

## University of Windsor Scholarship at UWindor

---

Electronic Theses and Dissertations

---

2013

# Training terminology on perceptions of women who engage in muscle strengthening activities

Brittany E. Cooper  
*University of Windsor*

Follow this and additional works at: <http://scholar.uwindsor.ca/etd>

---

### Recommended Citation

Cooper, Brittany E., "Training terminology on perceptions of women who engage in muscle strengthening activities" (2013). *Electronic Theses and Dissertations*. Paper 4851.

This online database contains the full-text of PhD dissertations and Masters' theses of University of Windsor students from 1954 forward. These documents are made available for personal study and research purposes only, in accordance with the Canadian Copyright Act and the Creative Commons license—CC BY-NC-ND (Attribution, Non-Commercial, No Derivative Works). Under this license, works must always be attributed to the copyright holder (original author), cannot be used for any commercial purposes, and may not be altered. Any other use would require the permission of the copyright holder. Students may inquire about withdrawing their dissertation and/or thesis from this database. For additional inquiries, please contact the repository administrator via email ([scholarship@uwindsor.ca](mailto:scholarship@uwindsor.ca)) or by telephone at 519-253-3000ext. 3208.

TRAINING TERMINOLOGY ON PERCEPTIONS OF WOMEN WHO ENGAGE IN  
MUSCLE STRENGTHENING ACTIVITIES

by

Brittany E. Cooper

A Thesis  
Submitted to the Faculty of Graduate Studies  
through the Faculty of Human Kinetics  
in Partial Fulfillment of the Requirements for  
for the Degree of Master of Human Kinetics at the  
University of Windsor

Windsor, Ontario, Canada

2013

© 2013 Brittany E. Cooper

Training Terminology on Perceptions of Women who Engage in Muscle Strengthening  
Activities

by

Brittany E. Cooper

APPROVED BY:

---

J. Singleton-Jackson  
Department of Psychology

---

T. Loughead  
Department of Kinesiology

---

K. Munroe-Chandler, Advisor  
Department of Kinesiology

May 23<sup>rd</sup>, 2013

### **AUTHOR'S DECLARATION OF ORIGINALITY**

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University or Institution.

## ABSTRACT

The present study examined the impact of muscle strengthening terminology on impressions formed of female exercisers, in addition to the influence of participant impression motivation and BSRI category on ratings of personality and physical attributes. Male and female participants ( $N = 265$ ,  $M_{\text{age}} = 21.23$ ) were presented with one of four vignettes describing a female target (weight trainer, resistance trainer, strength trainer, control). Participants then rated the target on personality and physical characteristics. Results indicated no significant differences among ratings of target types ( $p > .05$ ). Moreover, the participants' impression motivation did not influence target ratings ( $p > .05$ ). A significant main effect emerged for BSRI category ( $p < .05$ ). Participants classified as masculine-typed rated all targets as less kind compared to participants classified as feminine-typed or androgynous. It is possible the vignettes did not provide enough information about muscle strengthening to elicit stereotypes. Avenues for future directions are discussed.

## ACKNOWLEDGMENTS

I would first like to thank my advisor, Dr. Krista Chandler for her hard work and guidance on this project. During my time as your student, I've acquired invaluable skills that I'm certain will assist me throughout my life. I admire your work ethic and attention to detail, in addition to your kindness. Under your guidance, I've developed an unwavering belief in myself and a sense of self-compassion. I feel privileged to have had the opportunity to be your student. I would also like to extend thanks to Dr. Todd Loughead for his contributions on this thesis, as well as for his enthusiasm and positivity in the lab. Both you and Krista have created an environment under which individuality can thrive. For that, I am very grateful. I also would like to thank Dr. Jill Singleton-Jackson for being a member of my thesis committee. I am very appreciative of your contributions. Thank you for your suggestions and your continued support of this project. In addition, I am grateful for the Department of Kinesiology staff, particularly Diane Dupuis and Cathy Greenwell for their assistance and generosity throughout my time at the University of Windsor. Finally, to the Sport and Exercise Psychology Lab, I will forever be thankful to have been a member of such a great group. I couldn't have asked for better people to share my graduate experience with.

Above all, I'd like to thank my family, without whom I would be nothing. Putting my gratitude into words would be reductive. So, I will just say, I love you and thank you for everything you have done for me. Last, but not least, I'd like to thank Z.B. for being my friend when I needed one most. I dedicate this to you.

We shall not cease from exploration  
And the end of all our exploring  
Will be to arrive where we started  
And know the place for the first time.

~ T.S. Eliot

**TABLE OF CONTENTS**

AUTHOR’S DECLARATION OF ORIGINALITY .....	iii
ABSTRACT .....	iv
ACKNOWLEDGMENTS .....	v
LIST OF TABLES .....	ix
LIST OF APPENDICES .....	x
RESEARCH ARTICLE .....	1
Introduction.....	1
Method .....	8
Participants.....	8
Measures .....	9
Procedure .....	13
Analysis.....	14
Results.....	14
Discussion.....	17
References.....	26
Tables.....	33
REVIEW OF LITERATURE .....	40
Terminology and Forms of Muscle Strengthening .....	41
Self-presentation .....	43



Impression Formation .....	46
Self-presentation Theories and Models .....	48
Measurement of Self-Presentation in Exercise .....	51
Self-presentation and Body Image.....	54
Exerciser Stereotype .....	56
Measurement of Exerciser Stereotypes.....	57
The Positive Exerciser Stereotype .....	58
Exerciser Stereotypes and Gender .....	61
Exerciser Stereotypes and Weight Training .....	64
Measurement of Gender Stereotypes .....	66
References.....	69
APPENDICES .....	80
VITA AUCTORIS .....	91

**LIST OF TABLES**

<i>Table 1.</i> Participant Faculty Representation .....	33
<i>Table 2.</i> Participants' Top Forms of Exercise.....	34
<i>Table 3.</i> Participants' Second Forms of Exercise .....	35
<i>Table 4.</i> Mean Ratings of Personality Characteristics as a Function of Target Type .....	36
<i>Table 5.</i> Mean Ratings of Physical Characteristics as a Function of Target Type .....	37
<i>Table 6.</i> Mean Ratings of Personality Characteristics as a Function of BSRI Category ..	38
<i>Table 7.</i> Mean Ratings of Physical Characteristics as a Function of BSRI Category .....	39

**LIST OF APPENDICES**

*Appendix A.* Vignettes ..... 80

*Appendix B.* Ratings of Physical and Personality Attributes ..... 82

*Appendix C.* Modified Self-Presentation in Exercise Questionnaire – Muscle  
Strengthening ..... 83

*Appendix D.* Bem Sex Role Inventory ..... 84

*Appendix E.* Manipulation Check ..... 86

*Appendix F.* Demographic Information ..... 87

*Appendix G.* Welcome Page..... 88

*Appendix H.* Letter of Information to Consent to Participate in Research..... 89

## RESEARCH ARTICLE

### Introduction

Self-presentation is the process by which individuals attempt to control the impressions formed of them by others (Leary & Kowalski, 1990). This occurs when an individual selectively presents certain aspects of himself or herself while omitting other information in order to maximize the likelihood that a positive social impression will be formed (Carron & Prapavessis, 1997; Leary, 1992). Self-presentation has the potential to influence social, psychological, and material outcomes (Leary, 1992); therefore, most people attempt to display a desirable impression to others as frequently as possible, across varying social situations (Schlenker, 1980). Whereas self-presentation focuses on the perception of the individual attempting to create a positive impression, impression formation focuses on whether the efforts to be positively evaluated are successful in the opinion of the observer (Martin Ginis, Lindwall, & Prapavessis, 2007). The impressions we form of other individuals ultimately determine our evaluation of and subsequent behaviour towards them. This ideology can be applied to our understanding of how impressions are formed of exercisers and athletes.

In the process of impression formation, incoming information about a person is combined with pre-determined beliefs or stereotypes to form an overall impression (Baron & Byrne, 1997; Martin Ginis et al., 2007). Thorndike (1920) suggested that this overall impression can influence our perception of that individual on unrelated attributes, such as personality. This can result in a halo-effect, which is the tendency for observers to apply global positive impressions to their evaluation of a person on individual, unrelated attributes (Nisbett & Wilson, 1977). In contrast, the formation of a negative

global impression (in which evaluations of unrelated attributes of a person are unfavorably influenced) is referred to as the devil-effect (Cook, Marsh, & Hicks, 2003).

The halo-effect is evident in exercise such that individuals hold positive overall impressions about exercisers. The positive exerciser stereotype refers to the tendency for observers to rate exercisers more positively compared to inactive individuals (e.g., Lindwall & Martin Ginis 2006; Martin, Sinden, & Fleming, 2000). In addition to positive physical attributes (e.g., stronger, more fit), observers are inclined to attach positive attributes to exercisers that are not directly influenced by physical activity participation (e.g., being more intelligent, braver). In order to investigate the positive exerciser stereotype, researchers provide participants with exercise information (vignette) about a hypothetical individual, commonly referred to as a 'target.' Participants are asked to rate the target on various physical and personality attributes. Responses are then compared across several experimental conditions to measure impression formation (Martin Ginis et al., 2007). The positive exerciser stereotype has been observed across cultures, existing in Canadian, American, and Swedish populations of university students (Lindwall & Martin Ginis, 2010; Mack, 2003; Martin Ginis, Latimer, & Jung, 2003). Researchers (Martin et al., 2000; Rodgers, Hall, Wilson, & Berry, 2009) have also documented the existence of a non-exerciser stereotype such that targets labelled as non-exercisers are perceived by both exercisers and non-exercisers more negatively on various physical and personality attributes (e.g., less motivated, less healthy, less energetic, less disciplined and weaker) than exercisers. The finding that non-exercisers view other non-exercisers negatively is contrary to social identification theory (Tajfel & Turner, 1986), which purports that individuals are more likely to rate members of their

in-group more positively compared to members of out-groups. A possible explanation for the negative ratings of non-exercisers by both exercisers as well as non-exercisers may be related to social norms about physical activity. That is, the social pressure to be physically active may elicit feelings of cognitive dissonance in non-exercisers, subsequently resulting in more negative evaluations of fellow non-exercisers.

The impressions formed of exercisers can be dictated by one's own motivation to self-present as an exerciser. Martin Ginis et al. (2003) demonstrated that individuals who self-identified as an exerciser rated exercising targets more favourably compared to those who self-identified as a non-exerciser. Consistent with this finding, Lindwall and Martin Ginis (2006, 2010) showed that individuals with a greater desire to self-present as an exerciser (higher in impression motivation) rated exerciser targets more positively on physical attributes compared to individuals who were lower in impression motivation. Specifically, the results suggested that individuals who self-identified as an exerciser held a positive bias towards exercising targets.

Forming an impression of an exerciser may also be influenced by one's tendency to engage in gender stereotyping. Research (Bem, 1981; Koivula, 1995) suggests that people who are sex-typed (i.e., individuals who have internalized societal definitions of traditional masculinity and femininity; Bem, 1974) are more inclined to engage in gender stereotyping. Men and women who are sex-typed typically avoid traditionally gender-opposite activities in an effort to maintain a self-image that is consistent with culturally determined masculine or feminine norms (e.g., Kohlberg, 1966). Koivula (1995) demonstrated that sex-typed individuals are also more likely to classify sports as masculine-appropriate (e.g., weight lifting) or feminine-appropriate (e.g., ballet) as a

product of their engagement in gender-based schematic processing. It is possible that gender classification of activities will extend to the domain of exercise such that sex-typed individuals will be more likely to allow gender stereotypes to influence their ratings of female exercisers who engage in muscle strengthening activities.

Current body ideals for North American men and women have been influenced by the growing cultural acceptance of physical exercise as a valued and desirable behaviour (Choi, 2000). For women, the body ideal emphasizes slenderness with visible muscle tone (Gruber, 2007). Despite weight training being an important fitness component of achieving this ideal, few women participate in the activity (14.3%; Statistics Canada, 2005). This may be due in part to the culturally determined glass-ceiling on female muscularity (Dworkin, 2001). Women fear that by weight training, they will develop excessive muscular bulk (Choi, 2000), therefore moving farther from the female ideal. Moreover, women who exceed the acceptable standards of female muscularity often experience a conflict between being an athlete or exerciser (both of which enhances muscle) and being feminine (Krane, Choi, Baird, Aimar, & Kauer, 2004). In an effort to assuage women's fears, fitness facilities promote women's weight training for the purpose of elongating and toning muscle while providing advice on how to prevent gaining too much muscular bulk (Choi, 2003). Moreover, women's low participation rates in weight training could be due to the misperception of the term itself. That is, women may associate weight training with weight lifting, a competitive sport in which athletes train to lift maximal amounts of weight and typically acquire an excessive amount of musculature (Howley & Franks, 2007). In an attempt alleviate the potential confusion that weight training is analogous to weight lifting, popular magazines, the

Internet, fitness books, and other media often endorse training that focuses on muscular strength by referring to it as ‘resistance’ or ‘strength’ training. Women may be more inclined to participate in a *muscle strengthening* program with a perceived focus on muscle toning, as opposed to a *weight training* program with the perception of building size.

Concerns about being unable to achieve the societal standards of femininity can lead to self-presentational distress (Leary, 1992), potentially preventing women from engaging in certain exercises or sports that may be perceived as suggesting a deficiency in femininity. Men and women tend to participate in physical activities and sports that are consistent with their self-presentational goals (Leary, 1992). As such, individuals are likely to avoid activities that may contradict gender roles (e.g., feminine or masculine). Prior research (Klomsten, Marsh, & Skaalvik, 2005; Koivula, 1995, 2001; Metheny, 1965) has identified the presence of gender stereotyping of sports. Koivula (1995) determined that some sports are labelled as feminine (e.g., figure skating), while others are labelled as masculine (e.g., football), and others are considered to be gender-neutral (e.g., swimming). Sports in which men have a direct physical advantage over women, such as those where absolute strength (e.g., weight lifting) or speed (e.g., motor-bike racing) are essential, are often considered to be masculine and tend to involve aggression (Koivula, 2001). Moreover, appearance and attractiveness are strongly related to perceptions of femininity in sport (Koivula, 2001). For example, if the perceived goal of the sport or activity is appearance-related (e.g., toning the body through aerobics), the activity is more likely to be associated with femininity. Weight lifting, which was



classified in a recent study as a “hypermasculine” sport, was perceived as masculine because it lacks aesthetics and emphasizes strength and power (Hardin & Greer, 2009).

In order to assess whether traditional gender stereotyping of sports would extend to the domain of exercise, Drouin, Varga, and Gammage (2008) examined the presence of the positive exerciser stereotype across traditionally feminine, neutral, and masculine physical activities (e.g., aerobics, cycling, weight training). The results indicated that the positive exerciser stereotype extends to both men and women participating in different physical activities and sports, despite the gender stereotype associated with the activity. This would suggest there are no social disadvantages for individuals participating in a traditionally gender opposite-activity (e.g., a woman participating in weight training). However, a limitation of their research is that the vast majority of the participants were physical education and kinesiology students who may have been biased in their ratings of male and female exercisers compared to the general population. Kinesiology students may place more importance on physical activity and therefore their values associated with being an exerciser may have outweighed the gender stereotype associated with the specific activity.

In an effort to remedy the limitation noted in Drouin et al.’s (2008) study, researchers (Munroe-Chandler, Loughead, & Kossert, 2012; Shirazipour, Munroe-Chandler, & Loughead, 2012) examined the positive exerciser stereotype with weight trainers using a broad sample of university students. Munroe-Chandler et al. (2012) verified the presence of the positive exerciser stereotype associated with men who weight train, such that weight training targets were rated more positively on both physical and personality attributes compared to non-weight trainers and control targets (e.g., healthier,

more muscular, more fit, harder working, braver and having more friends). Shirazipour et al. (2012) extended the stereotype research by investigating the presence of the positive exerciser stereotype in female weight trainers. Female weight trainers were viewed more favorably on physical characteristics (i.e., healthier, more physically fit, stronger and more muscular) compared to non-weight training control targets. However, female weight training targets were not rated more favourably on personality characteristics when compared to non-weight training control targets (with the exception of being perceived as harder working). This suggests that a woman will benefit from weight training if she desires to be perceived as healthy. Though, unlike the male weight trainer, she will experience no self-presentational benefits from weight training if she wishes to be perceived more positively in terms of personality attributes such as friendliness and sociability.

As noted above, the current research suggests that the positive exerciser stereotype does extend to female weight trainers on physical attributes. Yet, to date no previous research has investigated how the terminology used to describe the activity of weight training may influence impression formation. Weight training has been characterized by men and women as a masculine activity (Hardin & Greer, 2009; Koivula, 1995), yet it is possible that the other muscle strengthening terminology (e.g., resistance and strength training), often used interchangeably with the term weight training, may be gender stereotyped differently to influence the impressions formed of a target. Therefore, the purpose of the current study was to examine the presence of an exerciser stereotype associated with women who participate in muscle strengthening activities. More specifically, the study aimed to identify the extent to which information

regarding popular muscle strengthening terminology (i.e., strength training, resistance training, and weight training) influences impression formation. It was hypothesized that female resistance and strength trainers would be rated more favourably on personality and physical attributes than female weight trainers given the possible misperception of the latter term. Based on previous research (Lindwall & Martin Ginis, 2006, 2010), it was also hypothesized that impression motivation would impact the participants' ratings of the exercise targets such that those higher in impression motivation would rate the muscle strengthening targets more favourably compared to those participants who are lower in impression motivation. In addition, it was hypothesized that an individual's tendency to engage in gender stereotyping would impact impression formation such that sex-typed individuals would rate muscle strengthening targets less favourably overall; more specifically, sex-typed individuals would rate the weight training target less favourably compared to the resistance and strength training targets.

## **Method**

### **Participants**

After receiving University of Windsor ethics approval, a total of 373 participants were recruited in the study, a minimum of 184 participants being necessary as determined through GPower analysis (Faul, Erdfelder, Lang, & Buchner, 2007). However, 108 participants were excluded due to insufficient data provided. Therefore, the final number of participants was 265 and consisted of both men ( $n = 106$ ) and women ( $n = 159$ ) with a mean age of 21.23 years ( $SD = 5.22$ ). Participants were undergraduate and graduate students at the University of Windsor. Efforts were made to recruit a sample representative of the diverse Faculties across campus. As such, the Faculty of Arts and

Social Sciences displayed the highest representation (35.8%), followed by the Faculty of Nursing (21.1%), Human Kinetics (19.6%) and the remaining 23.5% included Science, Engineering, Business and Law (see Table 1). A large majority of the participants self-identified as exercisers (78.1%), with the most popular form of exercise being cardiovascular exercise (44.2%; see Table 2). Most participants (43%) did not provide a second form of exercise (see Table 3). Furthermore, some participants indicated having never been exposed to women who engage in muscle strengthening (9.8%), however the majority of participants indicated rare exposure to women's muscle strengthening (50.9%), while 24.2% declared they were often exposed, and 11.7% of female participants claimed to be females who engaged in muscle strengthening activities themselves.

## **Measures**

**Vignettes.** Participants were presented with one of four randomly assigned vignettes wherein the muscle strengthening terminology of the target was manipulated (see Appendix A). Vignettes were adapted from previous research examining exerciser stereotypes. In an effort to improve upon previous studies' noted limitations of the vignettes (i.e., Munroe-Chandler et al., 2012; Shirazipour et al., 2012), several adaptations were made: the name "Joan" was replaced with "Michelle", due to the potential perception of the former name being associated with an older Caucasian woman; the exercise information provided in the vignettes did not include cardiovascular activity or exercise/weight training status, and referred only to muscle strengthening activities. As such, the vignettes varied only in the terminology used to describe the exerciser. Therefore the three experimental conditions depicted in the vignettes included

a (a) weight trainer (b) resistance trainer, and (c) strength trainer. A control condition was also assigned which did not contain any information about the exercise habits of the target (i.e., this condition did not include the italicized sentences). The weight training target was presented as follows:

Michelle is 20 years old, and is a student at a medium-sized university in Ontario. This semester she is taking courses in psychology, French, calculus, biology, and computer science. She has not yet decided on a major. Michelle is of average height and average weight, with brown eyes and dark hair. In her spare time, she listens to music, reads, watches TV, and often gets together with her friends to go for a drink or to see a movie. *Michelle also does weight training as her form of exercise*. She is the oldest of three children and her parents are both schoolteachers. Last summer, she worked at a retail store. Next summer, she hopes to tour Europe for a few weeks.

The vignette depicting the resistance trainer was identical, but identified Michelle as participating in resistance training: *Michelle also does resistance training as her form of exercise*. Likewise, the vignette depicting the strength trainer was presented as: *Michelle also does strength training as her form of exercise*. Therefore, the vignettes varied only in the muscle strengthening terminology used.

**Ratings of personality and physical attributes.** Participants were asked to rate one of the four targets (weight trainer, resistance trainer, strength trainer, control) on 12 personality and 8 physical attributes (see Appendix B). Within the personality

dimension, attributes included rating the target as sociable/unsociable, unintelligent/intelligent, sloppy/neat, sad/happy, mean/kind, lazy/works hard, friendly/not friendly, few friends/many friends, dependent/independent, has self-control/lacks self-control, lacks confidence/confidence, afraid/brave (Martin et al., 2000). Physical attributes that were rated included physically sick/healthy, attractive/unattractive figure, underweight/overweight, unfit/fit, physically weak/strong, ugly/good-looking, sexually unattractive/attractive, scrawny/muscular (Martin et al., 2000). Both personality and physical rating dimensions were assessed on a 9-point semantic differential scale. The semantic differential scales were originally used in studies examining a target's body type (e.g., Ryckman, Robbins, Kaczor, & Gold, 1989), and later adapted by research investigating exerciser stereotypes (e.g., Martin et al., 2000; Martin Ginis et al. 2003).

**Self-presentation.** The original 11-item Self-Presentation in Exercise Questionnaire (SPEQ; Conroy, Motl, & Hall, 2000) was designed to assess the two-components of self-presentation: impression motivation and impression construction (Leary & Kowalski, 1990) in an exercise environment (see Appendix C). However, a revised 8-item version of the SPEQ containing an equal number of impression motivation and construction items was developed by Gammage, Hall, Prapavessis, Maddison, Haase, and Martin (2004) after identifying conceptual problems with the original scale. The two-component (impression motivation and impression construction) 8-item version of the SPEQ is used to assess self-presentation. However, more recent research conducted in the area of self-presentation and exercise now typically focuses on impression motivation as the more significant component of self-presentation (e.g., Lindwall & Martin Ginis, 2010). Therefore, the present study measured only impression motivation

using the SPEQ modified for muscle strengthening exercises (SPEQ-M). The SPEQ-M was designed to measure an individual's motivation to present himself or herself as someone who engages in muscle strengthening exercises. An example of an impression motivation item is "I enjoy the praise I often receive for muscular strength training." The SPEQ-M employs a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*).

**Gender stereotyping.** The Bem Sex Role Inventory (BSRI; Bem, 1974) is a 60-item questionnaire designed to assess an individual's tendency to engage in gender stereotyping (see Appendix D). Participants were asked to respond based on the extent to which they believed each of 60 personality characteristics pertained to himself or herself. The inventory is based on the assumption that individuals who more readily characterize themselves as stereotypically masculine or feminine will be more likely to evaluate others based on socially constructed masculine and feminine gender schema. In addition, 'androgynous' and 'undifferentiated' men and women are less likely to rely on gender schema when forming impressions of others (Bem, 1981). It is assessed on a 7-point Likert scale from 1 (*Never or almost never true*) to 7 (*Always or almost always true*) and consists of three 20-item scales (i.e., Masculinity, Femininity and Social Desirability). For example, respondents are asked to provide a self-rating on personality characteristics such as assertiveness (Masculinity subscale), affection (Femininity subscale) and happiness (Social Desirability subscale). The BSRI has been found to have an acceptable level of internal consistency and test-retest reliability (Choi & Fuqua, 2003). The BSRI was important to include in the present study because participants may vary in their tendency to gender stereotype, which could influence their perception and consequent ratings of the muscle strengthening targets.

**Manipulation check.** A similar approach to previous studies (e.g., Munroe-Chandler et al., 2012; Shields, Brawley, & Martin Ginis, 2007) was taken such that participants were asked to complete a memory test in order to assess their perception of the muscle strengthening description provided in the vignette (see Appendix E). The memory test included questions regarding the respondents' recollection of general information (e.g., name, age of the target in the vignette) as well as participants' memory for the type of exercise identified in the vignette (weight training, resistance training, strength training, or none).

**Demographics.** Participants were asked to report their gender, age, Faculty, frequency and duration of exercise, the type of physical activities in which they engage most often and their exposure to female exercisers who do muscle strengthening activities (e.g., never, rarely, often, identify as one) (see appendix F).

### **Procedure**

Participants were recruited throughout the University of Windsor by means of announcements and postings in classes across varying Faculties on campus. Students willing to participate in the study were directed to the online survey's welcome page (see Appendix G) which contained information regarding the purpose of the research, estimated time to complete the survey package, benefits from participating in the study, as well as the name and contact information of the investigators involved. Participants were also presented with a page containing a letter of information to consent to participate in the research (see Appendix H). The consent was obtained when the participant selected 'I agree to participate' (continue to survey). The online questionnaire package included one



of the four vignettes describing a female target, a rating scale of physical and personality attributes, SPEQ-M, BSRI, a manipulation check, and demographic information.

### **Analysis**

In the preliminary analyses, ANOVAs were used to analyze demographic data in order to assess whether any differences existed across experimental groups. Furthermore, a tertile split was conducted on the impression motivation scores to identify participants with lower (IM score  $\leq 3.00$ ,  $n = 88$ ) and higher (IM score  $\geq 4.25$ ,  $n = 95$ ) impression motivation. Data from the middle tertile ( $n = 92$ ) were not included in the remaining analysis. Main analyses consisted of two 2 (higher and lower impression motivation) X 4 (weight trainer, resistance trainer, strength trainer, and control target) MANOVAs (one for personality characteristics and one for physical characteristics). The 12 personality ratings and 8 physical ratings served as the dependent variables.

Moreover, to analyze how gender stereotyping influenced the participants' rating of the targets on personality and physical attributes, all participants ( $N = 265$ ) were categorized as masculine-typed, feminine-typed, androgynous, or undifferentiated. Categorization was based on each participant's scores on the Masculinity and Femininity subscales of the BSRI in comparison to the sample's median scores (Masculinity = 4.85; Femininity = 4.95). Analysis consisted of two 4 (masculine, feminine, androgynous, undifferentiated) X 4 (weight trainer, resistance trainer, strength trainer, and control target) MANOVAs.

### **Results**

Based on the diagnostic criteria for multivariate analyses (Stevens, 2002), all multivariate assumptions were fulfilled. Demographic data were then analyzed to ensure

homogeneity across experimental groups. Several ANOVAs were conducted which revealed no significant differences ( $ps > .05$ ) between the experimental groups on any of the demographic variables. That is, there were no significant differences in the personality and physical across experimental groups based on age, Faculty, gender, exercise status or exercise frequency. Therefore, it was not necessary to control for any demographic variables in the subsequent analyses. Results of an independent samples t-test confirmed that the higher and lower impression motivation groups were significantly different ( $p < .001$ ) on impression motivation (Low  $M = 2.07$ ; High  $M = 4.92$ ).

Participants' responses from the manipulation check were examined for accuracy of recall. No significant differences between experimental groups emerged regarding the recall check (all  $ps > .05$ ). However, a closer examination of the manipulation check data revealed that 69.8% of the participants were unable to correctly recall the type of muscle strengthening exercise identified in the vignette (weight training, resistance training, strength training, none). This particular finding has important implications for the current study.

In the current study, the Cronbach's alpha for the impression motivation scale of the SPEQ-M was .86, which is considered acceptable (Nunnally & Bernstein, 1994). Moreover, the Masculinity and Femininity subscales of the BSRI demonstrated acceptable internal consistencies with Cronbach's alphas of .85 for Masculinity and .80 for Femininity.

### **Impression Motivation**

Two 2 (lower and higher impression motivation) X 4 (weight trainer, resistance trainer, strength trainer and control) MANOVAs were conducted wherein the first

assessed personality attribute ratings and the second assessed physical attribute ratings. Analyses revealed no significant differences based on higher and lower impression motivation groups for personality ratings, Pillai-Bartlett's trace,  $V = 0.17$ ,  $F(36, 498) = .83$ ,  $p > .05$ . Likewise, no significant differences were found based on higher and lower impression motivation groups for physical ratings, Pillai-Bartlett's trace,  $V = 0.16$ ,  $F(24, 510) = 1.16$ ,  $p > .05$ . In addition, for both personality and physical ratings, no significant differences were found between the ratings of the muscle strengthening targets (weight trainer, resistance trainer, and strength trainer) and the ratings of the control target ( $p > .05$ ). Means and standard deviations for personality and physical attribute ratings for each target type are displayed in Table 4 and Table 5, respectively.

### **Gender Stereotyping**

Two 4 (masculine, feminine, androgynous, undifferentiated) X 4 (weight trainer, resistance trainer, strength trainer and control) MANOVAs were conducted to evaluate whether BSRI category influenced the participants' personality and physical attribute ratings of the targets. The first MANOVA assessed personality attribute ratings and the second MANOVA assessed physical attribute ratings. Bonferroni adjustments were applied for the follow-up univariate ANOVAs (Tabachnick & Fidell, 2007). The adjustments were made such that the 12 personality attributes were deemed significant at  $p < .004$  ( $.05/12$ ), and the 8 physical attributes were significant at  $p < .006$  ( $.05/8$ ).

**Ratings of personality attributes.** A significant main effect was found for BSRI category (i.e., masculine-typed, feminine-typed, androgynous, and undifferentiated), Pillai-Bartlett's trace  $V = .22$ ,  $F(36, 756) = 1.63$ ,  $p = .012$ ,  $\eta^2 = .07$ . Follow-up univariate ANOVAs revealed significant differences for one of the twelve personality attributes;

*mean-kind* ( $p < .004$ ; *partial*  $\eta^2 = .067$ ). Post hoc analyses using Tukey's test showed that participants, who were classified as masculine-typed, rated all targets as significantly less kind compared to participants who were classified as feminine-typed or androgynous. Means and standard deviations for all personality attribute ratings based on BSRI category are shown in Table 6.

The main effect for target type was not significant ( $p > .05$ ). In addition, the target type X BSRI category was not found to be significant ( $p > .05$ ).

**Ratings of physical attributes.** A significant main effect emerged for target type, Pillai-Bartlett's trace  $V = .17$ ,  $F(24,732) = 1.82$ ,  $p = .01$ ,  $\eta^2 = .056$ . However, a closer examination of follow-up univariate ANOVAs with Bonferroni adjustments determined no significance at  $p < .006$ . Means and standard deviations for all physical attribute ratings based on BSRI category are shown in Table 7.

## Discussion

It has been argued that muscularity signifies masculinity and denotes observable differences between men and women (Choi, 2003). As such, even within the realm of sport and exercise, female muscularity is typically resisted. In order to comply with culturally determined expectations of female muscularity (Dworkin, 2001), female exercisers often aspire for subtle muscle tone, while remaining slender and avoiding muscular bulk (Choi, 2000). Women tend to engage in activities they perceive as being conducive to the attainment of this female body ideal such as cardiovascular exercise, and tend to avoid activities such as weight training (e.g., Patton, McGuire, Greenleaf, & Jackson, 2011). Women's physical activity choices are also determined by self-presentational goals (Hausenblas, Brewer, & Van Raalte, 2004; Leary, 1992; Martin et

al., 2000), which are often influenced by exerciser stereotypes. Although prior research has examined the positive exerciser stereotype for weight training in men (Munroe-Chandler et al., 2012) and women (Shirazipour et al., 2012), the existing literature has not yet investigated the impact of training terminology on the formation of exerciser stereotypes. It is possible that muscle strengthening terminology may influence how impressions are formed of exercisers. Weight training has been characterized as a masculine activity (Hardin & Greer, 2009; Koivula, 2001); however, other muscle strengthening terms (i.e., resistance and strength training) which are often used interchangeably with the term weight training may be perceived differently. Therefore, the primary purpose of the present study was to examine the effect of muscle strengthening terminology on observers' perceptions of women who engage in muscle strengthening activities. It was hypothesized that female resistance and strength trainers would be rated more favourably than weight trainers and control targets as a function of participants' impression motivation (higher and lower) and BSRI category (masculine, feminine, androgynous, undifferentiated). However, the results rendered alternative findings.

Contrary to the first hypothesis, female strength and resistance trainers were not rated more favourably on personality or physical attributes than female weight trainers or control targets. Therefore, ratings did not significantly differ among any of the target types. It is also important to note that the ratings of the muscle strengthening targets (i.e., weight trainer, resistance trainer, strength trainer) were not found to be significantly different from the ratings of the control target. This latter point suggests the absence of the positive exerciser stereotype in the present sample. Given there has been extensive

research conducted that has verified the existence of the positive exerciser stereotype (e.g., Lindwall & Martin Ginis, 2010; Mack, 2003; Martin Ginis, 2003), this particular finding was unexpected and warrants further discussion and investigation.

The absence of a positive exerciser stereotype may be a result of the findings that emerged from the manipulation check. Almost 70% of the participants were unable to correctly recall the type of muscle strengthening exercise described in the vignette. It is possible that the muscle strengthening information provided in the vignette was insufficient, thus preventing the muscle strengthening term from taking salience over the other vignette information (e.g., name, age, university course load). Previous research (Martin et al., 2000; Munroe-Chandler et al., 2012; Shirazipour et al., 2012) examining the positive exerciser stereotype has used more detailed information regarding the target's exercise habits (e.g., frequency, duration, type). However, the researchers of the current study were specifically interested in the participants' perceptions of the terminology and the exercises they believe to be associated with the terminology. By including only the muscle strengthening term, the researchers hoped to limit the bias that more specific exercise information would likely have ensued (e.g., we did not want to bias perceptions of resistance training by including specific types of resistance training exercises such as free weights, or exercises using one's own body weight as resistance).

It was also hypothesized that impression motivation would influence the ratings of the targets such that those participants who scored higher on impression motivation (as determined by the SPEQ-M) would rate the muscle strengthening targets more positively on both personality and physical attributes than participants who scored lower on impression motivation. This hypothesis was not supported. Impression motivation did

not have a significant influence on the ratings of the muscle strengthening targets in the current study. Although these results are contrary to previous exercise stereotype research with predominantly aerobic-based activities (e.g., Martin Ginis et al., 2006, 2010), they are in accordance with prior results examining the positive exerciser stereotype in weight trainers (Munroe-Chandler et al., 2012; Shirazipour et al., 2012). Consequently, impression motivation seems to have no influence on the ratings in research with muscle strengthening targets (e.g., weight trainers). This may be explained by the fact that 78.1% of participants in the present sample self-identified as an exerciser with the most popular form of exercise being cardiovascular exercise. In addition, the current sample had relatively low muscle strengthening participation levels as well as low levels of exposure to women who engage in muscle strengthening exercises. As such, it can be inferred that the lack of significant differences pertaining to impression motivation may be partly related to the participants' poor sense of identification with the muscle strengthening targets. In line with social identification theory (Tajfel & Turner, 1986), the participants may have been positively biased towards their in-group (cardiovascular exercisers) and felt indifferently towards members of an out-group (e.g., individuals who do only muscle strengthening exercises). The muscle strengthening target (whom, to the participants' knowledge did not engage in cardiovascular exercise) was not likely to have been perceived as a member of their in-group. The perception of the target as an out-group member may have diluted the impact of the exercise terminology, therefore rendering impression motivation scores of the participants' less influential in how the targets were rated. It may be valuable for future research to examine impression motivation in weight training using a sample recruited exclusively from fitness facilities.

Men and women who exercise at fitness facilities would have constant exposure to individuals who weight train, or self-identify as a weight trainer, and would perhaps be better able to relate and identify with muscle strengthening targets. Furthermore, individuals recruited from a fitness facility may display higher levels of impression motivation relating to weight training.

The final hypothesis concerned gender stereotyping, such that one's tendency to engage in gender stereotyping would impact the ratings of the targets. Specifically, it was expected that masculine- and feminine-typed individuals would rate all muscle strengthening targets less favourably than the control target, with the weight training target being rated the least favourably. Results showed that participants' BSRI category (masculine, feminine, androgynous, undifferentiated) impacted how the targets were viewed overall. Specifically, masculine-typed individuals rated all targets (weight trainer, resistance trainer, strength trainer, and control) as significantly less kind when compared to feminine-typed and androgynous individuals. Given masculine-typed individuals rate themselves more highly on personality traits such as assertiveness, dominance, and competitiveness (Bem, 1974), a potential explanation for this finding is that masculine-typed individuals make harsher judgments of others (in general) compared to feminine-typed and androgynous individuals. Though, to the researchers' knowledge, no prior literature exists to support this possibility. Another interpretation of this finding concerns the participants' perceptions of kindness. That is, masculine-typed individuals may interpret and value kindness differently compared to feminine-typed and androgynous individuals. Prior research has often placed the characteristic of kindness with attributes such as cooperation, tenderness, generosity, and modesty (e.g., Neff,



Rude, & Kirkpatrick, 2007; Swami et al., 2010). Kindness does not tend to be associated with attributes that often signify success (or traditional masculinity) such as aggressiveness, assertiveness, independence, leadership ability, or pride (e.g., Sirin, McCreary, & Mahalik, 2004; Swami et al., 2010). Consequently, given the target is depicted as a goal-oriented, successful student (e.g., she is enrolled in computer science courses, employed, hopes to travel to Europe), it may be more likely that masculine-typed participants would rate her as less kind, which may in fact be an attribute they associate with her progress and success. It is difficult to draw conclusions about this finding without making assumptions about gender stereotyping tendencies. Therefore, future research should investigate the impact of BSRI category on personality ratings of exercisers.

There were no significant differences found on physical attribute ratings as a function of BSRI category. Given weight training is considered by men and women to be a masculine-typed activity (Hardin & Greer, 2009; Koivula, 1995), one would expect masculine- and feminine-typed participants to more harshly critique the physical attributes of a female weight training target compared to androgynous or undifferentiated individuals. This would be anticipated because masculine- and feminine-typed individuals tend to evaluate others based on traditional gender stereotypes (Bem, 1974). The lack of significance regarding the physical attribute ratings may provide further evidence that the muscle strengthening information provided in the vignette was not strong enough to generate a memory for the participants.

The current study is not without limitations. As previously noted, it is possible that participants were unable to accurately recall the muscle strengthening terminology

due to the lack of information provided in the vignette. Thus, it is necessary for future studies to provide additional exercise information in the vignette in order to ensure participants' recollection of terminology. For example, future researchers may benefit from including more specific muscle strengthening information such as the duration and frequency of the muscle strengthening activity, without compromising the purpose of the study. In addition, mentioning the terminology several times throughout the vignette may improve its salience among the other information in the vignette. Another limitation of the present study concerns the BSRI. The BSRI was developed in 1974 and therefore, the personality characteristics that are intended to represent masculinity and femininity reflect the societal gender roles of almost four decades ago. Societal gender roles have certainly evolved, and therefore it may be difficult to accurately interpret modern BSRI scores (Auster & Ohm, 2000). Moreover, as noted in previous research (Shirazipour et al., 2012), it is important for future studies to consider cultural differences of the target and the participants. Likewise, it is important to consider cultural differences in the evaluation of BSRI scores (e.g., Harris, 1994).

Furthermore, the present study had a high number of incomplete questionnaire attempts (i.e., 108 participants were excluded out of 373 due to insufficient data). Past exerciser stereotype research (e.g., Shirazipour et al., 2012) has collected similar data through paper-pencil method whereas the present study used an online method. It is possible that an online method of data collection may increase the participants' perceptions of anonymity and reduce feelings of accountability. Future research should be aware of this limitation associated with online research and create strategies to increase online questionnaire completion.

A final limitation of the present study concerns the information provided in the vignette regarding the target's weight. Specifically, the vignette identifies the target as being "of average weight". This information may have biased the participants' perception of the target, consequently rendering the exercise information in the vignette less influential. However, previous research has found significant differences for exercising targets using the same weight information (e.g., Lindwall & Martin Ginis, 2010; Munroe-Chandler et al., 2012; Shirazipour et al., 2012). Therefore, it is more likely that the exercise information provided in the vignette in the present study was lacking in detail about the exercise habits of the target. This provides further evidence that future research must include additional exercise information in the vignette.

The present study examined the impact of training terminology on perceptions of female exercisers only. Future research should investigate how muscle strengthening terminology influences perceptions of men who engage in such activities. It is possible that terminology influences perceptions of male exercisers to a greater extent such that men who participate in weight training may be more positively evaluated compared to men who participate in resistance or strength training.

There are many physical and psychological health benefits that result from regular participation in muscle strengthening exercises (CSEP, 2012). Thus, it is important to identify reasons for women's low participation in muscle strengthening activities. The researchers of the current study speculated that muscle strengthening exercises labeled as 'resistance' or 'strength' training would have a stronger association with the attainment of the feminine body ideal (slender with subtle muscle tone) than 'weight' training. However, it is difficult to offer conclusive findings of the present study given the

evidence that the terminology in the vignette was not sufficient enough for participants to recall correctly. Therefore, in order to assess whether muscle strengthening terminologies impact perceptions of women who do muscle strengthening activities, future research must provide additional information in the vignette in order to ensure accurate participant recall. The present study emphasizes the necessity for future research to investigate the impact of terminology on perceptions of women who do muscle strengthening activities. It remains to be determined whether perceptions of muscle strengthening terminologies may serve to motivate or deter women's participation in muscle strengthening activities. This may provide a possible explanation for women's avoidance of muscle strengthening activities. In addition, it may be helpful to investigate women's low participation in muscle strengthening exercise using qualitative research methods. This may allow for a more in depth understanding regarding women's exercise choices and may provide future directions for quantitative study.

## References

- Auster, C. J., & Ohm, S. C. (2000). Masculinity and femininity in contemporary American society: A re-evaluation using the Bem Sex Role Inventory. *Sex Roles, 43*, 499-528.
- Baron, R. A., & Byrne, D. (1997). *Social psychology: Understanding human interaction* (7th ed.). Needham Heights, MA: Simon & Schuster.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162. doi: 10.1037/h0036215
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review, 88*(4), 354-364. doi: 10.1037/0033-295X.88.4.354
- The Canadian Society for Exercise Physiology (2012). *Canadian physical activity guidelines: For adults 18-64 years*. Retrieved from <http://www.csep.ca/english/view.asp?x=804>.
- Carron, A., & Prapavessis, H. (1997). Self-presentation and group influence. *Small Group Research, 28*(4), 500-516. doi: 10.1177/1046496497284002
- Choi, P. Y. L. (2000). *Femininity and the physically active woman*. London, England: Routledge.
- Choi, P. Y. L. (2003). Muscle matters: Maintaining visible differences between women and men. *Sexualities, Evolution & Gender, 5*, 71-81.  
doi:10.1080/1461666031000162554
- Choi, N., & Fuqua, D. R. (2003). The structure of the Bem Sex Role Inventory: A summary report of 23 validation studies. *Educational and Psychological Measurement, 63*, 873-887. doi: 10.1177/0013164403258235

- Conroy, D. E., Motl, R. W., & Hall, E. G. (2000). Progress toward construct validation of the Self-presentation in Exercise Questionnaire (SPEQ). *Journal of Sport & Exercise Psychology, 22*, 21-38.
- Cook, G. I., Marsh, R. L., & Hicks, J. L. (2003). Halo and devil effects demonstrate valenced-based influences on source monitoring decisions. *Consciousness and Cognition, 12*, 257-278.
- Drouin, B., Varga, H., & Gammage, K. (2008). The positive exerciser stereotype: The role of gender stereotype of the activity. *Journal of Applied Biobehavioural Research, 13*, 143-156. doi: 10.1111/j.1751-9861.2008.00032.x
- Dworkin, S. L. (2001). "Holding back": Negotiating a glass ceiling on women's muscular strength. *Sociological Perspectives, 44*, 333-350. doi:10.1525/sop.2001.44.3.333
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.
- Gammage, K. L., Hall, C. R., Prapavessis, H., Maddison, R., Haase, A., & Martin, K. A. (2004). Re-examination of the factor structure and composition of the Self-Presentation in Exercise Questionnaire. *Journal of Applied Sport Psychology, 16*, 82-91. doi:10.1080/10413200490260071
- Gruber, A. J. (2007). A more muscular female body ideal. In K. J. Thompson & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (pp. 217-229). Washington DC: American Psychological Association.

- Hardin, M., & Greer, J. D. (2009). The influence of gender-role socialization, media use, and sports participation on perceptions of gender-appropriate sports. *Journal of Sport Behavior, 32*(2), 207-226.
- Harris, A. C. (1994). Ethnicity as a determinant of sex role identity: A replication study of item selection for the Bem Sex Role Inventory. *Sex Roles, 31*(3), 241-273.  
doi:10.1007/BF01547717
- Hausenblas, H. A., Brewer, B. W., & Van Raalte, J. L. (2004). Self-presentation and exercise. *Journal of Applied Sport Psychology, 16*, 3-18.  
doi:10.1080/10413200490260026
- Howley, E. T., & Franks, B. D. (2007). *Fitness professional's handbook* (5th ed). Champaign, IL: Human Kinetics.
- Klomsten, A. T., Marsh, H. W., & Skaalvik, E. M. (2005). Adolescents' perceptions of masculine and feminine values in sport and physical education: A study of gender differences. *Sex Roles, 52*, 635-636. doi:10.1007/s11199-005-3730-x
- Kohlberg, L. A. (1966). A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E. E. Maccoby (Ed.), *The development of sex differences*. Stanford, CA: Stanford University Press.
- Koivula, N. (1995). Ratings of gender appropriateness of sports participation: Effects of gender-based schematic processing. *Sex Roles, 33*, 543-557.  
doi:10.1007/bf01544679
- Koivula, N. (2001). Perceived characteristics of sports categorized as gender-neutral, feminine and masculine. *Journal of Sport Behavior, 24*(4), 377-393.

- Krane, V., Choi, P., Baird, S. M., Aimar, C. M., and Kauer, K. J. (2004). Living the paradox: Female athletes negotiate femininity and muscularity. *Sex Roles, 50*, 315-329. doi: 10.1023/b:sers.0000018888.48437.4f
- Leary, M. R. (1992). Self-presentational processes in exercise and sport. *Journal of Sport & Exercise Psychology, 14*, 339-351.
- Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin, 107*, 34-47.  
doi:10.1037/0033-2909.107.1.34
- Lindwall, M., & Martin Ginis, K. A. (2006). Moving towards a favorable image: The self-presentational benefits of exercise and physical activity. *Scandinavian Journal of Psychology, 47*, 209-217. doi:10.1111/j.1467-9450.2006.0059.x
- Lindwall, M., & Martin Ginis, K. A. (2010). Exercising impressive impressions: The exercise stereotype in male targets. *Scandinavian Journal of Medicine & Science in Sports, 20*, e1-e11. doi: 10.1111/j.1600-0838.2008.00869.x
- Mack, M. G. (2003). Does exercise status influence the impressions formed by college students? *College Student Journal, 37*, 483-489.
- Martin Ginis, K. A., Latimer, A. E., & Jung, M. E. (2003). No pain no gain? Examining the generalizability of the exerciser stereotype to moderately active and excessively active targets. *Social Behaviour & Personality: An International Journal, 31*, 283-290. doi:10.2224/sbp.2003.31.3.283
- Martin Ginis, K. A., Lindwall, M., & Prapavessis, H. (2007). Who cares about what other people think? Self-presentation in sport and exercise. In G. Tenenbaum & R.



- Eklund (Eds.), *Handbook of sport psychology* (3rd ed., 136-153). New York: Wiley.
- Martin, K. A., Sinden, A. R., & Fleming, J. C. (2000). Inactivity may be hazardous to your image: The effects of exercise participation on impression formation. *Journal of Sport & Exercise Psychology, 22*, 283-291.
- Metheny, E. (1965). Symbolic forms of movement: The feminine image in sports. In E. Metheny (Ed.), *Connotations of movement in sport and dance* (pp. 43–56). Dubuque, IA: Brown.
- Munroe-Chandler, K. J., Loughead, T. M., & Kossert, A. L. (2012). Pumping iron: The social advantages of weight training. *Journal of Applied Biobehavioral Research, 17*(3), 157-175. doi: 10.1111/j.1751-9861.2012.00083.x
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. L. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality, 41*, 908-916. doi:10.1016/j.jrp.2006.08.002
- Nisbett, R. E., & Wilson, T. (1977). The halo-effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology, 35*, (4), 250-256.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Patton, R. W., McGuire, A., Greenleaf, C., & Jackson, A. (2011). Sex differences in fitness equipment use. *ACSM's Health and Fitness Journal, 15*, 15-18. doi:10.1249/fit.0b013e3182160f48

- Rodgers, W. M., Hall, C. R., Wilson, P. M., & Berry, T. R. (2009). Do non-exercisers also share the positive exerciser stereotype?: An elicitation and comparison of beliefs about exercisers. *Journal of Sport & Exercise Psychology, 31*, 3-17.
- Ryckman, R. M., Robbins, M. A., Kaczor, L. M., & Gold, J. A. (1989). Male and female raters' stereotyping of male and female physiques. *Personality and Social Psychology Bulletin, 15*, 244-251. doi:10.1177/0146167289152011
- Schlenker, B. R. (1980). *Impression management*. Monterey, CA: Brooks/Cole.
- Shields, C. A., Brawley, L. R., & Martin Ginis, K. A. (2007). Interactive effects of exercise status and observer gender on the impressions formed of men. *Sex Roles, 56*, 231-237. doi:10.1007/s11199-006-9166-0
- Shirazipour, C. H., Munroe-Chandler, K. J., & Loughead, T. M. (2012, November). *Judging the gym: Our impressions of female weight trainers*. Paper presented at Canadian Society for Psychomotor Learning and Sport Psychology, Halifax, Nova Scotia.
- Sirin, S. R., McCreary, D. R., & Mahalik, J. R. (2004). Differential reactions to men's and women's gender role transgressions: Perceptions of social status, sexual orientation, and value dissimilarity. *The Journal of Men's Studies, 12*(2), 119-132. doi:10.3149/jms.1202.119
- Statistics Canada (2005). Canadian community health survey: Health reports, Volume 18, Number 3. Retrieved from <http://www.statcan.gc.ca/pub/82-003-x/2006008/article/phys/10307-eng.htm>
- Stevens, J. (2002). *Applied multivariate statistics for the social sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Swami, V., Furnham, A., Chamorro-Premuzic, T., Akbar, K., Gordon, N., Harris, T., Finch, J., & Tovée, M. J. (2010). More than just skin deep? Personality information influences men's ratings of the attractiveness of women's body sizes. *Journal of Social Psychology, 150*(6), 628-647. doi:10.1080/00224540903365497
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.)*. Boston: Pearson Education, Inc.
- Tajfel, H., & Turner, J. (1986). The social identity theory of intergroup behaviour. In S. Worchel, & W.C. Austin (Eds.), *Psychology of Intergroup Relations* (pp. 7-24). Chicago: Nelson.
- Thorndike, E. L. (1920). A constant error in psychological ratings. *Journal of Applied Psychology, 4*, 25-29.

## Tables

Table 1

### *Participant Faculty Representation*

Faculty	Percentage of participants	Number of participants
Arts and Social Sciences	35.8%	95
Nursing	21.1%	56
Human Kinetics	19.6%	52
Science	15.8%	42
Undeclared	4.5%	12
Engineering	1.9%	5
Business	0.8%	2
Law	0.4%	1
Total	100%	265

Table 2

*Participants' Top Forms of Exercise*

Exercise	Frequency	
Cardiovascular	44.2%	(n = 117)
None	21.1%	(n = 56)
Weights	15.2%	(n = 42)
Jogging/Running	3.0%	(n = 8)
Walking	2.3%	(n = 6)
Yoga	2.3%	(n = 6)
Resistance training	1.9%	(n = 5)
Strength training	1.5%	(n = 4)
Sports	1.5%	(n = 4)
Biking	1.1%	(n = 3)
Climbing	1.1%	(n = 3)
Swimming	0.8%	(n = 2)
Dance	0.8%	(n = 2)
Horseback Riding	0.4%	(n = 1)
Abs	0.4%	(n = 1)
P90X	0.4%	(n = 1)
Stretching	0.4%	(n = 1)
Plyometrics	0.4%	(n = 1)
Belly Dance	0.4%	(n = 1)
Calisthenics	0.4%	(n = 1)

Table 3

*Participants' Second Forms of Exercise*

Exercise	Frequency	
None	43%	( <i>n</i> = 114)
Weights	17%	( <i>n</i> = 46)
Cardiovascular	10.2%	( <i>n</i> = 27)
Resistance Training	4.9%	( <i>n</i> = 11)
Strength Training	3.8%	( <i>n</i> = 10)
Yoga	3.0%	( <i>n</i> = 8)
Running/Jogging	2.3%	( <i>n</i> = 6)
Sports	1.9%	( <i>n</i> = 5)
High Intensity Interval Training	1.9%	( <i>n</i> = 5)
Circuit Training	1.5%	( <i>n</i> = 4)
Abs	1.5%	( <i>n</i> = 4)
Stretching	1.1%	( <i>n</i> = 3)
Balance	1.1%	( <i>n</i> = 3)
Dance	1.1%	( <i>n</i> = 3)
Crossfit	0.8%	( <i>n</i> = 2)
Cross training	0.8%	( <i>n</i> = 2)
Pilates	0.4%	( <i>n</i> = 1)
Martial Arts	0.4%	( <i>n</i> = 1)
Toning	0.4%	( <i>n</i> = 1)

Table 4

*Mean Ratings of Personality Characteristics as a Function of Target Type*

Personality Characteristic	Target Type			
	WT <i>n</i> = 68	RT <i>n</i> = 67	ST <i>n</i> = 57	Control <i>n</i> = 73
Afraid-Brave	6.01 (1.47)	6.18 (1.31)	6.30 (1.35)	6.52 (1.37)
Lacks Confidence – Confident	6.19 (1.70)	6.54 (1.53)	6.32 (1.70)	6.52 (1.75)
Has self-control – Lacks self-control	4.94 (2.34)	5.19 (2.02)	4.81 (2.50)	4.67 (2.38)
Dependent – Independent	6.38 (1.95)	6.93 (1.64)	6.82 (1.54)	6.96 (1.64)
Few friends – Many friends	6.37 (1.62)	6.43 (1.61)	6.36 (1.34)	6.59 (1.44)
Friendly – Not friendly	5.46 (2.45)	4.86 (2.39)	5.46 (2.52)	5.40 (2.33)
Lazy – Works hard	6.69 (1.76)	6.79 (1.46)	6.95 (1.47)	6.94 (1.41)
Mean – Kind	6.53 (1.55)	6.64 (1.25)	6.77 (1.34)	6.33 (1.25)
Sad – Happy	6.78 (1.26)	6.31 (1.38)	6.77 (1.27)	6.44 (1.34)
Sloppy – Neat	6.36 (1.59)	6.19 (1.31)	6.37 (1.23)	6.21 (1.27)
Unintelligent – Intelligent	6.76 (1.57)	6.90 (1.25)	7.00 (1.28)	6.99 (1.31)
Sociable – Unsociable	5.87 (2.26)	5.60 (2.25)	5.89 (2.37)	5.77 (2.28)

*Note.* Maximum rating value = 9. Higher scores indicate more positive trait attributions. Values enclosed in parentheses represent the standard deviations. WT = weight training, RT = resistance training, ST = strength training.

Table 5

*Mean Ratings of Physical Characteristics as a Function of Target Type*

Physical Characteristic	Target Type			
	WT <i>n</i> = 68	RT <i>n</i> = 67	ST <i>n</i> = 57	Control <i>n</i> = 73
Physical Sick – Healthy	6.84 (1.57)	7.09 (1.24)	6.95 (1.54)	7.29 (1.17)
Attractive physique – Unattractive physique	5.56 (2.13)	5.21 (2.06)	5.67 (1.98)	5.93 (1.87)
Underweight – Overweight	5.19 (.83)	5.03 (.76)	4.98 (.83)	5.10 (.90)
Unfit – Fit	6.54 (1.18)	6.57 (1.24)	6.71 (1.28)	6.15 (1.71)
Physically weak – Strong	6.30 (1.35)	6.51 (1.30)	6.77 (1.20)	6.08 (1.46)
Ugly – Good looking	6.26 (1.21)	6.01 (1.24)	6.14 (1.27)	5.95 (1.36)
Sexually unattractive – Attractive	5.93 (1.40)	5.78 (1.19)	6.05 (1.34)	5.71 (1.41)
Scrawny – Muscular	5.84 (1.28)	5.99 (1.30)	6.23 (1.10)	5.75 (1.09)

*Note.* Maximum rating value = 9. Higher scores indicate more positive trait attributions. Values enclosed in parentheses represent the standard deviations. WT = weight training, RT = resistance training, ST = strength training.



Table 6

*Mean Ratings of Personality Characteristics as a Function of BSRI Category*

Personality Characteristic	BSRI Category			
	Masculine <i>n</i> = 63	Feminine <i>n</i> = 60	Androgyn. <i>n</i> = 74	Undiff. <i>n</i> = 68
Afraid-Brave	6.05 (1.28)	6.35 (1.31)	6.32 (1.64)	6.29 (1.26)
Lacks Confidence – Confident	6.32 (1.70)	6.55 (1.53)	6.39 (1.70)	6.35 (1.75)
Has self-control – Lacks self-control	4.52 (1.96)	5.20 (2.58)	5.35 (2.39)	4.50 (2.17)
Dependent – Independent	6.57 (1.37)	7.20 (1.43)	6.66 (2.02)	6.71 (1.54)
Few friends – Many friends	6.27 (1.37)	6.52 (1.68)	6.77 (1.58)	6.18 (1.34)
Friendly – Not friendly	5.33 (2.24)	5.47 (2.57)	4.89 (2.58)	5.29 (2.24)
Lazy – Works hard	6.70 (1.55)	6.95 (1.51)	6.86 (1.45)	6.85 (1.63)
Mean – Kind	6.08 (1.21)	6.94 (1.24)	6.84 (1.32)	6.34 (1.45)
Sad – Happy	6.22 (1.26)	6.87 (1.38)	6.72 (1.27)	6.46 (1.34)
Sloppy – Neat	6.00 (1.37)	6.33 (1.36)	6.54 (1.40)	6.20 (1.25)
Unintelligent – Intelligent	6.83 (1.42)	7.25 (1.07)	7.01 (1.33)	6.57 (1.48)
Sociable – Unsociable	5.79 (2.01)	6.02 (2.24)	5.58 (2.45)	5.76 (2.37)

*Note.* Maximum rating value = 9. Higher scores indicate more positive trait attributions. Values enclosed in parentheses represent the standard deviations.

Table 7

*Mean Ratings of Physical Characteristics as a Function of BSRI Category*

Physical Characteristic	BSRI Category			
	Masculine <i>n</i> = 63	Feminine <i>n</i> = 60	Androgynous <i>n</i> = 74	Undiff. <i>n</i> = 68
Physical Sick – Healthy	6.74 (1.33)	7.20 (1.47)	7.00 (1.58)	7.23 (1.12)
Attractive physique – Unattractive physique	5.30 (1.62)	6.22 (2.03)	5.54 (2.06)	5.39 (2.19)
Underweight – Overweight	5.02 (.71)	5.30 (.79)	5.04 (.82)	4.99 (.96)
Unfit – Fit	6.22 (1.28)	6.70 (1.32)	6.45 (1.41)	6.55 (1.51)
Physically weak – Strong	5.97 (1.16)	6.62 (1.14)	6.34 (1.44)	6.63 (1.50)
Ugly – Good looking	5.71 (1.11)	6.32 (1.40)	6.00 (1.15)	6.30 (1.33)
Sexually unattractive – Attractive	5.65 (1.12)	6.03 (1.51)	5.72 (1.35)	6.01 (1.34)
Scrawny – Muscular	5.63 (1.11)	5.98 (1.16)	5.91 (1.16)	6.18 (1.32)

*Note.* Maximum rating value = 9. Higher scores indicate more positive trait attributions. Values enclosed in parentheses represent the standard deviations.

## REVIEW OF LITERATURE

People form impressions of other individuals by integrating new information with pre-existing beliefs and stereotypes in order to form an overall evaluation; this process is known as impression formation (Baron & Byrne, 1997). Previous research in impression formation has identified the existence of a gender stereotype associated with certain types of physical activities (e.g., Klomsten, Marsh, & Skaalvik, 2005; Koivula, 1995, 2001). Gender stereotypes may play a role in determining how people form impressions of women who participate in muscle strengthening activities (e.g., weight training). Furthermore, potential differences may exist regarding the terminology used to describe muscle strengthening activities as a result of gender stereotyping. The Canadian Society for Exercise Physiology (CSEP, 2012) recommends that Canadian adults (18-64 years) should participate in physical activity for at least 2.5 hours each week. These guidelines suggest that in order to achieve health benefits from physical activity and to improve one's quality of life, exercise should include moderate (e.g., walking or bike riding) to vigorous (e.g., running or cross-country skiing) aerobic activity for at least ten minute sessions throughout each week. More important to the current study, however, is the recommendation that adults also participate in muscle strengthening activities that target one's muscles and bones at least two days per week.

Muscle strengthening activities are associated with a wide range of benefits. When men and women participate in muscle strengthening activities, they reap many health benefits including increased bone mineral density, increased muscle mass and strength, decreased body fat, improved immune function and reversed effects of aging (Inclendon, 2005). Participating in muscle strengthening is important for both men and

women; however, it may be even more imperative for women. Men naturally have muscle-building advantages, such as higher amounts of testosterone and larger, denser bone than women and are therefore better able to build and maintain muscular tissue (Incedon, 2005). Women inherently require and store a higher percentage of body fat specifically for hormonal and childbearing purposes. Muscle strengthening exercises can help maintain a healthy level of body fat for women (Incedon, 2005). In addition, muscle strengthening exercises can be particularly important for post-menopausal women as bone loss occurs more quickly after menopause (Salvatore & Marecek, 2010). Weight-bearing exercises are also known to reduce the risk of developing certain psychological conditions that are more common in girls and women such as eating disorders and depression (Doyle, Ossip-Klein, Bowman, Osborn, McDougall-Wilson, & Neimeyer, 1987; Nolen-Hoeksema & Girgus, 1994). Examples of muscle strengthening activities include push-ups, stair-climbing, and lifting weights. Various terms are used to refer to muscle strengthening activities. Based on a review of literature and popular media, three of the most common terms are strength training, resistance training, and weight training.

### **Terminology and Forms of Muscle Strengthening**

Strength training, resistance training, and weight training are often used interchangeably to refer to any type of exercise that requires muscular effort to move against an opposing force to produce increases in muscle strength, endurance, and power (Fleck & Kraemer, 1997). The Internet, fitness books and magazines and other popular media frequently use these terms synonymously (Stoppani, 2006). For the purpose of the present study, it is essential to provide operational definitions for each term. According to the Canadian Society for Exercise Physiology (2012), *muscle strengthening* can be

viewed as the umbrella term, which can refer to the various forms of muscle strengthening activities (e.g., strength training, resistance training and weight training). In order to better understand this ideology, a closer examination of the definitions of muscle strengthening activities is required.

### **Strength Training**

Strength training is defined as any type of exercise that is designed to enhance muscular strength (the maximal force a muscle or muscle group can generate), power (the ability to exert muscular strength quickly), and muscular endurance (the ability of a muscle to resist fatigue) (Howley & Franks, 2007). Strength training involves resisting against a force and can assume a broad range of training modalities including weight machines, free weights, medicine balls, elastic cords, and even one's own body weight (Howley & Franks, 2007).

### **Resistance Training**

Resistance training is a form of muscle strengthening that uses force as resistance; the force may be created by various forms of resistance including but not limited to weights (Cook & Stewart, 1996). Based on this definition, resistance training and strength training assume the same operational definition (e.g., Howley & Franks, 2007); therefore strength and resistance training can be used interchangeably when referring to this type of muscle strengthening exercise. What remains unclear, however, is whether the general population perceives the terms as being interchangeable.

### **Weight Training**

Weight training is distinct from strength and resistance training in that weight training is limited to the use of free weights or weight machines for strength development

and improvement (Cook & Stewart, 1996). Furthermore, strength training and resistance training involve an array of training modalities ranging from uphill running to bench press. Weight training should be used *only* to refer to a muscle strengthening activity using free weights or machines with weight (Fleck & Kraemer, 1997).

### **Self-presentation**

Women's perception of and participation in muscle strengthening activities may be influenced by their self-presentational goals. Self-presentation, also known as impression management, is characterized by an individual's desire to influence and control the impressions others form of them (Leary & Kowalski, 1990). Successful social interaction would not occur without the construction of a social identity through the process of self-presentation (Goffman, 1959); therefore self-presentation is used on a daily basis by all people (Schlenker, 1980). Self-presentation occurs when an individual selectively presents certain aspects of himself or herself to others, while omitting other information with the intention of influencing others to form a positive social evaluation of them (Carron & Prapavessis, 1997; Leary, 1992). Self-presentation can influence life outcomes such as social, psychological, and material outcomes (Leary, 1992). As such, most people attempt to create a desirable impression to others as often as possible. However, people are not always conscious of the impressions they are making. The extent to which we are aware of the impressions we make is known as impression monitoring and involves different levels of impression awareness (Leary, 1996). Impression oblivion is the lowest level of impression monitoring and describes a person who is completely unaware of the impressions they are creating. In contrast, impression focus is the highest level in which an individual is largely aware of the impressions being

formed and the possible consequences or benefits that may result from their actions (Leary, 1996). Being completely unaware or overly aware of the impressions one is making can lead to impaired performance (Leary, 1996). Self-presentation can also serve to regulate our emotions such that making a positive impression increases positive emotions and reduces negative ones. Individuals who experience high levels of public self-consciousness are more inclined to worry that others perceive them negatively (Leary, 1996). Furthermore, we use self-presentational tactics in order to maintain our self-concept such that we aim to present images that are congruent with our perception of ourselves (Leary & Kowalski, 1990).

The domain of sport and exercise psychology has established a considerable amount of self-presentation research. Leary (1992) argued that concerns related to self-presentation affect various areas within sport and exercise such as motivation to participate in physical activity, choice of activity, quality of performance, and affective responses to sport and exercise. A key self-presentational motive to participate in physical activity is to develop and sustain a healthy, attractive physical appearance (Leary, 1992). Some individuals may be more motivated to participate in physical activity because being an athlete or exerciser is a highly valued aspect of their personal or social identity (Leary, Wheeler, & Jenkins, 1986). How an individual chooses a certain sport or physical activity is heavily influenced by certain stereotypes associated with the activity. People hold stereotypes about athletes who play certain sports (e.g., Sadalla, Linder, & Jenkins, 1988) and societal stereotypes may interact with an individual's self-presentational concerns to determine the type of physical activity they choose (Leary, 1992).

Self-presentation in sport and exercise is also influenced by gender stereotypes relating to role conflict, sex-role identification, and self-concepts (Jackson & Marsh, 1986) such that some physical activities and sports may typically be associated with one gender over the other. For example, women may worry they will be perceived as masculine if they participate in conventionally male activities such as lifting weights or boxing (Jackson & Marsh, 1986; Leary, 1992). Indeed, some women still avoid opposite-gender activities such as weight training for fear of being perceived as masculine (Gruber, 2007).

Individuals may experience emotional responses to sport and exercise as a result of self-presentational concerns. Social anxiety can occur when people desire to make a positive impression but assume they will be unsuccessful in doing so (Leary, 1983; Schlenker & Leary, 1982). This can lead to lower self-esteem and decreased participation in sport and exercise (Lantz, Hardy, & Ainsworth, 1997; Leary, 1996). Individuals may experience anxiety if they are concerned with how their bodies appear to others and assume observers will negatively judge their physique; this is known as social physique anxiety (Hart, Leary, & Rejeski, 1989). Anxiety about one's physique may cause avoidance of certain activities or sports and can lead to harmful behaviours such as fasting and over-exercising in an attempt to alter one's body (Hart et al., 1989). Given self-presentation is such an important antecedent to sport and exercise behaviour, understanding the multifaceted nature of self-presentation is crucial to the advancement of research in this area.



## **Impression Formation**

Impression formation occurs when an overall impression of a person is constructed by combining current information with stereotypes that may be associated with that person (Baron & Byrne, 1997). Impression formation operates as an important component of self-presentation such that every social interaction involves two participating elements: the actor (the subject attempting to establish a positive impression) and the observer (the subject forming an impression of the actor) (Goffman, 1959). Impression formation focuses on the observer's impression of the actor (Martin Ginis, Lindwall, & Prapavessis, 2007). Often, the impressions people form of others are heavily influenced by the preconceived assumptions or stereotypes held by the observer (Martin Ginis & Leary, 2006). This ideology contributes to the understanding of how impressions form of exercisers.

Most impression formation research investigates exercise stereotypes by providing participants with information about a target's exercise behaviour and manipulating the behaviour across conditions (e.g., exerciser, non-exerciser, control). Participants are typically asked to rate the target on physical dimensions (e.g., scrawny/muscular, physically healthy/sickly, ugly/good-looking) and personality dimensions (e.g., afraid/brave, lazy/works hard, unintelligent/intelligent). Responses are then compared across the experimental conditions to assess the respondents' impression formation of the exercisers (Martin Ginis et al., 2007).

Previous research has determined the presence of a positive exerciser stereotype associated with individuals who are physically active (e.g., Hodgins, 1992; Martin, Sinden, & Fleming, 2000). Many of the positive characteristics attributed to exercisers

are not directly influenced by their participation in physical activity. People's tendency to rate exercisers more favourably than non-exercisers is influenced by a halo effect (Thorndike, 1920). The halo effect reflects the tendency of observers to apply global positive impressions of a person to their assessment of that person on unrelated attributes. Exercise is a typically valued behaviour in our society because it promotes positive benefits such as health, fitness, and physical attractiveness. Therefore, observers normally hold favourable impressions of exercisers and these impressions are generalized to other unrelated attributes of the exercisers such as intelligence, friendliness and happiness. Contrary to the halo effect, observers tend to also be influenced by a devil-effect when forming an impression of non-exercisers (Thorndike, 1920). The devil-effect suggests that the formation of a negative global impression of an individual can cause discrete traits (such as personality) to be perceived negatively. For example, sedentary people are more likely to be negatively stereotyped and these impressions are globalized by observers to apply to all aspects of the sedentary individual's character.

Impression formation is also affected by the inferences people make about athletes who participate in particular sports or physical activities. For example, Sadalla et al. (1988) examined stereotypes in sport by asking participants to rate the targets who participated in one of the five sports (bowling, tennis, golf, skiing, and motocross). The participants formed impressions of the targets based on stereotypical assumptions associated with the sport and generalized the stereotype in order to assess how active, daring, cultured, calm, honest, and sensual they believed the individuals were. The results indicated that the targets who participated in bowling were rated as the least active and daring people.

## **Self-presentation Theories and Models**

There are several theories and models that contribute to a more thorough understanding of self-presentation. Early research in social facilitation discussed the impact that the mere presence of others can have on individual arousal and consequent performance (Zajonc, 1965). The evolution of research in this domain led to an understanding of the importance of evaluation by others in creating an arousal response (Cottrell, Wack, Sekerak, & Rittle, 1968) and the connection between perceived success or failure and task complexity (Bond, 1982). More recent self-presentational research includes Leary and Kowalski's (1990) two-component model which provides an investigation into the specific elements that comprise impression management.

**Evaluation apprehension model.** The evaluation apprehension model (Cottrell et al., 1968) is a product of social facilitation research and refers to an individual's tendency to anticipate assessment from evaluative observers. Zajonc (1965) proposed that the mere presence of others can elicit audience effects by increasing an individual's general drive or arousal level, consequently producing effects on individual performance. However, Cottrell et al. (1968) argued that it is not the presence of others but the anticipation of outcomes that comprises the development of arousal or drive. Furthermore, Cottrell et al. suggested that it is through socialization that an individual learns when to anticipate positive and negative outcomes from the presence of others.

**Self-presentation model.** In a self-presentational analysis of social facilitation, Bond (1982) contended that a performer will be motivated to demonstrate competence in the presence of others. By linking the performer's perceived success or failure to the task complexity, Bond's self-presentation model speculates that simple performances lead to

social facilitation and complex performances lead to social impairment (Bond & Titus, 1983). More specifically, Bond proposed that the presence of others facilitates performance when a task is simple (the majority of their responses are correct) whereas the presence of others impairs performance on difficult tasks (the majority of their responses are incorrect). Bond's self-presentational model suggests that arousal is affiliated with feelings of embarrassment such that the presence of others will increase arousal (embarrassment) only when the task to be completed is complex, making an individual feel incompetent (Bond & Titus, 1983). The self-presentational model is relevant and important to the understanding of social behaviour within sport and exercise due to its focus on the evaluative presence of others. For example, social physique anxiety and performance anxiety are highly influenced by feelings of incompetence and a perceived inability to complete a difficult task. That is, an individual experiencing social physique anxiety feels unable to display a desirable physique, whereas performance anxiety may result from an individual feeling unable to achieve a competition goal.

**The two-component model.** Leary and Kowalski (1990) described impression management as a two-component model by identifying two discrete processes that operate within self-presentation: impression motivation and impression construction.

Impression motivation denotes one's desire to create a particular impression to others which may or may not lead to the individual's effort to put forth relevant behaviours that would lead to the desired impression (some individuals may be highly motivated to create a particular impression but refrain) (Leary & Kowalski, 1990). Both situational and dispositional factors influence the degree to which people are motivated to control how others view them (Leary & Kowalski, 1990). Impression motivation

involves three antecedents: goal-relevance of impressions, value of desired goals, and the discrepancy between one's desired and current image. Goal-relevance of impressions suggests that impression motivation will be high when the impression to be made is relevant to acquiring a specific self-presentational goal such as social and material outcomes, maintenance of self-esteem, and identity development (Conroy, Motl, & Hall, 2000). According to Beck (1983), motivation also increases as the value or importance of goals increases, thus the value of the desired goal will also dictate one's impression motivation. Furthermore, impression motivation will increase if an individual perceives a discrepancy between their current image and their desired image. For example, failure or embarrassment will lead to an increased desire to manage one's impression such that the individual will be motivated to repair a damaged image.

The second component within the two-component model of self-presentation is impression construction. Impression construction occurs when an individual is motivated to render a particular impression to others and engages in specific behaviours that will lead to the desired impression outcome (Leary & Kowalski, 1990). Therefore, the two-component model accounts for an individual's motivation to create a desired impression and also the behavioural strategies that are involved in doing so (Leary & Kowalski, 1990). Leary and Kowalski proposed that constructing an impression involves the production of a self-concept, desired and undesired identity images, role constraints, target's values and current or potential social image. The production of a self-concept is dependent upon the perceived consistency between the images people try to project to others and how they see themselves. Desired and undesired identity images contribute to impression construction by influencing people to behave in a way that conveys a desired

identity. Role constraints dictate impression construction such that people work to ensure a public image that is compliant with situational role constraints. The values of a target also influence the way an individual tailors their public impression. For example, one may present themselves negatively if they believe a target values certain negative attributes. Lastly, a current or potential social image influences impression construction such that people are influenced by how they believe others currently view them and how they believe others will view them in the future.

### **Measurement of Self-Presentation in Exercise**

Conroy et al., (2000) developed the Self-Presentation in Exercise Questionnaire (SPEQ) in order to measure self-presentational tendencies related to the impression formed of an exerciser (i.e., the impression that an individual is a fit, healthy, active person). The SPEQ was designed to assess the two-components of self-presentation: impression motivation and impression construction (Leary & Kowalski, 1990) in an exercise environment. The development of the SPEQ involved conducting two studies. The first study aimed to reduce the initial item pool based on exploratory factor analysis, and the second study further reduced the item pool as well as examined the convergent and discriminant validity of the SPEQ. The final version of the first study was comprised of 11 items consisting of five items on impression motivation and six items on impression construction. The items were selected based on the subcomponents of impression management identified by Leary and Kowalski (1990). The final version of the second study was comprised of 14 items in which 7 items represented impression motivation and 7 items represented impression construction. The items were rated on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). An example of an item

representing impression motivation from the 14-item questionnaire is “I enjoy the praise I often receive for exercising” and an item representing impression construction is “I wear exercise/athletic clothing so other people will see me as an exerciser.” The 14-item questionnaire demonstrated acceptable reliability scores with alpha scores of .83 and .81 for the impression motivation and impression construction scales, respectively. An alpha value of .85 was estimated for the overall 14 items. The 11-item study demonstrated acceptable reliability scores as well with alpha values of .83 for the impression motivation scale and .78 for the impression construction scale. An overall alpha value of .85 was estimated for the entire 11-item model.

A further examination of the SPEQ model was completed by Conroy and Motl (2003) in an attempt to further cross-validate the items from the 11-item and 14-item models and to compare the factor structure of the SPEQ across genders. The findings from this study produced a revised 9-item, two-factor model of the SPEQ. Alterations to the impression motivation component of the scale were minimal. However, the impression construction component was improved in order to assess a more narrow range of impression construction strategies. In addition, unlike the original SPEQ, the revised version made meaningful comparisons between men and women due to the factor structure consistency across sexes. Furthermore, Conroy et al. (2000) limited their study to college-age male and female exercisers. The revised SPEQ used a sample that consisted of college-age exercisers as well as middle-age exercisers.

Observing that the previous SPEQ items represented physical appearance as both a self-presentational motive as well as a behavior, Gammage, Hall, Prapavessis, Maddison, Haase and Martin (2004) re-examined the factorial integrity of the 11-item,

two factor model of the SPEQ (Conroy et al.,2000). As a result, an 8-item model was developed which maintained the original two self-presentational components (impression motivation and impression construction). The revised version included an equal number of motivation and construction items. Although their revision led to an improvement in the factorial integrity of the SPEQ, there remained conceptual problems with the present scale such that impression motivation and impression construction were difficult for the respondent to separate in real world situations (Martin Ginis et al., 2007). More specifically, it is challenging to assess a behavior without also assessing the underlying motives. For example, the item “I wear exercise/athletic clothing so other people will see me as an exerciser” assesses a behavior (wearing the exercise clothing) and also a motivation (the desire to create an image of an exerciser to others) therefore items meant to measure impression construction may also involve elements of impression motivation (Gammage et al., 2004). Consequently, most of the research conducted in the area of self-presentation and exercise focuses on impression motivation as the more significant component of self-presentation (e.g., Lindwall & Martin Ginis, 2010).

The Self-Presentation in Exercise Questionnaire – Weight Lifting (SPEQ-WL; Gammage, Munroe-Chandler, & Hall, 2005) is an adapted version of the SPEQ and was developed to apply to research in weight training. Specifically, the SPEQ-WL was designed to measure an individuals’ motivation to present himself or herself as a weight trainer. An example of an impression motivation item is “I enjoy the praise I often receive for weight training.” This version of the SPEQ contains 11-items specific to weight training with Cronbach’s alphas for men and women of .91 and .89, respectively (Gammage et al., 2005). In order to to measure an individuals’ motivation to present



himself or herself as someone who engages in muscle strengthening exercises, the present study will measure impression motivation using the Self-Presentation in Exercise Questionnaire modified for muscle strengthening exercises (SPEQ-M). An example of an item from the SPEQ-M is “I enjoy the praise I often receive for muscular strength training.”

### **Self-presentation and Body Image**

Self-presentation, or one’s desire to present a positive image to others, is often related to one’s body image such that people typically aspire to be perceived by others as physically attractive (Hart et al., 1989). Furthermore, people formulate impressions partly based on their perceptions of others’ physical characteristics (Dion, Berscheid, & Walster, 1972; Lorenzo, Biesanz, & Human, 2010). Body image is a multidimensional construct (Muth & Cash, 1997) involving the perceptions, thoughts, and feelings one holds about his or her body (Grogan, 2008). North America’s body ideals, which have developed as a result of the growing cultural acceptance of physical exercise as a valued and desirable behaviour (Choi, 2000) are generally difficult to attain for most people (Gruber, 2007; Olivardia, 2007). For women, the ideal body emphasizes slenderness with visible muscle tone (Gruber, 2007), whereas the body ideal for men is lean, yet muscular (Cafri, Yamamiya, Brannick, & Thompson, 2005; McCreary, Sasse, Saucier, & Dorsch, 2004).

The current female body ideal differs from historical ideals in which a thin and soft physique was glorified (Gruber, 2007). However, with women’s increased involvement in sport and physical activity, an athletic physique is no longer considered abnormal for a woman (Dworkin & Heywood, 2003). This emphasis on muscle tone, in

addition to thinness, has increased pressure on girls and women to achieve a particular degree of muscularity which can lead to body dissatisfaction (McCabe & Ricciardelli, 2001).

In the same way women can become too thin, they can also become too muscular (Gruber, 2007). To this end, both thinness and muscularity exist on a continuum. Women who exceed the acceptable standards of femininity experience a conflict between being an athlete and being female. Krane, Choi, Baird, Aimar, and Kauer (2004) showed that female varsity athletes felt they were perceived by others as too muscular and less feminine as a product of their sport involvement (e.g., basketball, hockey, tennis, swimming). Choi (2003) reported that even within the sport of body building, a female can be penalized for being too muscular and lacking in femininity. Female body builders experience contradictory desires to achieve sport requirements (muscularity) while also attempting to display traditional femininity. This paradox instills a fear in the athletes of appearing overly muscular therefore even for female body builders, extreme muscularity is avoided (Grogan, Evans, Wright, & Hunter, 2004).

Despite the fact that many women experience sport and fitness as a source of power and independence (Dworkin, 2001), women are conscious of a limit existing within their athletic progression. Many women resist the development of too much muscle in order to comply with a culturally determined glass-ceiling on female muscular strength (Dworkin, 2001). In fact, when advertising to women, fitness facilities promote weight training for the purpose of shaping and toning muscle while providing specific advice on how to avoid developing size through muscle bulk (Choi, 2003). Impression formation of female exercisers involves the evaluation of a culturally ideal physique

(Leary, 1992) and concerns about not living up to the ideal standards of society can lead to self-presentational distress.

### **Exerciser Stereotype**

Stereotypes are defined as the beliefs and theories about the characteristics, attributes, and behaviours of members belonging to certain groups (Hilton & von Hippel, 1996). Stereotypes are context-dependent (Hilton & von Hippel, 1996) and exist for various reasons in everyday life. For example, stereotypes help simplify information processing demands by enabling people to rely on previously stored knowledge about their surroundings rather than incoming information (Bodenhausen, Kramer, & Süsser, 1994; Macrae, Milne, & Bodenhausen, 1994). It has been argued that reality is too complex to be perceived accurately (Lippman, 1922). As such, stereotypes are needed in order to simplify our social environment. The construction of a stereotype relies on one's ability to assign others to a meaningful social category (Hamilton & Sherman, 1994). Therefore, stereotypes may arise in response to social status, social roles, and gender-based expectancies (Eagly, 1995) or to justify a social identity within an in-group (Hogg & Abrams, 1988).

Stereotypes are maintained through numerous processes including priming (e.g., the influence of prior experience on information accessibility), assimilation effects (e.g., perceiving others as more similar to their group's stereotype than they really are), attributional processes (e.g., perceiving incoming information with a bias in order to maintain a stereotype about a group) and memory processes (e.g., information that is congruent with a group stereotype is better remembered than incongruent information) (Hilton & von Hippel, 1996). Stereotypes are problematic when they become associated

with enduring characteristics about individuals (such as gender or race) and can have a detrimental impact on social interaction. Although stereotypes can lead to negative beliefs about members of certain groups, they exist as a necessary cognitive mechanism. Stereotypes operate as a system of categorization allowing us to separate our in-group from out-groups based on the available differences in characteristics between groups (Hamilton & Sherman, 1994). Consequently, people also rely on stereotypes to make positive attributions about people in different groups; this is often the case for exercisers and athletes.

### **Measurement of Exerciser Stereotypes**

Exerciser stereotypes are most often assessed through the use of vignettes which provide detailed descriptions of the targets (e.g., Hodgins, 1992; Munroe-Chandler, Loughead, & Kossert, 2012; Martin et al., 2000). Previous research has also measured exerciser stereotypes by presenting participants with photographs or silhouette drawings of targets of varying physiques (Freeman, 1987; Spillman & Everington, 1989).

Participants are asked to rate the targets on a series of personality and physical attributes. Within the personality dimension, common attributes include rating the target as sociable/unsociable, unintelligent/intelligent, sloppy/neat, sad/happy, mean/kind, lazy/works hard, friendly/not friendly, few friends/many friends, dependent/independent, has self-control/lacks self-control, lacks confidence/confidence, afraid/brave (Martin et al., 2000). Physical attributes that are often assessed include sick/healthy, attractive/unattractive, underweight/overweight, unfit/fit, physically weak/strong, ugly/good-looking, sexually unattractive/attractive, scrawny/muscular (Martin et al., 2000). Both personality and physical dimensions are rated on a 9-point semantic

differential scale. An example of a personality attribute rating is 1 = *sloppy*, 9 = *neat* and an example of a physical attribute rating is 1 = *scrawny*, 9 = *muscular* (Martin Ginis & Leary, 2006).

### **The Positive Exerciser Stereotype**

The positive exerciser stereotype suggests that people who are identified as being physically active are typically rated more favorably than people who are perceived as inactive (Lindwall & Martin Ginis, 2006, 2010; Rodgers, Hall, Wilson, & Berry, 2009), presumably as a product of the positive value attached to a healthy and active lifestyle. Hodgins (1992) was the first to verify the existence of a “healthy body-healthy mind” stereotype. Her research demonstrated that, regardless of gender, physically active targets were rated more favourably than non-active targets on personality ratings. Subsequently, Martin et al. (2000) determined that female and male exercisers were rated more favourably than non-exercisers and control targets on both physical and personality attributes. Indicative of a halo-effect (Thorndike, 1920), exercisers were considered not only to be healthier, fitter and more physically attractive than non-exercisers and controls but were also believed to possess a wide range of positive non-physical attributes (greater self-control, harder working, friendlier, kinder, more intelligent, and braver; Martin et al. 2000).

Martin Ginis, Latimer, and Jung (2003) examined whether the positive exerciser stereotype could be extended to moderately or excessively active individuals. They also aimed to determine whether one’s desire to self-present as an exerciser moderated ratings of exercising and non-exercising targets. Participants were asked to rate one of five female targets (typical exerciser, non-exerciser, active-living target, excessive exerciser,

or control target) on personality and physical attributes. The active living and typical exercisers were rated more highly on personality attributes such as kindness, independence, and happiness than non-exercisers, excessive exercisers, and control targets. With regards to the physical attributes (such as muscular, fit, strong), the typical exercisers, active living targets, and excessive exercisers were rated more favourably than the non-exercisers and control targets. Therefore, the results showed that the positive exerciser stereotype does extend to moderately and excessively active individuals. However, for the excessive exerciser, the self-presentational benefits were only present for physical attributes; no self-presentational benefits were identified for personality attributes with the exception of the hard working attribute. Their research also found that individuals who self-identified as exercisers tended to rate exercising targets more favourably than non-exercising targets. This finding was later supported by Lindwall and Martin Ginis (2006, 2010) who showed that individuals who were high in impression motivation (higher in the desire to self-present as an exerciser) rated typical and excessive exercisers as having more desirable physical characteristics (such as a more desirable body, being more muscular, fit and strong) compared to those who were lower in impression motivation.

Although the positive exerciser stereotype has been shown to exist across various cultures; marked differences in the nature of the stereotype are present. While Martin Ginis et al. (2003) conducted their research using a sample of Canadian students, Lindwall and Martin Ginis (2006) identified that the positive exerciser stereotype existed outside North America, in a sample of Swedish undergraduate students. The Swedish students were asked to rate various female exercising targets (typical exerciser, active

living target, excessive exerciser, non-exerciser, control). Differences between the Canadian and Swedish samples were found suggesting that the positive exerciser stereotype may not be as pronounced among Swedish students as in Canadian students. For example, in the Swedish sample, the differences in ratings were generally found on the physical attributes as opposed to the personality attributes, contradicting previous studies conducted in Canada (Martin et al., 2000; Martin Ginis et al., 2003). Furthermore, the excessive exerciser was rated the least favourably in the Swedish sample (for example, less confident, meaner, sadder and more unsociable compared to the other target groups). This may be indicative of a cultural difference relating to beliefs about moderation between the Swedish and Canadian students (Lindwall & Martin Ginis, 2006). Similar results were found using male exerciser targets (Lindwall & Martin Ginis, 2010). Swedish students were asked to rate various male targets (typical exerciser, active living target, excessive exerciser, non-exerciser, control) on personality and physical attributes. The typical exerciser, active living target, and excessive exerciser were rated more positively compared to the other targets, particularly the non-exerciser. The typical exerciser was perceived the most positively on personality ratings (believed to be happier, harder working, more confident, having more self-control, and more sociable). However, the excessive exerciser was perceived as less confident, sadder, and less sociable compared to the typical exerciser. This finding again implies that excessive exercisers are viewed more negatively by Swedish students than Canadian students. In addition, Swedish undergraduate students judged female excessive exercisers more harshly than male excessive exercisers. While male excessive exercisers were rated more favourably than non-exercisers on several physical attributes (e.g., fitter, more sexually

attractive, and more muscular), the findings from the previous study (Lindwall & Martin Ginis, 2006) suggest female excessive exercisers did not benefit from the positive exerciser stereotype on either personality or physical attributes.

The target's body weight has also been assessed as a potential variable that may influence the positive exerciser stereotype. Previous research investigating body weight stereotypes has determined unfavourable attributes associated with being overweight or obese such as laziness, poor self-control, unattractiveness, sloppiness (Regan, 1996; Ryckman, Robbins, Kaczor, & Gold, 1989; Tiggemann & Rothblum 1988). Martin Ginis and Leary (2006) examined whether information about a female target's body weight (underweight, average, or overweight) moderated the interpretation of information about her exercise habits (exerciser, non-exerciser, control) to influence observers' ratings of her personality and physical appearance. The results showed that regardless of body weight, women who exercised were evaluated more favourably than non-exercising women on various physical and personality attributes. Specifically, being underweight appeared to override the negative non-exerciser stereotype associated with being a non-exerciser. Moreover, being an exerciser appeared to counteract the negative stereotypes associated with being overweight. Overall, non-exercisers were considered less confident, less brave, less happy, lazier and less sociable than exercisers of any weight.

### **Exerciser Stereotypes and Gender**

Exerciser stereotypes may also be influenced by existing gender stereotypes. Gender stereotypes are formed through the categorization of gender, otherwise known as gender-typing (Hardin & Greer, 2009; Koivula, 1995, 2001). This process is based in gender schema theory which suggests that individuals learn to classify masculine and



feminine behaviours and then strive to emulate their respective behavioural expectations (McVee, Dunsmore, & Gavelek, 2005). Exerciser stereotypes are influenced by gender schemas and are related to the appearance of the exerciser or athlete, as well as the gender stereotypes associated with the activity (Jones & Greer, 2011). Research has suggested that gender stereotypes associated with certain physical activities may have a significant impact on men's and women's sport and exercise participation. Leary (1992) suggested that men and women choose activities that are consistent with their self-presentational goals. People may avoid some physical activities if they perceive negative self-presentational implications. For example, activities associated with the opposite sex have been found to deter participation. Koivula (1995) identified that some activities are labelled as feminine (such as dance, aerobics and gymnastics), while others are labelled masculine (football, baseball and boxing) and others are considered to be gender-neutral (jogging, swimming, and badminton). Furthermore, Koivula (2001) determined that gender stereotyped activities allow the participants to remain compliant with the societal expectations of masculinity (power, aggression) and femininity (beauty, grace).

Klomsten et al. (2005) identified the presence of activity gender stereotyping in a sample of adolescents, concluding that masculine and feminine characteristics were valued differently by boys and girls and were consistent with societal gender stereotypes. However, Drouin, Varga and Gammage (2008) found that the positive exerciser stereotype occurred regardless of the gender stereotype of the activity. Drouin et al. examined the exerciser stereotypes present when men and women participated in gender-appropriate (e.g., aerobics for women, weight lifting for men), gender-neutral (e.g., jogging, swimming) and opposite-gender activities. One difference did emerge within

the personality dimension such that male targets were rated as more masculine than female targets. This finding suggests no social disadvantages for either women participating in a traditionally masculine-stereotyped activity (such as weight training) or men participating in a traditionally feminine-stereotyped activity (such as aerobics). The societal values associated with physical activity appear to be more important than the specific gender stereotype associated with each activity. However, it is important to note that the sample used in this study only included physical education and kinesiology students who may have been positively biased in their opinion of female exercisers.

Male and female trait attributes associated with physique types may also influence gender stereotyping (Ryckman et al., 1989). Individuals tend to attribute different personality traits to mesomorphs, ectomorphs and endomorphs (Ryckman, Dill, Dyer, Sanborn, & Gold, 1992). For example, mesomorphs typically receive positive attributions, which include being popular and good-looking. Spillman and Everington (1989) found that the mesomorphic body type in women was associated with competence, friendliness, health, happiness and intelligence; however aggression was also attributed to women with this physique. Male ectomorphs tended to be perceived more negatively in contrast to female ectomorphs who were perceived as having the most sexually attractive physique and believed to possess the most desired body by other women (Spillman & Everington, 1989). Overall, individuals with an endomorphic physique received the most negative attributions such as being lazy, sloppy, and unintelligent, however female endomorphs were perceived as being less sloppy and dirty than male endomorphs (Ryckman et al., 1989).

### **Exerciser Stereotypes and Weight Training**

Social perceptions and stereotypes of male and female extreme mesomorphs (such as body builders or weight trainers) have also been documented. Ryckman et al. (1992) found that participants in the role of observer, irrespective of their gender, perceived both male and female body builders to possess more traditionally masculine personality characteristics and less traditionally feminine personality characteristics compared to non-body builders. For example, female body builders were perceived as less likely to show romantic feelings or require romance from their partner, more likely to try to control their partner, and more likely to propose marriage to their partner than female non-body builders. The findings suggest that female body builders were perceived as acting outside of their traditional female sex roles, whereas male body builders were not (Ryckman et al., 1992). These findings are consistent with recent stereotypes of body builders or weight trainers such that male and female weight trainers are often characterized by intimidation, bulk, muscularity and masculinity (Stolp, 2010).

Munroe-Chandler et al. (2012) determined a positive exerciser stereotype associated with male weight trainers. Specifically, typical and excessive weight trainers were believed to be healthier, more muscular and fit, harder working, braver and having more friends compared to non-weight trainers and control targets. Despite their results which indicated a positive weight training stereotype in men, women who engage in weight training do not appear to reap the same social benefits. Shirazipour, Munroe-Chandler, & Loughhead (2012) determined that female weight trainers benefit from the positive exerciser stereotype such that they will be perceived by others as healthy, however they will not be perceived more positively on personality attributes (e.g.,

friendliness, popularity, intelligence) compared to female non-weight trainers. Similarly, within the realm of body building, Freeman (1988) determined that female body builders are perceived as less attractive, possessing fewer socially desirable personality characteristics and are expected to have less marital happiness compared to attractive female non-body builders. In general, the findings suggest that women who display the muscular development attributed to weight training or body building are viewed at a social disadvantage (Freeman, 1988).

Despite the relatively negative perceptions of female body builders, women's desire to display visible muscularity on their bodies has increased since the 1970s as their athletic involvement has expanded (Gruber, 2007). In the United States, women's engagement in lifting free weights increased 134% from 1990 to 1999 (SGMA International, 2001). In Canada, women's gym and fitness memberships have also increased over the past several decades. Nevertheless, in 2005 only 14.3% of women twelve years and older reported that they engage in weight training (Statistics Canada, 2005). Thus, the majority of women seem to be engaging in aerobic focused exercise, which may reflect an attempt to acquire the socially determined physique ideal (lean and toned). Indeed, differing expectations for men and women's bodies appear to be reflected in their use of exercise equipment at fitness facilities. Patton, McGuire, Greenleaf, and Jackson (2011) reported that women mainly use the cardiovascular machines (e.g., treadmill, elliptical) whereas the vast majority of men typically use muscle strengthening equipment (e.g., free weights, weight machines). Specifically, of the 599 college women who participated in the study, 80% did cardiovascular training and only 20% did muscle strengthening exercises. The opposite was true for the 792

male college participants such that 80% participated in muscular strength training and 20% used the cardiovascular machines. Therefore, men used equipment associated with muscular development and size enhancement while the majority of women used equipment promoting caloric loss and size reduction (Patton et al., 2011). The use of exercise equipment appears to be conducive to the societal ideals of beauty such that women are motivated to maintain a thin, feminine, yet toned physique and men appear to be motivated to maintain strong and powerful physiques (Grogan, 2008).

### **Measurement of Gender Stereotypes**

The Bem Sex Role Inventory (BSRI; Bem, 1974) is a self-report questionnaire used to measure one's tendency to engage in gender stereotyping. The theoretical basis of the BSRI concerns gender schema theory. Gender schema theory purports that gender stereotyping is derived from one's inclination to categorize and understand information about the self based on societal gender schemas which provide cultural definitions of masculinity and femininity (Bem, 1981). The BSRI consists of three 20-item scales (i.e., Masculinity, Femininity and Social Desirability). The Masculinity scale is comprised of 20 traditionally masculine (e.g., aggressive, independent, self-reliant) personality characteristics. Likewise, the Femininity scale contains 20 traditionally feminine (e.g., affectionate, gentle, understanding) personality attributes and the Social Desirability scale is comprised of 20 personality traits that are considered to be gender-neutral (e.g., adaptable, friendly, happy). The questionnaire's original item pool for the Masculinity and Femininity subscales was selected from an item pool of 200 characteristics of personality. The items were developed based on the judgments of 100 male and female undergraduate students at Stanford University who independently decided whether an

item was desirable for a man, a woman, or gender-neutral. For example, a characteristic was deemed feminine if men and women perceived it to be more desirable for a woman than for a man (Bem, 1981). The questionnaire asks participants to respond based on the extent to which they believe each of 60 personality characteristics pertains to himself or herself. The BSRI was created based on the assumption that a sex-typed individual has “internalized society’s standards of desirable behaviour for men and women” (Bem, 1974, p. 155) which would be reflected in their self-rating of personality characteristics. Thus, a person would be considered “sex-typed” based on the extent to which they describe oneself in accordance with sex-typed behaviours of masculinity and femininity (Bem, 1974). Participants are given a Masculinity and Femininity score and are then classified as one of the following: masculine-typed, feminine-typed, androgynous or undifferentiated. A median score for the Masculinity and Femininity subscales is calculated based on the sample data, therefore utilizing the sample as a comparison group for categorization. An individual is considered to be “sex-typed” (and consequently more likely to engage in gender stereotyping) if they score above the sample’s median on either Masculinity or Femininity. For example, a participant is classified as masculine-typed if the score is above the sample’s median on only Masculinity; similarly an individual is classified as feminine-typed if the score is above the sample’s median on only Femininity. Participants are categorized as androgynous if both the Masculinity and Femininity scores are above the medians. Finally, participants are categorized as undifferentiated if the Masculinity and Femininity scores are below both medians. The BSRI employs a 7-point Likert scale ranging from 1 (*Never or almost never true*) to 7 (*Always or almost always true*) and has been found to have an acceptable level of internal

consistency and test-retest reliability (Choi & Fuqua, 2003). Bem (1974) reported the internal consistency reliability to be  $\alpha = .86$  for the Masculinity subscale and  $\alpha = .82$  for the Femininity subscale. Test-retest reliability coefficients were also found to be highly reliable (Masculinity  $r = .90$ ; Femininity  $r = .90$ ). The BSRI is important to include in the present study because participants may vary in their tendency to gender stereotype, which could influence their perception and consequent ratings of the female muscle strengthening targets.

## References

- Baron, R. A., & Byrne, D. (1997). *Social psychology: Understanding human interaction* (7th ed.). Needham Heights, MA: Simon & Schuster.
- Beck, R. C. (1983). *Motivation: Theories and principles* (2<sup>nd</sup> ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162. doi:10.1037/h0036215
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review, 88*(4), 354-364. doi:10.1037/0033-295X.88.4.354
- Bodenhausen, G. V., Kramer, G. P., & Süsser, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology, 66*, 621-632. doi: 10.1037/0022-3514.66.4.621
- Bond, Jr., C. F. (1982). Social facilitation: A self-presentational view. *Journal of Personality and Social Psychology, 42*, 1042-1050. doi:10.1037/0022-3514.42.6.1042
- Bond, Jr., C. F., & Titus, L. J. (1983). Social facilitation: A meta-analysis of 241 studies. *Psychological Bulletin, 94*, 265-292. doi:10.1037/0033-2909.94.2.265
- Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice, 12*, 421-433.
- The Canadian Society for Exercise Physiology (2012). *Canadian physical activity guidelines: For adults 18-64 years*. Retrieved from <http://www.csep.ca/english/view.asp?x=804>.



- Carron, A., & Prapavessis, H. (1997). Self-presentation and group influence. *Small Group Research*, 28(4), 500-516. doi: 10.1177/1046496497284002
- Choi, P. Y. L. (2000). *Femininity and the physically active woman*. London, England: Routledge.
- Choi, P. Y. L. (2003). Muscle matters: Maintaining visible differences between women and men. *Sexualities, Evolution & Gender*, 5, 71-81.  
doi:10.1080/1461666031000162554
- Choi, N., & Fuqua, D. R. (2003). The structure of the Bem Sex Role Inventory: A summary report of 23 validation studies. *Educational and Psychological Measurement*, 63(5), 872-887. doi: 10.1177/0013164403258235
- Conroy, D. E., & Motl, R. W. (2003). Modification, cross-validation, invariance and latent mean structure of the self-presentation in exercise questionnaire. *Measurement in Physical Education and Exercise Science*, 7, 1-18.  
doi:10.1207/S15327841mpee0701\_1
- Conroy, D. E., Motl, R. W., & Hall, E. G. (2000). Progress toward construct validation of the Self-presentation in Exercise Questionnaire (SPEQ). *Journal of Sport & Exercise Psychology*, 22, 21-38.
- Cook, B. B., & Stewart, G. W. (1996). *Strength basics: Your guide to resistance training for health and optimal performance*. Champaign, IL: Human Kinetics.
- Cottrell, N. B., Wack, D. L., Sekerak, G. J., & Rittle, R. H. (1968). Social facilitation of dominant responses by the presence of an audience and the mere presence of others. *Journal of Personality and Social Psychology*, 9, 245-250.  
doi:10.1037/h0025902

- Dion, K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24, 285-290. doi:10.1037/h0033731
- Doyne, E. J., Ossip-Klein, D. J., Bowman, E. D., Osborn, K. M., McDougall-Wilson, I. B., & Neimeyer, R. A. (1987). Running versus weight lifting in the treatment of depression. *Journal of Counseling and Clinical Psychology*, 55, 748-754. doi:10.1037/0022-006X.55.5.748
- Drouin, B., Varga, H., & Gammage, K. (2008). The positive exerciser stereotype: the role of gender stereotype of the activity. *Journal of Applied Biobehavioural Research*, 13, 143-156. doi: 10.1111/j.1751-9861.2008.00032.x
- Dworkin, S. L. (2001). "Holding back": Negotiating a glass ceiling on women's muscular strength. *Sociological Perspectives*, 44, 333-350. doi:10.1525/sop.2001.44.3.333
- Dworkin, S. L., & Heywood, L. (2003). *Built to win: The female athlete as cultural icon*. Minneapolis, MN: University of Minnesota Press.
- Eagly, A. H. (1995). The science and politics of comparing women and men. *American Psychologist*, 50, 145-158. doi: 10.1037/0003-066X.50.3.145
- Fleck, S., & Kraemer, W. (1997). *Designing resistance training programs* (2nd ed.). Champaign, IL: Human Kinetics.
- Freeman, H. R. (1987). Structure and content of gender stereotypes: Effects of somatic appearance and trait information. *Psychology of Women Quarterly*, 11, 59-68. doi:10.1111/j.1471-6402.1987.tb00774.x
- Freeman, H. R. (1988). Social perception of bodybuilders. *Journal of Sport & Exercise Psychology*, 10, 281-293.

- Gammage, K. L., Hall, C. R., Prapavessis, H., Maddison, R., Haase, A., & Martin, K. A. (2004). Re-examination of the factor structure and composition of the Self-Presentation in Exercise Questionnaire. *Journal of Applied Sport Psychology, 16*, 82-91. doi:10.1080/10413200490260071
- Gammage, K. L., Munroe-Chandler, K. J., & Hall, C. R. (June, 2005). The drive for muscularity in weight lifters: The relationship to exercise imagery and self-presentational concerns. *Symposium presented at the annual meeting for the North American Society for Psychology of Sport and Physical Activity*, Clearwater, FL.
- Goffman, E. (1959). *The presentation of self in everyday life*. New York: Doubleday.
- Grogan, S. (2008). *Body image: Understanding body dissatisfaction in men, women and children* (2nd ed). New York, NY: Taylor & Francis.
- Grogan, S., Evans, R., Wright, S., & Hunter, G. (2004). Femininity and muscularity: Accounts of seven women body builders. *Journal of Gender Studies, 13*, 49-61. doi:10.1080/0958923032000184970
- Gruber, A. J. (2007). A more muscular female body ideal. In K. J. Thompson & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (217-229). Washington DC: American Psychological Association.
- Hamilton, D. L., & Sherman, J. W. (1994). Stereotypes. In Wyer, R. S. & Srull, T.K. (Eds.), *Handbook of social cognition Vol. 2: Applications* (2nd ed., 1-68). Hillsdale, NJ: Lawrence Erlbaum Associates.

- Hardin, M., & Greer, J. D. (2009). The influence of gender-role socialization, media use, and sports participation on perceptions of gender-appropriate sports. *Journal of Sport Behavior*, *32*(2), 207-226.
- Hart, E. H., Leary, M. R., & Rejeski, W. J. (1989). The measurement of social physique anxiety. *Journal of Sport & Exercise Psychology*, *11*, 94-104.
- Hilton, J. L., & von Hippel, W. (1996). Stereotypes. *Annual Review of Psychology*, *47*, 237-271. doi:10.1146/annurev.psych/47/1/237
- Hodgins, M. (1992). A person-perception study of the 'healthy body-healthy mind' stereotype. *The Irish Journal of Psychology*, *13*, 161-167.
- Hogg, M. A., & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes*. New York, NY: Routledge.
- Howley, E. T., & Franks, B. D. (2007). *Fitness professional's handbook* (5th ed). Champaign, IL: Human Kinetics.
- Inclendon, L. (2005). *Strength training for women*. Champaign, IL: Human Kinetics.
- Jackson, S. A., & Marsh, H. W. (1986). Athletic or antisocial? The female sport experience. *Journal of Sport Psychology*, *8*, 198-211.
- Jones, A., & Greer, J. (2011). You don't look like an athlete: The effects of feminine appearance on audience perceptions of female athletes and women's sports. *Journal of Sport Behavior*, *34*(4), 358-377.
- Klomsten, A. T., Marsh, H. W., & Skaalvik, E. M. (2005). Adolescents' perceptions of masculine and feminine values in sport and physical education: A study of gender differences. *Sex Roles*, *52*, 635-636. doi:10.1007/s11199-005-3730-x

- Koivula, N. (1995). Ratings of gender appropriateness of sports participation: Effects of gender-based schematic processing. *Sex Roles, 33*, 543-557.  
doi:10.1007/bf01544679
- Koivula, N. (2001). Perceived characteristics of sports categorized as gender-neutral, feminine and masculine. *Journal of Sport Behavior, 24*(4), 377-393.
- Krane, V., Choi, P., Baird, S. M., Aimar, C. M., & Kauer, K. J. (2004). Living the paradox: Female athletes negotiate femininity and muscularity. *Sex Roles, 50*, 315-329. doi: 10.1023/b:sers.0000018888.48437.4f
- Lantz, C. D., Hardy, C. J., & Ainsworth, B. E. (1997). Social physique anxiety and perceived exercise behavior. *Journal of Sport Behavior, 20*, 83-93.
- Leary, M.R. (1983). A brief version of the fear of negative evaluation scale. *Personality and Social Psychology Bulletin, 9*(3), 371-375.
- Leary, M. R. (1992). Self-presentational processes in exercise and sport. *Journal of Sport & Exercise Psychology, 14*, 339-351.
- Leary, M. R. (1996). *Self-presentation: Impression management and interpersonal behavior*. Boulder, CO: Westview Press, Inc.
- Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological Bulletin, 107*, 34-47.  
doi:10.1037/0033-2909.107.1.34
- Leary, M. R., Wheeler, D. S., & Jenkins, T. B. (1986). Aspects of identity and behavioural preference: Studies of occupational and recreational choice. *Social Psychology Quarterly, 49*(1), 11-18.

- Lindwall, M., & Martin Ginis, K. A. (2006). Moving towards a favorable image: The self-presentational benefits of exercise and physical activity. *Scandinavian Journal of Psychology, 47*, 209-217. doi:10.1111/j.1467-9450.2006.0059.x
- Lindwall, M., & Martin Ginis, K. A. (2010). Exercising impressive impressions: The exercise stereotype in male targets. *Scandinavian Journal of Medicine & Science in Sports, 20*, e1-e11. doi: 10.1111/j.1600-0838.2008.00869.x
- Lippman, W. (1922). *Public opinion*. New York: Harcourt & Brace.
- Lorenzo, G. L., Biesanz, J. C., & Human, L. J. (2010). What is beautiful is good and more accurately understood: Physical attractiveness and accuracy in first impressions of personality. *Psychological Science, 21*(12). doi:10.1177/0956797610388048
- Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology, 66*, 37-47. doi:10.1037/0022-3514.66.1.37
- Martin, K. A., Sinden, A. R., & Fleming, J. C. (2000). Inactivity may be hazardous to your image: The effects of exercise participation on impression formation. *Journal of Sport & Exercise Psychology, 22*, 283-291.
- Martin Ginis, K. A., Latimer, A. E. & Jung, M. E. (2003). No pain no gain? Examining the generalizability of the exerciser stereotype to moderately active and excessively active targets. *Social Behaviour & Personality: An International Journal, 31*, 283-290. doi:10.2224/sbp.2003.31.3.283
- Martin Ginis, K. A., & Leary, M. R. (2006). Single, physically active, female: The effects of information about exercise participation and body weight on perceptions of

young women. *Social Behaviour & Personality*, 34(8), 979-990.

doi:10.2224/sbp.2006.34.8.979

Martin Ginis, K. A., Lindwall, M., & Prapavessis, H. (2007). Who cares about what other people think? Self-presentation in sport and exercise. In G. Tenenbaum & R. Eklund (Eds.), *Handbook of sport psychology* (3<sup>rd</sup>ed, 136-153). New York, NY: Wiley.

McCabe, M. P., & Ricciardelli, L. A. (2001). Children's body image concerns and eating disturbance: A review of literature. *Clinical Psychology Review*, 21, 325-344.

McCreary, D. R., Sasse, D. K., Saucier, D. M., & Dorsch, K. D. (2004). Measuring the drive for muscularity: Factorial validity of the Drive for Muscularity Scale in men and women. *Psychology of Men & Masculinity*, 5, 49-58. doi:10.1037/1524-9220.5.1.49

McVee, M. B., Dunsmore, K., & Gavelek, J. R. (2005). Schema theory revisited. *Review of Educational Research*, 75(4), 531-566. doi:10.3102/00346543075004531

Munroe-Chandler, K. J., Loughhead, T. M., & Kossert, A. L. (2012). Pumping iron: The social advantages of weight training. *Journal of Applied Biobehavioral Research*, 17(3), 157-175. doi: 10.1111/j.1751-9861.2012.00083.x

Muth, J. L., & Cash, T. F. (1997). Body-image attitudes: What difference does gender make? *Journal of Applied Social Psychology*, 27(16), 1438-1452.

doi:10.1111/j.1559-1816.1997.tb01607.x

Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological Bulletin*, 114, 424-443.

doi:10.1037/0033-2909.115.3.424

- Olivardia, R. (2007). Muscle dysmorphia: Characteristics, assessment, and treatment. In K. J. Thompson & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (pp. 123-139). Washington DC: American Psychological Association.
- Patton, R. W., McGuire, A., Greenleaf, C., & Jackson, A. (2011). Sex differences in fitness equipment use. *ACSM's Health and Fitness Journal*, *15*, 15-18.  
doi:10.1249/fit.0b013e3182160f48
- Regan, P. C. (1996). Sexual outcasts: The perceived impact of body weight and gender on sexuality. *Journal of Applied Social Psychology*, *26*, 1803-1815.  
doi:10.1111/j.1559-1816.1996.tb00099.x
- Rodgers, W. M., Hall, C. R., Wilson, P. M., & Berry, T. R. (2009). Do non-exercisers also share the positive exerciser stereotype?: An elicitation and comparison of beliefs about exercisers. *Journal of Sport & Exercise Psychology*, *31*, 3-17.
- Ryckman, R. M., Dill, D. A., Dyer, N. L., Sanborn, J. W., & Gold, J. A. (1992). Social perceptions of male and female extreme mesomorphs. *The Journal of Social Psychology*, *132*, 615-627. doi:10.1080/00224545.1992.9713901
- Ryckman, R. M., Robbins, M. A., Kaczor, L. M., & Gold, J. A. (1989). Male and female raters' stereotyping of male and female physiques. *Personality and Social Psychology Bulletin*, *15*, 244-251. doi:10.1177/0146167289152011
- Sadalla, E. K., Linder, D. E., & Jenkins, B. A. (1988). Sport preference: A self-presentational analysis. *Journal of Sport & Exercise Psychology*, *10*(2), 214-222.



- Salvatore, J., & Marecek, J. (2010). Gender in the gym: Evaluation concerns as barriers to women's weight lifting. *Sex Roles, 63*, 556-567. doi:10.1007/s11199-010-9800-8
- Schlenker, B. R. (1980). *Impression management*. Monterey, CA: Brooks/Cole.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization and model. *Psychological Bulletin, 92*, 641-669. doi:10.1037/0033-2909.92.3.641
- SGMA International. (2001). *Tracking the fitness movement*. North Palm Beach, FL: Author.
- Shields, C. A., Brawley, L. R., & Martin Ginis, K. A. (2007). Interactive effects of exercise status and observer gender on the impressions formed of men. *Sex Roles, 56*, 231-237. doi:10.1007/s11199-006-9166-0
- Shirazipour, C. H., Munroe-Chandler, K. J., & Loughead, T. M. (2012, November). *Judging the gym: Our impressions of female weight trainers*. Paper presented at Canadian Society for Psychomotor Learning and Sport Psychology, Halifax, Nova Scotia.
- Spillman, D. M., & Everington, C. (1989). Somatotypes revisited: Have the media changed our perception of the female body image? *Psychological Reports, 64*(3), 887-890. doi: 10.2466/pr0.1989.64.3.887
- Statistics Canada (2005). Canadian community health survey: Health reports, Volume 18, Number 3. Retrieved from <http://www.statcan.gc.ca/pub/82-003-x/2006008/article/phys/10307-eng.htm>

- Stolp, S. M. (2010). *Exerciser stereotypes: Perceptions and influences on exercise related cognitions* (Master's thesis). Available from ProQuest Dissertations and Theses database. (UMI No. MR60552).
- Stoppani, J. (2006). *Encyclopedia of muscle and strength*. Champaign, IL: Human Kinetics.
- Thorndike, E. L. (1920). A constant error in psychological ratings. *Journal of Applied Psychology, 4*, 25-29.
- Tiggemann, M., & Rothblum, E. D. (1988). Gender differences in social consequences of perceived overweight in the United States and Australia. *Sex Roles, 18*, 75-86.  
doi:10.1007/bf00288018
- Zajonc, R. B. (1965). Social facilitation. *Science, 149*, 269-274.  
doi:10.1126/science.149.3681.269

## APPENDICES

### APPENDIX A

#### Vignettes

##### **Weight trainer**

Michelle is 20 years old, and is a student at a medium-sized university in Ontario. This semester she is taking courses in psychology, French, calculus, biology, and computer science. She has not yet decided on a major. Michelle is of average height and average weight, with brown eyes and dark hair. In her spare time, she listens to music, reads, watches TV, and often gets together with her friends to go for a drink or to see a movie. *Michelle also does weight training as her form of exercise.* She is the oldest of three children and her parents are both schoolteachers. Last summer, she worked at a retail store. Next summer, she hopes to tour Europe for a few weeks.

##### **Resistance trainer**

Michelle is 20 years old, and is a student at a medium-sized university in Ontario. This semester she is taking courses in psychology, French, calculus, biology, and computer science. She has not yet decided on a major. Michelle is of average height and average weight, with brown eyes and dark hair. In her spare time, she listens to music, reads, watches TV, and often gets together with her friends to go for a drink or to see a movie. *Michelle also does resistance training as her form of exercise.* She is the oldest of three children and her parents are both schoolteachers. Last summer, she worked at a retail store. Next summer, she hopes to tour Europe for a few weeks.

**Strength trainer**

Michelle is 20 years old, and is a student at a medium-sized university in Ontario. This semester she is taking courses in psychology, French, calculus, biology, and computer science. She has not yet decided on a major. Michelle is of average height and average weight, with brown eyes and dark hair. In her spare time, she listens to music, reads, watches TV, and often gets together with her friends to go for a drink or to see a movie. *Michelle also does strength training as her form of exercise.* She is the oldest of three children and her parents are both schoolteachers. Last summer, she worked at a retail store. Next summer, she hopes to tour Europe for a few weeks.

**Control**

Michelle is 20 years old, and is a student at a medium-sized university in Ontario. This semester she is taking courses in psychology, French, calculus, biology, and computer science. She has not yet decided on a major. Michelle is of average height and average weight, with brown eyes and dark hair. In her spare time, she listens to music, reads, watches TV, and often gets together with her friends to go for a drink or to see a movie. She is the oldest of three children and her parents are both schoolteachers. Last summer, she worked at a retail store. Next summer, she hopes to tour Europe for a few weeks.

## APPENDIX B

## Ratings of Physical and Personality Attributes

(Martin, Sinden, &amp; Fleming, 2000)

Please circle the number that you believe best describes Michelle on the following attributes:

Afraid	1	2	3	4	5	6	7	8	9	Brave
Lacks confidence	1	2	3	4	5	6	7	8	9	Confident
Has self-control	1	2	3	4	5	6	7	8	9	Lacks self-control
Dependent	1	2	3	4	5	6	7	8	9	Independent
Few friends	1	2	3	4	5	6	7	8	9	Many friends
Friendly	1	2	3	4	5	6	7	8	9	Not friendly
Lazy	1	2	3	4	5	6	7	8	9	Works hard
Mean	1	2	3	4	5	6	7	8	9	Kind
Sad	1	2	3	4	5	6	7	8	9	Happy
Sloppy	1	2	3	4	5	6	7	8	9	Neat
Unintelligent	1	2	3	4	5	6	7	8	9	Intelligent
Sociable	1	2	3	4	5	6	7	8	9	Unsociable
Physically sick	1	2	3	4	5	6	7	8	9	Healthy
Has an attractive physique	1	2	3	4	5	6	7	8	9	Has an unattractive physique
Underweight	1	2	3	4	5	6	7	8	9	Overweight
Unfit	1	2	3	4	5	6	7	8	9	Fit
Physically weak	1	2	3	4	5	6	7	8	9	Physically strong
Ugly	1	2	3	4	5	6	7	8	9	Good looking
Sexually unattractive	1	2	3	4	5	6	7	8	9	Sexually attractive
Scrawny	1	2	3	4	5	6	7	8	9	Muscular

## APPENDIX C

## Modified Self-Presentation in Exercise Questionnaire – Muscle Strengthening

(Adapted from Conroy et al., 2000)

Please circle the number for each statement below, which most accurately and honestly describes your beliefs.

1. I value the attention and praise of others when they regard me as having a muscular physique.

1	2	3	4	5	6
strongly disagree					strongly agree

2. I enjoy the praise I often receive for muscular strength training.

1	2	3	4	5	6
strongly disagree					strongly agree

3. I try to appear toned and muscular to others.

1	2	3	4	5	6
strongly disagree					strongly agree

4. Appearing physically strong and muscular to others is not important to me.

1	2	3	4	5	6
strongly disagree					strongly agree

## APPENDIX D

## Bem Sex Role Inventory (BSRI; Bem, 1974)

Please rate yourself on each item, on a scale from 1 (*Never or almost never true*) to 7 (*Always or almost always true*)

1	2	3	4	5	6	7
Never	Rarely		Neutral		Often	Always

1. Self reliant
2. Yielding
3. Helpful
4. Defends own beliefs
5. Cheerful
6. Moody
7. Independent
8. Shy
9. Conscientious
10. Athletic
11. Affectionate
12. Theatrical
13. Assertive
14. Flatterable
15. Happy
16. Strong personality
17. Loyal
18. Unpredictable
19. Forceful
20. Feminine
21. Reliable
22. Analytical
23. Sympathetic
24. Jealous
25. Leadership ability
26. Sensitive to others' needs
27. Truthful
28. Willing to take risks
29. Understanding
30. Secretive
31. Makes decisions easily

32. Compassionate
33. Sincere
34. Self-sufficient
35. Eager to soothe feelings
36. Conceited
37. Dominant
38. Soft spoken
39. Likable
40. Masculine
41. Warm
42. Solemn
43. Willing to take a stand
44. Tender
45. Friendly
46. Aggressive
47. Gullible
48. Inefficient
49. Acts as a leader
50. Childlike
51. Adaptable
52. Individualistic
53. Does not use harsh language
54. Unsystematic
55. Competitive
56. Loves children
57. Tactful
58. Ambitious
59. Gentle
60. Conventional



## APPENDIX E

## Manipulation Check

To the best of your abilities, please answer the following questions regarding the story that you read earlier. To enhance your memory, you may want to close your eyes and envision the image you created of the individual.

- a) The character described in the story was named \_\_\_\_\_.
- b) The character described in the story was \_\_\_\_\_ years old.
- c) Last summer, the character described in the story worked at \_\_\_\_\_.
- d) Would you describe the character as: (please choose one response)
  - a. A weight trainer
  - b. A resistance trainer
  - c. A strength trainer
  - d. None of the above
- e) Would you engage in the same exercise identified in the story?

## APPENDIX F

## Demographic Information

Age: \_\_\_\_\_

Gender: \_\_\_\_\_

University Faculty: \_\_\_\_\_

Do you exercise? YES NO

If you exercise, please provide your top two form(s) of exercise (e.g. cardiovascular, weights, etc.):

1) \_\_\_\_\_

2) \_\_\_\_\_

I exercise \_\_\_\_\_ days per week.

Every time I exercise, I exercise for approximately \_\_\_\_\_ minutes

How often are you exposed to females who do muscle strengthening exercises:

never rarely often I am female and I do muscle strengthening exercises

If you do muscle strengthening exercises, please answer the following two questions:

How many days per week do you engage in muscle strengthening exercises?

In each muscle strengthening exercise, approximately how many minutes do you train for?

## APPENDIX G

## Welcome Page

Welcome to the study being conducted by Brittany Cooper (MHK Student) and Dr. Krista Chandler (PhD) from the Department of Kinesiology at the University of Windsor.

The purpose of this study is to investigate physical and personality attributes involved in person perception.

If you volunteer to participate in this study, you will be asked to complete a brief survey concerning person perception.

Participation will take approximately **15-20 minutes** of your time to complete.

Why does your participation matter?

The proposed research will contribute to the field of exercise psychology through broadening researchers' understanding of the differences in personality and physical characteristics relating to person perception.

What do you get out of participation?

1. Participation may offer you insight into how research is conducted. This may be beneficial to students who are required to complete a research methods course or who wish to pursue graduate studies in any area of research.
2. Upon completion of the project (May 2013) the results will be made available on the University of Windsor Research Ethics Board website ([www.uwindsor.ca/reb](http://www.uwindsor.ca/reb)).
3. You will have the choice of entering into a draw for a chance to **win one of five \$25 Best Buy gift cards!**

**"I agree to participate"** (continue to survey)

Your participation in this research study is much appreciated. Thank you!

Brittany Cooper  
Department of Kinesiology  
University of Windsor  
[coope113@uwindsor.ca](mailto:coope113@uwindsor.ca)

## APPENDIX H

### LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

#### Physical and Personality Attributes Involved in Person Perception

You are asked to participate in a research study conducted by Brittany Cooper under the supervision of Dr. Krista Chandler, from the Department of Kinesiology at the University of Windsor. Results obtained from this research study will contribute to the completion of a Master's degree in the Faculty of Human Kinetics.

If you have any questions or concerns about the research, please feel free to contact Dr. Krista Chandler at (519) 253-3000, ext. 2446 or via e-mail at [chandler@uwindsor.ca](mailto:chandler@uwindsor.ca). You may also contact Brittany Cooper at (519) 253-3000, ext. 4997 or via e-mail at [coope113@uwindsor.ca](mailto:coope113@uwindsor.ca).

#### PURPOSE OF THE STUDY

The purpose of the study is to investigate physical and personality attributes involved in person perception.

#### PROCEDURES

If you volunteer to participate in this study, you will be asked to read a short description of an individual and rate the individual on various physical and personality characteristics based on the information presented. Following this, you will complete two brief questionnaires: the SPEQ-M and the BSRI. Lastly, you will answer several questions and provide demographic information.

The study should take no more than 15-20 minutes to complete.

#### POTENTIAL RISKS AND DISCOMFORTS

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

#### POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participants may benefit from participation in this study, as their exposure to research will be increased. Participation may be of particular interest to students who are required to complete a Research Methods course.

#### COMPENSATION FOR PARTICIPATION

You will not be compensated for your participation in this study. However, if you choose, you can enter your name into a draw for a chance to win one of five \$25 gift cards at Best Buy.

#### CONFIDENTIALITY

Responses to the questionnaires will remain anonymous while the information from the draw will remain confidential. All data will be kept in a password protected file which will only be accessible by the primary investigators. Potentially the data may also be utilized in subsequent studies conducted by the researchers. Data will be kept secured for five years when it will then be destroyed.

#### PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If you volunteer to be in this study, you may withdraw at any time while you are completing the surveys, without consequences of any kind. However, once you have submitted the completed survey, this will be accepted as your consent to participate and it is not possible to

withdraw because the surveys are anonymous. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

#### FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

If you wish to receive any additional information regarding this research, please contact the researchers via e-mail ([coope113@uwindsor.ca](mailto:coope113@uwindsor.ca) or [chandler@uwindsor.ca](mailto:chandler@uwindsor.ca)). The results from this research will be available on the REB study results website upon completion ([www.uwindsor.ca/reb](http://www.uwindsor.ca/reb)).

#### SUBSEQUENT USE OF DATA

These data may be used in subsequent studies in publications and in presentations.

#### RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

#### SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

\_\_\_\_\_  
Signature of Investigator

\_\_\_\_\_  
Date

**VITA AUCTORIS**

NAME: Brittany Elizabeth Cooper

PLACE OF BIRTH: Stratford, Ontario, Canada

YEAR OF BIRTH: 1986

EDUCATION: University of Windsor, Windsor, Ontario  
2011-2013, M.H.K.

Western University, London, Ontario  
2008-2010, B.A. (Hons)

University of British Columbia  
Vancouver, British Columbia  
2004-2007

Sir Frederick Banting School,  
London, Ontario  
2001-2004