine-point scale (where 1 = “do not agree at all” and 9 = “agree very much”). This method of

assessment of self-presentational aspects was based on past research by Swann and Hill (1982) which employed a similar rating grid targeting the participants' level of agreement to identity feedback. Interrater reliability was strong (Pallant, 2007) and ranged from $r = .862$ ($n = 101, p < .001$) to $r = .885$ ($n = 101, p < .001$).

Self-presentation opportunity 1 (SP1): post public personality assessment – rationalization of weak identity feedback.

Participants' responses to the confederates' question regarding whether or not they agreed with their personality feedback were assessed for a second time by three trained raters. This time the responses were specifically viewed in terms of participants' level of rationalization to identity feedback. It was reasoned that participants may use the opportunity to self-present by providing rationalized reasons to explain their consistent or inconsistent exercise identity feedback. For example, a participant may suggest that, "Mine sounds about right. Like I like exercising, but I'm the most...addicted to it." These self-presentational rationalization responses were assessed using a nine-point scale (where 1 = "*did not rationalize at all*" and 9 = "*rationalized very much*"). Interrater reliability was of medium strength (Cohen, 1992) and ranged from $.660$ ($n = 101, p < .001$) to $.739$ ($n = 101, p < .001$).

Measure Set 1.

Affect.

Weiner's eight-item affect scale (1986; see Appendix E, Measure 1) was used to assess participants' affective reactions to the identity-relevant feedback they received (i.e., the exercise identity challenge). The participants used a nine-point scale (1 = "*do not feel at all*"; 9 = "*feel very much*") to rate the extent to which they experienced positive (e.g., happy) and negative (e.g., depressed) emotions regarding this identity feedback. Scores for the positive subscale were

reverse scored and summed with the negative subscale items to acquire a total affect variable for analysis purposes. This scale has been demonstrated to be reliable with other samples (Strachan et al., 2005; Weiner, 1986), and reliability was also demonstrated in the current study (Cronbach's alpha = .865).

Manipulation check: 'personality assessment feedback.'

The 'personality assessment feedback' manipulation check measure (Appendix E, Measure 2) asked each participant to (1) indicate his/her level of agreement to his/her personality assessment feedback and (2) indicate the level of perceived consistency between his/her personality assessment and personal view of him/her-self as an exerciser. Participants answers were captured on a nine-point Likert scale, where 1 = "completely disagree" and 9 = "completely agree." The measure was designed to test whether the lab session was effective at challenging or verifying the participants' exercise identities. The results of this measure were later compared to the participants' conditions to ensure the lab session was effective.

Self-presentation opportunity 2 (SP2): solutions to barriers challenge and exercise intentions.

The purpose of this exercise was to provide an opportunity for self-presentation wherein participants were given an opportunity to publically demonstrate their ability to find solutions for five real-life obstacles to exercise adherence thus, seeking to influence the perceptions that other people in the situation have of them. The number and elaboration of the participants' solutions to the five hypothetical barriers to exercise adherence were assessed post-lab session. See Appendix J, Measure 2 for the full assessment grid utilized by three interraters.

An interrater reliability analysis using the statistic was performed to determine consistency among raters. For assessment of participants' self-presentational to exercise identity

challenges, interrater reliability was strong (Pallant, 2007) between raters $r = .883$ ($n = 101$, $p < .001$).

Exercise intentions.

Participants restated their intentions for exercise over the next week in terms of the frequency, duration, and intensity of exercise relative to strenuous, moderate, and mild exercise intensity categories, as part of the second self-presentational opportunity (see Appendix A, Measure 7). Further, as part of this activity, participants also stated the strength of these intentions using a nine-point Likert scale, exactly like the exercise intentions measure filled out at baseline. This measure was included in the self-presentational portion because it was administered verbally by the confederate to the participant in the presence of the researcher and answers to all six questions were verbal as well. Furthermore, to extract the degree of self-presentation employed during SP2 the baseline exercise intention responses were subtracted from the self-presentational exercise intention responses from the present measure. This measure was an indicator of self-presentation, as it offered participants an opportunity to verbalize their exercise intentions and the strength of those exercise intentions for the coming week in a public setting with the confederate and researcher.

Measure Set 2.

Affect.

The affect measure (Weiner, 1986; see Appendix H, Measure 1) was re-administered to participants but in this case, affect was measured relative to participants' perceptions of their ability to self-present as an exerciser during the course of the experiment. The reliability of this scale was also demonstrated in this study (Cronbach's alpha = .904). Please refer to the initial affect measure description to determine the measure layout.

Situation satisfaction.

The one-item situational satisfaction measure (Appendix H, Measure 2) asked participants about their satisfaction in their ability to portray themselves adequately to others during the lab session. The question was assessed on a nine-point scale (1 = “*completely satisfied*”; 9 = “*not satisfied at all*”).

Desire to self-present.

The one-item desire to self-present measure (also found in Appendix H, Measure 2) asked participants the extent to which they desired to present themselves differently than their personality profile indicated at the cessation of the lab session. The question was assessed on a nine-point scale (1 = “*desired very much*”; 9 = “*did not desire*”).

Chapter IV

Presentation of the Journal Article

The journal article entitled *Affective and Self-Presentational Responses to an Exercise Identity Challenge: Investigating Identity Theory and the Role of the Other* presented in this chapter has been prepared for submission to the Journal of Health Psychology

Running head: PUBLIC EXERCISE IDENTITY CHALLENGES

Affective and Self-Presentational Responses to an Exercise Identity Challenge: Investigating
Identity Theory and the Role of the Other

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Abstract

According to Identity Theory (IT), identity-inconsistent feedback is associated with negative affect and motivation to change the situation to match identity. Responses to identity-relevant feedback from others remains an understudied IT tenet. The affective and self-presentational responses of high-identity exercisers provided with identity confirming or disconfirming feedback in the presence of another person were examined in a randomized experiment. MANCOVA procedures revealed that compared to confirmed individuals, disconfirmed individuals demonstrated greater negative affect, desire to self-present, and attempts to self-present. Regression analyses determined that among disconfirmed individuals, satisfaction with self-presentation was negatively related to negative affect. Findings support IT predictions.

KEYWORDS: identity; Identity Theory; affect; role of the other; public; self-presentation; MANCOVA; bivariate regression

Introduction

Given the many health benefits associated with a physically active lifestyle (Public Health Agency of Canada, 2004; *Healthy People 2010*, 2000) and the elevated disease (Blair & Brodney, 1999) and obesity (Ammerman, Pignone & Fernandez, 2002; *Health Canada: It's Your Health*, 2006) rates associated with inactivity, it is surprising that the majority of Canadians fail to meet even minimal physical activity recommendations (Miller, Sales, Kopjar, Fihn & Bryson, 2005). Accordingly, understanding factors associated with health behaviour (e.g., exercise adherence) has taken research precedence (Orleans, 2000). The investigation of psychological variables is one recommended avenue for addressing the issue of exercise adherence (Orleans, 2000). Pertinent psychological variables fall under the rubric of self (Contrada & Ashmore, 1999) and given that understanding the self is integral to understanding health behaviours (Fox & Wilson, 2008), the self has become a research priority (Contrada & Ashmore, 1999). One self-related variable that has received increased research attention is *identity*.

Identities are components of the self that consist of the meanings or expectations about who one is in the context of a given role (Stets & Burke, 2003; Burke & Stets, 2009). These meanings are formed through interactions and expectations of both the self (internal) and others (external; Stets & Burke, 2003) and are thought to guide identity-relevant behaviour (Gecas & Burke, 1995; Stets & Burke, 2003). Identity Theory (Burke, 1980; Stryker, 1968) provides a theoretical framework to understand how identities influence behaviour through the generation of testable hypotheses.

According to Burke (2006), identities are dynamic, self-regulating control systems that encourage identity-congruent behaviour by providing personally-relevant behavioural standards (Stryker & Burke, 2000). When an identity is activated by a situation, people compare their

identity meaning and *identity-relevant situational meanings* (how they are portrayed in the situation). When a discrepancy occurs during the *comparison* process, people react both behaviourally and affectively (Burke & Harrod, 2005). If the comparison suggests a difference, the incongruence is thought to create negative affect and motivation to modify the situation so that behaviour is brought in line with identity meanings (cf. Stets & Burke, 2003). If the comparison suggests no difference, positive affect should result and no change to the situation or behaviour is necessary given the perceived match (Stryker & Burke, 2000).

Identity Theory research supports the tenet that identities are linked to identity-relevant behaviour in a variety of contexts (e.g., Callero, 1985; Hoelter, 1983; Serpe, 1987; Stryker & Serpe, 1982); including health behaviours such as condom use (e.g., Fekadu & Kraft, 2001), healthy eating (e.g., Armitage & Connor, 1999; Sparks & Guthrie, 1998), and unhealthy behaviours (Storer, Cychosz & Anderson, 1997). A great deal of identity research addressing health behaviours has focused on exercise. More specifically, the literature asserts that exercise and physical activity behaviours highly correspond to the exercise identity construct (Anderson & Cychosz, 1994; Anderson, Cychosz & Franke, 1998; Miller, Ogletree & Welshimer, 2002; Petosa, Suminski & Hartz, 2003; Strachan et al., 2009b). According to Anderson et al., the strength of exercise identity is related to one's exercise participation, perceived level of exertion, muscular endurance, percent body fat, and fitness levels (Anderson & Cychosz, 1994; Anderson et al., 1998; Storer et al., 1997). Furthermore, Anderson and Cychosz (1994) report that, as exercise identities become more important to individuals in relation to their other identities (also known as identity salience) the more likely individuals are to also progress through exercise participation levels.

While past research has established a link between exercise identity and exercise behaviours (Anderson & Cychosz, 1994; Anderson, Cychosz & Franke, 1998; Miller, Ogletree & Welshimer, 2002; Petosa, Suminski & Hartz, 2003) few studies have utilized Identity Theory propositions, which offer a theoretically-based guide for investigation. Strachan et al. (2008, 2009b) have taken initial steps in testing Identity Theory predictions in the exercise domain. Specifically, Strachan and Brawley (2008) examined the reactions of exercisers with strong and moderately strong exercise identities to vignettes that described situations designed to challenge individuals' exercise identity. When compared to individuals with moderate exercise identities, individuals with strong exercise identities responded with greater negative affect and in a manner that suggested they more strongly sought identity-behaviour congruence. Strachan et al. also examined affective reactions to identity-behaviour consistency by having participants reflect on their recent exercise behaviour and determine to what extent it had been consistent with their view of themselves as exercisers (their exercise identity meaning; Strachan et al., 2009b). They found that negative affect increased as perceptions of consistency decreased and the strength of this relationship was stronger for high identity individuals than for low identity individuals.

However, as the studies by Strachan et al. illustrate, exercise identity research has solely focused on *individual* judgments about personal exercise identity consistency. Riley and Burke (1995) concur in the general identity literature, asserting that few studies that employ Identity Theory acknowledge the importance of the role of the other as it applies to identity-congruent behaviour. This is surprising as Stets and Burke (2003) have suggested that an individual learns the meanings of his/her role identity *through* the reactions of others while interacting with them in a given situation. For that reason, Riley and Burke suggest a broadened social perspective of

Identity Theory research, as the Theory explicitly acknowledges that individuals derive information from the feedback they receive from *others*.

An example of how identity feedback from others may influence affect and behaviour from an Identity Theory perspective is instructive. Jane strongly identifies with being a seasoned exerciser (*identity standard*). When Jane meets with a personal trainer for the first time, he makes a comment that suggests he thinks Jane is a 'beginner exerciser.' Jane would compare this other-derived, identity-relevant feedback (*situational meaning*) provided by the personal trainer with her identity standard. As Jane perceives this feedback from the trainer as inconsistent with her *identity standard* she should experience negative affect. According to Identity Theory when individuals receive identity-disconfirming feedback from others, or in the presence of others, they should seek to influence the perceptions that other people in the situation have of them (in this case, as a beginner exerciser). They should do this in an attempt to re-establish congruence between perceptions in the situation and identity meanings. Indeed, Jane may engage in self-presentation to try to change the impression the personal trainer has of her by, for example, referring to her past exercise experiences in conversation.

Self-presentation is a social-psychological construct that conceptualizes individual attempts to influence the attitudes and behaviours of others through the presentation of self-relevant information (Schlenker, 2003). Indeed, self-presentational behaviour has been identified as aiding in the self-verification process of a self-relevant identity at the individual level (Swann, 1983). In the present study, self-presentation was employed as a means of assessing individuals' attempts to realign perceptions of the situation with exercise-identity meanings.

Swann and Hill (1982) and Riley and Burke (1995) are among the few researchers to investigate the role identity-relevant feedback from others plays in the identity verification

process. As such, their studies exemplify experimental protocols that test self-verification behaviours of individuals who receive disconfirming identity feedback in the presence of others. Specifically, Swann and Hill conducted an experiment that examined the behavioural and psychological responses of female undergraduate students after receiving disconfirming self-concept feedback. They found that individuals who received self-discrepant feedback from a confederate participant and did not have an opportunity to reject or refute it publically changed their self-ratings; whereas, individuals who had an opportunity to reject or refute it publically did not change their self-ratings. Swann and Hill's study suggests that when given an opportunity, people seek to change the view others have of them when this view is inconsistent with their personal self-views.

Also employing an experimental protocol, Riley and Burke (1995) tested the leadership identity, identity meanings, and pertinent identity-relevant behaviour; which was captured by both the self and others. They found that when discrepancies arose between participants' personal identity assessments and their group members' identity assessments of them they were less satisfied with their role performance in the group (Riley & Burke, 1995). These findings suggest that individuals are effected (e.g., their satisfaction levels) when feedback from others is not consistent with their personal identity meanings.

Despite these contributions to the general identity literature, there remains a paucity of research addressing the role of the other in Identity Theory generally and this gap is especially evident in the exercise identity literature. Indeed, no exercise identity research to date has examined reactions to other-derived identity feedback. To address this, Riley and Burke (1995) propose the expansion of our perception of Identity Theory to include others in the identity confirmation process. With this expanded theoretical perception in mind, this study was designed

to fill the gap in the exercise identity literature, as well as Identity Theory literature as it relates to feedback from the other by examining individual reactions to exercise-identity feedback provided by and in the presence of others. Further, this study not only contributes theoretically to the exercise identity literature, but also makes methodological advances by employing an experimental protocol. As Burke and Stets (2009) exude, experimental protocols, such as was employed by Swann and Hill (1982), are excellent prototypes for testing and understanding the identity model. Further, through having participants respond to what they perceive to be real identity-relevant feedback, our study builds upon earlier exercise identity studies that utilized hypothetical exercise identity challenges (e.g., Strachan & Brawley, 2008).

In summary, the overall purpose of this study was to examine the affective and self-presentational reactions of individuals with a strong exercise identity exposed to either i) an exercise identity confirming or ii) an exercise identity disconfirming public situation. Based on Identity Theory, it was hypothesized that compared to exercisers who were provided with exercise-identity confirming feedback, exercisers provided with exercise-identity disconfirming feedback in a public domain would respond to this situation with i) greater negative affect, ii) greater desire to self-present themselves as exercisers, and iii) greater attempts to self-present themselves as exercisers. Furthermore, individuals in the disconfirming condition who were satisfied with their ability to self-present as an exerciser were hypothesized to report less negative affect than individuals who remained unsatisfied with their ability to self-present.

Methods

Design and Participants

Participants consisted of 63 female and 38 male ($M_{\text{age}} = 22.2$ years, $SD = 5.49$) self-identified student exercisers. Eighty-seven percent of participants were Caucasian and eighty-six

percent were single. Furthermore, 46.2 percent were majoring in health sciences, 19.2 percent in social sciences, and 16.4 percent in engineering and sciences. Participants were eligible to participate if they scored at or above the midpoint on exercise identity (Anderson & Cychosz, 1994).

In this study, a randomized experimental design was used in which participants were randomly assigned to either an identity confirming or disconfirming condition with equal proportions of male and female participants assigned to each condition. One male and three female student confederates, who were of the same age to the participants, were employed to the participants. Confederates were matched to participants in terms of gender.

Procedure

Participants were recruited from academic and fitness classes, at three post-secondary institutions in a large Canadian city ($n = 101$). Participants were deceptively told that the study's purpose was to assess the link between personality characteristics and future success in academic and exercise behaviours. One week prior to the lab session participants provided consent and filled out demographic measures as well as the exercise identity measure (Anderson & Cychosz, 1994) to determine eligibility. In order to maintain the guise of the study participants also filled out *pseudo* measures which included a measure of academic identity and a personality measure.

Upon arrival to the lab, the participant and confederate (hitherto referred to as 'the participants') were guided to a private room where they were seated at a table opposite the researcher. They were reminded of the *pseudo* purpose of the study and notified that the lab session would be audio-recorded. Furthermore, the participant and confederate were informed that they would receive feedback regarding how similar their personality profiles (filled out online one week prior) were to the profiles of 'ideal' exercisers or academics, depending on to

which condition they were ‘randomly’ assigned. In reality, the real participants always received exercise feedback while the confederate always received academic feedback.

The researcher then produced the personality profiles. Further, the researcher informed the participants that their final scores still required tallying and thus instructed them to exchange their profiles in order to reduce swayed marking. In reality, this ensured that the participant knew that the confederate had closely observed his/her personality profile score in relation to the ‘ideal’ exerciser profile.

The researcher then provided verbal tallying instructions so that participants could tally each other’s scores. Participants were able to see how similar or dissimilar the other person’s personality profile was to the ‘ideal’ exerciser or academic profiles given that the profile contained a results key that explained the meaning of various score ranges in terms of likelihood of future success in that domain. Profiles associated with participants in the disconfirming condition indicated a large discrepancy between their profiles and the ‘ideal’ exerciser. This feedback was designed to be inconsistent with participants’ high exercise identities. Conversely, profiles associated with participants in the confirming condition were very close to the ‘ideal’ exerciser profile and therefore consistent with participants’ high exercise identities. The confederate always received a neutral academic score to avoid the possibility of a potential social comparison confound.

Next, the researcher prompted the confederate to announce the numerical score of the real participant and the researcher provided verbal feedback to the real participant, in the presence of the confederate, regarding the meaning of his/her score in relation to the ‘ideal’ exerciser personality profile. Secondly, the researcher prompted the real participant to announce the numerical score of the confederate and the researcher provided the confederate with verbal

feedback with regards to his/her academic personality profile to uphold the believability of the study.

Then, the researcher announced that she 'forgot' a measure, which required her to leave the room to collect the missing measure. During the researcher's absence (of precisely 90 seconds) the confederate casually asked the real participant if he/she agreed with his/her personality assessment (self-presentational opportunity 1). The confederate reacted to the participant's response in a neutral manner, for example, responding to comments with statements like, "oh, yeah," "okay," and "hmm." The real participants' responses were assessed post-experiment by three raters.

Upon the researcher's return the participants filled out measures of affect related the feedback they had received and a manipulation check designed to determine if participants' perceived their identity feedback as being consistent with the condition to which they had been assigned (i.e., confirming or disconfirming). Then the researcher reminded the participants of the second *pseudo*-purpose of the study, which was to determine if brainstorming activities pertaining to overcoming barriers to exercise and academic success would aid in adherence to that behaviour during the next week. Further, the researcher explained that both the participant and confederate would individually brainstorm solutions to barriers presented for their specified domains and that the real participant was 'randomly' selected to go first. The confederate was instructed to read aloud the list of five barriers to exercise adherence to the participant and participant was instructed to verbally provide personally relevant solutions to each barrier.

The researcher then instructed the confederate to temporarily step out of the lab in order to provide a private setting for the researcher to thoroughly debrief the real participant about his/her personality profile and the brainstorming session he/she had just completed. The

researcher further explained that the confederate would return after this debriefing session with the real participant in order for him/her to complete the brainstorming portion of his/her lab session in order to maintain the believability of the study. When the confederate left, the real participant filled out measures of affect related to self-presentation and situational satisfaction. Then the participant was debriefed about the deception involved in the study and asked if he/she caught onto the true purpose.

Measures

Eligibility and demographic measures.

Eligible participants provided the following demographic information: age, gender, ethnicity, and partner status.

Recent physical activity.

A portion of the Godin Leisure Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1985) was used. Participants reported the number of strenuous, moderate, and mild 30-minute exercise sessions they engaged in during a recent typical week. This scale's reliability has been demonstrated and it has been previously validated against objective measures such as $\dot{V}O_{2\max}$ (Godin & Shephard, 1985) and kilocalorie estimates (Miller, Freedson & Kline, 1994).

Exercise identity.

The nine-item Exercise Identity Scale (Anderson & Cychosz, 1994) was used to measure the extent to which participants view themselves as an exerciser in order to screen for eligibility. Participants rated the extent to which each item applies to them, using a seven-point Likert scale, where 1 = "*strongly disagree*" and 7 = "*strongly agree*." Sample items include, "*I consider myself an exerciser*" and "*I have numerous goals related to exercising*." Test-retest reliability and internal consistency of this scale has been demonstrated among samples of healthy students

(e.g., Anderson & Cychosz, 1994; Strachan & Brawley, 2008). This scale was shown to be reliable in the current study (Cronbach's alpha = .859).

Personality (pseudo measure).

Participants completed what they were led to believe was a personality measure in order to maintain the guise of the *pseudo*-purpose of the study, which was to assess the link between personality characteristics and success in the domains of exercise and academics. Specifically, real participants filled out the 33-item Self-Control Scale (Tangney, Baumeister & Boone, 2004). This scale employs a five-point Likert scale, where 1 = “*not at all like me*” and 5 = “*very much like me.*” Note that, the Self-Control Scale is not utilized by psychologists as a personality trait measure, but was employed in the study solely for the purposes of deception. When provided with identity-relevant feedback, participants were told that the extent to which their personality traits are (dis)similar to that of a successful exerciser were based on their scores on this measure.

Self-presentation opportunity 1 (SP1): post public personality assessment – agreement of feedback.

Participants' responses to the confederate's question regarding whether or not the participant agreed with his/her personality feedback (that occurred during the researcher's 90 second absence) were audio-recorded and assessed for self-presentational responses post-lab session by three trained raters. It was reasoned that participants may use the opportunity to self-present as being similar or dissimilar to the feedback they received (a successful or unsuccessful exerciser) by expressing their level of agreement (e.g., “Ya, to see [obstacles to exercise] as minor setbacks, rather than long-term barriers is definitely right on”) with the feedback. The raters assessed the extent to which participants' statements reflected agreement with his/her exercise identity feedback using a nine-point scale (1 = “*do not agree at all*”; 9 = “*agree very*

much”). This method of assessment of self-presentational aspects was based on past research by Swann and Hill (1982) which employed a similar rating grid targeting the participants’ level of agreement to identity feedback. Interrater reliability was strong (Pallant, 2007) and ranged from $r = .862$ ($n = 101, p < .001$) to $r = .885$ ($n = 101, p < .001$).

Self-presentation opportunity 1 (SP1): post public personality assessment – rationalization of weak identity feedback.

Participants’ responses to the confederates’ question regarding whether or not they agreed with their personality feedback were also assessed for in terms of participants’ level of rationalization to identity feedback. It was reasoned that participants may use the opportunity to self-present by providing rationalized reasons why their consistent or inconsistent exercise identity feedback. As per general methods, please provide example (see comments in that document). These self-presentational rationalization responses were assessed using a nine-point scale (1 = “*did not rationalize at all*”; 9 = “*rationalized very much*”). Interrater reliability was moderately strong (Pallant, 2007) and ranged from $.739$ ($n = 101, p < .001$) to $.660$ ($n = 101, p < .001$).

Negative affect 1.

Weiner’s eight-item affect scale (1986) was used to assess participants’ affective reactions to the identity-relevant feedback they received. Participants used a nine-point scale (1 = *do not feel at all*; 9 = *feel very much*) to rate the extent to which they experienced positive (e.g., happy) and negative (e.g., depressed) emotions regarding this identity feedback. Scores for the positive subscale were reverse scored and summed with the negative subscale items to acquire a total negative affect variable for analysis purposes. This scale has been demonstrated to be

reliable with other samples (Strachan, 2005; Weiner, 1986), and reliability was also demonstrated in the current study (Cronbach's alpha = .865).

Manipulation check: 'personality assessment feedback.'

The 'personality assessment feedback' manipulation check asked each participant to indicate his/her level of agreement to his/her personality assessment feedback and indicate the level of perceived consistency between his/her personality assessment and personal view of him/her-self as an exerciser. Participants answers were captured on a nine-point Likert scale, where 1 = "*completely disagree*" and 9 = "*completely agree.*" The measure was designed to test whether the lab session was effective at challenging or verifying the real participants' exercise identities. The results of this measure were later compared to the real participants' conditions to ensure the lab session was effective.

Self-presentation opportunity 2: solutions to barriers challenge.

The purpose of this exercise was to provide an opportunity for self-presentation wherein participants were had a chance to publically demonstrate their ability to find solutions for five real-life obstacles to exercise adherence, thus seeking to influence the perceptions that other people in the situation have of them. The number and elaboration of the real participants' solutions to the five hypothetical barriers to exercise adherence were assessed post-lab session.

Negative affect 2.

The affect measure (Weiner, 1986; see Appendix H, Measure 1) was re-administered to participants but in this case, affect was measured relative to participants' perceptions of their ability to self-present as an exerciser during the course of the experiment. The reliability of this scale was also demonstrated in this study (Cronbach's alpha = .904). Please refer to the initial affect measure description to determine the measure layout.

Situation satisfaction.

The one-item situational satisfaction measure (Appendix H, Measure 2) asked participants about their satisfaction in their ability to portray themselves adequately to others during the lab session. The question was assessed on a nine-point scale (1 = “*completely satisfied*”; 9 = “*not satisfied at all*”). The scale was found to be reliable for the current study

Desire to self-present.

The one-item desire to self-present measure (also found in Appendix H, Measure 2) asked participants the extent to which they desired to present themselves differently than their personality profile indicated. The question was assessed on a nine-point scale (1 = “*desired very much*”; 9 = “*did not desire*”).

Results**Data management.**

In the current dataset, less than five percent of data points were missing for all variables. Therefore, according to Tabachnick and Fidell (2007) mean substitution was a viable means of missing data replacement and was employed. Specifically, when a participant was missing a value for a scale item, then the participant’s item mean for the remainder of the items in the scale was entered, thereby capturing the most representative value of the participants’ unique responses to that scale. Also, outlying univariate cases pertaining to physical activity scores were identified and modified to one unit larger than the next extreme score (Tabachnick & Fidell, 2007). No multivariate outliers were detected using the SPSS regression method and the Mahalanobis distance option. Preliminary assumption testing was conducted and all assumptions were met. A MANCOVA analysis was employed to compare randomized groups for differences on demographic and descriptive variables, controlling for age, as groups differed on age where

the confirmed condition's mean age was 20.6 years of age (SD = 2.09) and the disconfirmed condition's mean age was 23.9 (SD = 7.26). Finally, no significant gender differences were found on the variables of interest.

Descriptive statistics.

The average exercise identity score of participants was 51.8 (SD = 8.34) out of a possible maximum score of 63. On average, participants reported engaging in 4.15 (SD = 4.87) 30-minute or more bouts of mild, 3.64 (SD = 3.42) moderate, and 5.40 (SD = 4.50) strenuous exercise in the past week. Only six out of one hundred and seven participants caught onto the deception element of the study as was shared at the cessation of the experimental sessions. These participants data were not included in the analysis resulting in data from 101 participants being included in the analyses. Please refer to Table 1 where correlations of the variable of interest are presented.

Table 1

Strength of Relationships between Dependent Variables

Scale	1	2	3	4	5
1. Negative affect	-	-.443*	.288*	-.041	-.399*
2. Feedback agreement		-	.022	-.011	.149
3. Feedback rationalization			-	-.088	-.185
4. Self-presentation challenges				-	.046
5. Desire to present differently					-

Note. Controlled for age.

* $p < .01$

Data analysis.

In order to ensure that our experimental manipulation of confirming or disconfirming people's exercise identities worked a one-way multiple analysis of covariance (MANCOVA)

was conducted as a manipulation check, controlling for age. Specifically, we wanted to determine if, as predicted, participants in the confirming condition agreed more with the feedback they received and saw this feedback as more consistent with their exercise identity than participants in the disconfirming condition.

The overall MANCOVA model was significant ($F(2, 95) = 43.0, p < .01$; Wilks' Lambda = .525; partial eta squared = .475). Specifically, participants in the confirming condition reported significantly more agreement with the exercise identity feedback they received ($M = 7.50, SD = 1.680$) compared to the disconfirming condition ($M = 4.61, SD = 2.47$). Further, the confirming condition felt this feedback was significantly more consistent with their exercise identities ($M = 7.31, SD = 1.725$) than participants in the disconfirming condition ($M = 3.68, SD = 2.20$).

Furthermore, two analyses were carried out to test study hypotheses. First, a one-way multiple analysis of covariance (MANCOVA) was used to compare individuals randomized to the two conditions on the expected outcomes, specifically to test whether or not people in the identity disconfirming condition respond i) greater negative affect, ii) greater desire to self-present, and iii) greater attempts to self-present themselves as exercisers in a public domain. To address the second hypothesis, a regression analysis was employed to examine the hypothesis that individuals in the disconfirming condition who reported satisfaction with their ability to self-present as an exerciser would report less negative affect than individuals who remained unsatisfied with their ability to self-present.

Main analyses.

Hypothesis 1.

In order to compare randomized groups on the dependent variables, a one-way between-groups MANCOVA was performed controlling for age. Age was a significant covariate ($F(94, 5) = 4.44, p < .01$; Wilks' Lambda = .809; partial eta squared = .191). Univariate follow-up analyses revealed that age was significant for agreement to feedback (confirming condition $M = 6.38, SD = 1.637$; disconfirming condition $M = 4.23, SD = 2.48$) and self-presentation challenges (confirming condition $M = 10.44, SD = 3.28$; disconfirming condition $M = 9.97, SD = 3.73$).

The overall model was significant, as the confirming and disconfirming feedback groups differed on the combined dependent variables, ($F(97, 5) = 18.86, p < .01$; Wilks' Lambda = .507; partial eta squared = .493). Univariate follow-up analyses revealed that individuals in the disconfirming condition reported greater negative affect, ($F(101, 1) = 48.5, p < .01$; partial eta squared = .324). Also, disconfirmed individuals displayed significantly different self-presentation reactions than confirmed individuals. Specifically, disconfirmed participants expressed greater desire to portray themselves differently, ($F(101, 1) = 11.81, p < .01$; partial eta squared = .105); expressed greater disagreement with feedback, $F(101, 1) = 27.8, p < .01$; partial eta squared = .216; and were more likely to rationalize feedback, $F(101, 1) = 13.32, p < .01$, partial eta squared = .117, than confirmed participants. Participants in the confirming and disconfirming feedback conditions did not differ significantly on the number of solutions they provided to potential exercise barriers. Please refer to Table 2 where univariate effects based on condition for these variables are presented.

Table 2

Univariate Effects for Condition

Variable	Condition	Means	Standard Deviations
Negative affect*	Confirm	15.02	9.94
	Disconfirm	37.4	10.61
Feedback agreement*	Confirm	6.38	1.637
	Disconfirm	4.23	2.48
Feedback rationalization*	Confirm	.624	1.194
	Disconfirm	2.11	2.54
Self-presentation challenges	Confirm	10.44	3.28
	Disconfirm	9.97	3.73
Desire to present differently*	Confirm	6.57	2.22
	Disconfirm	4.97	2.48

Note. Controlled for age.

* $p < .05$, 2-tailed

Hypothesis 2.

Given that the second hypothesis pertained only to participants randomized to the disconfirming condition, only this data were selected for this analysis. To address the second hypothesis, a bivariate regression analysis was conducted where the criterion variable, negative affect, was regressed on the predictor variable, satisfaction with ability to self-present. Participants in the disconfirming conditions' satisfaction with their ability to self-present as exercisers was a significant predictor of negative affect ($\beta = .535$, $t(45) = 4.25$, $p < .01$) and accounted for 28.6 percent ($R^2 = .286$) of the variance of negative affect scores. Please refer to Table 3 where beta values on these variables are presented.

Table 3

Prediction of Negative Affect for Disconfirmed Individual Post Self-Presentational Opportunities

Variable	<i>adjR</i> ²	<i>R</i> ² Δ	<i>p</i> of <i>F</i> Δ	B	<i>t</i>
Negative Affect	.270	.286	.05	.535	4.25

Note. Controlled for age.* *p* < .01**Discussion**

The present experimental study is the first investigation, to our knowledge, to examine individual affective and self-presentational responses to other-derived, personally relevant exercise identity feedback. Findings support Identity Theory-driven hypotheses (Burke, 1980) examined in the context of exercise behaviour. Further, the findings answer a research call for examination of the role of the other in the identity verification process (Riley & Burke, 1995).

Affect.

Based on Identity Theory, it was hypothesized that people provided with exercise identity disconfirming feedback presented by and in the presence of others would respond with greater negative affect compared to those whose exercise identities were confirmed. This hypothesis was supported. Specifically, disconfirmed individuals demonstrated significantly greater negative affect after receiving exercise identity feedback in the public domain compared to confirmed individuals. According to Burke's Identity Theory (1991, 1996) identity verification produces positive emotions and identity nonverification produces negative emotions (Burke & Stets, 2009).

The present finding of negative affective responses to identity-disconfirming feedback is consistent with past general Identity Theory research. Specifically, the present study is attuned to the work of Stets et al. (2003, 2004, 2005; Stets & Asenico, 2008; Stets & Osborn, 2008) which

collectively asserts that individuals who receive unexpected identity nonverifying feedback report negative emotions. Additionally, these findings are consistent with past research in the exercise domain which also suggests that individual emotional responses are related to perception of identity verification (Strachan et al., 2008; 2009*b*). The current findings extend past research by suggesting that, in the context of exercise, identity-relevant feedback *from others* (in addition to self-evaluative feedback) is also associated with positive affect when it confirms one's exercise identity and negative affect when it challenges one's exercise identity.

Self-presentation.

This study's findings provide partial support for the hypothesis that compared to individuals whose exercise identities were confirmed, individuals whose exercise identities were publicly refuted would demonstrate greater attempts to self-present as an exerciser. Specifically, disconfirmed individuals expressed i) a significantly greater desire to portray themselves differently throughout the public situation, ii) greater public disagreement with their exercise identity feedback, and iii) greater public rationalization of their weak identity feedback as compared to confirmed individuals. These findings are congruent with Identity Theory (Burke, 1980). However, the self-presentation hypothesis was not supported with respect to self-presentational responses participants provided during the exercise barriers activity. Supporting and non-supporting findings will be addressed in turn.

This study found that disconfirmed individuals demonstrated greater attempts to self-present as exercisers, a finding which is in line with Identity Theory (Burke, 1980) and the concept of self-presentation (Schlenker, 2003). Identity Theory posits that when individuals perceive their identity as not verified by situational identity-relevant feedback, individuals should respond with identity-relevant behaviour in an attempt to elicit identity verification (Burke &

Stets, 2009; Gecas & Burke, 1995; Stets & Burke, 2003). When identity-relevant feedback is received by and in the presence of others (as was the case for the present study), one way in which individuals may try to change the situation through behaviour is by *self-presenting* in order to influence the perceptions others have of them (Schlenker, 2003). In the present study, self-presentational motives were demonstrated through disconfirmed individuals expressing greater *desire* to present themselves differently as compared to their confirmed counterparts. Moreover, Burke (2006) suggests that individuals can employ verbal explanations of their inconsistent identity feedback in a behavioural attempt to rectify their current situation. Indeed, individuals in this study publicly demonstrated self-presentation behaviour in an attempt to rectify their identity nonverification, as demonstrated by the significantly greater disagreement and rationalization of feedback findings amongst disconfirmed individuals.

The findings pertaining to participants' self-presentational responses to the barriers to exercise activity did not support our self-presentation hypothesis. Participants in the confirmed and disconfirmed groups did not differ with regards to the number of personally-relevant solutions they provided to a list of barriers to exercise. A possible explanation for this finding is that participants in the disconfirmed condition did not feel a greater need to present themselves as exercisers in order to achieve verification of their challenged exercise identity. This explanation does not seem likely; however, given that directly after this activity, disconfirmed participants reported greater desire to present themselves differently than they were portrayed in the situation than did confirmed individuals. Another possible explanation for this null finding is that this measure of self-presentation may have captured different motives for self-presentation for each group. As hypothesized, participants in the disconfirmed condition may have been motivated to provide personally-relevant solutions to barriers in an attempt to self-present as an

exerciser and therefore rectify the identity challenging situation. Self-presentation as an exerciser may have occurred on the part of confirmed participants as a means of verifying the identity-confirming feedback they had been given or as an ongoing effort to present themselves in a manner consistent with their exercise identity. Indeed, it is a well-demonstrated tenet of Identity Theory that individuals seek ongoing verification of endorsed identities (Burke, 2006; Swann & Hill, 1982).

Despite the finding that groups did not differ in terms of two of the self-presentational opportunities (the number of solutions they provided in the exercise barrier activity and their stated intentions for future exercise relative to original intentions), our other findings suggest that disconfirmed participants desired to present themselves differently than they felt they were portrayed in the situation and engaged in self-presentation through disagreement and rationalization. These self-presentation findings are also in line with past research. Indeed, Burke (1996) contends that when an individual perceives an identity discrepancy he/she is motivated to bring his/her identity verification process under conscious control through the adoption of coping strategies, such as reinterpreting others' feedback (i.e., rationalization). Further, Swann and Hill (1982) report that identity-challenged individuals verbally refute discrepant feedback when given the chance to do so in the presence of another. Swann (1983) argues that self-presentation behaviour aids in the self-verification process of a self-relevant identity at the individual level, especially in the health behaviour domain (Martin & Leary, 2001). With respect to the exercise identity literature, this is the first study in the exercise identity literature to examine self-presentational reactions to challenged exercise identities.

Satisfaction with affect and self-presentation.

Findings of this study also support our third hypothesis that individuals in the disconfirming condition who were satisfied with their ability to self-present as an exerciser would report less negative affect about the situation than individuals who remained unsatisfied with their ability to self-present. As compared with the unsatisfied self-presenters, satisfied, disconfirmed participants demonstrated significantly less negative affect at the cessation of the research session. Once again, this finding is congruent with Identity Theory (Burke, 1980).

According to Burke (1991), a negative affective state motivates individuals to remedy the identity-nonverification through meaningful *identity-relevant behaviour*. Furthermore, if the individual is able to rectify his/her identity through *identity-relevant behaviour* the discrepancy between the *identity-standard* and the *identity-relevant situational meanings* is reduced, which consequently alleviates or dampens the negative affect associated with the discrepancy (Burke, 2006). Our findings support this tenet as satisfied self-presenters reported less negative affect than less satisfied self-presenters who reported more negative affect.

This finding builds upon past Identity Theory research. Namely, Riley and Burke (1995) conducted a study pertaining to role-identity satisfaction as it relates to the identity verification process in a public domain. They found that when individuals' identity-related feedback was inconsistent with group member role-identity, individuals were dissatisfied with their role-identity in that situation. However, Riley and Burke did not employ affect measures to capture specific affective states pertaining to the identity verification process. Furthermore, self-presentation opportunities were not employed, which is a means by which identity disconfirmed individuals can behave in identity-relevant ways to reduce and/or eliminate their identity discrepancy. This study therefore, extended the scope of the identity model by including affect measures and self-presentation opportunities.

Strengths.

This study provides contributions that should be emphasized. There is a void in Identity Theory literature pertaining to identity and the role of the other which this study directly addresses, specifically pertaining to the exercise identity. Further, this study makes methodological advances by employing an experimental protocol, as per Burke and Stets (2009) directives. Furthermore, steps were taken in the design of this study to rule out a possible alternative, social comparison explanation for our proposed findings. Given that information provided to the confederate (which was also known by the participant) pertained to a different domain than exercise (academics) and was not vastly similar or dissimilar (but rather was neutral) to the exercise confirming or disconfirming feedback provided to participants, it was unlikely that reactions exhibited by participants were motivated by social comparison. Moreover, this study provided participants with what participants perceived to be real identity feedback, which improves upon other exercise identity studies that used hypothetical exercise identity challenges (e.g., Strachan & Brawley, 2008) which may have lacked in relevance to participants. Lastly, this study uniquely tested Identity Theory's identity verification process through employment of affect measures and self-presentation opportunities.

Limitations and future directions.

This study is not without limitations. Individuals self-present through a variety of verbal and *nonverbal* behaviours (DePaulo, 1992); however, this study solely captured verbalized self-presentations. Further, according to Kwang and Swann (2010) in ongoing relationships (e.g., exerciser-personal trainer relationships) self-verification is potent, even when feedback is negative. However, identity verification in ongoing relationships does not necessarily need to be rectified in an instant, or hour-long lab session, but through continuous self-presentation

demonstrations through verbal and nonverbal behaviour over time. Future research should address exercise identity self-presentation in more naturalistic setting that targets ongoing, continuous relationships, such as an exerciser with a trainer or workout partner. Such research about actual exercise engagement as a reaction to identity verification would have implications for exercise behaviour. Further, future research should address how long an individual has to sustain an unverified identity standard for a identity-related discrepancy to become motivating. Further, future research should investigate whether the source of identity-relevant feedback affects the impact of identity-related information. For example, would identity discrepant feedback differ in motivational properties as a function of whether the feedback is delivered from a referent individual or a stranger? Additionally, this study did not look at potential moderators for self-presentation behaviour, such as impression management (Martin Ginis & Leary, 2004). Thus, future research should address self-presentation moderators to the exercise identity verification process.

Self-related research is imperative for understanding exercise adherence and other health behaviours (e.g., Strachan et al., 2008, 2009*b*). To this end, the present study makes contributions to the Identity Theory literature, through its examination of the self-related variable, identity, in relation to physical activity behaviour and the role of the other. Findings support an understudied Identity Theory tenet. Further, this study has practical implications for exercise, as understanding the effects of identity-related feedback from others is relevant given that exercise in social situations is common (McAuley et al., 2003). Specifically, knowing that individuals who strongly endorse the exercise identity seek to have others see them in a manner that is consistent with this identity suggests that social exercise contexts may elicit behavioural

reactions aimed at sustaining this identity. Future research should continue to examine factors that influence the identity verification process including the role of the other.

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Chapter V

General Discussion

The present experimental study is the first investigation, to our knowledge, to examine individual affective and self-presentational responses to other-derived, personally relevant exercise identity feedback. Findings support Identity Theory-driven hypotheses (Burke, 1980) examined in the context of exercise behaviour. Further, the findings answer a research call for examination of the role of the other in the identity verification process (Riley & Burke, 1995).

Affect.

Based on Identity Theory, it was hypothesized that people provided with exercise identity disconfirming feedback presented by and in the presence of others would respond with greater negative affect compared to those whose exercise identities were confirmed⁸. This hypothesis was supported. Specifically, disconfirmed individuals demonstrated significantly greater negative affect after receiving exercise identity feedback in the public domain compared to confirmed individuals. According to Burke's Identity Theory (1991, 1996) identity verification is associated with positive emotions and identity nonverification is associated with negative emotions (Burke & Stets, 2009).

The present finding of negative affective responses to identity-disconfirming feedback is consistent with past general Identity Theory research. Specifically, the present study is attuned to the work of Stets et al. (2003, 2004, 2005; Stets & Asenico, 2008; Stets & Osborn, 2008) which collectively asserts that individuals who receive unexpected identity nonverifying feedback report negative emotions. Additionally, these findings are consistent with past research in the

⁸ However, it should be noted that while negative affect was significantly greater for the disconfirmed individuals than for the confirmed individuals, the disconfirmed individuals' negative affect was still at the midpoint on the affect scale range. Thus it is moderate in total potential magnitude in terms of level of negative affect.

exercise domain which also suggests that individual emotional responses are related to perception of identity verification (Strachan et al., 2008, 2009b). The current findings extend past research by suggesting that, in the context of exercise, identity-relevant feedback *from others* (in addition to self-evaluative feedback) is also associated with positive affect when it confirms one's exercise identity and negative affect when it challenges one's exercise identity.

Self-presentation.

This study's findings provide partial support for the hypothesis that compared to individuals whose exercise identities were confirmed, individuals whose exercise identities were publicly refuted would demonstrate greater attempts to self-present as an exerciser. Specifically, disconfirmed individuals expressed i) a significantly greater desire to portray themselves differently throughout the public situation, ii) greater public disagreement with their exercise identity feedback, and iii) greater public rationalization of their weak identity feedback as compared to confirmed individuals. These findings are congruent with Identity Theory (Burke, 1980). However, the self-presentation hypothesis was not supported with respect to self-presentational responses participants provided during the exercise barriers activity and self-presentation of future exercise intentions. Supporting and non-supporting findings will be addressed in turn.

This study found that disconfirmed individuals demonstrated greater attempts to self-present as exercisers, a finding which is in line with Identity Theory (Burke, 1980) and the concept of self-presentation (Schlenker, 2003). Identity Theory posits that when individuals perceive their identity as not verified by situational identity-relevant feedback (situational identity meanings), individuals should respond with identity-relevant behaviour in an attempt to change the situation such that it is consistent with identity verification (Burke & Stets, 2009;

Gecas & Burke, 1995; Stets & Burke, 2003). When identity-relevant feedback is received by and in the presence of others (as was the case for the present study), one way in which individuals may try to change the situation through behaviour is by *self-presenting* in order to influence the perceptions others have of them (Schlenker, 2003). In the present study, self-presentational motives were demonstrated through disconfirmed individuals expressing greater *desire* to present themselves differently as compared to their confirmed counterparts. Moreover, Burke (2006) suggests that individuals can employ verbal explanations of their inconsistent identity feedback in a behavioural attempt to rectify their current situation. Indeed, individuals in this study publicly demonstrated self-presentation behaviour in an attempt to rectify their identity nonverification, as demonstrated by the significantly greater disagreement and rationalization of feedback findings amongst disconfirmed individuals.

The findings pertaining to participants' self-presentational responses to the barriers to exercise activity did not support our self-presentation hypothesis. Participants in the confirmed and disconfirmed groups did not differ with regards to the number of personally-relevant solutions they provided to a list of barriers to exercise. A possible explanation for this finding is that participants in the disconfirmed condition did not feel a greater need to present themselves as exercisers in order to achieve verification of their challenged exercise identity. This explanation does not seem likely however, given that directly after this activity, disconfirmed participants reported a greater desire to present themselves differently than they were portrayed in the situation as compared with the confirmed individuals.

Another possible explanation for this null finding is that this measure of self-presentation may have captured different motives for self-presentation for each group. As hypothesized, participants in the disconfirmed condition may have been motivated to provide personally-

relevant solutions to barriers in an attempt to self-present as exercisers and therefore, rectify the identity challenging situation. Self-presentation as an exerciser may have occurred on the part of confirmed participants as a means of verifying the identity-confirming feedback provided or as an ongoing effort to present themselves in a manner consistent with their exercise identity. Indeed, it is a well-demonstrated tenet of Identity Theory that individuals seek ongoing verification of endorsed identities (Burke, 2006; Swann & Hill, 1982).

Another possible explanation for the lack of difference between groups on this self-presentation variable is that despite the fact that confirmed participants received strong exercise identity verifying feedback at the onset of the experimental session (and the identifying nature of this feedback was confirmed through a manipulation check) these confirmed participants (as well as unconfirmed participants) may have perceived the exercise barriers as another challenge to their exercise identity. In turn, this “challenge” may have elicited all participants to self-present in order to control the perceptions of the situation and limit as many discrepancies as possible (from Swann, 1983).

Finally, it is possible that this measure did not capture self-presentation at all and that participants were just eagerly participating in the activity. Indeed, in addition to all participants self-identifying as exercisers, 46.2 percent of participants were health science students, many of which were from the School of Human Kinetics. As the curriculum of these departments includes education about physical activity adoption, it is possible that this large portion of the sample may have been enthusiastic to provide barrier solutions regardless of whether their identity had been challenged or not. Furthermore, the type of people attracted to Human Kinetics may have high exercise intentions based on personal interests.

The self-presentation measure designed to capture potential self-presentation through the public statement of future exercise intentions is another finding that did not support our self-presentation hypothesis. Essentially, there was no statistical difference between participants in the confirmed and disconfirmed groups with respect to increases in publically mentioned exercise intentions over those provided at baseline. As a second part of the self-presentational responses to exercise barriers activity participants publically stated their exercise intentions for the coming week in response to an identical set of exercise intention questions retrieved from the online baseline questionnaire. Consequently, participants' public responses were compared to their baseline exercise intention responses to determine if the change in number of the challenged participants' responses differed significantly from those of the confirmed participants ($F(6, 93) = .531, p = .783$; Wilks' Lambda = .967; partial eta squared = .033). As this finding indicates, there was no difference between the conditions and therefore, was no evidence of a difference in self-presentation levels between groups.

A possible explanation of this finding is that participants' reported exercise intentions, recorded at baseline, were exceedingly high. For instance, at baseline participants reported their exercise intentions for the coming week as being approximately six strenuous 30-minute sessions, four moderate ones, and three mild. Compared with the exercise intentions of previous sample of adults with high exercise identity (e.g., Strachan et al., 2008, 2009b) these stated intentions are high. Therefore, it is reasoned that the high level of exercise intentions exhibited by participants in this study may be due to a ceiling effect. Participants reported such high exercise intention levels at baseline that there was very little room for an increase in the number of exercise sessions that we were looking for as support for self-presentation. Further, possible explanations provided with respect to the barriers self-presentation activity may also apply here.

As it is noted above, the strong exercise identity of all participants may be associated with i) efforts to either refute (challenge condition) or confirm (confirmed condition) the identity feedback provided, ii) efforts to engage in ongoing self-presentation that is consistent with a strong exercise identity (Burke, 2006; Swann & Hill, 1982) or iii) enthusiastic participation in the activity regardless of their identity verification condition.

Past Identity Theory research may provide another possible explanation for the failure to find support for self-presentation in the present study for some measures of this construct. For instance, Burke and Stets (2009) and Kwang and Swann (2010) contend that some recent identity verification studies that provide discrepant identity feedback to individuals do not find the hypothesized reactions to this discrepant feedback. These researchers reason that since participants have very little invested in stranger participants relationally, when identity nonverification occurs participants are often unconcerned with publically rectifying discrepancies. This explanation could also apply to the present findings where the confederate and the experimenter were not known to the participants.

These non-significant findings should be considered along with the significant findings that did support self-presentation as a reaction to identity discrepancy in the current study. To review, our other findings suggest that disconfirmed participants desired to present themselves differently than they felt they were portrayed in the situation and engaged in self-presentation through disagreement and rationalization. These self-presentation findings do find support from past research. Indeed, Burke (1996) contends that when an individual perceives an identity discrepancy he/she is motivated to bring his/her identity verification process under conscious through the adoption of coping strategies, such as reinterpreting others' feedback (i.e., rationalization). Further, Swann and Hill (1982) report that identity-challenged individuals

verbally refute discrepant feedback when given the chance to do so in the presence of another.

Swann (1983) contends that self-presentation behaviour aids in the self-verification process of a self-relevant identity at the individual level, especially in the health behaviour domain (Martin & O'Brien, 2001). With respect to the exercise identity literature, this is the first study in the exercise identity literature to examine self-presentational reactions to challenged exercise identities. Future research should seek to confirm the present findings and determine ideal ways of capturing self-presentational responses to identity feedback.

Satisfaction with affect and self-presentation.

Findings of this study also support our third hypothesis that individuals in the disconfirming condition who were satisfied with their ability to self-present as an exerciser would report less negative affect about the situation than individuals who remained unsatisfied with their ability to self-present. As compared with the unsatisfied self-presenters, satisfied disconfirmed participants demonstrated significantly less negative affect at the cessation of the research session. Once again, this finding is also congruent with Identity Theory (Burke, 1980).

According to Burke (1991), a negative affective state motivates individuals to remedy the identity-nonverification through meaningful *identity-relevant behaviour*. Furthermore, if the individual is able to rectify his/her identity through *identity-relevant behaviour* the discrepancy between the *identity-standard* and the *identity-relevant situational meanings* is reduced, which consequently alleviates the negative affect associated with the discrepancy (Burke, 2006). Our findings support this tenet as satisfied self-presenters reported less negative affect than less satisfied self-presenters who reported more negative affect.

This finding builds upon past Identity Theory research. Namely, Riley and Burke (1995) conducted a study pertaining to role-identity satisfaction as it relates to the identity verification

process in a public domain. They found that when individuals' identity-related feedback was inconsistent with group member role-identity individuals were dissatisfied with their role-identity in the situation. However, Riley and Burke did not employ affect measures to capture specific affective states pertaining to the identity verification process. Furthermore, self-presentation opportunities were not employed, which is a means by which identity disconfirmed individuals can behave in identity-relevant ways to reduce and/or eliminate their identity discrepancy. This study therefore, extended the scope of the identity model by including affect measures and self-presentation opportunities.

Strengths.

This study provides numerous contributions that should be emphasized. First, there is a gap in Identity Theory literature pertaining to identity and the role of the other (Riley & Burke, 1995) which this study directly addresses, specifically pertaining to the exercise identity. Second, this study makes methodological advances by employing an experimental protocol. The use of an experimental protocol not only adheres to recommendations for ideal protocol for identity-verification studies (Burke & Stets, 2009) but also provides the first experimental exercise identity challenge in the exercise identity literature. Third, in the present study, participants were provided with what they perceived to be real identity feedback, which improves upon other exercise identity studies that have used hypothetical exercise identity challenges (e.g., Strachan & Brawley, 2008) which may have lacked in relevance to participants. Fourth, this study uniquely tested Identity Theory's identity verification process through employment of affect measures and self-presentation opportunities.

In addition, steps were taken to ensure that the confederate (who acted as another participant) and the experimenter were not only believable in their roles but also provided a

similar experimental setting for all participants. First, participants were gender matched to their confederates. This effort likely contributed to the finding of no significant gender differences found between groups with regard to the variables of interest.

An additional and important methodological strength of this study is that steps were taken in the design to rule out a possible alternative, social comparison explanation for our proposed findings. We sought to use a confederate to provide a context where a similar other was aware of and provided the real participant with his/her identity feedback. In order to create a situation where the real participant would believe our cover story, that the confederate was a real participant, feedback had to be provided to this “other” participant. If the feedback provided to the confederate was also in the domain of exercise, the participant may have had responded not only because their identity had been challenged or confirmed, but also because they had engaged in social comparison with the confederate. To ward off the possibility of social comparison, we choose to provide the confederate with feedback in another domain entirely, namely, academics. We were further concerned that social comparison could still possibly occur across domains if the confederate received markedly similar or dissimilar balanced feedback. To guard against this possibility, neutral feedback was provided to the confederate. In light of these steps taken to decrease the chances of social comparison occurring, it was unlikely that reactions exhibited by participants were motivated by social comparison.

Further, all confederates were trained and followed a strict script for each lab session to ensure consistency amongst all participants. In addition, all lab sessions were conducted by the same experimenter. These steps taken to ensure a similar lab environment contributed to the internal validity of the study. Furthermore, raters of self-presentation data were carefully trained to facilitate reliable ratings between raters (Osbourne, 2008).

Limitations and future directions.

The strengths of this research should be considered in light of limitations. Individuals self-present through a variety of verbal and *nonverbal* behaviours (DePaulo, 1992); however, this study solely captured verbalized self-presentations. According to Kwang and Swann (2010) in ongoing relationships (e.g., exerciser-personal trainer relationship) self-verification is potent, even when feedback is negative. However, identity verification in ongoing relationships does not necessarily need to be rectified in an instant, or hour-long lab session, but through continuous self-presentation demonstrations through verbal and nonverbal behaviour over time. Future research should address exercise identity self-presentation in more naturalistic settings that targets ongoing, continuous relationships, such as an exercisers' relationship with a personal trainer or exercise partner, or a player's relationship with a coach. Such research about self-presentation through actual exercise behaviour as a reaction to identity verification would have implications for exercise adherence.

As 51 percent of the Canadian population is physically inactive (*Canadian Fitness and Lifestyle Research Institute, 2008*) exercise adoption and *adherence* needs to take research precedence (Orleans, 2000). Future research in Identity Theory could provide greater insight into this problem. In review Identity Theory posits that individuals seek to behave consistently with their identity standard, for instance their exercise identity standard, and furthermore are motivated to behave in a manner that denotes to others that they are who they think they are. Essentially, the feedback received from others assists in the identity verification (or nonverification) process. As noted above, future self-presentational and Identity Theory research into the impact of more referent relationships on the identity verification process could have implications to address this astounding physical inactivity rates in Canada.

Furthermore, given the important impact of the role of the other as established through this study future research addressing the proxy efficacy of referent individuals could prove fruitful. Specifically proxy efficacy is an individual's confidence in the skills and abilities of a third party or parties (e.g., referent individual(s) such as a personal trainer or exercise partner) to function effectively on his/her behalf (Bray & Cowan, 2004). Examining the proxy efficacy of a person's referent individuals directly pertaining to physical activity and its impact on the identity verification process would continue to extend research into the impact of the role of the other on identity. Moreover, it would integrate multiple theories (i.e., Identity Theory and Social Cognitive Theory), which Painter et al. (2008) strongly endorse as an important avenue for health research.

Another limitation pertains to the lab session environment. In order to increase the internal validity of the study it needed to take place in a laboratory setting. As with any experiment, gains related to internal validity associated with laboratory control may have come at the cost of some threats to external validity (e.g., the identity challenge may be perceived as artificial in comparison to how exercise identities are challenged in the real world). Further, in seeking internal consistency, some aspects of the study may have led to suspicion among participants about the true nature of the study. Lab sessions took place in a room with double-sided mirrors, despite the fact that they were not required for the study. Further, it is estimated that the majority of the student participants were exposed to psychology classes through program requirements that may have primed them for potential deception tactics. However, we have reasonable confidence in the maintained integrity of our study cover story given that participants indicated that they did not catch onto the study's true purpose. As a reminder only six out of one hundred seven participants caught onto the deception element of the study as was shared at the

cessation of the experimental sessions. These participants' data were withdrawn from analyses, resulting in data from 101 participants being included in the analyses.

Furthermore, this study did not look at potential moderators for self-presentation behaviour, such as impression management (Martin Ginis & Leary, 2004). For instance, some individuals may vary in the extent to which they attempt to manage the impressions that others have of them through self-presentation given variation in peoples' concern about what other's think of them. Exploring this and other potential moderating effects would provide information about the types of individuals most likely to engage in self-presentation in response to identity threats and the situations in which self-presentational responses to such threats are most likely to occur.

Moreover, future research should employ a similar experimental protocol to test Identity Theory's tenets with respect to the identity verification process for low identity exercisers. According to Identity Theory, identity nonverification should lend itself to a negative affective state and consequent behaviour to rectify this discrepancy. However, do these predictions vary as a function of level of exercise identity? Studying reactions of individuals with less strong exercise identities to identity feedback presents another interesting opportunity for future research. Specifically, it is conceivable that the identity "confirming" feedback provided in the current study may be perceived by individuals with less strong identities as inconsistent feedback in that it may *exceed* the meaning of their exercise identities. Past identity theory research addressing reactions to identity disconfirming feedback that is above one's identity standard suggests mixed findings (Kwang & Swann, 2010). Indeed, some individuals experience positive affect about feedback that exceeds their identity standard while others experience negative affect given that this feedback exceeds and therefore is not consistent with their identity standard

(Burke, 2006). Research addressing these questions in the context of exercise, as well as the greater Identity Theory literature would shed more light on the depth and breadth of the identity verification process and its applicability to a wider range of individuals.

Future research directions should also extend our understanding of the role of the other in the identity verification process through the use identity feedback that truly reflects another individuals' personally-arrived-at perceptions of the real participant. For instance, participants should receive personal identity feedback they are led to believe the other (i.e., confederate) deduced from personal information the participant provided about the identity in question. Hypothetically, this design could yield more powerful results, in that, the confirming or disconfirming identity feedback would not be based on "research" but rather the other's perceptions of that person.

Lastly, future research should address how long an individual has to sustain a non-verified identity standard for their identity to be motivating? Burke (2006) asserts that if an identity is continually not verified than one of two things needs to occur: either one's identity standard needs to change or the identity needs to be abandoned. However, what factors influence a shift in identity versus abandonment of the identity? What is more, would this be amplified or diminished when in the presence of a referent individual or a stranger? As this research contends the resultant discrepancy of the identity nonverification has motivating characteristics if it is handled effectively; Motivational Interviewing (MI) comments on this. Specifically, MI is a client-centred, directive therapeutic style for initiating and facilitating change (Miller, 2000) and focuses on the *importance* of change (Miller & Rollnick, 2002). According to MI, if the discrepancy or *behavioural gap* is very large it can diminish one's confidence in his/her ability to overcome it, which can act as a demotivating agent for behaviour change. This research informs

MI, which is growing in its adoption by health practitioners, regarding the impact of the role of the other. However, more research regarding the magnitude of the discrepancy or *behavioural gap* needs to be conducted to better understand the ability to effectively motivate individuals through MI. Such research could be extended to use by physical activity counselors, sport psychologists, as well as trainers and coaches.

Self-related research is imperative for understanding exercise adherence and other health behaviours (e.g., Anderson & Cychosz, 1994; Anderson, Cychosz & Franke, 1998; Petosa et al., 2003; Storer, Cychosz & Anderson, 1997; Strachan et al., 2008, 2009*b*). This thesis makes a contribution to self research by heeding Contrada and Ashmore's (1999) recommendation that researchers continue to study the role of self in health behaviour. Specifically, the present study makes contributions to the Identity Theory literature, through its examination of the self-related variable, identity, in relation to physical activity behaviour and the role of the other. Findings support the understudied Identity Theory tenet that identity-relevant feedback from others has affective and behavioural implications for individuals in an exercise context.

In addition to building on theory, the present findings have practical implications for exercise. Understanding the effects of identity-related feedback from others is relevant given that exercise in social situations is common (McAuley et al., 2003). Specifically, knowing that individuals who strongly endorse the exercise identity seek to have others see them in a manner that is consistent with this identity suggests that social exercise contexts may elicit behavioural reactions aimed at sustaining this identity. Further, identity-confirming feedback from others appears to be a relevant source of identity-confirming information and could be targeted in attempts to strengthen exercise identity. Given the well-established link between exercise identity and exercise adherence outcomes (Strachan et al., 2009*a*), future research should

continue to examine factors that influence the identity verification process including the role of the other.

Chapter VI

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Chapter VII

Appendices

Appendix A: Baseline questionnaire (administered online).

Measure 1: Consent Form

Consent Form

Criteria for Participation:

NOTE: If you use a Mac computer with the internet browser "Safari" you will have troubles completing this survey. We recommend that you use Internet Explorer or Firefox; browsers that can be downloaded for free and are compatible with both Macs and PC's. We apologize for any inconvenience that this may cause Mac users.

Title of the Study: Personality's Influence on Success in the Academic and Exercise Pursuits of Post-Secondary Students

Researchers: Gwenyth Stadig, MA Candidate, will be conducting this research project as part of her Master's thesis, under the supervision of Dr. Shaelyn Strachan.

Gwenyth Stadig, MA Candidate, School of Human Kinetics, University of Ottawa, (613) 562-5800 ext. 3974, gstad006@uottawa.ca

Dr. Shaelyn Strachan, PhD, School of Human Kinetics, University of Ottawa, (613) 562-5800, ext. 4254, shaelyn.strachan@uottawa.ca

Invitation to Participate: I am invited to participate in the above mentioned research study conducted by Gwenyth Stadig and Dr. Shaelyn Strachan. This research project has been approved by the University of Ottawa Health Sciences and Sciences Research Ethics Board.

Purpose of the Study: The purpose of this study is (1) to assess the link between personality characteristics and success in the domains of exercise and academic behaviours and (2) to determine if brainstorming with another participant regarding barriers and solutions for academic success or exercise adherence aids in facilitating success in these domains over the following week.

Participation: My participation will consist of (1) filling out a web-based baseline questionnaire, which should take me approximately 5 to 10 minutes to complete; (2) participating in a lab-based research session, which will be scheduled in 7 to 14 days time and will take approximately 30 to 45 minutes to complete; and (3) filling out a web-based follow-up questionnaire one week following my lab-based session, which should take no longer than 10 minutes.

Risks: I understand that discomfoting feelings may result from being provided with personality relevant feedback through participation in this study; however, these feelings are expected to be very minimal. I know that my participation is voluntary and that I can withdraw from the study for any reason, at any time, without penalty of any sort.

Benefits: My participation in this study will potentially contribute to the wider community by contributing to the knowledge of factors associated with post-secondary student's physical

activity and academic behaviours, however this contribution is not necessarily guaranteed.

Confidentiality and Anonymity: I have received assurance from the researcher that the information I will share throughout this study will remain strictly confidential. I understand that the contents will be used only for research purposes and that my confidentiality will be protected. If I participate in this study, my particular data will be merged with other participants' data and presented in summary form. There will be no way for me or my data to be identified. Any findings from this study will be potentially presented at scholarly meetings and/or in scholarly journals. I will be asked to provide my email address which will be used to contact me. The confidentiality of both my email address and my data will be ensured. That is, my data will be kept in a confidential, password-protected database assessable to only the researchers. As well, my email address will be used only for the purposes described above and will only be assessable to the researcher. Further, after I complete the study, my email address will be removed from my data and deleted.

Conservation of Data: Data will be stored electronically in the researchers locked office at the University of Ottawa. The data will be stored for 10 years and then deleted.

Compensation: If I am eligible to participate and consent to participate in this study, I will receive \$15.00, which I will receive at the completion of the laboratory session.

Voluntary Participation: My participation is voluntary and I understand that I can withdraw from the study for any reason at any time without penalty of any sort. If I choose to start filling out an online questionnaire and decide to stop part way through I can withdraw from the study. My decision to participate or not or to withdraw would have no negative effects. Further, any data that I have contributed will be destroyed at my request. If I choose to participate, I can choose not to answer individual items of the questionnaire. My particular data will be merged with other participants' data and presented in summary form. There will be no way for me or my data to be identified. Any findings from this study will be potentially presented at scholarly meetings and/or in scholarly journals. I will be asked to provide my email address which will be used to contact me. The confidentiality of both my email address and my data will be ensured. That is, my data will be kept on a confidential, password-protected website assessable to only the researchers. As well, my email address will be used only for the purposes described above and will only be assessable to the researcher. Further, after I complete the study, my email address will be removed from my data and deleted.

Participation Yes/No:

Acceptance: By clicking "I agree to participate" below, I am indicating that I agree to participate in the above research study conducted by Gwentyth Stadig and Dr. Shaelyn Strachan of the School of Human Kinetics in the Faculty of Health Sciences.

If I have any questions about the study, I may contact the researchers.

Options:

- (a) No I do not agree to participate and do not want to continue
- (b) Yes I do agree to participate and want to continue

Measure 2: Personality Trait Measure⁹ (pseudo measure)

INSTRUCTIONS – Please read carefully: Answer the following items as they apply to you. There are no right or wrong answers. Please choose a number from the scale (1 to 5) that best represents what you believe to be true about yourself for each question.

NOT AT ALL
LIKE ME

SOMETIMES
LIKE ME

VERY MUCH
LIKE ME

1 2 3 4 5

1. I have a hard time breaking bad habits. _____
2. I am lazy. _____
3. I say inappropriate things. _____
4. I never allow myself to lose control. _____
5. I do certain things that are bad for me, if they are fun. _____
6. People can count on me to keep on schedule. _____
7. Getting up in the morning is hard for me. _____
8. I have trouble saying no. _____
9. I change my mind fairly often. _____
10. I blurt out whatever is on my mind. _____
11. People would describe me as impulsive. _____
12. I refuse things that are bad for me. _____
13. I spend too much money. _____
14. I keep everything neat. _____
15. I am self-indulgent at times. _____
16. I wish I had more self-discipline. _____
17. I am good at resisting temptation. _____
18. I get carried away by my feelings. _____
19. I do many things on the spur of the moment. _____
20. I don't keep secrets very well. _____
21. People would say that I have iron self-discipline. _____
22. I have worked or studied all night at the last minute. _____

⁹ Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72(2), 271-324.

NOT AT ALL
LIKE ME

SOMETIMES
LIKE ME

VERY MUCH
LIKE ME

1 2 3 4 5

23. I'm not easily discouraged. _____
24. I'd be better off if I stopped to think before acting. _____
25. I engage in healthy practices. _____
26. I eat healthy foods. _____
27. Pleasure and fun sometimes keep me from getting work done. _____
28. I have trouble concentrating. _____
29. I am able to work effectively toward long-term goals. _____
30. Sometimes I can't stop myself from doing something, even if I know it's wrong. _____
31. I often act without thinking through all the alternatives. _____
32. I lose my temper too easily. _____
33. I often interrupt people. _____
34. I sometimes drink or use drugs to excess. _____
35. I am always on time. _____
36. I am reliable. _____

Measure 3: Academic Habits Measure (pseudo measure)

INSTRUCTIONS – University and college students often report that they do not spend as much time as they would like, or report is needed, on their school-related work. In fact, even the most disciplined people struggle to accomplish all their desired work on time and with quality, due to other demands on their schedule, such as social engagements, recreational pursuits, physical activity and family demands to name a few. We need to understand how much school-related work people are *really doing*, so please tell us what you are *actually* doing as you fill out this survey. Don't worry if you have not accomplished as much academically as you wish you had. We need to know what is really happening, not what you think we 'want to hear'. The most difficult thing will no doubt be for you to remember exactly how much time you spent on each school-related work domain. It is thus important for you to make an effort to remember so that your answers are as precise as possible. Take the time you need to answer as accurately as possible.

Please read carefully: Think back to the **past week** and answer the following questions as honestly as possible. How many **30 minute continuous** intervals did you spend in **academic-related pursuits**? Write the appropriate **number of times** per week on each line.

Class Time

This is the time you spent in class during the past week.

Indicate the number of times you attended class in 30 minute intervals. For example, one class at the University of Ottawa is one and a half hours, or three 30 minute intervals.

Class Work/Research Time

This is the time you spent completing class work and/or conducting research that contributed to graded activities.

Indicate the number of times in the past week that you spent completing class work and/conducting research in 30 minute intervals.

Studying Time

This is the time you spent studying for class related evaluations, such as midterms and exams.

Indicate the number of times in the past week you spent studying in 30 minute intervals.

Measure 4: Academic Intentions Measure (pseudo measure)**Class Time Intentions**

Indicate in the number of hours, in the upcoming week, that you intend on attending classes. Try to be as honest as possible in your intentions.

"I plan on attending ____ hours of class next week."

NOTE: Include (1) the number of class hours you plan on attending AND (2) the number of class hours you are scheduled for each week. For example: "I intend to attending 12 hours of class next week and I am scheduled for 15 hours." This can be written 12/15.

Strength of Class Time Intentions: Select the number that best represents the strength of your intentions for attending class in the upcoming week (1 – 9).

Intentions:

Definitely
will not
attend
intended
classes

1 2 3 4 5 6 7 8 9

Definitely
will
attend
intended
classes

Class Work and/or Research Intentions

Indicate the number of hours, in the upcoming week, that you intend on completing class work and/or research. Try to be as honest as possible in your intentions.

"I plan on spending ____ hours on class work and/or research time in the next week."

Strength of Class Work/ Research Intentions: Select the number that best represents the strength of your intentions for class work/researching in the upcoming week (1 – 9).

Intentions:

Definitely
will not
complete
intended
work

1 2 3 4 5 6 7 8 9

Definitely
will
complete
intended
work

Studying Intentions

Indicate the number of hours, in the upcoming week, that you intend on studying. Try to be as honest as possible in your intentions.

"I plan on spending ____ hours studying in the next week."

Strength of Studying Intentions: Select the number that best represents the strength of your intentions for studying in the upcoming week (1 – 9).

Definitely
will not
study as
intended

Definitely
will
study as
intended

1 2 3 4 5 6 7 8 9

Measure 5: Academic Identity Measure (pseudo measure)

INSTRUCTIONS – Please read carefully: Use the scale provided to rate extent to which each item applies to you.

1. I consider myself a good student.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	
2. When I describe myself to others, I usually reference my academic involvement.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	
3. I have numerous goals related to my academic success.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	
4. Being a good student is a central factor to my self-concept.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	
5. I need to succeed in school to feel good about myself.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	
6. Others see me as a successful student.							
STRONGLY DISAGREE				STRONGLY AGREE			
1	2	3	4	5	6	7	

7. For me, being a good student means more than just doing well in school.

STRONGLY DISAGREE

STRONGLY AGREE

1 2 3 4 5 6 7

8. I would feel a real loss if I were forced to give up my academic pursuits.

STRONGLY DISAGREE

STRONGLY AGREE

1 2 3 4 5 6 7

9. My academic interests are something I think about often.

STRONGLY DISAGREE

STRONGLY AGREE

1 2 3 4 5 6 7

Measure 6: Physical Activity Habits Measure¹⁰

INSTRUCTIONS – Like most people, it is likely that you do not exercise as much as you would like. In fact, even the most disciplined people have difficulties doing as much exercise as they would wish to because of family demands, fatigue at the end of the working day, unexpected situations, etc. We need to understand how much exercise people are *really doing*. Please tell us what you are *actually* doing. Don't worry if you have not exercised as much as you wish you had. We need to know what is really happening, not what you think we 'want to hear'. The most difficult thing will no doubt be for you to remember when you exercised, what type of physical activity you did and how hard you did it. It is thus important for you to make an effort to remember so that your answers are as precise as possible. Take the time you need to answer.

Please read carefully: Think back to the **past week** and answer the following questions as honestly as possible. How many times **on average** did you do the following kinds of exercise for **30 minutes continuously or more** during your **free time**? Write the appropriate **number of times** per week on each line.

Strenuous Exercise

Described as: "Exhausting exercise; heart beats rapidly"; examples: Running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating/blading, vigorous swimming, vigorous long distance bicycling, and/or skating

In the past week, how many times on average did you do strenuous exercise for 30 minutes or more? Indicate the appropriate number of times on the following line.

Moderate Exercise

Described as: "Exercise not exhausting"; examples: Fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, and/or dancing

In the past week, how many times on average did you do moderate exercise for 30 minutes or more? Indicate the appropriate number of times on the following line.

Mild Exercise

Described as: "Minimal effort exercise"; examples: Yoga, archery, fishing, bowling, horseshoes, golf, snowmobiling, and/or easy walking

In the past week, how many times on average did you do mild exercise for 30 minutes or more? Indicate the appropriate number of times on the following line.

¹⁰ Godin, G., & Shephard, R.J. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Sciences*, 10(3), 141-146.

Measure 7: Exercise Intentions Measure**Strenuous Exercise Intentions**

Indicate the number of times per week, in the upcoming week, that you intend to exercise at a strenuous intensity (i.e., exhausting exercise, such as running, vigorous swimming, etc.) for at least 30 minutes continuously. Try to be as accurate as possible in your intentions.

"I intend to exercise at a strenuous intensity _____ times per week (for a minimum of 30 minutes) in the upcoming week."

Strength of Strenuous Exercise Intentions: Select the number that best represents the strength of your intentions for performing strenuous exercise (1 – 9).

Definitely
will not
engage in
intended
exercise

1 2 3 4 5 6 7 8 9

Definitely
will
engage in
intended
exercise

Moderate Exercise Intentions

Indicate the number of times per week, in the upcoming week, that you intend to exercise at a moderate intensity (i.e., non-exhausting exercise, such as fast walking, tennis, etc.) for at least 30 minutes continuously. Try to be as accurate as possible in your intentions.

"I intend to exercise at a moderate intensity _____ times per week (for a minimum of 30 minutes) in the upcoming week."

Strength of Moderate Exercise Intentions: Select the number that best represents the strength of your intentions for performing moderate exercise (1 – 9).

Definitely
will not
engage in
intended
exercise

1 2 3 4 5 6 7 8 9

Definitely
will
engage in
intended
exercise

Mild Exercise Intentions

Indicate the number of times per week, in the upcoming week, that you intend to exercise at a mild intensity (i.e., minimally exhausting exercise, such as yoga, archery, snowmobiling, etc.) for at least 30 minutes continuously. Try to be as accurate as possible in your intentions.

"I intend to exercise at a mild intensity _____ times per week (for a minimum of 30 minutes) in the upcoming week."

Strength of

Mild Exercise Intentions: Select the number that best represents the strength of your intentions for performing mild exercise (1 – 9).

Definitely
will not
engage in
intended
exercise

1 2 3 4 5 6 7 8 9

Definitely
will
engage in
intended
exercise

Measure 8: Exercise Identity Scale¹¹

INSTRUCTIONS – Please read carefully: Use the scale provided to rate extent to which each item applies to you.

1. I consider myself an exerciser.						
STRONGLY DISAGREE			STRONGLY AGREE			
1	2	3	4	5	6	7
2. When I describe myself to others, I usually include my involvement in exercise.						
STRONGLY DISAGREE			STRONGLY AGREE			
1	2	3	4	5	6	7
3. I have numerous goals related to exercising.						
STRONGLY DISAGREE			STRONGLY AGREE			
1	2	3	4	5	6	7
4. Exercise is a central factor to my self-concept.						
STRONGLY DISAGREE			STRONGLY AGREE			
1	2	3	4	5	6	7
5. I need to exercise to feel good about myself.						
STRONGLY DISAGREE			STRONGLY AGREE			
1	2	3	4	5	6	7

¹¹ Anderson, D.F., & Cychosz, C.M. (1994). Development of an exercise identity scale. *Perceptual and Motor Skills*, 78(3), 747-751.

6. Others see me as someone who exercises regularly.	
STRONGLY DISAGREE	STRONGLY AGREE
1 2 3 4 5 6 7	
7. For me, being an exerciser means more than just exercising.	
STRONGLY DISAGREE	STRONGLY AGREE
1 2 3 4 5 6 7	
8. I would feel a real loss if I were forced to give up exercising.	
STRONGLY DISAGREE	STRONGLY AGREE
1 2 3 4 5 6 7	
9. Exercising is something I think about often.	
STRONGLY DISAGREE	STRONGLY AGREE
1 2 3 4 5 6 7	

Measure 9: Participant Demographics

1. Name: Please provide your name.

NOTE: We ask that you provide your name solely for the purpose of contacting you and scheduling your laboratory session for this study. You can choose just to provide your first name if that is preferred.

2. Contact Information: Please provide your email address.

NOTE: Your email address is necessary in order for the research team to contact you for participation in the lab-based research session. Your email address will remain confidential, as will all information you provide throughout your involvement in the study.

3. Age: What is your age?
4. Gender: Please indicate your gender.

Options:
(a) Male
(b) Female

5. Please describe the ethnic group(s) to which you belong.
6. Partner Status: Please indicate your partner status.

Options:
(a) Single
(b) Common Law
(c) Married
(d) Divorced

7. Post-Secondary Student Status: Are you a post-secondary student?

Options:
(a) Yes
(b) No

8. Major: If you are a student, what is your major?

9. Year of Study: If you are a student, what year are you in?

Options:

- (a) 1st
- (b) 2nd
- (c) 3rd
- (d) 4th
- (e) 5th onwards

10. Physical Activity/Sport Participation: Please list the physical activity and/or sport pursuits that you are most involved.

NOTE: A text box is provided for your answer if you feel the need to clarify anything regarding these activities.

Appendix B: Experiment Script

Experimental Script

Salutations

Thank-you for coming

The purposes are:

- To better understand the link between one's personality characteristics and his/her success in academics and/or exercise
- To determine if a brainstorming session regarding overcoming barriers to success helps people overcome barriers during the next week

Introduction:

- It is important that you understand the following information, as part of this study; therefore, please clarify anything that is unclear. Also, so that we know that you fully understand what I am about to say, you will be asked to paraphrase the information shared here just to make sure that you have retained it before we start the next activity.
- It is well established in the literature that personality traits are associated with success in different domains
- In this study we are looking at success in the domains of exercise and academics
- Through understanding an individual's personality we are able to determine the likelihood that that individual will succeed in exercise or academics throughout his/her lifetime
- This is done through comparisons between the individual's personality with an ideal personality profile for a specified domain, such as exercise or academics
- Years of research have been dedicated to understanding what personality characteristics enable sustained success for individuals over a lifetime in a specific performance domain
- Research has found that the more closely an individual's profile matches this 'ideal personality profile' for his/her prospective performance domain, the greater the chances are that that individual will also find success throughout his/her lifetime
- Conversely, the greater the difference an individual's profile is to this ideal profile, the less likely that person is able to perform consistently over his/her lifetime
- It may be useful for people to know their profiles, so that they are more aware of the strengths or struggles with respect to future success
- This way they can work with advantageous personality traits they possess and are better able to work on problematic personality traits that may interfere with success in the future
- This is why the second part of this sessions is dedicated to a brainstorming sessions with your partner
- Also, this lab session will be audio-recorded as a way to provide for us to check that I am conducting this experimental session in the same manner for all participants.
- So, to start things off please fill out this first set of measures; which includes your consent form

Participant and Confederate read and signed the informed consent

Thank-you

Personality Profiles:

- For this study you were randomly assigned to the exercise domain or the academic domain
- For this session, [*real participant*] you are in the exercise group and [*confederate*] you are in the academic group *(Researcher reads from clipboard)
- Because we were unaware of your domain assignment until this lab session your personality profiles need to be tallied
- But research has indicated that tallying one's own personality profile against an ideal can lead to swayed results, therefore you will tally each other's profiles
- So [*confederate*] here is [*real participant*]'s and [*real participant*] here is [*confederate*]'s profile
- The different columns indicated on your profiles – such as A, B, C, etc. – represent different aspects of personality
- The aspects of personality that are associated with success in either of the performance domains of academics and exercise are different; thus need to be computed differently
- Therefore, for the exercise domain, [*confederate*], tally columns A, B, E, G, and I for [*real participant*]'s profile *(Researcher reads from clipboard)
- And for the academic condition, [*real participant*] tally columns A, C, D, F, and H *(Researcher reads from clipboard)

Participant and Confederate tally each other's personality profiles

- All done?
- So [*confederate*], what is [*real participant*]'s tallied value?

Confederate reports value

- Alright, so according to the research [*real participant*], your personality profile indicates that...*(Researcher reads from clipboard)

[Leave a moment to allow the real participant to react, before continuing]

- And [*real participant*] what is [*confederate*]'s tallied score?

Real Participant reports value

- Alright, so this means... *(Researcher reads from clipboard)

[Give comparable pause as was given to Real Participant]

Confederate: "Well, that's definitely something to think about." [Neutral tone].

- Alright, please return the personality profiles to your partner. ...

["Frantically" looking for measures]

- I've accidentally left the next set of measures in my office. I apologize. I will be back in one quick moment.

Researcher leaves room for approximately 45 seconds to 'retrieve measures'

Self-Presentation Opportunity 1 (SP1):

Confederate: "I guess that seems about right for me. I mean I've never got straight A's or anything, but I've also never failed a class. What do you think? Does your feedback seem right to you?"

Researcher returns

- Sorry about that. I had left them in the photocopier. Anyway, here is the second set of measures.

Participant and Confederate fill out Measure Set 1

Thank-you

Self-Presentational Opportunities 2 and 3:

- The second part of this study includes a brainstorming session addressing barriers to and solutions for overcoming obstacles to success in either academics or exercise, depending on your domain
- An important element to this study is that one participant will be given an opportunity to brainstorm, while the other participant will not
- We are curious about the comparison – whether or not the brainstorming session helps in overcoming barriers to success – and how it influences behaviour in the following week
- So, for this lab session... [*real participant*], *(Researcher reads from clipboard) you will provide solutions to overcoming barriers for your domain – so, the exercise domain
- Therefore, [*confederate*], you will read these five barriers to success from this list [*provide barrier list to confederate*] to present to [*real participant*], so that I can watch the clock
- [*Real participant*] Just to make sure our experimental session doesn't go on too long, we are going to limit you to one minute to address how you would overcome each barrier to success...in exercise. I will let you know if it is time to move onto another barrier.
- Your goal is state how you could personally overcome each barrier
- Does that make sense?

Wait for response from Real Participant and Confederate

- Alright, [*confederate*] read your first barrier whenever you are ready.

Confederate reads 5 barriers from the barrier list aloud. Participant reacts in 1 minute intervals.

Research controls the clock.

- Thank-you
- And as a final task, please fill out this last set of measures

Participant and Confederate fill out Measure Set 2

- Thank-you so much for your time, here is the \$15
- And lastly, I need to debrief each of the participants; however, I need to do this individually. [Real participant] you'll go first. So [confederate] if I could just have you step out for a moment.

Present deception debriefing to Real Participant

- The purpose of the present study is somewhat different from the purpose that we originally presented to you
- Although you were informed that the purpose of this study was to look at your personality profile relative to the personality profiles associated with people who are successful and in exercise maintenance and academic pursuits
- The real purpose of this study was to examine the responses of individual's when given feedback that challenged or confirmed your exercise identity of yourself – that is, how they view themselves as exercisers. Further, we were interested in examining these reactions when they were delivered in front of a similar other person.
- In other words, in this study we wanted to measure how people who consider themselves exercisers would react when told in front of another person that they displayed attributes that would make it unlikely/very likely for them to be successful at exercising in the future
- Thus, the personality profile feedback you were provided with was false and not based on the personality information you provided as baseline measures
- It is important that you understand that the personality profile information you were provided with was **bogus** (or untrue)
- In fact, you were selected for this study because you scored relatively high on a measure known as *exercise identity* which means that you view yourself as an exerciser
- Past research suggests that having high scores on this measure will make you more likely to adhere to exercise
- Further, despite being told that you will be contacted in 1 week for a follow-up of your physical activity over the past week, you will not be contacted

- Also, the other participant is not a real participant, but rather a hired research assistant

- Given that you were deceived about the real purpose of this study, you have the right to *withdraw your data even though you have finished participating*
- Your choice to withdraw your data will have no negative consequences and you will still receive your compensation

- As you can imagine, in order to retain the integrity my thesis project I'm asking that you keep the deception element a secret

- I am sure you can understand why deception was needed in this study, as self-presentation is not authentic when the individuals know that they are being tested on that element
- Lastly, in any way, shape or form, were you aware of the deception element either during or before the experiment?
- Please do make us aware – and I can assure you in no way will we be upset – as I am sure you can understand how knowing about the deception could drastically alter the results of my thesis project
- Finally, we are interested in whether you caught on to the real purpose of this study and/or the role of the confederate before it was revealed to you

Appendix C: Informed Consent Form (administered during experiment)

Consent Form

Criteria for Participation:

NOTE: If you use a Mac computer with the internet browser "Safari" you will have troubles completing this survey. We recommend that you use Internet Explorer or Firefox; browsers that can be downloaded for free and are compatible with both Macs and PC's. We apologize for any inconvenience that this may cause Mac users.

Title of the Study: Personality's Influence on Success in the Academic and Exercise Pursuits of Post-Secondary Students

Researchers: Gwennyth Stadig, MA Candidate, will be conducting this research project as part of her Master's thesis, under the supervision of Dr. Shaelyn Strachan.

Gwennyth Stadig, MA Candidate, School of Human Kinetics, University of Ottawa, (613) 562-5800 ext. 3974, gstad006@uottawa.ca

Dr. Shaelyn Strachan, PhD, School of Human Kinetics, University of Ottawa, (613) 562-5800, ext. 4254, shaelyn.strachan@uottawa.ca

Invitation to Participate: I am invited to participate in the above mentioned research study conducted by Gwennyth Stadig and Dr. Shaelyn Strachan. This research project has been approved by the University of Ottawa Health Sciences and Sciences Research Ethics Board.

Purpose of the Study: The purpose of this study is (1) to assess the link between personality characteristics and success in the domains of exercise and academic behaviours and (2) to determine if brainstorming with another participant regarding barriers and solutions for academic success or exercise adherence aids in facilitating success in these domains over the following week.

Participation: My participation will consist of (1) filling out a web-based baseline questionnaire, which should take me approximately 5 to 10 minutes to complete; (2) participating in a lab-based research session, which will be scheduled in 7 to 14 days time and will take approximately 30 to 45 minutes to complete; and (3) filling out a web-based follow-up questionnaire one week following my lab-based session, which should take no longer than 10 minutes.

Risks: I understand that discomfoting feelings may result from being provided with personality relevant feedback through participation in this study; however, these feelings are expected to be very minimal. I know that my participation is voluntary and that I can withdraw from the study for any reason, at any time, without penalty of any sort.

Benefits: My participation in this study will potentially contribute to the wider community by contributing to the knowledge of factors associated with post-secondary student's physical activity and academic behaviours, however this contribution is not necessarily guaranteed.

Confidentiality and Anonymity: I have received assurance from the researcher that the information I will share throughout this study will remain strictly confidential. I understand that the contents will be used only for research purposes and that my confidentiality will be protected. If I participate in this study, my particular data will be merged with other participants' data and presented in summary form. There will be no way for me or my data to be identified. Any findings from this study will be potentially presented at scholarly meetings and/or in scholarly journals. I will be asked to provide my email address which will be used to contact me. The confidentiality of both my email address and my data will be ensured. That is, my data will be kept in a confidential, password-protected database assessable to only the researchers. As well, my email address will be used only for the purposes described above and will only be assessable to the researcher. Further, after I complete the study, my email address will be removed from my data and deleted.

Conservation of Data: Data will be stored electronically in the researchers locked office at the University of Ottawa. The data will be stored for 10 years and then deleted.

Compensation: If I am eligible to participate and consent to participate in this study, I will receive \$15.00, which I will receive at the completion of the laboratory session.

Voluntary Participation: My participation is voluntary and I understand that I can withdraw from the study for any reason at any time without penalty of any sort. If I choose to start filling out an online questionnaire and decide to stop part way through I can withdraw from the study. My decision to participate or not or to withdraw would have no negative effects. Further, any data that I have contributed will be destroyed at my request. If I choose to participate, I can choose not to answer individual items of the questionnaire. My particular data will be merged with other participants' data and presented in summary form. There will be no way for me or my data to be identified. Any findings from this study will be potentially presented at scholarly meetings and/or in scholarly journals. I will be asked to provide my email address which will be used to contact me. The confidentiality of both my email address and my data will be ensured. That is, my data will be kept on a confidential, password-protected website assessable to only the researchers. As well, my email address will be used only for the purposes described above and will only be assessable to the researcher. Further, after I complete the study, my email address will be removed from my data and deleted.

Consent to Participate: I have read and understood the description provided above; I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I consent to participate in the study described above, understanding that I may withdraw this consent at any time.

Signature of Participant

Date

Signature of Researcher Witness

Date

Appendix D: Personal Profiles

Measure 1: Disconfirming Condition Tallying Form

Personality's Influence on Success in Academic and Exercise
Pursuits in Post-Secondary Students

Participant (0001840080)

Domain (circle one):

Academic OR *Exercise
Domain Domain

Participant Personality Profile Values:

A	B	C	D	E	F	G	H	I
22	33	32	28	26	24	20	25	26

*Results from Personality Scale (Carmines & Zeller, 1994; Grasmick et al., 1993; Kvale & Brinkmann, 2008; Lazarus & Folkman, 1984; Murray & McAdams, 2007; Vroom, 1995; Zaller, 1992)

**Each column is associated with different aspects of personality

Ideal Personality Profile Values:

A	B	C	D	E	F	G	H	I
13	27	22	16	25	17	17	20	20

Difference between Personality Profile Values:

A	B	C	D	E	F	G	H	I
9	6	10	12	1	7	3	5	6

Domain Score: 43

Measure 2: Disconfirming Condition Personality Profile Score Meanings

Note. The underlined section is the feedback the participant received if he/she was in the disconfirming condition.

What does your score mean?

If the sum difference value is between 0 and 18, this means that your profile is very similar to the ideal "successful exerciser". According to research, a person with this personality profile will very likely be physically active throughout his/her lifetime. While you will undoubtedly face challenges towards being physically active, your personality traits render you committed and determined to reach your exercise goals, and see obstacles as minor setbacks rather than serious and long-term barriers.

If the sum difference value is between 19 and 37, this means that your profile is somewhat similar to the ideal exerciser but that there are some differences. Further, you are likely to be physically active for several years to follow, but that you will experience lows and highs in your physical activity frequency. When you experience an exercise barrier, it may slow you down or even stop your exercise behaviour for a few weeks, but you are resilient to long-lasting barriers. Although sometimes low in confidence, your personality traits render you persistent, and thus capable of overcoming struggle.

If the sum difference value is 38 or more, this means that your profile is not very similar to the ideal exerciser. Further, according to research, a person with this personality profile will very likely struggle with remaining physically active throughout the his/her lifetime. Such personalities are highly prone to perceiving exercise barriers as insurmountable and plentiful, and are likely to struggle when life's circumstances bring about an exercise challenge.

Measure 3: Confirming Condition Tallying Form

Personality's Influence on Success in Academic and Exercise Pursuits in Post-Secondary Students

Participant (0001840120) Domain (circle one):

Academic OR *Exercise
Domain Domain

Participant Personality Profile Values:

A	B	C	D	E	F	G	H	I
19	29	24	19	32	18	23	23	25

*Results from Personality Scale (Carmines & Zeller, 1994; Grasmick et al., 1993; Kvale & Brinkmann, 2008; Lazarus & Folkman, 1984; Murray & McAdams, 2007; Vroom, 1995; Zaller, 1992)

**Each column is associated with different aspects of personality

Ideal Personality Profile Values:

A	B	C	D	E	F	G	H	I
13	27	22	16	25	17	17	20	20

Difference between Personality Profile Values:

A	B	C	D	E	F	G	H	I
6	2	2	3	7	1	6	3	5

Domain Score: 15

Measure 4: Confirming Condition Personality Profile Score Meanings

Note. The underlined section is the feedback the participant received if he/she was in the confirming condition.

What does your score mean?

If the sum difference value is between 0 and 18, this means that your profile is very similar to the ideal "successful exerciser". According to research, a person with this personality profile will very likely be physically active throughout his/her lifetime. While you will undoubtedly face challenges towards being physically active, your personality traits render you committed and determined to reach your exercise goals, and see obstacles as minor setbacks rather than serious and long-term barriers.

If the sum difference value is between 19 and 37, this means that your profile is somewhat similar to the ideal exerciser but that there are some differences. Further, you are likely to be physically active for several years to follow, but that you will experience lows and highs in your physical activity frequency. When you experience an exercise barrier, it may slow you down or even stop your exercise behaviour for a few weeks, but you are resilient to long-lasting barriers. Although sometimes low in confidence, your personality traits render you persistent, and thus capable of overcoming struggle.

If the sum difference value is 38 or more, this means that your profile is not very similar to the ideal exerciser. Further, according to research, a person with this personality profile will very likely struggle with remaining physically active throughout the his/her lifetime. Such personalities are highly prone to perceiving exercise barriers as insurmountable and plentiful, and are likely to struggle when life's circumstances bring about an exercise challenge.

Measure 5: Confederate Tallying Form

Personality's Influence on Success in Academic and Exercise Pursuits in Post-Secondary Students

Confederate (0001860400)

Domain (circle one):

*Academic OR Exercise
Domain Domain

Participant Personality Profile Values:

A	B	C	D	E	F	G	H	I
22	32	27	24	28	24	24	22	25

*Results from Personality Scale (Carmines & Zeller, 1994; Grasmick et al., 1993; Kvale & Brinkmann, 2008; Lazarus & Folkman, 1984; Murray & McAdams, 2007; Vroom, 1995; Zaller, 1992)

**Each column is associated with different aspects of personality

Ideal Personality Profile Values:

A	B	C	D	E	F	G	H	I
13	27	22	16	25	17	17	20	20

Difference between Personality Profile Values:

A	B	C	D	E	F	G	H	I
9	5	5	8	3	7	7	2	5

Domain Score: 29

Measure 6: Confederate Neutral Personality Profile Score Meanings

Note. The underlined section is the feedback the confederate always receives.

Academic Domain Personality Profile Score Meanings

What does your score mean?

If the sum difference value is between 0 and 18, this means that your profile is very similar to the ideal "successful academic". Further, according to research, a person with this personality profile will very likely be successful in academic and consequent work-related domains for several years to follow, with little to no serious barriers that you are unable to overcome. While you will undoubtedly face challenges to consistent performance success, but your personality traits render you committed and determined to reach your goals, and to see obstacles as minor setbacks rather than serious and long-term barriers.

If the sum difference value is between 19 and 37, this means that your profile is somewhat similar to the ideal academic but that there are some differences. Further, you are likely to continue to be academically successful for several years to follow, but that you will experience lows and highs in your motivation and output levels. When you experience a barrier, it may slow you down or even stop your consistent pursuit of academic or work-related goals for a few weeks, but you are resilient to long-lasting barriers. Although sometimes low in confidence, your personality traits render you persistent, and thus capable of overcoming struggle.

If the sum difference value is 38 or more, this means that your profile is not very similar to the ideal academic. Further, according to research, a person with this personality profile will very likely struggle to maintain consistently successful academic performance throughout the years to follow. Such personalities are highly prone to perceiving barriers as insurmountable and plentiful, and are likely to struggle when life's circumstances bring about a challenge. You tend to view issues as catastrophic and internalize the blame onto yourself.

Measure 7: Tallying Instructions

Personality Meanings

Column	Associated Numerical Values	Meanings
A	1, 2, 3, 4, 34	Externally-driven
B	13, 15, 18, 27	Internalization
C	26, 1, 19, 22, 33, 17	Propensity towards risk-taking
D	16, 14, 11, 4, 9, 34, 36	Successfulness
E	36, 35, 13, 14, 12, 2, 3, 4, 11, 17	Neuroticism
F	1, 2, 3, 15, 31	Openness
G	30, 20, 21, 19	Contentiousness
H	11, 1, 2, 17, 15, 22, 26	Agreeableness
I	6, 7, 8, 14, 13, 16	Caring

Instructions for Researchers*

Academic Domain Tallying Instructions

Add columns: **A + B + E + G + I**

*NOTE: This combination of personality traits are most closely linked to success in the academic and further work-related success in overcoming barriers. Other distinctive attributes and combinations of attributes are related to success in alternate domains of performance.

Exercise Domain Tallying Instructions

Add columns: **A + C + D + F + H**

*NOTE: This combination of personality traits are most closely linked to success in the exercise adherence success in overcoming barriers. Other distinctive attributes and combinations of attributes are related to success in alternate domains of performance.

Appendix E: Measure Set 1

Measure 1: Affect 1 Measure*Feedback AQ – Exercise*

INSTRUCTIONS: When you reflect on the feedback you just received, how does it make you feel? Use the scale below to indicate how you feel.

1. Happy about my feedback.

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

2. Ashamed about my feedback.

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

3. Pleased about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

4. Depressed about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

5. Guilty about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

6. Proud about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

7. Upset about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

8. Disappointed about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

Appendix F: Researcher Notes

Measure 1: Introduction Points

Introduction

- It is important that you understand the following information, as part of this study; therefore, please clarify anything that is unclear. Also, so that we know that you fully understand what I am about to say, you will be asked to paraphrase the information shared here just to make sure that you have retained it before we start the next activity.
- It is well established in the literature that personality traits are associated with success in different domains
- In this study we are looking at success in the domains of exercise and academics
- Through understanding an individual's personality we are able to determine the likelihood that that individual will succeed in exercise or academics throughout his/her lifetime
- This is done through comparisons between the individual's personality with an ideal personality profile for a specified domain, such as exercise or academics
- Years of research have been dedicated to understanding what personality characteristics enable sustained success for individuals over a lifetime in a specific performance domain
- Research has found that the more closely an individual's profile matches this 'ideal personality profile' for his/her prospective performance domain, the greater the chances are that that individual will also find success throughout his/her lifetime
- Conversely, the greater the difference an individual's profile is to this ideal profile, the less likely that person is able to perform consistently over his/her lifetime
- It may be useful for people to know their profiles, so that they are more aware of the strengths or struggles with respect to future success
- This way they can work with advantageous personality traits they possess and are better able to work on problematic personality traits that may interfere with success in the future
- SECOND PART of this sessions is dedicated to a **brainstorming sessions** with your partner
- AUDIO-RECORDED as a way to provide for us to check that I am conducting this experimental session in the same manner for all participants.

Measure 2: 'Random' assignment verification forms

Portion of Random Assignment I

Session	Academic Domain	Exercise Domain
1	A	B
2	B	A
3	A	B
4	B	A
5	A	B
6	B	A
7	A	B
8	B	A
9	A	B
10	B	A
11	A	B
12	B	A
13	A	B
14	B	A
15	A	B
16	B	A
17	A	B
18	B	A
19	A	B
20	B	A
21	A	B
22	B	A
23	A	B
24	B	A
25	A	B
26	B	A
27	A	B
28	B	A
29	A	B
30	B	A
31	A	B
32	B	A
33	A	B
34	B	A
35	A	B
36	B	A
37	A	B
38	B	A

Portion of Random Assignment II

Session	Brainstorming	Non-Brainstorming
1	A	B
2	B	A
3	A	B
4	B	A
5	A	B
6	B	A
7	A	B
8	B	A
9	A	B
10	B	A
11	A	B
12	B	A
13	A	B
14	B	A
15	A	B
16	B	A
17	A	B
18	B	A
19	A	B
20	B	A
21	A	B
22	B	A
23	A	B
24	B	A
25	A	B
26	B	A
27	A	B
28	B	A
29	A	B
30	B	A
31	A	B
32	B	A
33	A	B
34	B	A
35	A	B
36	B	A
37	A	B
38	B	A
39	A	B
40	B	A
41	A	B

Appendix G: Self-Presentational Opportunity 2 Facilitation Sheets

Measure 1: Exercise Barriers

Barriers to Exercise Success

1. You are consistently staying up too late; therefore, need to sleep in until the last possible minute to get your rest. Consequently are not finding time in your day to exercise, as you used to get up in the mornings to go for a run. What can you do to make sure you become physically active again?
2. You no longer have access to a car to get to soccer practice (or another favoured activity) which was your main physical activity past time. What can you do to make sure you keep exercising?
3. You have little time to fit exercise in your day (i.e., only between two classes), but in the past week have found that you are either too hungry or too full (because of the limited time you have to eat too) in order to get in a good workout, so you've been skipping your exercise sessions. What can you do to help yourself stop skipping workouts?
4. It's the beginning of the school year and the gym is *always* busy. You have set some time aside to work-out every day, but every time you get to the gym it's so busy. You tried fighting your way through the crowds to get your workout done, but it took you an hour and a half longer than it should! Now every time you think of the gym you don't want to go back.
5. You've just moved back to Ottawa from home where you were all summer. When at home you and your sister got into a great exercise routine where you had each other to motivate, etc. and sometimes just to get your butts out the door. Now that she's not around you are a lot lazier. What could you do to help this situation?

Measure 2: Exercise Intentions

Strenuous Exercise Intentions

1. How many times next week do you intend to exercise at a strenuous intensity (i.e., exhausting exercise, such as running, vigorous swimming, etc.) for at least 30 minutes continuously?
2. From 1 to 9, how likely are you to exercise this number of times?

Moderate Exercise Intentions

1. How many times next week do you intend to exercise at a strenuous intensity (i.e., non-exhausting exercise, such as fast walking, tennis, etc.) for at least 30 minutes continuously?
2. From 1 to 9, how likely are you to exercise this number of times?

Mild Exercise Intentions

1. How many times next week do you intend to exercise at a strenuous intensity (i.e., minimally exhausting exercise, such as yoga, archery, snowmobiling, etc.) for at least 30 minutes continuously?
2. From 1 to 9, how likely are you to exercise this number of times?

Measure 3: Academic Barriers (for show)

Barriers to Academic Success

1. You are consistently staying up too late; therefore, need to sleep in until the last possible minute to get your rest. Consequently are not finding time in your day to exercise, as you used to get up in the mornings to go for a run. What can you do to make sure you become physically active?
2. You no longer have access to a car to get to soccer practice (or another favoured activity) which was your main physical activity past time. What can you do to make sure you keep exercising?
3. You have little time to fit exercise in your day (i.e., only between two classes), but in the past week have found that you are either too hungry or too full (because of the limited time you have to eat too) in order to get in a good workout, so you've been skipping your exercise sessions?
4. It's the beginning of the school year and the gym is *always* busy. You have set some time aside to work-out every day, but every time you get to the gym it's so busy. You tried fighting your way through the crowds to get your workout done, but it took you an hour and a half longer than it should! Now every time you think of the gym.
5. You've just moved back to Ottawa from home where you were all summer. When at home you and your sister got into a great exercise routine where you had each other to motivate, etc. and sometimes just to get your butts out the door. Now that she's not around you are a lot lazier. What could you do to help this situation?

Measure 4: Academic Intentions (for show)

Class Time Intentions

3. How many times next week do you intend to attend class for at least 30 minutes continuously?
4. From 1 to 9, how likely are you to attend class this number of times?

Class Work and/or Research Intentions

3. How many times next week do you intend to do class work and/or conduct research for at least 30 minutes continuously?
4. From 1 to 9, how likely are you to do class work and/or conduct research this number of times?

Studying Intentions

3. How many times next week do you intend to study at least 30 minutes continuously?
4. From 1 to 9, how likely are you to study this number of times?

Appendix H: Measure Set 2

Measure 1: Affect 2 Measure*Presentation AQ – Exercise*

When reflecting on how you were able to present yourself over the course of the study, how does it make you feel? Use the scale below to indicate how you feel.

1. Happy about my feedback.

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

2. Ashamed about my feedback.

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

3. Pleased about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

4. Depressed about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

5. Guilty about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

6. Proud about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

7. Upset about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

8. Disappointed about my feedback

1	2	3	4	5	6	7	8	9	
Don't feel at all									Feel very much

Measure 2: Situation Satisfaction Questionnaire

Situational Satisfaction Questionnaire

1. To what extent do you feel satisfied with the research session that just happened as a whole?

9 8 7 6 5 4 3 2 1

Not at all satisfied

Completely satisfied

2. To what extent do you feel satisfied with how you were able to portray yourself to the other participant and the researcher in this research session?

9 8 7 6 5 4 3 2 1

Not at all satisfied

Completely satisfied

3. To what extent did you feel the desire to present yourself differently than how you were portrayed in this research session?

9 8 7 6 5 4 3 2 1

Did not desire

Desired very much

Appendix I: Deception Debriefing

Measure 1: Deception Debriefing Form

Deception Debriefing

First of all, thank-you very much for participating in our research study, as your participation is extremely valuable!

Researchers:

- 1) Primary Researcher:
Dr. Shaelyn Strachan, Ph.D.
School of Human Kinetics, University of Ottawa

- 2)

Secondary Researcher:
Gwenyth Stadig, MA Candidate
School of Human Kinetics, University of Ottawa

-

Deception:

The purpose of the present study is somewhat different from the purpose that we originally presented to you. Although you were informed that the purpose of this study was to look at your personality profile relative to the personality profiles associated with people who are successful and unsuccessful at exercise maintenance and academic pursuits, the real purpose of this study was to examine the responses to being provided with feedback that challenged or confirmed your exercise standard for yourself. In other words, in this study we wanted to measure how people who consider themselves exercisers would react when told that they displayed attributes that would make it unlikely/very likely for them to be successful at exercising in the future. Thus, the personality profile feedback you were provided with was false and not based on the personality information you provided as baseline measures. It is important that you understand that the personality profile information you were provided with was **bogus** (or untrue). For the purpose of this study, you were provided with bogus feedback in order to elicit a response (negative emotions, efforts to “prove” that you really are good at adhering to exercise) but this information really has no relevance to you. In fact, you were selected for this study because you scored relatively high on a measure known as *exercise identity* which means that you view yourself as an exerciser. Past research suggests that having high scores on this measure will make you more likely to adhere to exercise. Further, despite being told that you will be contacted in one (1) week for a follow-up of your physical activity over the past week, you will not be contacted. We only told you this as a cover story for your participation in the overcoming barriers challenge. In reality, we were interested in seeing if participants who received the more negative personality profile would provide more responses to overcome these barriers than the participants who were provided with the more positive personality profile.

Also, the other participant in this study was not a true participant, but a confederate participant. This means that you were the only true participant in this study as the other participant receiving

feedback for his/her academic pursuits provided rehearsed reactions to each situation during the laboratory session. His/her role in this laboratory experiment was staged in order to limit the number of unknown variables present in the laboratory session, which theoretically enables greater validity.

Given that you were deceived about the real purpose of this study, you have the right to withdraw your data even though you have finished participating. If you wish to withdraw your data, your data will be destroyed and will not be used in this study. To withdraw your data, please inform the researcher. Your choice to withdraw your data will have no negative consequences and you will still receive your compensation.

If you are interested in learning about the results of this study, please provide your email address below and you will be contacted with any publications that result from this research. If you have general comments or questions related to this study, please contact the primary researcher, Shaelyn Strachan, by phone at (613) 562-5841 or by email at shaelyn.strachan@uottawa.ca. We would like to assure you that this study has been reviewed by, and received ethics clearance through the University of Ottawa Health Sciences and Sciences Research Ethics Board. Any questions regarding your rights as a participant may be addressed through the Protocol Officer for Ethics in Research, University of Ottawa, 550 Cumberland Street, Room 159, Ottawa, ON, K1N 6N5, (613) 562-5841 or ethics@uottawa.ca.

If you still feel uncomfortable as a result of participating in this study please contact the University of Ottawa's Community Life Service by phone at (613) 562-5841, email at communitylife@uottawa.ca or in person at 85 University Pvt. Room 318, Ottawa, Ontario.

Finally, we are interested in whether you caught on to the real purpose of this study and/or the role of the confederate before it was revealed to you. Please indicate below if you think you were aware of this deception or the real purpose of the study such that it affected how you responded to the questions.

Yes? No? Comments?

Your email address, if interested in being provided with related publication:

Measure 2: Experimental Debrief Form (manipulation check)

Experimental Debrief Form

1. How did you hear about the study?

Please circle one

Poster Presentation Friend Other: _____

2. For the integrity of the data collected it is imperative that all participants be legitimately deceived throughout the study. That is, if you heard about the study and the fact that it involves providing people with false feedback, it would compromise your data and be very detrimental to our findings. We will not be angry if this is the case for you, but rather would appreciate your honesty.

Is this the case for you?

Did you come into the study blinded of the deception element?

Please circle one: Yes No

3. Did you have prior knowledge about this study?

Please circle one: Yes No

If so, please briefly explain:

4. Were you aware or suspicious that the other participant was actually a confederate?

Please circle one: Yes No

If yes, how so?

Appendix J: Self-Presentational Responses Interrater Coding

Self-Presentational Responses to an Exercise-Identity Challenge

Participant Name & Number:

Coder's Name:

SP #1: Post "Personality" Feedback (*Circle the appropriate response)

Who prompted conversation?	CONFEDERATE or PARTICIPANT
Questioning method:	YES or NO
	1 2 3 4 5 6 7 8 9
Agreeableness:	1 2 3 4 5 6 7 8 9
	Strongly Disagree Neutral Strongly Agree
Supports Strong Exercise Identity:	YES or NO
	1 2 3 4 5 6 7 8 9
Rationalize Weak Exercise Identity:	YES or NO
	1 2 3 4 5 6 7 8 9

SP #2: "Sports Psych Activities"

Exercise Question 1: "Staying up too late"

Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9
Refute personal relevance of barriers:	YES or NO
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____

Exercise Question 2: "No longer have a car to get to soccer practice"

Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9
Refute personal relevance of barriers:	YES or NO
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____
Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9

Exercise Question 3: "Little time to fit exercise into your day"

Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9
Refute personal relevance of barriers:	YES or NO
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____
Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9

Exercise Question 4: "Beginning of the year and the gym is *always* busy"

Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9
Refute personal relevance of barriers:	YES or NO
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____
Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9

Exercise Question 5: "When you were at home, you and your sister got into a great exercise routine"

Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9
Refute personal relevance of barriers:	YES or NO
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____
Number of solutions provided:	
Elaboration of answers:	1 2 3 4 5 6 7 8 9

SP #2 - Exercise Intentions

Strenuous exercise intentions mentioned:	
Strength of strenuous exercise intentions:	1 2 3 4 5 6 7 8 9
Moderate exercise intentions mentioned:	
Strength of moderate exercise intentions:	1 2 3 4 5 6 7 8 9
Mild exercise intentions mentioned:	
Strength of mild exercise intentions:	1 2 3 4 5 6 7 8 9
***	***
Time <i>NOT</i> addressing question:	YES or NO
Time:	Start: _____ Finish: _____

Appendix K: Measure tracking chart

Timeline	Measure	Real	Pseudo	Corresponding Appendix
<i>Prior to lab session</i> ¹²				
Baseline	Recent physical activity	Yes		Appendix A, Measure 6
	Exercise identity	Yes		Appendix A, Measure 8
	Exercise intentions	Yes		Appendix A, Measure 7
	Personality		Yes	Appendix A, Measure 2
	Academic habits		Yes	Appendix A, Measure 3
	Academic intentions		Yes	Appendix A, Measure 4
	Academic identity		Yes	Appendix A, Measure 5
<i>Lab session</i> ¹³				
Informed consent form	Informed consent form	Yes		Appendix C
Self-presentation opportunity 1 (SP1)	SP1: Post public personality assessment	Yes		Appendix J ¹⁴
Measure set 1	Affect 1	Yes		Appendix E, Measure 1
	Manipulation check (PAF)	Yes		Appendix E, Measure 2
Self-presentation opportunity 2 (SP2)	SP2: Solutions to barriers challenge	Yes		Appendix J ¹⁵
Measure set 2	Affect 2	Yes		Appendix H, Measure 1
	Situational satisfaction	Yes		Appendix H, Measure 1
Deception debriefing	Manipulation check (deception)			Appendix I, Measure 2

¹² Baseline measures were filled out online.

¹³ Measures presented in order of appearance throughout each participant's lab session.

¹⁴ Assessed post-experiment by three interraters.

¹⁵ Assessed post-experiment by three interraters.