

THE EFFECTS OF SPORT ADVERTISING ON FEMALES'  
BODY IMAGES

by

Catherine Michelle Sabiston

A Thesis

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

Windsor, Ontario, Canada

2001

© 2001 Catherine Sabiston



National Library  
of Canada

Acquisitions and  
Bibliographic Services

395 Wellington Street  
Ottawa ON K1A 0N4  
Canada

Bibliothèque nationale  
du Canada

Acquisitions et  
services bibliographiques

395, rue Wellington  
Ottawa ON K1A 0N4  
Canada

*Your file Votre référence*

*Our file Notre référence*

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-62278-9

Canada

## ABSTRACT

Advertising has been documented as a prominent factor promoting irrational perceptions of body shape and image ideals amongst females. Previous researchers have indicated trends in body image disturbances as a result of advertising exposure (e.g., Lavine, Sweeney, & Wagner, 1999; Myers & Biocca, 1992). In sport management, however, there are no studies investigating the physiological and psychological aspect of the sport consumer's health, including body image. Instead, investigations in sport management and sport marketing have attempted to capitalize on prospective financial benefits and repercussions for the betterment of the organization or corporation, rather than the consumer specifically (Fullerton & Dodge, 1995; Mullin, Hardy, & Sutton, 1993). Therefore, the purpose of this exploratory research was to investigate the effects of athletic shoe sport advertising on body image disturbances in female undergraduate students (N=230). Participants were randomly assigned to three groups: product-only sport advertising exposure, model-only sport advertising exposure, or a no exposure control group. Participants completed the body image questionnaires, including the Silhouette Measure of Body Image (Stunkard, Sorenson, & Schulsinger, 1983), the Social Physique Anxiety Scale (Martin, Rejeski, Leary, McAuley, & Bane, 1997), and the Reasons for Exercise Inventory (Silberstein, Striegel-Moore, Timko, & Rodin, 1988). Additionally, the Attitudes Towards Sport Advertising Scale (Rabak-Wagener, Eickoff-Shemek, & Kelly-Vance, 1998) was completed during both a pre- and post-test. Approximately one month following the pre-test, the subjects were conditionally exposed to the product-only sport advertising, model-only sport advertising, or the no-exposure control. Following the conditional exposure to advertising, subjects were asked to

complete the same questionnaires as in the pre-test. The multivariate mixed model was used as a repeated measures analysis with multiple dependent variables, and a significant time effect was noted ( $F = 3.097, p = 0.028$ ). There was not a significant group by time interaction, however notable trends indicated that the three experimental groups expressed varying disturbances in body image following the advertising exposure. Greater body image disturbances were reported during the post-test compared to the pre-test in the model-only sport advertising exposure group.

The scarcity of research in sport marketing supports the necessity of continued investigations on the impact of sport advertisements on body image. The awareness of the potential impact of sport advertisements on current and potential sport consumers' perceptions, beliefs, and behaviours is of functional vitality to the continued proliferation of sport marketing.

## DEDICATION

Jean Anderson – March 10, 1921-January 2, 2001

This thesis is dedicated to the memory of my grandmother, Jean Anderson, who has inspired me to be accepting of others, and more importantly accepting of myself.

Grandma, I miss you so much.

## ACKNOWLEDGEMENTS

There are no words or phrases to accurately express my sincerest appreciation to the many people that have influenced aspects of my life. This is only my best attempt.

First of all, my thesis would not have been possible without the guidance and support of my advisor, Dr. Krista Munroe, whose exceptional experience and patience I truly admire. I look forward to the upcoming years in which I can continue to learn from her, in an area of study that I can only hope to be as passionate about as Krista is herself. I would also like to thank my committee members, Dr. Cheryl Thomas, Dr. Jacquelyn Cuneen, and Dr. Jim Weese for being a part of this experience. I have certainly benefited from their knowledge and experience. Additionally, I would like to thank Dr. Boucher for his insightfulness in sport management, and Diane Dupuis for her concern, commitment and personal organization and efficiency that certainly did not go unnoticed. And to my roommates and classmates, Jennifer Mariuz, Angela Buss, and Cristina Caperchione, without whose friendship, support, and assistance I would not have completed this thesis. Finally, Dr. Gordon Olafson, whom I thank for his superior support and mentoring in the last couple of years. Although I may have always known my future aspirations, I owe the realization of such aspirations to him.

I would also like to acknowledge my friends, who have all helped me to discover my strengths and weaknesses, and made me realize that anything is possible with their support and inspiration. I wish to mention Jannisse Primeau for her consistent admiration for sport and possibly initiating my passion for this area of study; Laurie Lambros for her strong opinions and intelligence, and for her constant guidance and support; to Kirsty Spence for her consistent encouragement and academic mind that far surpasses her own realization; and finally to the two people closest to any sisters I could ever want, Jennifer Cleary and Kerith Harrison - I could use any positive word in the English language to

describe either of them, and it would still do no justice for their individual characters.

Additionally, I would like to recognize Tony Nurse for teaching me the meaning of being happy and always making me smile. His drive and determination never ceases to amaze me. I will continue to admire all my friends, and will miss them all tremendously.

This thesis is a culmination of the ongoing and unconditional encouragement from my family. I could never have picked a better support structure than what was given to me. I would like to thank my mom for understanding me, and being my best friend. I thank my dad for giving me the freedom to excel at what I wanted, and for always supporting my decisions. This thesis, and all my previous and future achievements are a result of the exceptional opportunities and experiences afforded to me by them both, and I praise them for sharing both their struggles and accomplishments, from which I have learned the true meaning of life. I wish to also acknowledge my godmother and friend Marci Jeanneret, whose care, love and support means so much to me. And to my brothers, Andrew and Doug Sabiston, from whom I have learned a great deal about everyday life, I thank them both. They are supportive, intelligent and talented individuals, and I hope they will never forget that. I love and admire my family.

To everyone I have already mentioned, and anyone who opens the front cover of this thesis, its important to point out that experience is a hard teacher. It makes us suffer the consequences before teaching us the lesson. However, without experience, there would be no challenges. And challenges are the links to our self-growth, and more importantly self-acceptance. We need to believe in ourselves, because without that, we have nothing. As this belief grows, we will determine that a sense of humour is far more rewarding than losing five pounds or getting a new haircut. Challenge yourself to be happy. It takes many more muscles to frown than it does to smile.

## TABLE OF CONTENTS

ABSTRACT .....	iii
DEDICATION .....	v
ACKNOWLEDGEMENTS .....	vi
LIST OF TABLES .....	xi
LIST OF FIGURES.....	xii
CHAPTER	
I: INTRODUCTION.....	1
Introduction .....	1
Body Image... ..	3
Body Image Modalities .....	4
Perceptual .....	4
Cognitive .....	4
Affective.....	6
Behavioural .....	9
Gender and Body Image.....	11
Age and Body Image.....	12
Factors Affecting Body Image .....	12
Peer and familial influence.....	13
Marketing .....	13
Sport Marketing.....	14
Sport Consumer.....	16
Market segmentation .....	16
Consumer psychology .....	18
Advertising .....	20
Sport advertising .....	21
Testing for Advertising Effectiveness.....	23
Measure of advertising effectiveness .....	24
Social Marketing .....	25
Advertising Influences on Body Image.....	26
Physical Attractiveness .....	27
Social Comparison .....	29
Body Image .....	31
Advertising Formats .....	32
Summary.....	34
II: PURPOSE.....	35
Research Questions .....	36
Hypotheses.....	37



	Hypothesis 1 .....	37
	Hypothesis 2 .....	37
	Hypothesis 3 .....	38
	Hypothesis 4 .....	38
III:	METHODOLOGY .....	39
	Participants .....	39
	Measures .....	40
	Body Mass Index .....	40
	Silhouette Measure of Body Image .....	40
	Social Physique Anxiety Scale .....	42
	Reasons for Exercise Inventory .....	42
	Attitudes Towards Sport Advertising Scale .....	43
	Experimental Manipulation of Sport Advertisements .....	44
	Experimental Randomization .....	45
	Pilot Testing .....	47
	Experimental Procedure .....	48
	Pre-test .....	48
	Post-test .....	48
	Design and Analyses .....	49
IV:	RESULTS .....	52
	Participant Characteristics .....	52
	Instrument Properties .....	55
	Multidimensional Properties of Body Image .....	56
	Analyses of Research Questions .....	56
	Analyses of Study Hypotheses .....	61
	Hypothesis 1 .....	61
	Hypothesis 2 .....	62
	Hypothesis 3 .....	63
	Hypothesis 4 .....	65
	Group Differences .....	66
V:	DISCUSSION .....	69
	Multidimensionality of the Body Image Construct .....	69
	Multivariate Mixed Model .....	71
	Interpretation of Results .....	71
	Nature of Body Image Construct .....	72
	Experimental Conditions .....	74
	Testing and interaction effects .....	75
	Reaction effects .....	76
	Placebo effects .....	76
	Random assignment .....	77
	Experimental Manipulation .....	78
	Medium of projection .....	78
	Strength of the manipulation .....	78

	Advertising format .....	80
	Social Physique Anxiety .....	81
	Notable Trends .....	83
	Social Comparison .....	83
	Physical attractiveness.....	84
	Ethnic diversity .....	85
	Celebrity endorsements .....	86
	Predisposition to body image disturbances .....	87
	Attitudes Towards Sport Advertising.....	89
	Implications for Sport Marketing.....	90
	Advertising Intentions.....	91
	Market Segmentation .....	95
	Advertising Effectiveness .....	96
VI:	CONCLUSION .....	98
	Summary.....	98
	Future Recommendations.....	99
	REFERENCES.....	106
	APPENDIX A: Silhouette Measure of Body Image.....	122
	APPENDIX B: Social Physique Anxiety Scale .....	123
	APPENDIX C: Reasons for Exercise Inventory .....	124
	APPENDIX D: Attitudes Towards Sport Advertising Scale .....	125
	APPENDIX E: Informed Consent.....	126
	APPENDIX F: Scale Reliabilities.....	128
	VITA AUCTORIS .....	129

## LIST OF TABLES

1.	Random Assignment by Selected Class (Faculty) and the Alphabetized First Letter of the Participants' Last Name .....	46
2.	A Comparison of the Number of Participants Within the Experimental Groups (and %) on Variables of Reported Year of Study, Exercise Frequency, Activity Preference, and Reading Frequency .....	53
3.	Descriptive Statistics for Self-reported Age, Height and Weight Variables, and Calculated Body Mass Indices (BMI) .....	54
4.	Means ( $\bar{X}$ ) and Standard Deviations (s.d.) on the Silhouette Measure of Body Image (SMBI), the Social Physique Anxiety Scale (SPAS), the Reasons for Exercise Inventory (REI) and the Attitudes Toward Sport Advertising Scale (ATSA) During the Pre-test .....	59
5.	Means ( $\bar{X}$ ) and Standard Deviations (s.d.) on the Silhouette Measure of Body Image (SMBI), the Social Physique Anxiety Scale (SPAS), the Reasons for Exercise Inventory (REI) and the Attitudes Toward Sport Advertising Scale (ATSA) During the Post-test.....	60

## LIST OF FIGURES

1.	Consumer Behaviour in Sport .....	19
2.	ATSA Mean Scores: Group by Time Interaction.....	58
3.	SMBI Mean Scores .....	63
4.	SPAS Mean Scores.....	64
5.	REI: Weight/Appearance Management Subscale Mean Scores .....	65
6.	ATSA Mean Scores.....	66
7.	A continuum of the consequences of advertising effects.....	74

## CHAPTER I

### Introduction

The pervasiveness of advertising images that depict young, underweight models as both ideal and normal is a well-documented threat to female's body image disturbances (Dionne, Davis, Fox, & Gurevich, 1995). The typical consumer is exposed to approximately 1,600 advertisements per day, 1,200 of which are consciously noted (Myers & Biocca, 1992). At least half of these advertisements denote implications of ideal body shapes, sizes, and physical attractiveness (Myers & Biocca, 1992). According to Rabak-Wagener et al. (1998), the ideal female body is depicted in advertising as tall, thin, and physically attractive. Body image disturbances have become entrenched among females as a consequence of the advertising that is replete with the portrayal of ideal physiques (Dionne et al., 1995). The emphasis that advertisements place on the thin ideal body has helped to create a North American society in which underweight figures are perceived to be the norm (Myers & Biocca, 1992). However, very few females are genetically able to achieve the body shapes, sizes, and physical attractiveness depicted in advertising; a failure that has led to an unprecedented number of females internalizing the ideal body and pursuing a physical standard that is not only unrealistic but also significantly below healthy weight standards (Markula, 1995).

Advertising that portrays the ideal body has also been a well-documented catalyst to the stigma attached to being overweight (Brownell, 1991). According to several researchers, overweight individuals are negatively viewed by themselves and by others (Brownell, 1991; Larkin & Pines, 1979). Obese individuals have been rated as less active, hardworking, intelligent, athletic, successful and popular than non-obese people

(Larkin & Pines, 1979). These observations are disconcerting given that in recent years, it has been delineated that over half of the North American population has been characterized as being overweight, over fat, and obese (Ross, 1999). Consequently, disturbances of body image are often observed in obese and overweight, and as well as in normal weight individuals, ranging from feelings of self-consciousness and contempt towards the body to denial or distortion of appearance (Cash & Henry, 1995; Glucksman & Hirsch, 1969). Additionally, it has been estimated that up to two thirds of young women experience significant dissatisfaction with their body shape, size, condition, or appearance (Myers & Biocca, 1992).

Thus, perceptions associated with body image are of considerable importance. Notwithstanding the pervasiveness of advertising images, there is a lack of research investigating the effects of specific advertising (i.e., sport advertising) on the various modalities of body image. Body image has been described as multidimensional, consisting of perceptual, cognitive, affective, and behavioural modalities (Bane & McAuley, 1998). Researchers have studied the effects of fashion advertising on self-rated body image disturbances (Barber, 1998; Lavine et al., 1999; Rabak-Wagener et al., 1998), however industries such as sport and fitness have not been evaluated. Research in sport and fitness is important due to the economic impact, since sport represents a large business enterprise (Kane, 1988). Beyond the economic impact, sport participation plays a crucial role in social-psychological development, including body image (Bredemeier, 1984). Furthermore, the emergence and advancement of the field of sport management illustrates the continued importance placed on sport (Kane, 1988).

## Body Image

Over the last few decades, body image has become an integral aspect of an individual's physical and psychological health (Ibbetson, 1996). Body image can be defined as the attitudes that individuals express concerning their bodies and physical appearances (Cash & Pruzinsky, 1990). The escalating prevalence of body image disturbances has been accentuated, in part, by individuals' attempts to achieve the ideal body (Bane & McAuley, 1998). Despite possible short-term fluctuations in intensity of despondency, body image disturbances persist over time and during considerable variations in life circumstances and events (Stunkard & Mendelson, 1967). According to Koff and Kiekhofer (1978), errors in judgments of body size, and evaluations of body disturbances, are established at an early age and remain relatively stable cognitive, affective, and behavioural predispositions. Consequently, issues involving body image are longitudinal in nature and affect individuals of varying body shapes and sizes.

Keeton, Cash, and Brown (1990) have stated that there is no clear conceptual understanding of body image, potentially due to the inconsistent body image definitions and measurement instruments employed in the research. As Bane and McAuley (1998) suggested, "constructs assessed under the rubric body image include perceptions of body size, evaluation of appearance, anxiety about one's physique, and avoidant behaviors related to appearance" (p. 312). As a result of these inconsistencies in the operational definitions, it has been difficult to compare and contrast studies on body image. More recently, it has been suggested that body image be viewed, and consequently quantified, as a multidimensional construct (Bane & McAuley, 1998; Cecil & Stanley, 1997).

According to Bane and McAuley (1998), the multidimensional construct of body image includes perceptual, cognitive, affective, and behavioural modalities.

### Body Image Modalities

Perceptual modality of body image. The perceptual modality of body image represents the accuracy of perceptions pertaining to body image, measured as both body-part procedures and whole body methods of analysis (Bane & McAuley, 1998). Body-part procedures require individuals to estimate the width of a certain body part, whereas whole-body techniques require individuals to indicate and select images that match their body size. According to Bane and McAuley (1998), the perceptual body image instruments used to approximate sizes and widths of body parts are costly to use, and have not emanated from a theoretical base. Bane and McAuley (1998) also illustrate that there are several factors that affect the research environment, including the type of clothing worn, lighting, and food consumption. Furthermore, methodological concerns render perceptual body image measures difficult to compare and contrast (Bane & McAuley, 1998). There are several results and observations that add further credence to the proposition that cognitive, attitudinal, and behavioural parameters of body image have more clinical relevance than perceptual components (Keeton et al., 1990). As a result of these observations, the cognitive, affective and behavioural measures of body image are used more prominently in the research.

Cognitive modality of body image. In spite of the delineation of body image into multiple distinct dimensions, most researchers have focused on the cognitive dimension (Bane & McAuley, 1998; Ibbetson, 1996). Whereas perceptual measures of body image concern physical dimensions, the cognitive modality measures thoughts about the body



and evaluations of physical appearance, as well as body satisfaction (Bane & McAuley, 1998). The cognitive component of body image is typically assessed using paper and pencil tests to visually represent disturbances based on individuals' thoughts and evaluations of the actual size and shape of their bodies and body areas (Keeton et al., 1990). The simplicity of investigating the cognitive modality of body image defines the magnitude of studies focusing on this domain. Evaluations of cognitive body image include computer-generated projected images of body shapes and sizes, digitized differences between line drawings and self-references, and distorted mirrors, photographs, and videos (Keeton et al., 1990).

The cognitive modality of body image has been studied by various methods of measurement involving physical alterations of individual body dimensions (i.e., size and shape). One of the most prominent cognitive body image instruments is the Silhouette Measure of Body Image scale developed by Stunkard et al (1983). The instrument presents nine silhouette drawings of figures ranging from very thin to extremely overweight on a scale numbered one through nine, respectively.

The results of studies investigating body image according to the Silhouette measure have consistently reported that females rate their current body shape larger than the ideal and larger than the body size thought to be most desirable to the opposite sex (Cohn & Adler, 1992; Fallon & Rozin, 1985; Lavine et al., 1999; Rozin & Fallon, 1988; Tiggemann & Pennington, 1990). As well, females have exaggerated their peer's preferences for a particular body shape, specifying a preferential smaller shape (Cohn & Adler, 1992).

Despite the abundance of research employing the Silhouette measure, a limitation to this research is the lack of investigation of responses following exposure to advertisements. Although it is an assumption that body image can be quantified in a cross-sectional analysis, research is necessary to determine the possible effects of advertising on the cognitive modality of body image.

Affective modality of body image. The affective dimension of body image has only recently been identified (Bane & McAuley, 1998). Affective body image instruments elicit responses such as anxiety and negative feelings related to self-evaluations of the body (Bane & McAuley, 1998). Accordingly, only one measure is available to assess concern and negative affect regarding body shape, specifically the Body Shape Questionnaire (Cooper, Taylor, Cooper, & Fairburn, 1987). Participants are asked to rate how often they are concerned or worried about their body, including thoughts pertaining to their physical appearance, body dissatisfaction, and the occurrence of appearance-referential thoughts (Cash, 1994). The anxiety that individuals experience when others evaluate their body has been assessed with the use of the Social Physique Anxiety Scale (SPAS; Martin et al., 1997). The SPAS is a 9-item instrument with scores ranging from 9 to 45. This scale has been deemed to be more psychometrically sound than the original 12-item version created by Hart, Leary, & Rejesky (1989). Additionally, confirmatory factor analysis has yielded adequate fit indices (all > .90), indicating a parsimonious, conceptually driven instrument (Martin et al., 1997).

Since the development of the original 12-item Social Physique Anxiety Scale, many exercise and sport scientists have investigated the relationship between social physique anxiety and other psychosocial variables including motives for exercise and

attitudes towards exercising (Frederick & Morrison, 1996), exercise setting preferences (Crawford & Ecklund, 1994; Spink, 1992), sport competition anxiety (Martin & Mack, 1996), physical attractiveness (Thornton & Maurice, 1997), and body image factors (McAuley & Burman, 1993). Management and communication researchers have also used the SPAS to detect possible group influences (Carron & Prapavessis, 1997; David & Johnson, 1998). However, the construct validity and overall psychometric integrity of the SPAS has been questioned (Martin et al., 1997). There have been several problems associated with specific items on the scale that are redundant and ambiguous in nature, and the correlation with other scales has been scrutinized (Eklund, Mack, & Hart, 1996; Motl & Conroy, 2000; Petrie, Dielh, Rogers, & Johnson, 1996). Hence, the nine-item scale was used in the current research in attempt to avoid succumbing to many of these conceptual difficulties.

The dimensional properties of the SPAS have also been questioned. Eklund et al. (1996) argued that the SPAS consisted of two first-order factors, which they subsequently labeled Physique Comfort and Negative Expectancy. This contention was later rebutted, and the nine-item SPAS was created to avoid accepting the bi-dimensionality of the original construct (Martin et al., 1997). Carron and Prapavessis (1997) conducted further research on the bi-dimensionality of the SPAS while studying group influences on social physique anxiety. Results were identical for both subscales of the SPAS, indicating support for a unidimensional model, which has been defined in the current study as the affective modality of body image.

The SPAS focuses on anxiety resulting from a concern for the manner in which others perceive the individual's body (Crawford & Eklund, 1994). The functional vitality

of this dimension is evident in, but not restricted to research investigating the importance of peer perceptions. For instance, Heinberg and Thompson (1992) determined that both males and females rated peers' evaluations and opinions as more important than family. Additionally, Cash, Cash, and Butters (1983) also concluded that "peer beauty qualified as more appropriate standard for social comparison than professional beauty" (p. 354). Moreover, Ibbetson (1996) declared that the primary influence on adolescents' behaviours, thoughts, and actions is from their peers, who are themselves more influenced by the mass media rather than family. Therefore, an individual's resultant anxiety as a consequence of public scrutiny and evaluation is of qualified concern.

Further validation for the importance of investigating social physique anxiety is the resultant attitudes and behaviours of individuals high on the scale (Hart et al., 1989). Compared to people who are low in social physique anxiety, those who are highly anxious are likely to avoid situations in which their figure is under the scrutiny of others, and also likely to become very distressed when their figures are on display. Additionally, these individuals are likely to avoid activities that accentuate their figures, including fitness activities that might be beneficial to them, and attempt to improve their figures through a variety of means that may be harmful.

A subsidiary of research pertaining to social physique anxiety is the concept of self-presentation. According to Carron and Prapavessis (1997), self-presentation is "...an attempt by the individual to selectively present aspects himself or herself or to omit self-relevant information to maximize the likelihood that a positive social impression will be generated and an undesired impression will be avoided" (p.500). Although self-presentation and social physique anxiety are not synonymous, the concepts are associated

bi-directionally. Issues pertaining to self-presentation have been investigated in areas related and pertaining to sport management, specifically organizational behaviour and leadership studies, as a collective term “impression management” (i.e., Levine & Feldman, 1997; Roth, Harris, & Snyder, 1988). According to Gardner and Avolio (1998), impression management strategies are associated with motives such as personal gain and approval, and are employed by several individuals, including but not exclusive to leaders, managers, subordinates and superiors of varying age, race, and gender. Females benefit most in their use of impression management strategies, since they are disadvantaged and affected by past and present social stereotypes, expectations, and perceptions of their roles and positions in the workplace (Mercurio & Guilfoyle, 1996; Levine & Feldman, 1997). The effects of social physique anxiety on females’ use of impression management and self-presentation should be investigated in leadership and management studies due to the importance of leaders and managers in all fields, including sport and fitness.

Behavioural modality of body image. Similar to the affective measure of body image, the behavioral component has only recently become apparent in the body image research (Bane & McAuley, 1998). The Reasons for Exercise Inventory (REI; Silberstein et al. (1988) is a measure for the behavioural modality of body. The 24-item scale was developed to identify reasons for engaging in exercise, which are measured as seven possible rationally conceived subscales of weight control, fitness, health, mood, attractiveness, enjoyment, and tone. According to Bane and McAuley (1998), body image disturbances have been reported to be associated with exercising for weight control and physical appearance more than exercising for health and fitness reasons. This

contention has been supported in other research, including an earlier study which reported that females exercise more for weight-related reasons than do males, and that weight-related motives for exercise were consistent with body image disturbances (McDonald & Thompson, 1992).

Crawford and Eklund (1994) have provided support for the use of the REI in combination with the SPAS. While investigating the relationships between the scales, weight control and physical attractiveness REI subscales were significantly correlated with social physique anxiety (Crawford & Eklund, 1994). Additionally, physical attractiveness was also determined to be a predictor of social physique anxiety. According to Crawford and Eklund (1994), "It does appear that the reasons that women engage in exercise activities are differentially associated with SPA [social physique anxiety]. Reasons that can be construed as self-presentational (Physical Attractiveness, Body Tone, and Weight Control) seem to be important and positively associated with SPA" (p. 80). Consequently, self-presentational perspectives, as measured using the SPAS, may be useful in understanding body image disturbances and the associated exercise behaviour patterns.

The REI scale has been used in limited capacity in research pertaining to body image disturbances. Presently, the scale was chosen to attest to the multidimensionality of the body image construct. The functional vitality of investigating the behavioural modality of body image can be viewed in the previous research, which suggests that motives for exercise may moderate how body image is affected by exercise participation (Bane & McAuley, 1998). Furthermore, according to Butters and Cash (1987), the pursuit of strategies for weight loss, including exercise, is likely more for the purpose of

eliminating the social stigma and a negative body image than it is for losing weight. The shortcoming of this area of research is the lack of theoretical justification. However, according to Bane and McAuley (1998), the importance of research in the area of body image, and specifically the behavioural modality of body image, is related to the fact that physical appearance is a major motivator for individuals to exercise.

Examining the importance of exercise on body image could have significant relevance to sport marketing research, whereby several sport products are advertised in fitness and health magazines for use during physical fitness activities. Furthermore, the REI may identify trends in body image disturbances, as exercise is a commonly reported means of dealing with disturbances associated with body image (Cash, Novy, & Grant, 1994; Silberstein et al., 1988).

### Gender and Body Image

Studies investigating gender comparisons of body image and the effects of exposure to advertising are numerous, indicating that females are more dissatisfied with their bodies than males (Andersen & DiDomenico, 1990; Garner, 1997; Lintott, 1992). Drewnowski and Yee (1987) studied satisfaction of body weight and body image of both males and females and concluded that gender is a significant predictor of perceived dissatisfaction with body shape. Females were twice as likely to report being overweight when compared to males, whereas males were equally divided between reporting overweight or underweight. Drewnowski and Yee (1987) concluded, "...satisfaction with body image and body weight does not appear to be an intrinsic male characteristic" (p. 632). This observation is supported by research that indicates male self-reported disturbances in body image have been equivocal (Bane & McAuley, 1998; Cohn &

Adler, 1992; Fallon & Rozin, 1985; Rozin & Fallon, 1988). Subsequently, most research examining body image disturbances has focused on female populations.

### Age and Body Image

Despite the considerable gender differences in the perceptions of desirable body shape, several studies have demonstrated correlations between the individual's age and body dissatisfaction (Cohn et al., 1987; Dwyer & Mayer, 1968; Rozin & Fallon, 1988; Tiggemann & Pennington, 1990). Previous researchers have suggested that adolescents could be more inclined to body dissatisfaction than younger or older people, based on theoretical conceptualizations that adolescence is a time of change, self-consciousness, and identity search (Tiggemann & Pennington, 1990). However, Rozin and Fallon (1988) observed that age was not a factor in expressing body image disturbances, as both mothers and daughters representing different generations had similar reflections regarding their body shapes and sizes. Hallinan and Schuler (1993) also determined that age was not a factor in determining disturbances in body image, since both elderly, college, and prepubescent females have reported similar self-rated distortions. Therefore, it is a valid assumption that body image disturbances affect females of varying ages, and remain fairly stable throughout their life spans, due potentially in part to the constant barrage of advertising images portraying the difficult to achieve ideal figure (Koff & Rierdan, 1990).

### Factors Affecting Body Image

Body image disturbances have been studied as a result of various internal and external factors. Internal factors impacting the cognitive, affective, and behavioural modalities of body image include perceptions, attitudes and beliefs pertaining to the self



(Bane & McAuley, 1998). External influential factors concern peers and family, and the effects of marketing, promotions and advertising (Markula, 1995; Tiggemann & Pickering, 1996).

Peer and familial factors. According to Cohn and Adler (1992), the pressure for women to achieve the ideal body figure may arise from comparisons of their own figure with the ideal figure attributed to female peers. However, females have overestimated the extent to which thin figures are held as ideal by their same-sex peers (Cohn & Adler, 1992). Regardless of this finding, peer perceptions pertaining to body shapes and sizes have been recorded to be of greater importance than family members' perceptions and opinions (Cash et al., 1983; Heinberg & Thompson, 1992; Ibbetson, 1996). Additionally, Rozin and Fallon (1988) observed that mothers and daughters have similar ratings of body image disturbances, whereas fathers seemed disdainful to the concept of body image. Thus family influences have been observed to be inconsequential when compared to peer influences (Cohn & Adler, 1992; Rozin & Fallon, 1988), and the intensely documented influences of media, marketing, and advertising (Brown, 1997; Kane, 1988; 1989).

Marketing. Marketing is a dynamic field that encompasses many activities in which consumers engage, or are affected by on a daily basis (Evans, Berman, & Wellington, 1997). Marketing has been defined as "...the anticipation, management, and satisfaction of demand through the exchange process. It involves goods, services, organizations, people, and ideas" (Evans et al., 1997, p. 7). More specifically, marketing is a process of planning and implementing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and

organizational objectives (Berkowitz, Crane, Kerin, Hartley, & Rudelius, 1995). The exchange process is vital to marketing, as it entails a trade-off of values between consumers and marketers for mutual benefit. This exchange process may be affected by enhanced body image disturbances that potentially result from exposure to marketing, and particularly promotions and advertising.

Promotion involves communicating information that assists in a mutual understanding of the consumers' desires and the marketers' intentions to deliver goods and services (Evans et al., 1997). Communication processes are used to inform, persuade, and remind individuals about the available products, services, image, ideas, or impact on society (Evans et al., 1997). An integral aspect to promotion is the concept of advertising.

Advertising has been documented as a prominent external factor promoting irrational perceptions of body shape ideals amongst females (Rabak-Wagener et al., 1998). According to McCarthy, Shapiro, and Perreault (1994), advertising is "...any paid form of nonpersonal presentation of ideas, goods, or services by an identified sponsor" (p. 842). Hence, advertising is the presentational aspect of marketing, or a functional method of communicating ideas to mass audiences. Advertising is a key element in all areas of consumer interest, including the advancing field of sport marketing.

### Sport Marketing

The recent proliferation of sport marketing research broaches the importance of marketing in the current competitive sport markets worldwide. Sport marketing can be defined as addressing the needs and wants of sport consumers through the exchange process (Mullin et al., 1993). As such, sport marketing encompasses all domains of

customer/retailer relationships. Sport marketing research is a connective link between the consumer, customer, and the marketer, through information used to identify and define marketing opportunities and problems (Mullin et al., 1993).

Sport marketing and advertising research is emergent in various focal areas, however studies investigating the physiological and psychological aspects of the sport consumer's health are virtually non-existent. Investigations in sport marketing have attempted to capitalize on the prospective financial benefits and repercussions, and neglected certain possible effects of sport advertising on current and potential consumer's cognitions and affect (Mullin et al., 1993). The importance of this observation is that advertising has been labeled a prominent factor affecting consumer's body image in the fashion industry (Garner, 1997), and could therefore equally affect body image in the sporting industry. However, the vitality of further research in sport marketing is based on the assumption that sport advertisements are different from other forms of advertising, thus warranting independent analyses. According to Mullin et al. (1993), marketing sport is dissimilar to marketing other products, such as soaps and fast foods, thus fundamentally stating that the sport product is unique. Furthermore, sport has a universal appeal, as it has been a significant aspect in most civilizations worldwide, attracts all age groups, genders, and socioeconomic classes, and pervades many elements of life, such as leisure and recreation, exercise and health, sex, religion, business and economics (Coakley, 1998). The unique characteristics of the sporting industry, and the complexity of the sport consumer's physiological and psychological beliefs, behaviours, needs and wants, directs attention to the importance of the sport consumer and market segmentation in sport marketing research.

## Sport Consumer

Sport consumers have been identified according to the frequency and levels of sport involvement, in addition to the specific scope of interest (Mullin et al., 1993). Research pertaining to the sport consumer is difficult to analyze due to major inconsistencies in samples, in methodologies, and in definitions of sport and consumer (Stephens, 1987). Consequently, most of the available information focuses on demographic profiles of consumer groups, and there is much less available information on psychographic profiles (Mullin et al., 1993), including issues relating to the impact of advertising on body image. An important variable dictating the degree to which sport consumers are affected by the marketing and advertising of sport is the concept of market segmentation.

Market segmentation. While investigating the effects of sport advertising on females' body image disturbances, it is important to consider market segmentation to determine the adequacy of advertising in various market segments, including female sport consumers and prospective consumers. Every business entity that offers goods and services to a diverse consumer market can benefit from the implementation of prudent marketing strategies (Fullerton & Dodge, 1995). Market segmentation is a strategy that involves aggregating prospective buyers into groups that have common needs and will respond similarly to a marketing action (McCarthy et al., 1994). A market segment thus refers to "one or more specific groups of potential consumers toward which an organization directs its market mix" (Berkowitz et al., 1995, p.724). The marketing mix is the controllable factors of product, price, place, public relations, and promotion, of which advertising is an integral aspect (Berkowitz et al., 1995; Mullin et al., 1993).

Advertising, as it relates to body image, has created an illusionary product need among market segments by establishing and promoting the impossible-to-achieve ideal body image, both taller and thinner than the average North American (Beasley, 1999).

Although sport advertising research is not apparent on measures of body image, it is evident that the advertising and marketing of sport products follows trends of successful product advertising in other exceedingly researched domains such as fashion advertising. Unfortunately, according to Fullerton and Dodge (1995), the sport industry has placed considerable emphasis on mass marketing techniques, rather than specific market segments, which have inhibited the applicability of novel and potentially effective marketing ideas and strategies.

Market segmentation continues to be fundamental to sport marketing, especially considering the diverse segments of the population that are attracted to the sporting industry. The diverse market segments in sport are designated on the basis of product usage, notably users and nonusers. Nonusers are distinguished as prospects, those likely to become users, and nonprospects, those unlikely to ever become users (Berkowitz et al., 1995). Prospective users are essential to the future proliferation of sport marketing and advertising. As these consumers become interested in the sport product and the organization, the current target market segments extend, thus increasing sales and recognition. According to Kuzma, Shankline, and McCally (1993), sport product and sport organization recognition and awareness are the most vital outcomes of sport marketing.

Despite the success of sport marketing in recent years, implications for future enhancement of sales and product recognition may depend on the research related to

prospective market segments in sport. As already mentioned, it is important to study the effects of sport advertising images on individual's body image to determine whether sport advertising is enhancing lifestyles and health or acting as a potential deterrent to current prospective consumers. Focusing on prospective consumers, especially females, will enhance the company or organization's recognition, and indirectly influence product sales and consumer purchase behaviours. Branch (1995) has reported that the manner in which females are viewed by sport marketers and advertisers as a desirable target market is changing. Females are viewed as unique, thus requiring recognition and consideration in sport marketing. Since sport marketers are developing tailored strategies to meet the unique and discriminating needs of female sport consumers (Branch, 1995), it is important to identify potential areas of concern pertaining to the sport advertisements, such as enhanced body image disturbances.

Consumer psychology. Advertising can be either beneficial or detrimental to the sport organization depending on complex dynamics of environmental and individual factors related to the market segments. Consumer psychology is a term used to describe environmental and individual interactions between the consumer and the organizations that produce consumer products (Schultz, 1998). Mullin et al. (1993) have used a diagram to illustrate the interactions that determine the sport consumer's socialization, involvement, and commitment in sport, which are the integral aspects of the consumer decision-making processes. As revealed in Figure 1, decision-making is the processing of the culmination of individual and environmental knowledge, feelings, and behaviours that result in varied degrees of involvement and/or commitment to sport. According to Mullin et al. (1993), the model is a reminder of all the factors that the sport marketer

must understand to develop consumer interest, involvement, and commitment.

Environmental factors that alter sport consumer's involvement and commitment include: significant others, cultural norms and values, class, race, and gender relations, and geographic conditions. The individual (internal) factors that influence the way sport consumers interact include self concept, of which body image is an integral aspect, stage in life, physical characteristics, learning, perception, motivation, and attitudes.

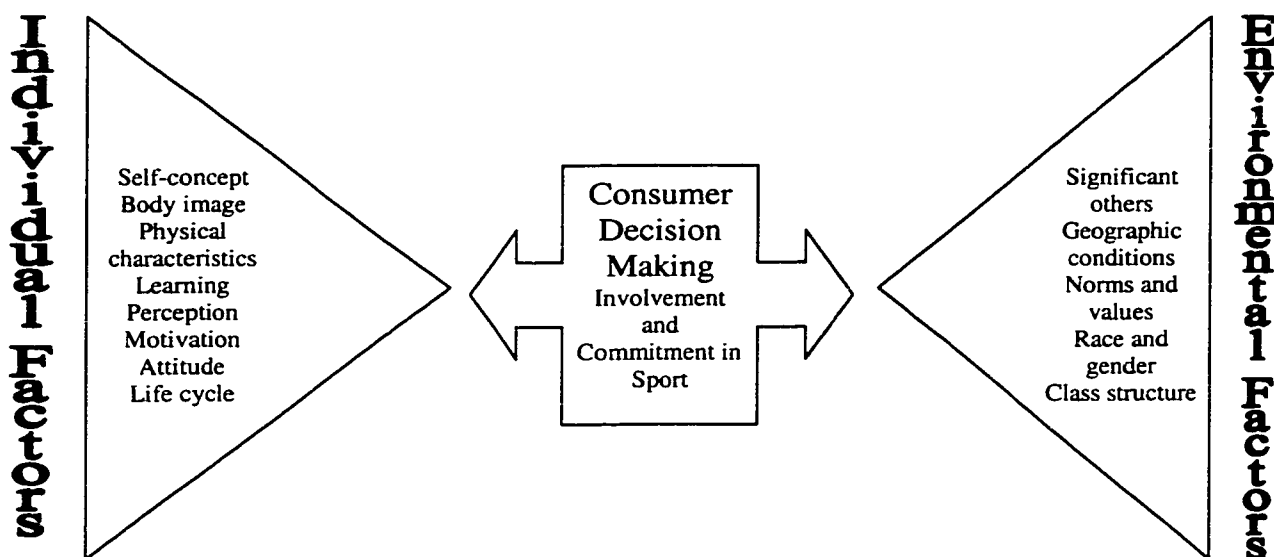


Figure 1. Consumer Behaviour in Sport: Modified from Mullin, Hardy, and Sutton (1993)

The self-concept affects individual personality and behaviour, hence consumer product-purchase behaviour (Mullin et al., 1993). Thus, an association between the importance of body image and the effects of advertising, and consequently purchase behaviour, becomes evident. For example, if the advertisements do contribute to enhanced body image disturbances, this outcome could affect the consumer's decision to purchase the product, or participate in the activity being advertised. Furthermore, the company or

organization, and the product alone could be poorly recognized as a result of the influence of advertising.

### Advertising

Since advertising has proliferated in recent decades, it has become an environmental aspect, persistently encountered, and therefore involuntarily experienced by the entire population (Pollay, 1986). According to Boutilier and SanGiovanni (1983), television and magazine advertising is so pervasive that no individual, institution, or social group remains unaffected by the influences of advertising. Due to the current nature of advertising, it has been discovered to have profound consequences, including impacting individual's affect, cognition, and behaviours of body image, despite the intent of advertising to increase product awareness and ensuing sales (Pollay, 1986). The impact of advertising on body image can be partially explained by Lasch (1978), claiming that advertising provides a fair portrayal of consumer's conception of utopia. Such conceptions may be increasingly common and unquestioned as repeated exposure to such images inevitably lead to processes of validation, sanctioning, and standardization of the accepted criteria for social value. An example of these processes which lead to normalized thoughts is the current ideal body form, which has been reported by many to be tall, extremely thin, and physically attractive (Lavine et al., 1999, Shaw & Kemeny, 1989).

Several reasons have been offered to explain the impact that advertising has on the modalities of body image, including the pervasiveness and repetitiveness of the distinctive advertisements, as well as the professional display, researched presentation, and mode of delivery (Pollay, 1986). According to Lasch (1978),



Modern advertising seeks to promote not so much self-indulgence as self-doubt. It seeks to create needs, not to fulfill them; to generate new anxieties instead of allaying old ones. By surrounding the consumer with images of the good life, the propaganda of commodities simultaneously makes [the individuals] acutely unhappy with [their] lot. By fostering grandiose aspirations, it also fosters self-denigration and self-contempt. (p. 180)

The fear that advertising instills a sense of inadequacy is important in the research pertaining to female's body image disturbances (Pollay, 1986). Furthermore, as a consequence of the ubiquity of advertisements, the written and visual messages that emanate from advertising reflect, shape, and even create individual attitudes, values, and beliefs (Kane, 1989). Advertising is designed to change attitudes, direct behaviour, and attract attention in various consumer domains, including sport.

Sport advertising. Sport advertising has recently become integral to the domain of sport marketing (Mullin et al., 1993). Continued research is therefore necessary to determine the effectiveness and impact of this medium. Currently, researchers in sport advertising focus on the recognition of company or organization sponsorships, brand name recognition and recall, and consumer purchase behaviours primarily at sporting events, both in the stadium or on television (Mullin et al., 1993). Since the introduction of sport and fitness magazines, individuals have become inundated with print images of fitness models and sport products. Furthermore, the amount of coverage of female sports has continually escalated since the passage of Title IX (Kane, 1988). Despite previous

studies that have illustrated an under representation of females in sport (Boutilier & SanGiovanni, 1983; Bryant, 1980; Reid & Soley, 1979), the more recent advancements are illustrated by magazines dedicated to female athletes and fitness promotion. It is important to study the effects of these images on individual's body image to determine whether current sport advertising enhances body image disturbances in females.

Advertising and marketing research have been conducted for several decades, however indications of both intended and unintended consequences of advertising (i.e., body image dissatisfaction) have surfaced as possible areas of investigation (Pollay, 1986). Most of the criticism of advertising comes from individuals who focus on advertising's social role, whereas most of its defense comes from those who emphasize its economic functions (Pollay, 1986). Currently, marketing research encompasses consumer behaviour and purchase decision processes rather than the effects of marketing and advertising concepts on consumer's physiological and psychological health, as indicated by the quantification of body image (Berkowitz et al., 1995). Sport marketing and advertising parallel this trend, since sport organizations have focused on producing and selling products instead of identifying and satisfying the needs and wants of consumers (Mullin et al., 1993). As a result of this observation, the need for research that focuses on the sport consumer is essential. The importance of studying possible body image disturbances as a result of advertising includes both social and economic factors. According to Dawar and Parker (1994), perceptions of product quality and retailer reputation determine the consumer's potential to purchase the product or become involved with the organization. A cyclical correlation can thus be inferred, whereas consumers' body image disturbances could be reflected in their purchase behaviours.

Advertising is a significant component to the marketing of sport and sport-related products and as such has become pivotal in the sporting industry (Wyatt, McCullough, & Wolgemuth, 1998). The advertising of sport products and corporate sponsorships, in addition to the advertising of sporting games themselves, influences the purchasing behaviours of consumers, including ticket sales, and the product life cycles. Also, advertising has been recorded to alter consumer perceptions and beliefs regarding the marketing company, the products, and the surrounding environment (Dawar & Parker, 1994). Advertising can also impact consumer's cognitions and affect regarding his/her body image (Heinberg & Thompson, 1995; Lavine et al., 1999).

#### Testing for Advertising Effectiveness

There are several techniques used to determine advertising effectiveness. The most direct approach to testing the effectiveness of advertising is to ask consumers for their reactions to the advertisements (Schultz & Schultz, 1998). Two prominent techniques to test sport advertising effectiveness include aided recall and recognition (Mullin et al., 1993; Schultz & Schultz, 1998). Aided recall is used to determine the extent to which contents of the advertisements can be remembered. During this process, consumers are usually presented with a series of specific questions pertaining to the advertisements. Recognition is a technique for testing advertising effectiveness by asking individuals if they recognize a particular advertisement, and the conditions surrounding its presentation, such as location, name of product, and message content (Schultz & Schultz, 1998).

Attitudes towards advertising are prominent measures in sport marketing (Kinney & McDaniel, 1996; Nebenzahl & Hornik, 1985; Shannon & Turley, 1997; Stotlar &

Johnson, 1989; Turco, 1996). For example, Nebenzahl and Hornik (1985) performed an exploratory study of the effectiveness of commercial billboards in sports arenas. Effectiveness was determined as a measure of brand awareness, recall, and recognition. Concluding statements indicated increased recall and recognition of advertised brands following exposure to billboards. Turco (1996) examined the effects of courtside advertising on product recognition and attitude change among consumers. Results indicated that recognition accuracy of advertisements by spectators improved from pre-season to post-season. Additionally, attitudes towards advertisers also improved. The implications of these studies direct attention to the importance of exposure to advertisements and the positive effect on product awareness and brand loyalty. However, it is difficult to compare billboard advertisements to the print medium that has higher overall exposure rates. Even if comparable, the increased recognition and recall of advertisements could be detrimental if the advertisements themselves are deemed to perpetuate body image disturbances. Also, the attitudes that are studied in sport marketing research are related to consumer purchase behaviour and decision-making rather than the influence that the advertisements have on the cognitive, affective, and behavioural modalities of body image.

Measure of advertising effectiveness. Rabak-Wagener et al. (1998) developed a survey instrument used to measure the beliefs and behaviours pertaining to fashion advertising. The instrument had been pilot-tested for understanding, clarity, and consistency by experts, and consequently deemed valid. In further studies, the reliability coefficient was determined to be .82 using a test-retest methodology. The scale consists of 11-items on which individuals respond to questions pertaining to advertising using a 7-

point Likert scale. Modifications to the original scale were made in the current research to focus on different advertisements rather than simply fashion advertising, specifically sport advertising.

### Social Marketing

A novel concept to sport marketing and advertising research is social marketing, which refers to the advertising and promotion of health and fitness-oriented lifestyles and behaviours (Lori, 1991; McFarlane, 1994). According to Lori (1991), "...social marketing has been conceived to enhance the effectiveness of organizational efforts to market causes, ideas, and public issues" (p. 18). Several marketing implications are evident from research investigating healthcare issues. Delene and Brogowicz (1990) alluded to the need for health and fitness program offerings to explicitly address body image issues on an operational level, consequently building participation. Furthermore, the importance of social marketing in research investigating consumer's physiological and psychological health becomes evident when investigating the modalities of body image. For instance, the structure of the SPAS (Martin et al., 1997) measures the degree of anxiety that individuals experience as a function of other people's evaluation of their physique. These perceptions are integral in the sport and fitness industries, since being perceived as physically fit, strong, healthy, beautiful and attractive rather than overweight, unhealthy and unattractive is very important (McAuley & Burman, 1993). A cyclical conundrum is apparent, as sport advertising that portrays the unattainable ideal may enhance perceptions and degrees of social physique anxiety. As a result, individuals will be less likely to participate in sport and fitness activities if they experience a high degree of social physique anxiety. Therefore, the advertising that has a purpose of

increasing sales and product awareness may not only be unsuccessful, but also may lead to decreased participation in sport and fitness activities. Future implications prevailing from studies on the effects of sport advertising on measures of body image could be pertinent.

### Advertising Influences on Body Image

Comparisons to the assumed ideal body shape and size, as is depicted in advertisements, have resulted in studies investigating the effects of advertising on body image. The studies have mainly focused on eating disorders (Andersen & DiDomenico, 1990; Gustavson et al., 1990), gender stereotyping and feminism (Lavine et al., 1999), and physical attractiveness and perceived age (Korthase & Trenholme, 1982, 1983; Mazis, Ringold, Perry, & Denman, 1992; Tanke, 1982). Several researchers have investigated the effects of advertising on body image (Heinberg & Thompson, 1995; Lavine et al., 1999; Shaw & Kemeny, 1989). The results of these studies have guided the researchers to suggest trends that advertising does influence certain factors relating to current and potential consumer's physiological and psychological health, analyzed as cognitive, affective, and behavioural modalities of body image. Research conducted on the effects of advertising on body image has included test-retest methodologies involving exposure to advertisements, simple survey instruments and questionnaires, focus groups and interviews, and intervention testing (Cash et al., 1994; Heinberg & Thompson, 1995; Lavine et al., 1999; Rabak-Wagener et al., 1998; Shaw & Kemeny, 1989).

Since the body image construct is associated with eating and weight-related problems, a cyclical association can be observed as a result of exposure to advertising (Riva, Melis, & Bolzoni, 1997). Advertising has been indicated as a prominent factor

associated with excessive weight concerns and possible eating disorder trends in adolescents, who report attempts to look like models on television and in the magazines (Taylor et al., 1996). Body image and body size distortion criteria exist in the Diagnostic and Statistical Manual of Mental Disorders IV, a manual required for the diagnosis of eating disorders; however research has shown that body size distortion and body dissatisfaction are not unique characteristics of individuals with eating disorders (Cash & Brown, 1987; Cash & Hicks, 1990; Gustavson et al., 1990). Hence, for the purpose of the current research, it was assumed that the quantification of body image does not discriminate between eating-disordered and normal-weight individuals. Furthermore, according to Gustavson et al. (1990), the subjective experience of body image and body image distortion may be appropriately measured using image-based comparisons rather than verbal discussions; therefore the Silhouette Measure of Body Image (Stunkard et al., 1983) was assumed to be appropriate, independent of focus groups or interviews.

### Physical Attractiveness

The effects of advertising on body image and the related prevalence of eating disorders and excessive exercise behaviours is associated with the individual factors affecting the sport consumer's decision making processes depicted in Figure 1. Similar influential individual factors are physical characteristics, notably investigated in studies pertaining to body image and advertising (Andersen, Woodward, Spalder, & Koss, 1993; Etcoff, 1999; Mazur, 1986). Physical attractiveness and beauty have "...catered to a limitless desire to see and imagine an ideal human form" (Etcoff, 1999, p. 7). According to Mazur (1986), advertisements emphasize the importance of conforming to the body image currently considered ideal. The ideal human form, which varies among cultures

and across time, has been more pronounced in the body shape of females than that of men (Barber, 1998). This is a result of the importance males place on the physical attractiveness of females, whereas females indicate preferences for personality traits and intelligence (Andersen et al., 1993). Furthermore, advertising produces dramatic notions of beauty that change from year to year, which places unwarranted pressures on females to conform to the current trends in beauty (Mazur, 1986). The ability to conform to external standards of beauty and physical attractiveness affects individual's cognitive, affective, and behavioural dimensions of body image. The increases in body dissatisfaction have become prominently evident since the advancements in marketing and advertising, however have consistently affected females throughout history (Mazur, 1986).

Research on the perceived physical attractiveness of models presented in fashion advertisements has been equivocal (Korthase & Trenholme, 1982; 1983; Mathes, Brennan, Haugen, & Rice, 1985; Mazis et al., 1992). Some support the contention that there is no correlation between age and perceptions of physical attractiveness (Deutsch, Zalenski, & Clark, 1986; Wernick & Manaster; 1984), while Mathes et al., (1985) found that older subjects provided higher attractiveness ratings of models than did younger participants. A study conducted by Mazis et al., (1992) attempted to account for the limitations in previous research, as well as to determine possible interactions between viewer and model ages on perceptions of physical attractiveness. Results demonstrated that regardless of viewer age, younger models were judged as more attractive than older models. An assumption of the current research associated with these results is that the more prominent sports and fitness magazines are targeting younger market segments, and



the models displayed in the advertisements are therefore of younger ages. However, a limitation of this current research is the lack of investigations on the comparisons between sport advertising models and models portrayed in other forms of advertising (e.g., fashion models) on variables such as age and physical attractiveness.

### Social Comparison

The studies investigating correlations between age and perceived physical attractiveness are foundational to research pertaining to the effects of advertising on perceptions of physical attractiveness and body image. Advertisements displaying physically attractive models have enhanced the expression of body dissatisfaction among females (Timko, Striegel-Moore, Silberstein, & Rodin, 1987). According to Richins (1991), females describe themselves as less satisfied with their physical appearance and weight following exposure to advertisements depicting female fashion models. Pinhas, Toner, Ali, Garfinkel, & Stuckless (1999) expanded upon this finding and determined females were significantly more depressed and disturbed following exposure to fashion models, and consequently expressed greater despondency with their bodies. Although Pinhas et al., (1999) determined that exposure to fashion models has an immediate negative effect on female's mood and body image, the study was limited to the deficiency of comprehensive research, including the lack of definitions of the body image modalities studied, or explanations of the advertisements employed.

The factors that influence the judgments of attractiveness, such as age and perceiver characteristics have been identified in previous research (Pinhas et al., 1999; Richins, 1991; Timko et al., 1987). Additional research has also included approaches that consider the effects of contextual and situational factors on perceptions of

attractiveness (Cash et al., 1983). Specific research studies (Cash et al., 1983; Kenrick & Gutierrez, 1980; Melamed & Moss, 1975) have identified the operation of a contrast effect, which implies that "...targets are judged to be more physically attractive when viewed in the context of photos of unattractive females than in the context of attractive stimuli" (Cash et al., 1983, p. 351). The contrast effect is derived from Festinger's (1954) social comparison theory, which proposes that individuals are more likely to compare themselves with others who are similar rather than those who are dissimilar. Perhaps the contention of the social comparison theory is of functional value to the research investigating the effects of advertising. Since advertisement models have been described as reigning amongst the upper extreme of the normal distribution of physical attractiveness (Cash et al., 1983), implications that the majority of the population do not compare themselves to advertisement models due to the dissimilarity are possible. However, research investigating the effects of advertising on self-evaluations of physical attractiveness and body image support the comparative nature of human beings, thus the contrast effect and social comparison theory (Cash et al., 1983; Heinberg & Thompson, 1995). According to Heinberg and Thompson (1995), exposure to advertising primes appearance evaluative schemas, which leads individuals to compare themselves to the models portrayed in advertisements, consequently leading to negative feelings about their own body and overall body image distortion. An important implication for sport marketing and advertising is evident in that advertisements that portray individuals of varying body size and shape proportions may influence the contrast effect. If individuals can relate to, and compare themselves to the models in advertisements, the product

quality and company or organization recognition could be enhanced, thus indirectly influencing financial benefits.

### Body Image

Body image distortions have been primarily subsidiaries of research focusing mainly on the impact of advertising on eating disorders and physical attractiveness. However, current research has identified the direct relationship between advertising and body image (Heinberg & Thompson, 1995; Lavine et al., 1999; Rocchio, 1995). Advertising has been identified as having effects on viewers' beliefs, values, attitudes, and behaviours, despite the primary objective of creating product awareness and encouraging product purchase (Lavine et al., 1999). Upon the completion of research investigating the effects of television advertising on body image, Lavine et al. (1999) concluded that their results offer empirical support for the contention that exposure to models portrayed in advertisements may have significant consequences on the modalities of body image. Specifically, Lavine et al. (1999) found that women exposed to advertisements judged their body size as larger compared to women exposed to no advertisement control conditions. However, these results were dependent on a predisposition for body image disturbances. According to Lavine et al. (1999), individuals who reported body image disturbances on the pre-test significantly increased their scores on the post-test, implying greater advertising effects on body image. Participants who did not report body image disturbances on the pre-test did not report disturbances following advertising exposure.

Further research has indicated that the effects of advertising could be more prominently observed among individuals with a predisposition to body image

disturbances. Pinhas et al. (1998) indicated that following exposure to fashion advertising, women who were dissatisfied with their bodies were more vulnerable to the image exposure than individuals who were not exposed to advertising, and compared to individuals that had not expressed body image disturbances. David and Johnson (1998) claimed that individuals with high self-esteem indicated small media and advertising effects on body image. Conversely, individuals with low self-esteem estimated a large media effect on body image. Additional research has indicated that high levels of body image disturbances lead to reports of greater media and advertising effects (Heinberg & Thompson, 1995; Lavine et al., 1999; Thornton & Maurice, 1997). Given these results, there are certain referential contentions towards the laboratory nature of the studies, and the subsequent potentially temporary effects observed (Lavine et al., 1999). However, according to the authors, due to the high degree of mundane realism, repeated exposure to model advertisements over time may lead to chronic effects.

Advertising formats. Despite the plethora of general research on the effects of television and print advertising (i.e., eating disorders, physical attractiveness), there is a paucity of research investigating individual's possible cognitive, affective, and behavioural body image distortions when exposed to print advertising. Additionally, a lack of research investigating different formats of print advertising is also evident. An advertising format relates to the specific methods used to promote the product. Two of the primary formats of advertising include model-related advertising, which prominently displays individuals as the focal point in the advertisements, and product-related advertising. Rocchio (1995) examined the impact of exposure to advertisements that did or did not depict attractive models on body image measures of college females. When

exposed to advertisements depicting models, females rated their own body size as larger (i.e., cognitive body image), compared to females who were not exposed to model-related advertising. However, exposure to the model-related advertising did not significantly impact affective measures of body image.

Heinberg and Thompson (1995) examined exposure to appearance-related (e.g, model) television commercials and non-appearance-related television commercials for effects on body image distortion among females. The results suggested that model-related advertising presenting images of thinness and attraction could negatively affect body image. Heinberg and Thompson (1995) claimed that advertising is a significant factor impairing the moderation of perturbations in body image.

Further research in the area of model and product-related advertising is necessary based on the assumption that these two forms of advertising are significantly and obviously different from one another. If model-related and product-related advertisements are similar and comparable, then research pertaining to the messages conveyed through the advertising medium, rather than the formats themselves, would be essential. As a consequence of this limitation, it is assumed that sport advertising models are not similar to fashion models, thus warranting independent analysis. It is assumed that sport models are more toned, lean, and muscular than the models representing the fashion industry. This assumption is based on the observation that sport advertising is trying to enhance consumer perceptions and beliefs, in addition to purchase behaviours, of sport, fitness, and health products and ideas. Thus sport models are required to be motivational role models. As a consequence, the model-related advertisements in sport could impact individuals to a greater extent, due to the addition of the muscularity

construct to the template that currently affects female's measures of body image. Furthermore, certain sport advertisements employ sport celebrities and athletes as product endorsers, thus portraying the "...quickest, strongest, most flexible women in the world" (Powers, 1996). The problem is that top athletes, like ordinary women, frequently believe that more fit equals less fat and tend to reduce their body fat content in attempt to perform better (Powers, 1996). Thus, sport advertisers may be portraying successful athletes who themselves represent the ideal body, further hindering the consumers' evaluations of their own body shape and size. According to Segel (1997), the consumer's failure to achieve the portrayed images, and the subsequent struggle for the ideal body helps to perpetuate the sales of the magazines and the products within, as well as body dissatisfaction in predominantly female populations.

#### Summary

Foundational research on body image has been performed in various fields of study including developmental, cognitive and clinical psychology, sociology, and health education. However, regardless of the realm of applicability, experimental research investigating the effects and impact of advertising on body image is minimal or not evident, especially in sport marketing. Therefore, the scarcity of research in advertising in general, and specifically the overall lack of research in sport marketing, highlights the necessity of investigating the impact of sport advertising on body image.

## CHAPTER II

### Purpose

Sport advertising could impact body image similar to the effects disclosed by the previous research in other areas of study (e.g., fashion advertising). The advertising of sport-related products and the sporting events themselves may facilitate perceptions of tall, thin, and toned ideals for females. These characteristics have been illustrated by several researchers to affect both body-size distortion and body dissatisfaction (Levine et al., 1999; Myers & Biocca, 1992; Rabak-Wagener et al., 1998; Silverstein, Perdue, Peterson, & Kelly, 1986). The lack of body image research in sport marketing renders the possibility of a relationship currently undetectable. Furthermore, research investigating possible differences between model-related advertisements and product-related advertisements is absent from, but not limited to, sport marketing research. The need to study the difference between alterations in body image perceptions based on model-related sport advertisements in comparison to the sport-product advertisements was therefore evident.

The purpose of the study was to determine whether exposure to sport-related magazine advertisements contributed to body image disturbances among females. More specifically, the purpose was to determine whether there was a difference between the exposure to athletic shoe sport advertising that employs human models in comparison to the advertising that forecasts primarily the sport product. The focus of the current research was to determine the possible impact of sport-related magazine advertisements on body image, using a one-month pre and post-test methodology. The multidimensionality of the body image construct was evaluated using the Silhouette

Measure of Body Image (Stunkard et al., 1983), the Social Physique Anxiety Scale (Martin et al., 1997), and the Reasons for Exercise Inventory (Silberstein et al., 1988). The importance of employing several instruments to measure body image has been qualified by Keeton et al., (1990), observing that “a major criticism of research on body image concerns the dubious assumptions of the unidimensionality of the construct and the equivalence of body-image measures” (p. 213). Therefore, it was an objective of the current research to avoid succumbing to certain limitations expressed in previous research pertaining to the effects of advertising on body image.

### Research Questions

The multidimensional properties of the body image construct had not yet been determined in previous research, therefore the initial purpose of the current study was to statistically determine the structure of the body image construct. Furthermore, the introduction of the Attitudes Towards Sport Advertising scale (Rabak-Wagener et al., 1998) as an additional measure of body image pertaining to sport advertising was investigated.

The research questions that were pertinent to the study of the effects of sport advertising on body image disturbances among females in the experimental groups (i.e., product-only sport advertising exposure, model-only sport advertising exposure, or a no advertising exposure control) included: (1) Were the groups significantly different in terms of body image disturbances? (2) Regardless of group, did body image disturbances significantly change from the pre-test to the post-test? (3) Which group changed significantly more from the pre-test to the post-test? (4) Did the groups change at



significantly different rates from the pre-test to the post-test based on the various dependent variables?

In addition to the research questions pertaining to the effects of sport advertising on the cognitive, affective, and behavioural modalities of body image, the research question pertaining to the ATSA (Rabak-Wagener et al., 1998) was investigated: 1) Was the ATSA a measure of body image disturbance? (2) Did the group scores significantly change from the pre-test to the post-test?

### Hypotheses

A comparison between the structures of the advertisements will determine if any difference exists in the effects of model-related advertising and product-related advertising versus no advertising exposure on the cognitive, affective, and behavioural modalities of body image. It was hypothesized that the modalities of body image will be affected by the sport advertisement format, thus females exposed to four minutes of model-related advertising will show greater discrepancies in their pre and post-test measures of body image.

Hypothesis 1. Females will rate their current body size as significantly larger (i.e., higher score) on the post-test compared to the pre-test on the Silhouette Measure of Body Image (Stunkard et al., 1983). Additionally, the discrepancy scores (i.e., Current-Ideal) will be significantly higher for individuals exposed to model-only sport advertisements.

Hypothesis 2. Following exposure to model-related sport advertisements, females will report higher degrees of social physique anxiety, as indicated by higher post-test

numerical representations on the Social Physique Anxiety Scale (Martin et al., 1997) compared to pre-test scores.

Hypothesis 3. Females will indicate higher numerical values on the Reasons for Exercise Inventory (Silberstien et al., 1988) for items related to weight and physical attractiveness on the post-test compared to the pre-test following exposure to model-only sport advertising exposure.

Hypothesis 4. Individuals exposed to model-related sport advertising will have higher post-test scores compared to initial pre-test scores on the Attitudes Toward Sport Advertising scale (Rabak-Wagener et al., 1998).

## CHAPTER III

### Methodology

#### Participants

Female participants ( $N=230$ ), who were matched for pre and post-test scores, were recruited from undergraduate classes at the University of Windsor. The classes were chosen based on an attempt to represent various faculties and the respective subject matters, and a total of six classes were approached and eventually employed in the present research. As a result, there were several faculties represented in the current exploratory study, of which Human Kinetics and Business contribute to 26% and 26.5% of the complete sample. Communication studies (12%), Psychology (9%), and Sociology (8%) faculties were also represented, in addition to 19% of the sample represented by Criminology, Geography, Computer Sciences, Drama, Music, Engineering, and English students. It was assumed that the sample participants would not report different scores on the questionnaires based on the faculty that they represented. Statistics that were conducted following the experimental procedures supported this assumption.

The sample was limited to females for comparative purposes, due to the multitude of research studies investigating females' self-reported body image disturbances. Additionally, this was a preliminary investigation on the effects of sport advertising, thus controlling as many factors as possible was beneficial. Male self-reported disturbances in body image have been equivocal in previous research (Bane & McAuley, 1998; Cohn & Adler, 1992; Fallon & Rozin, 1985; Rozin & Fallon, 1988). As a result, it is difficult to allude to trends and significant findings among male self-reports on body image. Therefore, the potential to identify certain elements and implications of

sport advertising has been plausible studying merely female subjects. Participants ranged in age from 17 to 42 years ( $M = 20.31$ ,  $s.d. = 2.64$ ) and were chosen from a college-aged sample because, among this age group, females have been known to place strong emphasis on the importance of physical attractiveness, body image, and social acceptance (Altabe & Thompson, 1993).

### Measures

Body Mass Index. The participants' self-reported weight and height variables were employed to calculate Body Mass Indices (BMIs), which were used as an objective indicator of healthy weight ranges (Wilmore & Costill, 1994). Despite certain problems that are associated with calculated BMIs, such as a lack of regard for muscle mass and bone structure, BMI measurements are considered adequate for classifying individuals for health purposes (Wilmore & Costill, 1994). The Canadian Society for Exercise Physiology has indicated that the range of  $18.5$  to  $25 \text{ kg/m}^2$  is considered normal. Individuals with BMIs lower than  $18.5 \text{ kg/m}^2$  are considered underweight, and individuals with BMIs over  $25 \text{ kg/m}^2$  are considered overweight, while those with BMIs above  $30 \text{ kg/m}^2$  are considered obese (Canadian Society for Exercise Physiology). BMI was used as an objective measure of body image disturbances.

Silhouette Measure of Body Image (SMBI). The participants were presented with the Silhouette measure originally developed by Stunkard et al. (1983), which was used as a cognitive measure of body image. This measure has been determined to be a reliable and valid instrument of cognitive body image (Cohn & Adler, 1992; Fallon & Rozin, 1985; Lavine et al., 1999; Rozin & Fallon, 1988). The instrument measures body disturbances using a 9-point continuum of female body figure diagrams ranging from

extremely thin to extremely overweight (see Appendix A). Body disturbances are measured according to a self-reported current estimation of body size, and an ideal estimation in which the individual identifies the body shape most desired, an indication of the body size thought to be most desirable to the opposite sex, and an estimation of same-sex peer ideals (Cohn & Adler, 1992; Fallon & Rozin, 1985; Rozin & Fallon, 1988). The instrument has been validated as an anthropometric measure of adult and adolescent body size (Mueller, Joos, & Schull, 1985). For adults, correlations between body weight and silhouette choice ranged from .65 to .84 for untrained observers and from .85 to .92 for trained observers. According to Cohn and Adler (1992), adolescents were as accurate in their self-ratings as were independent but untrained judges. The validity of the scale was also assessed as the correspondence between self-reported weight dissatisfaction and body image dissatisfaction as measured by body figure ratings, which was strong for females ( $r = .76, p < .001$ ). Lavine et al. (1999) also reported the internal consistency of the instrument to be  $\alpha = .92$ .

The self-report evaluations of body size using the Silhouette measure included estimations of current body size, ideal body size, the estimation of body size thought to be most desirable to the opposite sex, and the estimation of same-sex peer ideal body size. The original estimation of the opposite sex body size most desired by the rater was eliminated due to the nature of the study, specifically the concern for female body image measures rather than both genders. The only relevant items in the present study were the current and ideal ratings on the SMBI.

The cognitive body image score was derived by subtracting the ideal figure rating from the current figure rating on the SMBI. This section of the scale has been used

extensively in body image research. For descriptive purposes, this raw score was employed; however, the absolute value of the discrepancy between the two reported figure ratings was employed in further analyses. The direction of discrepancy was not considered as important as the magnitude of the discrepancy.

Social Physique Anxiety Scale (SPAS). The SPAS (Martin et al., 1997; see Appendix B) is a 9-item self-report inventory that measures social physique anxiety as an affective modality of body image. Subjects were asked to indicate the degree to which statements are characteristic of them on a 5-point Likert scale, ranging from (1) not at all to (5) extremely. Individuals who scored higher (e.g., maximum score is 45) on the SPAS were expressing augmented social physique anxiety compared to those individuals who scored lower (e.g., minimum score is 9) on the scale. Therefore, high-scoring SPAS participants indicated a fear of being judged and scrutinized by others, thus expressing the importance of others' opinions. The SPAS has demonstrated construct validity, test-retest reliability ( $\alpha = .82$ ), and internal consistency (Cronbach's  $\alpha = .90$ ) (Hart et al., 1989; Martin et al., 1997). A slight modification on the instrument has been done to ensure the consistency of wording throughout the experimental protocol. The word "physique" has been eliminated from the questions, leaving only the word "figure". This change should not alter the psychometric properties of the scale. Furthermore, physique is predominantly used as a descriptor for male body shapes, and figure is the appropriate term used to describe female body shapes. Thus the need to include both terms was not necessary while investigating female body image disturbances.

Reasons for Exercise Inventory (REI). The REI (see Appendix C) is a 24-item, 7-subscale self-report inventory purporting to evaluate motives for engaging in exercise

activities (Silberstein et al., 1988). The seven REI subscales include exercising for weight control, fitness, health, improving body tone, improving overall physical attractiveness, mood enhancement, and enjoyment. Subjects rated the importance of each exercise motive from (1) not at all important to (7) extremely important. Mean scores were determined for each motive, and the higher score identified the main reasons individuals engaged in exercise. Silberstein et al. (1988) reported that the seven subscales all reported sufficient reliabilities, including fitness ( $\alpha = .80$ ), health ( $\alpha = .78$ ), body tone ( $\alpha = .73$ ), weight control ( $\alpha = .81$ ), mood enhancement ( $\alpha = .79$ ), physical attractiveness ( $\alpha = .70$ ) and enjoyment ( $\alpha = .71$ ). However, according to Tabachnick and Fidell (1989), the small number of items within each subscale could contribute to the instability of this inventory.

Attitudes Toward Sport Advertising Scale (ATSA). Rabak-Wagener et al. (1998) designed a survey instrument to measure beliefs and behaviours towards fashion advertising. The ATSA (see Appendix D) is an 11-item instrument that was modified to be of functional value to the current research, thus the word "fashion" was replaced with the word "sport", or the same-meaning derivatives. A total score was calculated for all 11 items, which has been identified by Rabak-Wagener et al. (1998) as an overall perception of body image. The higher the total mean score on the scale indicated greater body image disturbances. The original scale was reported to be both valid and reliable, and test-retest methodology was also deemed appropriate at  $\alpha = .82$  (Rabak-Wagener et al., 1998).

### Experimental Manipulation of Sport Advertisements

A one-year period (1999) of the three highest-rated consumer-based sport and fitness magazines was the initial template for retrieving sport advertisements. The SRDS Consumer Magazine Advertising Source reports circulation numbers for publication and advertising purposes. The magazine sample included Shape magazine, with reported Canadian circulation numbers of close to 70, 000 over the 6-month period ending in December 1999. Fitness and Self magazines were also used, with Canadian circulation numbers of 38, 700 and 35, 200 respectively, over the 6-month period ending December 1999.

The sport advertisements employed in the current study have been defined as any pictorial descriptions of athletic shoes that included the brand name prominently displayed. Athletic shoes were chosen as the advertising category for means of consistency and elimination for the need to yoke the advertisements within each experimental group (i.e., model and product-only advertising). Additionally, the National Trade Databank reported that sporting footwear sales were second to sport equipment with 31.6% of the total market share in 1996. All advertisements that promoted sport and fitness shoes were taken from the magazines, eliminating only duplicate advertisements. Subsequently, graduate class participants served as coders for the advertisements. There was no training for the coders, as it was important that the sample of advertisements be viewed objectively. The researcher also coded the advertisements based on the same criteria, and comparisons were made for interrater reliability. All advertisements were viewed and rated on a 5-point scale, including (1) most model-related, (2) somewhat model-related, (3) neither model nor product related, (4) somewhat product-related, and



(5) most product-related. The scores were summed, and the 15 highest and 15 lowest scoring advertisements were selected, thus representing each category (i.e, model-related and product-related advertising). The advertisements were then scanned into two Microsoft Office PowerPoint<sup>®</sup> presentations representing the model- and product-related sport advertisement experimental conditions independently. The model-related and product-related advertising experimental conditions, represented by separate randomly assigned groups within the undergraduate classes, were exposed to presentations that were similar in every aspect except the exact advertisement displayed. The presentation was set up to reveal a new advertisement every 15 seconds until the 15 advertisements had been viewed. This was an appropriate manipulation of the conditions, as the subjects were exposed to advertising for approximately 4 minutes. Researchers investigating the effects of advertisements have reported to expose subjects to advertisements for between five and ten seconds (Heinberg & Thompson, 1995; Lavine et al., 1999; Rocchio, 1995). The final experimental condition, the control, was not exposed to an advertising presentation.

#### Experimental Randomization

The participants were randomly assigned to one of the three experimental groups, including individuals who were exposed to model-only sport advertisements, product-only sport advertisements, or no exposure to sport advertisements. The process of randomization was conducted by employing the participants' first initials of their last names, which was assumed to be unrelated to the participant characteristics under investigation in the current study. The researcher divided the alphabet into three categories, including the letters A through H, I through P and Q through Z. At the onset

of the post-test, an overhead depicting the alphabetized categories and a designated classroom, was presented to each of the six classes from which participants were selected. The individuals were asked to report to a classroom that was associated with the first initial of their last name. Research assistants also accompanied the respective individuals to the classroom destinations. Based on this randomization, there was no association between the experimental group and the alphabetized categories, and individuals had an equal opportunity to be in the product-only, model-only, or control group during any given data collection (refer to Table 1).

Table 1

Random Assignment by Selected Class (Faculty) and the Alphabetized First Letter of the Participants' Last Name

Selected Class (by faculty)	Alphabetized Categories for Participants' Last Name	Experimental Group Designation
Business	A-H I-P Q-Z	Product-Only Model-Only Control
Sociology	A-H I-P Q-Z	Control Model-Only Product-Only
Communication Studies (#1)	A-H I-P Q-Z	Model-Only Control Product-Only
Human Kinetics (#1)	A-H I-P Q-Z	Product-Only Model-Only Control
Communication Studies (#2)	A-H I-P Q-Z	Control Model-Only Product-Only
Human Kinetics (#2)	A-H I-P Q-Z	Model-Only Control Product-Only

The process of randomization resulted in similar sample sizes within each of the three experimental groups (Control:  $n = 70$ ; Model-only:  $n = 79$ ; Product-only:  $n = 81$ ). It was assumed that the population distribution was normal within each treatment group, and the variances within each group were equal, in addition to the homogeneity of covariance between the trials.

### Pilot Testing

For the purpose of ensuring comprehension of the experimental protocol, and the guidelines for conducting the research, a pilot test was completed prior to the actual experimental trial. The pilot test was conducted in three Human Kinetics classes representing each of the experimental conditions (model-only, product-only, and control), and only females were asked to participate in the study. These Human Kinetics classes were not included in the experimental conditions of the study. The questionnaires were administered in person by the researcher, and full instructions were provided, in writing, on the front page of the questionnaire booklet. Any further questions were addressed prior to the commencement of the testing. Confidentiality and anonymity of subjects was assured. The sport advertisements were presented using a data projection unit and PowerPoint<sup>®</sup> at the front of the class. Once the presentation had ended, the students were asked to complete all five sections of the questionnaire booklet, including demographic information, the three body image modalities, and the attitudes towards sport advertising. The students were then asked to return the questionnaires to the researcher. The pilot test only included one test session rather than the test-retest methodology that was employed during the experimental protocol. The purpose of the pilot test was to determine the ease of understanding and general emanation of the experimental procedures.

The pilot test data were analyzed for trends and the possible identification of problems or concerns. It was important to ensure that all questionnaires were easily understood and could be accurately completed in the time allotted.

### Experimental Procedure

Pre-test. Female students from university undergraduate classes were asked to remain in class to take part in an experimental study. It was emphasized that participation in the study was elective and would not influence the individual's grades in the course. Participants were also ensured that the completion of the survey instrument implied informed consent. The instrument also included a written notification that all responses would remain confidential, and that anonymity was assured (see Appendix E).

The questionnaires were administered in person by the researcher, and full instructions were provided, in writing, on the front page of the questionnaire booklet. Any further questions were addressed prior to the commencement of the testing. The students were then asked to complete all five sections of the questionnaire booklet (i.e., demographic data, SMBI, SPAS, REI, & ATSA instrument). The questionnaires took approximately 20 minutes to complete. Once completed, the individuals were asked to return the questionnaires to the researcher.

Post-test. The experimental protocol was identical for the two conditions, except for the advertisements that were displayed. Approximately one month following the pre-test, female students from the same undergraduate classes were again asked to remain in class to take part in the experimental study, and were subsequently randomly assigned, employing alphabetized last names, to one of the three experimental groups. It was then re-ensured that participation in the study was elective and would not influence the

individual's grades in the course. Participants were also ensured that the completion of the survey instrument, which was identical to the pre-test instrument, implied informed consent. The instrument also included a written notification that all responses would remain confidential, and anonymity was assured.

The questionnaires were administered in person by the researcher, and full instructions were provided, in writing, on the front page of the questionnaire booklet. Any further questions were addressed prior to the commencement of the research. For the two experimental groups, the sport advertisements were then presented via PowerPoint<sup>®</sup> and a projection unit at the front of the class for approximately four minutes. Once the presentation had ended, the students were asked to fill out the five sections of the questionnaire booklet, where each section was representative of the body image modalities and the attitudes towards sport advertising, in addition to demographic data. Once completed, the students were asked to return the questionnaires to the researcher, upon ensuring that all questions had been answered. The control group was asked to complete the questionnaire booklet immediately upon receipt, therefore having no exposure to the sport advertisements.

### Design and Analyses

Measures of cognitive (Silhouette; Stunkard et al., 1983), affective (SPAS; Martin et al., 1997), and behavioural (REI; Silberstein et al., 1988) body image served as dependent variables in the current research, and were analyzed conjointly as a multidimensional measure of body image. The Attitudes Towards Sport Advertisements Scale (Rabak-Wagener et al., 1998) was the fourth dependent variable and was analyzed separately. The independent variables consisted of time of testing, including the pre and

post-test scores, and the experimental groups, which were labeled according to the advertising format viewed.

Reliability and validity are essential criteria for assessing the quality of all measurement devices and procedures (Gravetter & Wallnau, 1992). An instrument displays validity if it measures what it is supposed to be measuring, whereas reliability refers to the measurement being consistent and accurate (Baumgartner & Strong, 1998). The measurement process in descriptive studies is susceptible to error due to the intangible nature of the conditions under investigation. For this reason, researchers must attempt to maximize the quality of the measurement instruments and procedures that are employed (Gravetter & Wallnau, 1992). Consequently, Principle Components Analysis and Varimax Rotation were used as statistical means for examining construct validity and Cronbach's alpha was the statistical measure of internal consistency.

Following measures of internal consistency (Cronbach's alpha) and Principle Component Analysis, repeated measures analyses with multiple dependent variables were conducted using the multivariate mixed model. The multivariate mixed model analysis treats the experimental groups (model-only, product-only, and control exposure) as a true multivariate case by forming a linear composite of the three body image modalities (dependent variables) to discriminate among the levels of the independent variable. The main effect for the three groups, the main effect for time (pre- and post-test), and the group by time interaction were calculated using specific F-ratios. When significant F ratios were obtained at  $p \leq 0.05$ , post hoc tests were conducted to determine exactly where significant differences existed. Paired t-tests were also conducted in order to address the hypotheses and study mean differences within each experimental group.

The ATSA (Rabak-Wagener et al., 1998), representing the fourth dependent variable, was analyzed independently using a repeated measures ANOVA design for the pre-and post-test scores. Means and standard deviations were also calculated, compared, and analyzed. In addition to employing the ANOVA design to investigate total body image disturbances on the ATSA, paired t-tests were conducted to address the hypothesis.

Assumptions of repeated measures analysis, including both the multivariate mixed model and ANOVA, were considered. According to Gravetter & Wallnau (1992), observations within each treatment condition are assumed to be independent, the population distribution is normal within each treatment group, and there is homogeneity of covariance between the trials. Additionally, variances of the population distribution for each treatment should be equivalent.

## CHAPTER IV

### Results

#### Participant Characteristics

Female participants (Pre-test:  $n = 302$ ; Post-test:  $n = 291$ ) responded to several demographic questions including program and year of study, exercise frequency and specific activities, and fitness magazine reading frequency (refer to Table 2). Only those participants that completed both the pre and post-test questionnaires were included in the experimental sample ( $N=230$ ). Participants were currently enrolled in undergraduate programs at the University of Windsor and approximately one half of the individuals were predominantly in their first year of studies, whereas the other half were in upper year studies (53.5%). Most of the current sample reported exercising at least once a week (80%). Of those participants who exercised, the most prevalent activities included running, biking, or swimming (60%), and weight training (39%). Furthermore, a small number of participants indicated attending aerobics classes (24%), and competing in team and individual sports (19% and 20%, respectively). In addition to exercise frequency, fitness magazine reading frequency was also of interest in the current study as an indication of possible sport advertising exposure. From the sample, 81 participants (35%) indicated reading fitness magazines at least once every three months.

Self-reported heights and current and ideal weights, in addition to calculated Body Mass Indices (BMI)<sup>1</sup> are represented in Table 3. According to Cash et al. (1989), there is a high correlation between subjects' self-reported and actual height and weight measures.

---

<sup>1</sup> BMI – Body Mass Index is calculated using Quetelet's index, which is obtained by dividing the individuals' weight (in kilograms) by the squared sum of their height in meters (Wilmore & Costill, 1994).



Table 2

A Comparison of the Number of Participants Within the Experimental Groups (and %) on Variables of Reported Year of Study, Exercise Frequency, Activity Preference, and Reading Frequency

Variables	Total (n =)	Model- Only (n =)	Product- Only (n =)	Control (n =)
Total	230	79	81	70
<b>Year of study:</b>				
First year	107 (46.5%)	35 (44.3%)	42 (51.9%)	30 (42.9%)
Second year	72 (31.3%)	24 (30.4%)	26 (32.1%)	22 (31.4%)
Third year	28 (12.17%)	10 (12.7%)	8 (9.9%)	10 (14.3%)
Fourth year	17 (7.39%)	9 (11.4%)	3 (3.7%)	5 (7.1%)
Other	6 (2.6%)	1 (1.3%)	2 (2.5%)	3 (4.3%)
<b>Exercise:</b>				
Yes	183 (79.57%)	63 (79.7%)	63 (77.8%)	57 (81.4%)
No	47 (20.43%)	16 (20.3)	18 (22.2%)	13 (18.6%)
<b>Exercise Frequency:</b>				
Not at all	47 (20.43%)	16 (20.3%)	18 (22.2%)	13 (18.6%)
2 or fewer times a week	93 (40.43%)	26 (32.9%)	34 (42.8%)	33 (47.1%)
3 or more times a week	90 (39.13%)	37 (46.8%)	29 (35.8%)	24 (34.3%)
<b>Activity:</b>				
Running/Biking/Swimming	134 (58.26%)	51 (64.6%)	45 (55.6%)	38 (54.3%)
Weight Training	89 (38.7%)	32 (40.5%)	28 (34.6%)	29 (41.4%)
Aerobics	54 (23.48%)	20 (25.3%)	20 (24.7%)	14 (20%)
Team Sports	44 (19.13%)	16 (20.3%)	16 (19.8%)	12 (17.1%)
Individual Sports	48 (20.87%)	16 (20.3%)	14 (17.3%)	18 (25.7%)
<b>Reading:</b>				
Yes	81 (35.22%)	33 (41.8%)	26 (32.1%)	22 (31.4%)
No	149 (64.78%)	46 (58.2%)	55 (67.9%)	48 (68.6%)
<b>Reading Frequency:</b>				
Not at all	150 (65.22%)	46 (58.2%)	56 (69.1%)	48 (68.6%)
Once every three months	35 (15.22%)	17 (21.5%)	7 (8.6%)	11 (15.7%)
Once a month	25 (10.87%)	11 (13.9%)	7 (8.6%)	7 (10%)
2 times a month	12 (5.21%)	3 (3.8%)	6 (7.4%)	3 (4.3%)
3 or more times a month	8 (3.47%)	2 (2.5%)	5 (6.2%)	1 (1.4%)

A paired sample t-test was used as a comparison of means between the reported current and ideal weights, and a significant difference was found ( $t = 10.726$ ;  $p \leq 0.01$ ).

In the current study, 70% of the participants were objectively classified as normal weight, based on their calculated BMIs. In spite of normal BMI ranges (i.e., 18.5-25kg/m<sup>2</sup>), these individuals reported their ideal weight as being significantly lower than their current weight ( $t = 8.966, p \leq 0.01$ ). Only 7% of the current sample had BMIs less than 18.5 kg/m<sup>2</sup>, and their reported current and ideal weights were not significantly different. The remainder of sample in the study (19%) had objective BMIs that were above 25 kg/m<sup>2</sup>, and these individuals reported their ideal weight as being significantly less than their current weight ( $t = 9.171, p \leq 0.01$ ). There is 4% of the sample that is unaccounted for based on incomplete questions pertaining to body weight and height.

Table 3

Descriptive Statistics for Self-reported Age, Height and Weight Variables, and Calculated Body Mass Indices (BMI)

Measure	Total	Model-Only (M-O)	Product-Only (P-O)	Control
Age (yrs)	$\bar{X} = 20.31$ s.d. = 2.64	$\bar{X} = 20.62$ s.d. = 3.34	$\bar{X} = 20.10$ s.d. = 2.57	$\bar{X} = 20.20$ s.d. = 1.62
Height (m)	$\bar{X} = 1.65$ s.d. = 0.007	$\bar{X} = 1.664$ s.d. = 0.007	$\bar{X} = 1.660$ s.d. = 0.0068	$\bar{X} = 1.649$ s.d. = 0.007
Weight (kg)	$\bar{X} = 62.3$ ** s.d. = 11.36	$\bar{X} = 60.13$ s.d. = 8.69	$\bar{X} = 64.20$ * s.d. = 11.90	$\bar{X} = 59.78$ s.d. = 11.12
Ideal Weight (kg)	$\bar{X} = 56.69$ s.d. = 7.62	$\bar{X} = 56.95$ s.d. = 6.21	$\bar{X} = 56.85$ s.d. = 8.72	$\bar{X} = 56.18$ s.d. = 7.87
BMI (kg/m <sup>2</sup> )	$\bar{X} = 22.41$ s.d. = 3.51	$\bar{X} = 21.72$ s.d. = 2.64	$\bar{X} = 23.45$ * $\psi$ s.d. = 4.08	$\bar{X} = 22.00$ s.d. = 3.44

Note. \*\* Total sample current weight significantly greater than ideal weight ( $p \leq 0.01$ )

\* P-O group significantly greater than the control ( $p \leq 0.05$ )

$\psi$  P-O group BMI significantly greater than the M-O group ( $p \leq 0.01$ )

The sample was non-probable in nature, due in part to the researcher's initial choice of classes within certain faculties. As a result, there were several faculties represented in the current study, and there were no significant differences between

faculty distinctions. Multivariate statistics performed on the data excluding Human Kinetics and Business classes did not show any significant group effect, but a significant main effect for time was noted ( $F = 5.578, p \leq 0.001$ ). Furthermore, a repeated measures MANOVA was conducted on the Human Kinetics and Business participants, and a significant time effect was noted ( $F = 6.849, p \leq 0.001$ ).

### Instrument Properties

The internal consistencies were determined for each of the body image scales using Cronbach's Alpha scale reliabilities on SPSSx. All scales demonstrated adequate internal consistencies ( $\alpha = .68$  to  $.90$ ), except the REI, in which each subscale was analyzed separately and the deletion of certain items, including the items consisted in the Tone subscale, was necessary to obtain adequate internal consistencies ranging from  $.72$  to  $.85$  (see Appendix F). Following the deletion of the items, a Principle Components Extraction with Varimax Rotation was conducted using factor analysis on the REI. The number of factors extracted was based on the requirement that item loadings were higher than  $.50$  on a rotated factor (Gravetter & Wallnau, 1992). The resultant factor structure comprised four factors that paralleled the factors that were identified by Cash et al. (1994), and were similarly labeled fitness/health management, weight/appearance management, stress/mood management, and socializing. However, based on Cash et al.'s (1994) observation that the only factor to be significantly associated with body image disturbances was weight/appearance management, further analyses included only this factor of the REI. Also, the weight/appearance management factor was the only factor to be significantly correlated to the SMBI ( $r = .427, p \leq 0.01$ ) and SPAS ( $r = .619, p \leq 0.01$ ) measures of body image in the current study.

### Multidimensional Properties of Body Image

The multidimensional nature of body image was analyzed using Principle Components Analysis and Varimax rotation with Kaiser Normalization. Three components with factor loadings ranging from .554 to .839 were observed. The four questions on the SMBI were all clustered as one component, therefore appropriately labeled Cognitive measure of body image. The nine items on the SPAS were also clustered in an independent component, and labeled Affective measure of body image. Furthermore, the Behavioural measure of body image was represented by the four questions that comprise the weight/appearance management factor of the REI, which were also independently clustered as the third component. Therefore, the multidimensional nature of body image has been identified by three modalities, labeled Cognitive, Affective, and Behavioural. In addition to factor analysis, all scales were significantly correlated to one another ( $r = .417$  to  $.542$ ,  $p \leq 0.01$ ), which is an indication that the SMBI, SPAS, and REI weight/appearance management subscale are related, and can be used to measure body image. The ATSA total score is also significantly correlated to the other scales ( $r = .362$  to  $.769$ ,  $p \leq 0.01$ ).

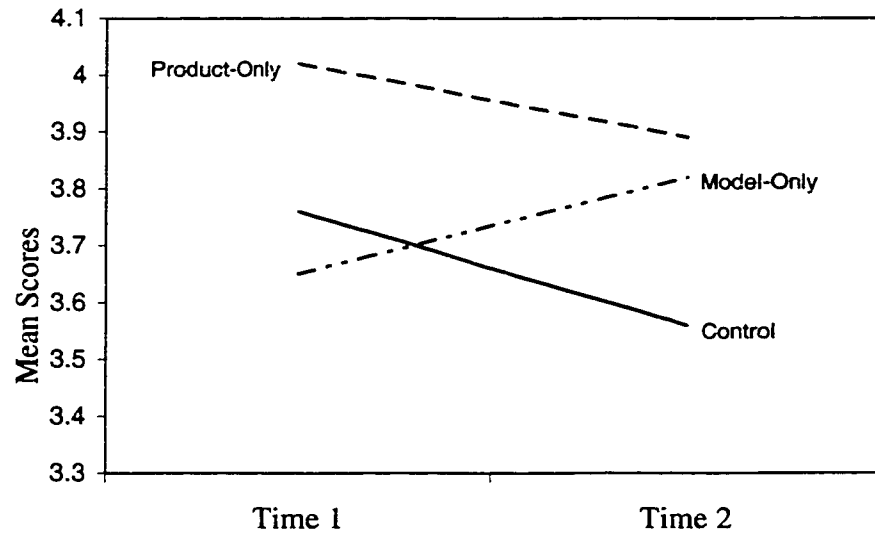
### Analyses of Research Questions

In order to investigate the relationship between the body image variables (i.e., cognitive, affective, and behavioural modalities) and the effects of a four-minute sport advertising manipulation in a multidimensional analysis, a repeated measures multivariate mixed model was employed. Results indicated that there was a significant main effect for time ( $F = 3.097$ ,  $p = 0.028$ ), however no significant main effect for group ( $F = 1.183$ ,  $p = 0.314$ ) or group by time interaction ( $F = .404$ ,  $p = 0.876$ ) was found.

Therefore, regardless of experimental group (model-only and product-only sport advertising or the control), body image disturbances changed significantly from the pre-test to the post-test. Furthermore, the groups did not differ in terms of body image disturbances. Additional univariate analyses indicated a significant time effect for the Social Physique Anxiety Scale ( $F = 8.248, p = 0.005$ ) and a significant main effect for group ( $F = 3.461, p = 0.033$ ) on the scale, with follow-up post hoc tests revealing a significant difference between the product-only sport advertising exposure group and the control group ( $\bar{X} = 3.31, p = 0.039$ ). However, there was no significant interaction effect on the SPAS.

A repeated measures ANOVA was used to investigate the effects of sport advertising exposure on the Attitudes Towards Sport Advertising Scale. There were no significant main effects, however a significant group by time interaction was found ( $F = 3.896, p = 0.022$ ; see Figure 2). Trends in the data become obvious when comparing mean scores within the groups during the pre and post-tests. The control group reported lower mean scores on the ATSA on the post-test compared to the pre-test ( $\bar{X} = 3.58, SD = 1.16$  &  $\bar{X} = 3.76, SD = 1.05$ , respectively), although this finding is not significant.

ATSA Mean Scores  
(Group by Time Interaction)



**Figure 2.** Group mean scores on the ATSA during the pre-test (time 1) and the post-test (time 2) demonstrating a significant interaction ( $p \leq 0.05$ ).

The model-only sport advertising exposure group demonstrated near significant differences in means on the total score of the ATSA ( $t = -1.881$ ,  $p = 0.064$ ). Finally, the product-only sport advertising exposure group mean scores on the total ATSA were lower following the advertising exposure (Pre-test:  $\bar{X} = 4.02$ ,  $SD = 1.25$  & Post-test:  $\bar{X} = 3.89$ ,  $SD = 1.27$ ). For a complete summary of all the means pertaining to the dependent variables during the pre-test, refer to Table 4. For a complete summary of all the means pertaining to the study dependent variables during the post-test, refer to Table 5.

Table 4

Means ( $\bar{X}$ ) and Standard Deviations (s.d.) on the Silhouette Measure of Body Image (SMBI), the Social Physique Anxiety Scale (SPAS), the Reasons for Exercise Inventory (REI) and the Attitudes Toward Sport Advertising Scale (ATSA) During the Pre-test

Measure	Total	Model-only (M-O)	Product-only (P-O)	Control
<b>SMBI:</b>				
Current (C)	$\bar{X} = 3.23$ s.d. = 1.03	$\bar{X} = 3.06$ s.d. = .84	$\bar{X} = 3.57^{**}$ ¥ s.d. = 1.01	$\bar{X} = 3.04$ s.d. = 1.15
Ideal (I)	$\bar{X} = 2.46$ s.d. = .64	$\bar{X} = 2.35$ s.d. = .58	$\bar{X} = 2.56$ s.d. = .67	$\bar{X} = 2.47$ s.d. = .68
Most desired opposite sex	$\bar{X} = 2.44$ s.d. = .68	$\bar{X} = 2.35$ s.d. = .60	$\bar{X} = 2.54$ s.d. = .69	$\bar{X} = 2.41$ s.d. = .73
Most desired same sex peer	$\bar{X} = 2.05$ s.d. = .68	$\bar{X} = 1.91$ s.d. = .64	$\bar{X} = 2.25^{*}$ ¥ s.d. = .66	$\bar{X} = 1.97$ s.d. = .70
Absolute discrepancy (C-I)	$\bar{X} = .86$ s.d. = .73	$\bar{X} = .78$ s.d. = .59	$\bar{X} = 1.04^{*}$ s.d. = .83	$\bar{X} = .74$ s.d. = .79
<b>SPAS</b>	$\bar{X} = 27.13$ s.d. = 7.56	$\bar{X} = 26.22$ s.d. = 7.51	$\bar{X} = 29.36^{**}$ s.d. = 3.26	$\bar{X} = 25.60$ s.d. = 6.99
<b>REI:</b>				
Weight/appearance management	$\bar{X} = 4.61$ s.d. = 1.34	$\bar{X} = 4.53$ s.d. = 1.35	$\bar{X} = 4.93^{*}$ s.d. = 1.41	$\bar{X} = 4.37$ s.d. = 1.20
Fitness/health management	$\bar{X} = 5.29$ s.d. = 1.02	$\bar{X} = 5.52$ s.d. = .99	$\bar{X} = 5.15$ s.d. = .98	$\bar{X} = 5.19$ s.d. = 1.08
Stress/mood management	$\bar{X} = 4.52$ s.d. = 1.43	$\bar{X} = 4.80$ s.d. = 1.44	$\bar{X} = 4.43$ s.d. = 1.34	$\bar{X} = 4.29$ s.d. = 1.48
Socializing $\delta$	$\bar{X} = 3.43$ s.d. = 1.69	$\bar{X} = 3.81$ s.d. = 1.79	$\bar{X} = 3.29$ s.d. = 1.58	$\bar{X} = 3.14$ s.d. = 1.63
<b>ATSA</b>	$\bar{X} = 3.74$ s.d. = 1.16	$\bar{X} = 3.57$ s.d. = 1.22	$\bar{X} = 3.94$ s.d. = 1.20	$\bar{X} = 3.72$ s.d. = 1.04

**Note.** \*\* P-O group mean significantly greater than the control group mean ( $p \leq 0.01$ )  
 ¥ P-O group mean significantly greater than the M-O group mean ( $p \leq 0.01$ )  
 \* P-O group mean significantly greater than the control group mean ( $p \leq 0.05$ )  
 $\delta$  Significant group effect ( $F = 3.100, p = 0.047$ )

Table 5

Means ( $\bar{X}$ ) and Standard Deviations (s.d.) on the Silhouette Measure of Body Image (SMBI), the Social Physique Anxiety Scale (SPAS), the Reasons for Exercise Inventory (REI) and the Attitudes Toward Sport Advertising Scale (ATSA) During the Post-test

Measure	Total	Model-only (M-O)	Product-only (P-O)	Control
<b>SMBI:</b>				
Current (C)	$\bar{X} = 3.30$ s.d. = 1.09	$\bar{X} = 3.19$ s.d. = .95	$\bar{X} = 3.57 *$ s.d. = 1.13	$\bar{X} = 3.13$ s.d. = 1.14
Ideal (I) $\Psi$	$\bar{X} = 2.55$ s.d. = .62	$\bar{X} = 2.44$ s.d. = .57	$\bar{X} = 2.68$ s.d. = .65	$\bar{X} = 2.51$ s.d. = .63
Most desired opposite sex	$\bar{X} = 2.46$ s.d. = .67	$\bar{X} = 2.38$ s.d. = .63	$\bar{X} = 2.59$ s.d. = .67	$\bar{X} = 2.40$ s.d. = .71
Most desired same sex peer	$\bar{X} = 2.00$ s.d. = .61	$\bar{X} = 1.95$ s.d. = .58	$\bar{X} = 2.11$ s.d. = .57	$\bar{X} = 1.93$ s.d. = .67
Absolute discrepancy (C-I)	$\bar{X} = .84$ s.d. = .75	$\bar{X} = .82$ s.d. = .73	$\bar{X} = .96$ s.d. = .80	$\bar{X} = .73$ s.d. = .72
<b>SPAS</b>	$\bar{X} = 27.91$ s.d. = 7.80	$\bar{X} = 27.57$ s.d. = 7.99	$\bar{X} = 29.63 *$ s.d. = 3.29	$\bar{X} = 26.30$ s.d. = 7.14
<b>REI:</b>				
Weight/appearance management	$\bar{X} = 4.59$ s.d. = 1.36	$\bar{X} = 4.56$ s.d. = 1.38	$\bar{X} = 4.78$ s.d. = 1.41	$\bar{X} = 4.39$ s.d. = 1.26
Fitness/health management	$\bar{X} = 5.29$ s.d. = 1.02	$\bar{X} = 5.48$ s.d. = .92	$\bar{X} = 5.22$ s.d. = 1.05	$\bar{X} = 5.14$ s.d. = 1.07
Stress/mood management	$\bar{X} = 4.73$ s.d. = 1.35	$\bar{X} = 4.93$ s.d. = 1.33	$\bar{X} = 4.63$ s.d. = 1.21	$\bar{X} = 4.60$ s.d. = 1.49
Socializing	$\bar{X} = 3.50$ s.d. = 1.61	$\bar{X} = 3.67$ s.d. = 1.75	$\bar{X} = 3.34$ s.d. = 1.57	$\bar{X} = 3.47$ s.d. = 1.46
<b>ATSA</b>	$\bar{X} = 3.71$ s.d. = 1.19	$\bar{X} = 3.73$ s.d. = 1.20	$\bar{X} = 3.81$ s.d. = 1.24	$\bar{X} = 3.56$ s.d. = 1.14

Note. \* P-O group mean significantly greater than the control group mean ( $p \leq 0.01$ )

$\Psi$  Significant group effect ( $F = 3.066, p = 0.049$ )

Individuals who reported height and weight variables that resulted in normal BMI ratings (i.e., 18.5-25 kg/m<sup>2</sup>) were investigated independently in a repeated measures



multivariate mixed analysis. There was a significant time effect ( $F = 1.826, p = 0.037$ ), group effect ( $F = 0.308, p \leq 0.01$ ), and interaction effect ( $F = 0.519, p \leq 0.01$ ).

Univariate analyses demonstrated significant time effects for all scales (SMBI:  $F = 0.007, p \leq 0.01$ ; SPAS:  $F = 5.479, p = 0.037$ ; REI:  $F = 0.232, p \leq 0.01$ ) and a group by time interaction (SMBI:  $F = 0.591, p \leq 0.01$ ; SPAS:  $F = 0.871, p \leq 0.01$ ; REI:  $F = 0.167, p \leq 0.01$ ). Participants who reportedly have BMIs exceeding  $25 \text{ kg/m}^2$  demonstrated a significant group by time interaction ( $F = 0.272, p = 0.02$ ), whereas analyses pertaining to those identified as underweight according to their BMIs (i.e., less than  $18.5 \text{ kg/m}^2$ ) were not significant.

### Analyses of Study Hypotheses

Hypothesis 1. It was hypothesized that following exposure to approximately four minutes of model-related sport advertising, females would rate their current body size as significantly larger on the post-test compared to the pre-test on the Silhouette Measure of Body Image (SMBI). To examine the hypothesis, repeated measures multivariate analysis of variance was conducted on the SMI exclusively. This hypothesis was rejected since there was no significant group by time interaction in the multivariate analyses for the current, ideal, opposite sex and same sex peer measures of the SMI. However, there was a significant time effect ( $F=2.410, p = 0.05$ ) and group effect ( $F=2.543, p \leq 0.01$ ) on the SMI. Univariate analyses indicated significant differences on scores from the pre-test to the post-test pertaining to both current ( $F = 3.268, p = 0.07$ ) and ideal ( $F = 5.690, p = 0.02$ ) ratings on the SMI, independent of sport advertising exposure. Also, significant group effects were discovered for current ( $F = 5.494, p \leq 0.01$ ), ideal ( $F = 2.815, p = 0.06$ ), and female peer ( $F = 4.856, p = 0.09$ ) ratings on the

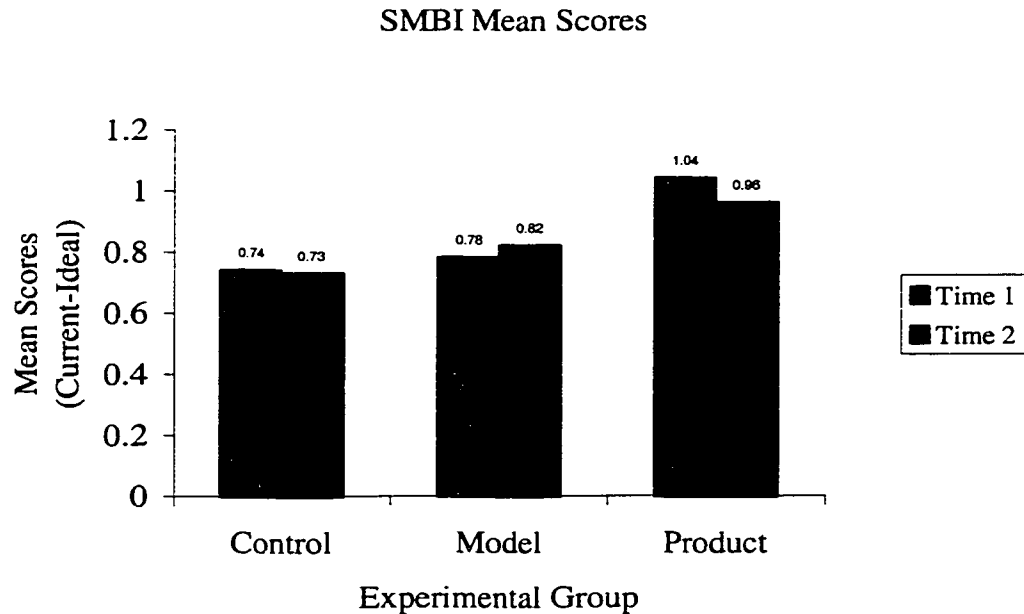
SMBI, independent of time. Post hoc analyses demonstrated significant differences between the product-only sport advertising exposure group and the control group ( $\bar{X} = .48, p \leq 0.01$ ), and the model-only sport advertising exposure and the product-only sport advertising exposure group ( $\bar{X} = .43, p = 0.03$ ). No significant differences were noted between the model-only sport advertising exposure and the control groups.

Participants' absolute discrepancy mean scores on the SMBI (Current – Ideal) did indicate trends for possible effects of exposure to sport advertising (see Figure 3). The mean scores were higher, yet not significant, on the post-test in the model-only sport advertising exposure group (Pre-test:  $\bar{X} = .78$ , Post-test:  $\bar{X} = .82$ ), whereas the mean scores were lower following product-only sport advertising exposure (Pre-test:  $\bar{X} = 1.04$ , Post-test:  $\bar{X} = .96$ ), and were virtually identical in the control group (Pre-test:  $\bar{X} = .73$ , Post-test:  $\bar{X} = .74$ ).

Hypothesis 2. Higher scores on the Social Physique Anxiety Scale (Martin et al., 1997) were predicted on the post-test following exposure to model-only sport advertising. Following the multivariate mixed analyses, univariate analyses indicated a significant time effect for the Social Physique Anxiety Scale ( $F = 8.248, p = 0.005$ ) and a significant main effect for group ( $F = 3.461, p = 0.033$ ). However, there was no significant interaction. Post hoc tests on the SPAS revealed a significant difference between the product-only sport advertising exposure group and the control group ( $\bar{X} = 3.31, p = 0.039$ ).

In order to examine the study hypothesis, a paired t-test analysis was used to determine possible differences between the mean total scores on the SPAS within each of the experimental groups. All groups demonstrated increases in SPAS scores from the

pre-test to the post-test (see Figure 4), however the change in scores for the model-only sport advertising exposure group was significant ( $t = -3.014$ ,  $p = 0.03$ ), thus the researcher failed to reject the hypothesis of no difference.



**Figure 3.** Mean scores for the control group, model-only sport advertising exposure group, and the product-only sport advertising exposure group on the Silhouette Measure of Body Image during the pre-test (time 1), and the post-test (time 2).

**Hypothesis 3.** In order to improve the internal consistencies of the subscales, several items on the Reasons for Exercise Inventory (Silberstein et al., 1988) were deleted, in addition to the subscale measuring Tone. Following the data reduction and Principle Components Analysis with Varimax Rotation, only one factor (weight/appearance management) was deemed appropriate for further analysis. The

repeated measures univariate analyses indicated no significant main effects or interaction. Upon further analyses of the REI, it was noted that there were no significant differences between the mean scores on the subscales (see Figure 5), hence, the hypothesis that post-test scores on the weight/appearance subscales would be higher following model-only sport advertising exposure was rejected.

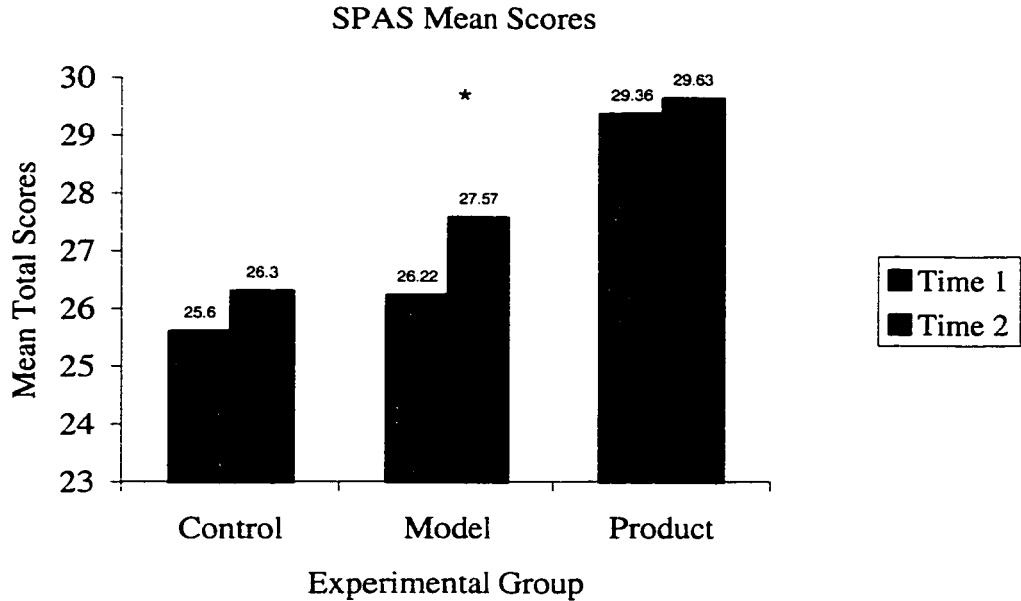


Figure 4. Mean scores for the control group, model-only sport advertising exposure, and the product-only sport advertising exposure groups on the Social Physique Anxiety Scale during the pre-test (time 1), and the post-test (time 2).

\* Significant difference between time 1 and time 2 ( $p \leq 0.05$ ).

**REI Mean Scores  
(Weight/Appearance Management)**

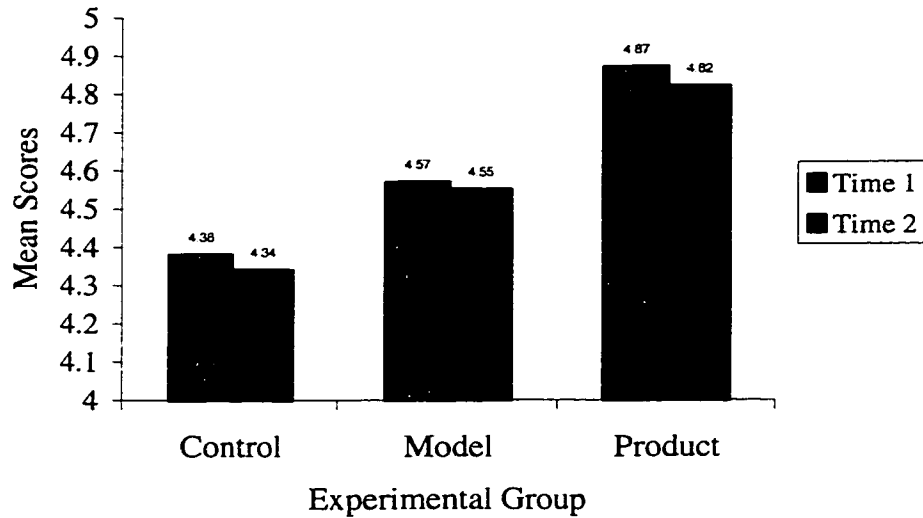


Figure 5. Mean scores for the control group, model-only sport advertising exposure group, and the product-only sport advertising exposure group on the Reasons for Exercise Inventory Weight/Appearance subscale during the pre-test (time 1), and the post-test (time 2).

Hypothesis 4. A repeated measures ANOVA was used to investigate the effects of sport advertising exposure on the Attitudes Towards Sport Advertising Scale. There were no significant main effects. A significant interaction was observed ( $F = 3.896, p = 0.022$ ). No significant differences were observed when a paired t-test was employed to determine whether exposure to model-only sport advertising would increase the post-test scores on the ATSA, and the hypothesis was therefore rejected. The mean scores in the model-only sport advertising group neared significant differences ( $t = -1.906, p = 0.06$ ; see Figure 6). The scores decreased from the pre-test to the post-test following product-only sport advertising exposure ( $\bar{X} = 43.32$  &  $41.94$ , respectively), and scores in the

control group also decreased from the pre-test to the post-test ( $\bar{X} = 40.71$  &  $38.97$ , respectively).

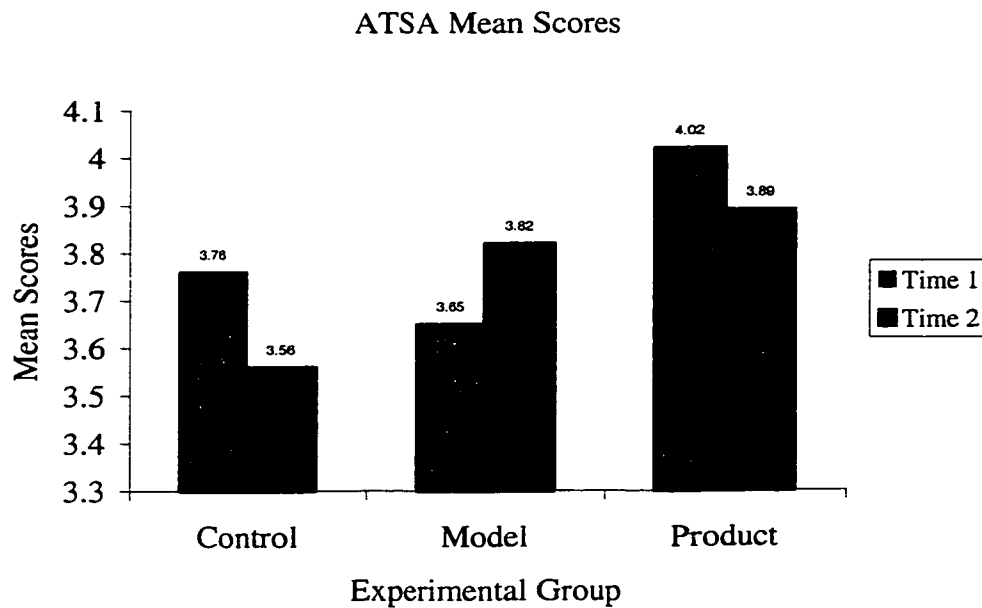


Figure 6. Mean scores for the control group, model-only sport advertising exposure group, and the product-only sport advertising exposure group on the Attitudes Toward Sport Advertising Scale during the pre-test (time 1), and the post-test (time 2).

#### Group Differences

Univariate analyses were conducted between the experimental groups on all scales and subscales in the current study, including the demographic variables. There were no significant differences between the groups on measures of exercise frequency, activity preference, reading frequency, or year of study. There was a significant group effect on the weight variable ( $F = 4.027$ ,  $p = 0.019$ ). The product-only sport advertising exposure group had a significantly higher mean weight compared to the control ( $\bar{X} = 9.72$ ,  $p = 0.048$ ). Furthermore, a significant group effect was noted on the

calculated BMI variable ( $F = 5.595, p = 0.004$ ), in which the product-only sport advertising exposure group had a significantly higher mean BMI compared to both the model-only sport advertising exposure group and the control ( $\bar{X} = 1.73, p = 0.008$  &  $\bar{X} = 1.44, p = 0.045$ , respectively). The pre-test results were indicative of a group effect on the SMBI-Current figure rating ( $F = 6.932, p \leq 0.001$ ) and SMBI-Most desired same sex peer figure rating ( $F = 5.698, p = 0.004$ ), in which post-hoc tests highlighted differences between the product-only sport advertising exposure group and both the control ( $\bar{X} = .53, p = 0.006$  &  $\bar{X} = .28, p = 0.043$ , respectively) and model-only sport advertising exposure group ( $\bar{X} = .50, p = 0.007$  &  $\bar{X} = .34, p = 0.007$ , respectively). Furthermore, the pre-test scores on the absolute discrepancy score on the SMBI (Current figure – Ideal figure) was also significantly different between the product-only group and the control ( $\bar{X} = .29, p = 0.048$ ), in addition to the SPAS mean scores ( $\bar{X} = .418, p = 0.009$ ), and the REI Weight/Appearance Management subscale ( $\bar{X} = .563, p = 0.05$ ). Furthermore, the pre-test scores on the REI-Socializing subscale resulted in a significant group effect ( $F = 3.100, p = 0.047$ ).

During the post-test, there was a significant group effect on the univariate analyses for the SMBI-Current figure rating ( $F = 3.825, p = 0.023$ ) and the SPAS ( $F = 3.62, p = 0.028$ ), in which the post-hoc tests indicated specific and significant differences between the product-only sport advertising exposure group and the control ( $\bar{X} = .44, p = 0.045$  &  $\bar{X} = .37, p = 0.032$ , respectively). The SMBI-Ideal figure rating also resulted in a significant group effect ( $F = 3.066, p = 0.049$ ), however no significant post-hoc differences were noted.

Univariate analyses were also conducted on the mean difference of scores between the pre and post-test and the experimental groups. There were no significant findings, thus the experimental groups were not significantly different on the discrepancy between the mean scores on the pre and post-tests.



## CHAPTER V

### Discussion

The study examined the effects of athletic footwear sport advertising on the cognitive, affective, and behavioural modalities of body image among female undergraduate students. The results of this exploratory research provide several indications of the possible role that sport marketing and advertising may have on the multidimensional construct of body image. Although there have been no previous studies that have attempted to measure body image as a multidimensional construct, the findings from the current research support this multidimensional structure. Furthermore, the Attitudes Towards Sport Advertising Scale (Rabak-Wagener et al., 1998) was an independent measure of body image in the current study. The ATSA was significantly correlated to the other measures of body image ( $r = .362-.769$ ,  $p \leq 0.01$ ), which implicates that the scale could be used in future research investigating the effects of sport advertising on body image.

#### Multidimensionality of the Body Image Construct

According to the interpretation of the results, the design of the current study viably measured the multidimensional construct of body image in a cross-sectional design. However, due to the lack of previous research in the areas pertaining to sport advertising effects, the structure of the body image construct, and the possible differences between advertising formats, a paucity of support for the present findings exists. As a result of the limited research, there is a possibility that body image cannot be measured in a cross-sectional design consisting of a one-month pre and post-test. Furthermore, few studies have measured body image disturbances in a repeated measures design (e.g.,

Heinberg & Thompspon, 1995; Lavine et al., 1999; Pinhas et al., 1996), thus the substantiation of a one-month timeframe for conducting pre and post-tests may not be evident. Despite the fact that the scales used in the current research have not been used prominently during pre and post-tests, researchers have demonstrated adequate test-retest reliability on the SPAS ( $\alpha=.82$ : Hart et al., 1989), and ATSA ( $\alpha=.82$ : Rabak-Wagener et al., 1998). There are no reports of test-retest reliabilities for the SMBI (Stunkard et al., 1983), or the REI (Silberstein et al., 1988). Nevertheless, results of the factor analysis of the scales and the correlations between the scales support the study of body image as a multidimensional construct. The results of the Principle Components Analysis were indicative of a questionnaire that measured three distinctly different factors, which were labeled according to the three modalities of body image (i.e., cognitive, affective, and behavioural). Also, the three scales that measured each of the modalities were significantly correlated to one another ( $r = .417-.542$ ,  $p \leq 0.01$ ), which implied that these scales adequately measured the same concept, namely body image. Furthermore, the correlation coefficients appropriately indicated that each scale was independent of the other, although significantly correlated, which demonstrates that the scales were not measuring exactly the same concept. Coefficient values that are closer to a perfect correlation would tend to indicate that the scales were measuring nearly identical concepts. This further supports the contention that the cognitive, affective, and behavioural modalities of body image were measured in the current study. Body image can be measured as a multidimensional construct and future research should account for the dimensional properties. Cash (1994) reported that researchers should not consider

body image as a unitary construct, and Bane and McAuley (1998) also allude to the validity of studying body image as a multidimensional construct.

### Multivariate Mixed Model

#### Interpretation of Results

To determine the effects of sport advertising on the multidimensional body image construct, a repeated measures multivariate mixed model analysis technique was employed. There was a significant difference between the pre-test and the post-test scores, which were taken approximately one month apart. However, individuals exposed to product-only or model-only sport advertising did not demonstrate significantly greater body image disturbances compared to the subjects who were not exposed to a sport advertising manipulation. Furthermore, univariate analyses determined that the SPAS was the only instrument to demonstrate significant time and group effects, in which the product-only sport advertising exposure group means were significantly greater than the control group.

The lack of research pertaining to the effects of sport advertising, and the multidimensional nature of body image, leads to difficulties in determining possible associations in body image literature. However, when comparing the current results to previous investigations pertaining to the directional relationship of the effects of fashion advertising on body image, certain similarities are evident. For instance, Irving (1990) did not report significant differences in body image disturbances between females who were exposed to advertising models labeled as thin, average weight, oversize, and the no exposure control group. This evidence of a non-directional relationship between media exposure and body image has also been alluded to in other research. Rocchio (1995)

discovered that exposure to fashion advertising models did not significantly affect the body image measures, however a trend of larger reported body sizes following this exposure was noted. Trends were also evident in the current research, since participants in the model-only exposure group reported larger body sizes following the exposure to model-only sport advertising, and also reported greater levels of social physique anxiety on the SPAS (Martin et al., 1997), and body image disturbances on the ATSA (Rabak-Wagener et al., 1998). Finally, both Heinberg & Thompson (1995) and Lavine et al. (1999) provide further support of the general findings in the current research, since a directional relationship between advertising exposure and body image disturbances was dependent on classifying individuals according to pre-existing disturbances. Significant advertising effects were noted in groups of individuals who reported a predisposition for body image disturbances, which parallels the results of the current study. However, investigating the overall effects of fashion advertising on body image variables did not provide significant results (Heinberg & Thompson, 1995; Lavine et al., 1999). To explain the findings of the current research, the nature of body image, the experimental conditions, and the experimental manipulation must be examined.

#### Nature of Body Image Construct

The lack of a significant main group effect in the current study could be associated with the undesirability of the outcome. Body image disturbances are not socially desirable, nor are the known consequences that are related to these disturbances, such as eating disorders, exercise addictions, depression, and lack of self-confidence (Bunnell, Cooper, Hertz, & Shenker, 1992; Gustavson et al., 1990). As a result of this observation, individuals, independent of experimental exposure group, could be inhibited

by questions pertaining to body image and the effects of advertising, and be reserved in their honest responses for fear of disrespect and disapproval. David and Johnson (1998) alluded to an interesting continuum of social undesirability as it relates to media and advertising effects (see Figure 7). The outcomes of the advertising effects are divided into three categories that parallel the modalities of body image currently under investigation. According to David and Johnson (1998), distortions in one's perception of ideal body weight could be the first consequence of media and advertising effects (i.e., cognitive body image modality). At the next level, media images could have an effect on psychological factors (i.e., affective body image modality), such as physique anxiety. And finally the most undesirable consequences of advertising are behavioural in nature, such as an eating disorder or excessive exercise. This continuum introduces a novel approach to studying and measuring body image disturbances as they relate to the effects of advertising. Perhaps body image should be measured on a tiered or escalational basis using each scale as a representation of the consequences of the effects.

According to David and Johnson (1998), as the outcomes moved up the effects' hierarchy, individuals tended to differentiate more between social desirability and personal risk. For marketing researchers, it might be important to take into account the distinctions between personal and social risk. It is possible that an advertising campaign that is very effective in increasing product awareness and the surrounding implications associated with the product at the social level could have little consequence at the individual level, of which the examination of body image becomes important.

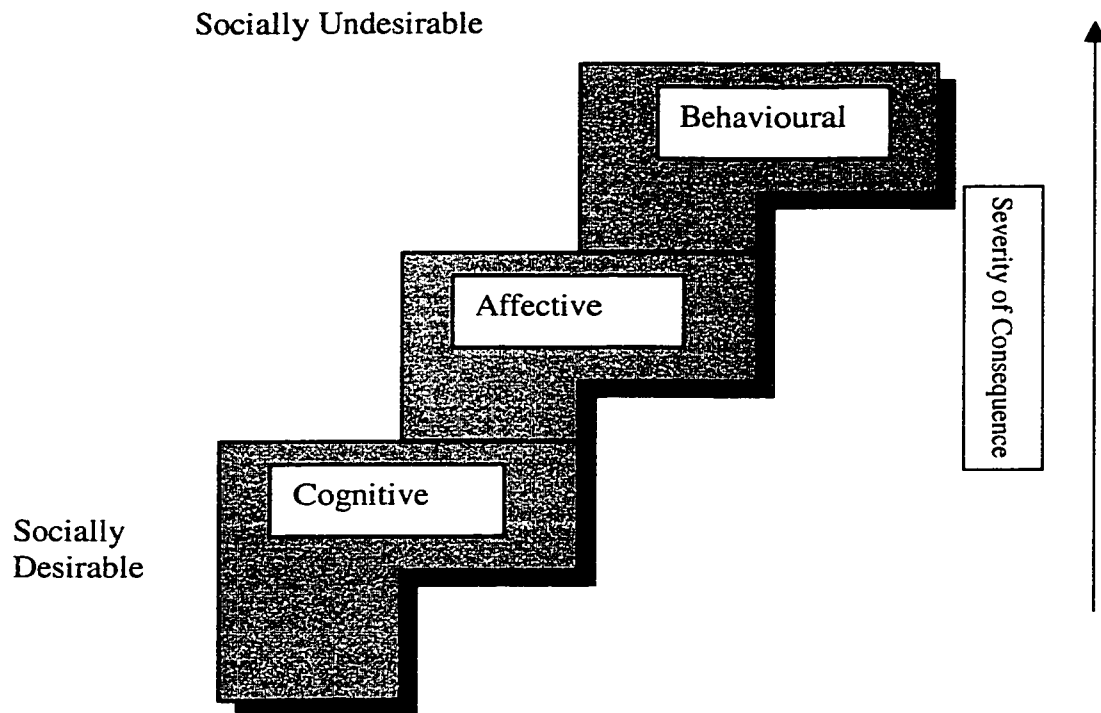


Figure 7. A continuum of the consequences of advertising effects: Modified from David and Johnson (1998).

### Experimental Conditions

The current finding of a significant time effect (i.e., post-test scores varied significantly from pre-test scores) can be partially explained by possible experimental conditions which are indirectly related to the use of self-report questionnaires. Self-report questionnaires often reveal only participants' perceptions and intentions, which do not always coincide with their actual behaviours (Schultz & Schultz, 1998). In marketing research, however, self-report surveys are used extensively in attempt to reveal certain trends in consumer perceptions and beliefs, and the resultant potential purchase behaviours (Dalrymple & Parsons, 1995). Surveys are an effective and efficient means of collecting data pertaining to sport marketing.

Testing and interaction effects. Due to the design of the study, and the nature of measuring body image and the associated perceived implications, testing and interaction effects could have impacted the post-test scores in the control group, which was not exposed to a sport advertising manipulation. Interaction effects can also influence individuals' scores independent of exposure group. As a result of learning, post-test scores can be altered due to previous testing using the identical questionnaires. When the completion of a pre-test changes the participants' responses on the post-test, this is referred to as interaction effects (Baumgartner & Strong, 1998). In studies involving measures of body image, it is often difficult to conceal the intentions of the researcher. This difficulty is a result of the direct questions that are required to study and measure body image and other self-related issues such as physical attractiveness and self-esteem. The researchers' obvious intentions, coupled with the nature of the body image construct, makes it difficult to study and measure body image objectively, thus resulting in possible testing and interaction effects.

In some instances, researchers attempt to disguise their intentions using deception techniques. Deception is often used in marketing and advertising research, and refers to the withholding, or altering of information in an attempt to hide the obviousness of the research question, and avoid succumbing to interaction effects (Evans et al., 1997). Deception was not used in the current study. The researcher did not want to alter the perceived purpose of the study, because the initiatives of the research could become both objectively and subjectively complicated as a result of deception. Also, the use of the SMBI, SPAS, REI, and ATSA in one questionnaire made the obviousness of studying body image variables very probable, and therefore deception techniques would have

likely been transparent. And finally, the Informed Consent Statement which was signed by the subjects accurately reflected the procedure and type of experiment, and the researcher wanted to ensure there were no misconceptions as to how the data was collected, interpreted, or applied.

Reaction effects. According to Baumgartner and Strong (1998), another possible reason for a significant main effect of time could be reactive effects. Experimental conditions that foster reactive effects could include self-report questionnaires, however it is more likely that participants were reacting to the repeated measure design, or being placed in separate experimental groups for testing. Participants were placed in groups during the post-test only, which was a distinctly different, yet necessary, protocol than the pre-test. This random assignment was likely more noticeable to the control group, who were obviously not exposed to sport advertising. The individuals who were placed in the product-only or model-only sport advertising exposure groups were exposed to a manipulation, unaware that there were participants who were not privy to a manipulation.

Placebo effects. The change in beliefs and reports of increased or lack of body image disturbances can be partially explained by placebo effects, in which subjects believe the treatment is supposed to change their attitudes and beliefs and therefore respond with a change (Baumgartner & Strong, 1998). It is likely that the product-only and model-only sport advertising exposure groups were affected by placebo effects at some capacity. Placebo effects are not readily discussed in marketing research, however in studies pertaining to consumer's perceptions, attitudes, and beliefs, several of the results could be explained by placebo effects. Attempting to control for placebo effects,



such as using a dependent analysis procedure or matched subjects design, could be essential to the future of sport marketing research as it relates to body image.

Random assignment. A random assignment of students was conducted using the first letter of the participants' last names, thus forming three different experimental groups. Despite the random assignment, it appears that significant differences between the groups existed prior to any manipulation. Specifically, the product-only sport advertising exposure group had initial, but not statistically significant greater mean scores on all modalities of body image (refer to Figures 3 through 6). However, upon the investigation of the pre-test mean scores and the post-test mean scores independently, there are significant differences between the product-only sport advertising exposure group and either or both the control and model-only sport advertising exposure group. Furthermore, the product-only sport advertising group was statistically different than the control group on the self-reported weight variable, and significantly different than the control and the model-only sport advertising exposure group on the BMI variable. The implication of this finding is that the participants in the product-only sport advertising exposure group had initial higher weights and BMIs, and could have had greater body image disturbances prior to the commencement of the investigation. These initial differences could have impacted the final results of the study, although the differences in these scores following sport advertising exposure were not significant. Therefore, for the purpose of the current research, these differences were not likely to have had significant implications, especially considering the lack of significant main effects for univariate analyses conducted on the difference of scores concerning the pre and post-tests between the experimental groups.

## Experimental Manipulation

Medium of projection. Projected images could influence the degree of effects of the sport advertisements on participants' body image scores. The use of a computer-generated PowerPoint<sup>®</sup> presentation to portray the images was determined to be an adequate means of delivering the sport advertisement manipulations. However, this medium does not accurately simulate the means in which participants would be affected by the advertisements. Studies using video manipulations (i.e., Heinberg & Thompson, 1995; Strauss, Doyle, & Kriepe, 1994), slides designed from magazine advertisements (i.e., Irving, 1990), and print manipulations (Cash et al., 1994; Mazis et al., 1992) have all alluded to adequate testing conditions and manipulation projection mediums. Therefore, the use of PowerPoint<sup>®</sup> to project images of sport advertisements may have been a valid and controllable manipulation medium.

Strength of the manipulation. The strength of the manipulation of advertising exposure could impact the extent of reactive and interaction effects, and the overall effects of sport advertising on body image (Heinberg & Thompson, 1995). Participants could overcompensate for their reports of the effects of advertising, thus indicating higher post-test scores. Conversely, participants could also disregard the effects of the sport advertising exposure and report similar or lower post-test scores compared to the pre-test, which would subsequently lower body image disturbances. The subjects in the control could also alter their perceptions, beliefs, and attitudes associated with sport advertising, despite not being directly exposed during the experiment. Since there were no questions pertaining to the degree of exposure to sport advertising prior to the current study, it is difficult to assess the strength of the manipulation. In essence, sport advertising could be

pervasive in the media and a mere four minutes of the manipulated exposure would not affect the years of previous exposure. Conversely, if sport advertisements are not prevalent, and given that only 35% of the participants indicated reading fitness magazines, it is possible that four minutes of exposure to novel advertising may have been effective in provoking a response.

Another consideration is the concept of perceptual vigilance. While studying the effects of advertising on smoking behaviour, Mazis et al. (1992) determined that the concept of perceptual vigilance provided a possible explanation for why smokers are likely to be more aware of cigarette advertisements. Mazis et al. (1992) claimed that users of a product may selectively attend to advertising messages. Therefore, not only readers of fitness magazines but also exercisers in the current study potentially attended to the sport advertisements, which is approximately 80% of the sample. It is, however, not possible to attend to and respond adequately to all messages directed towards consumers (Schultz & Schultz, 1998). Accordingly, an interest in exercise and fitness behaviours might affect advertisement recognition, rather than the advertisements encouraging physical activity. This is an important contention, as it was reported that a potential cyclical conundrum could be apparent; sport advertising that portrays the unattainable ideal may enhance body image disturbances. However, this cyclical association could be dependent on the degree of interest in physical activity, coupled with the current observation that body image predispositions could also determine the effects of advertising.

The strength of the manipulation could also account for the lack of a significant group effect in the current study. Several investigations pertaining to advertising

effectiveness and media effects have employed forced exposure to a treatment or manipulation (i.e., Heinberg & Thompson, 1995, Lavine et al., 1999; Rocchio, 1995). There has been no consistent duration of exposure, and an agreement as to the most effective manipulation has not been evidently reached. It is possible that 15 seconds of exposure to each sport advertisement did not represent an adequate treatment manipulation. The sport advertisements could be complex in nature, thus requiring more time to internalize and encode the visual and textual messages. Moreover, it is possible that there are differences in the length of time that is required to attend to the messages in sport advertising due to the format (i.e., model-only or product-only) of the advertisements. However, the trends in the current study demonstrate differences in mean scores on measures of body image between the exposure groups, which could be accounted for by an accurate manipulation.

Advertising format. The results of this exploratory research indicated no significant difference between the product-only and model-only sport advertising exposure and the no exposure control experimental groups, independent of the timing of the tests. Despite the assumption that there are visual differences between model and product-only sport advertising, there is a possibility of similar effects on consumer's perceptions, beliefs, and behaviours. For instance, the written messages and text that portray the advertiser's intentions may be similar in both model and product-only sport advertising. In fact, the written messages on product-only advertising could be more influential, since there are no visual performance indications. Advertisements displaying only the product could lead to the necessity of mental schemas. Schemas are integrated clusters of information in memory that are organized according to various topics, themes,

and types (Zimbardo, 1988). Once formed, schemas exert commanding influences on the way individuals recall and classify the context of the situation (Zimbardo, 1988). During the product-only sport advertising exposure, individuals could avail themselves of personal conceptual frameworks related to exercise and fitness, thus visualizing using the product (i.e., athletic footwear) and participating in habitual activities. These mental schemas are very important in consumer psychology and while assessing the impact of advertising, as the use of mental schemas individualizes the effects of advertising. As it is very difficult to measure consumers' perceptions, beliefs and attitudes regarding a specific advertisement, focus groups and consumer interviews would be effective methods of acquiring information pertaining to mental schemas and the associated perceptions and beliefs. However, due to the nature of body image disturbances, there are challenges to the use of focus interviews in body image research (Gustavson et al., 1990).

#### Social Physique Anxiety

Univariate analyses following the repeated measures multivariate mixed analyses indicated that the SPAS contributed to the significant time effect in the study. Furthermore, there was a significant difference between mean scores in the control group and the product-only sport advertising exposure group on the SPAS, although no main group effect in the multivariate mixed analyses was noted. The significant difference between the control group and the product-only sport advertising exposure group on weight and BMI measures cannot be discounted as a possible reason for the results on the SPAS. The significant time effect can be a result of the experimental design, including the possibility of testing, interaction, reactive and placebo effects. The significant

difference between the pre and post-test scores following model-only sport advertising exposure could also have contributed to the time effect. The differences between the control and product-only sport advertising exposure groups on measures of social physique anxiety highlights the importance of investigating public anxiety in addition to private anxiety pertaining to the effects of advertising. As was already mentioned, it is possible that the effects of product-only sport advertising were a result of participants' use of mental schemas to visualize themselves using the product, hence wearing the athletic footwear. Situations that foster wearing athletic footwear are commonly also situations that are opportune for the evaluation of an individual's physique, such as participating in sporting games and events, or fitness classes (Crawford et al., 1996). Therefore, the possibility that participants in the current study perceive greater social physique anxiety as a result of being exposed to product-only sport advertising and the associated use of mental schemas is likely.

Conversely, the participants exposed to model-only sport advertisements were exposed to the models and were likely evaluating the models' figures, rather than perceiving themselves under the scrutiny of others. Therefore, the subjectivity of the effects of sport advertising on social physique anxiety is likely greater in product-only advertising exposure groups rather than model-only advertising exposure group, when compared to the no-advertising control group. This contention has both positive and negative aspects. It may be beneficial for sport marketers to focus on the use of product-only sport advertisements, consequently honing in on the individuality and subjectivity of the effects of such advertisements, since personal perceptions and purchase behaviours are essential to the resultant financial benefits. However, if product-only sport

advertising enhances social physique anxiety, this could be detrimental to the consumers' health as they will be less likely to participate in activities that foster the possible evaluation of their physiques. Consequently, the need and demand for the product will also be diminished.

The repeated measures multivariate mixed analyses highlighted both significant and interesting results in the current exploratory research. Aside from the between-group findings, there were patterns within the model-only and product-only sport advertising exposure groups and the control group pertaining to body image disturbances.

#### Notable Trends

Within each group, trends pertaining to the effects of model-only and product-only sport advertisements, and the no-exposure control, were noted. The participants who were exposed to model-only sport advertising demonstrated higher mean scores on the cognitive and affective modalities of body image, in addition to the body image measure pertaining to the effects of sport advertising. Females exposed to product-only sport advertising demonstrated lower means scores on the cognitive and behavioural modalities of body image, in addition to the body image measure pertaining to sport advertising influence. Finally, the control group indicated fairly consistent scores on all modalities of body image.

#### Social Comparison

As a result of the trends in the research identifying higher mean scores following exposure to model-only sport advertising, it becomes evident that model-only sport advertising could be plausible for participants' use of a contrast effect and the social comparison theory. According to the theory, individuals are more willing to compare

themselves to others who are similar rather than individuals who are dissimilar (Festinger, 1954). Models represented in the sport advertisements employed in the current research could be viewed as desirable, yet likely unrealistic and unattainable. Myers and Biocca (1995) support this observation by reporting that very few females are genetically able to achieve the body shapes, sizes, and physical attractiveness depicted in advertising. Furthermore, females have only recently coveted the strong, athletic, and attractive physical characteristics that have been associated with fitness lifestyles (Bordo, 1993). These characteristics are likely portrayed in sport advertising, and while reviewing the trends in the current research, appear to affect body image disturbances among the female participants.

Physical attractiveness. The current research is indicative of a contrast effect, consequently inferring that the participants tended to alter their cognition, affect, and behaviours as a result of exposure to model-only sport advertising. This contention is supported by previous research by Cash et al. (1983), who exposed females to print advertising which depicted either physically attractive models labeled as professionals, physically attractive females who were not described as professional models, or non-physically attractive females. Upon viewing the advertisements, participants exposed to the physically attractive females (not professional models) rated their level of physical attraction as lower than those who were exposed to the other conditions (Cash et al., 1983). These findings were interpreted as supportive of a negative contrast effect. Since the effect occurred only for participants exposed to attractive females, which the authors related to female peers, rather than advertisements depicting professional models, Cash et al. (1983) concluded that peer beauty was a more appropriate standard for social



comparison than professional beauty. The importance of physical attraction is a well-documented fact in research pertaining to fashion advertising (Ibbetson, 1996), however the importance in sport advertising has not been addressed. In model-only sport advertising depicting athletic footwear, there could be more emphasis on muscularity and fitness and less on physical attraction. Accordingly, participants may have found it easier to compare themselves to the models in sport advertisements due to the lack of emphasis on qualities of professional physical attractiveness. Thus, sport advertising models may qualify as a more appropriate standard of social comparison. This observation could have endearing effects on body image disturbances, especially if the strong, muscular, athletic, and thin figure eventually becomes the standard for the ideal body. Females may continue to compare themselves to sport models, thus potentially introducing or enhancing body image disturbances, which may affect self-esteem and the individual's health, hinder physical fitness participation, sport product purchases, and perceptions, beliefs, and behaviours pertaining to the sport industry, companies, and organizations.

Ethnic diversity. Cultural and ethnic comparisons are also of importance, especially considering the lack of cultural diversity represented in the sport advertisements. All of the models in the sport advertisements were Caucasian, except one African-American sport celebrity. Due to the multicultural demographics at the University of Windsor (<http://cronus.uwindsor.ca/units/hro?hro.nsf/main?OpenForm>), there is a possibility that participants did not compare themselves or relate to the models in the sport advertising employed in the current study. Previous research has indicated differences in body image disturbances and perceptions of appearance based on ethnicity. Parker, Nichter, Nichter, and Vuckovic (1995) concluded that African-American females'

perceptions of beauty were less rigid than those of Caucasian females. Additionally, the overall body image disturbances were not as prevalent among the females of African-American decent (Parker et al., 1995). Beasley (1999) determined that race and body size of fashion models did not affect African-American females' perceptions of their own body image. It was also concluded that African American females did not suffer from body image disturbances to the same extent as Caucasian females, nor did they report being as affected by media images of the ideal female form (Beasley, 1999). Further studies have investigated other factors that affect body image disturbances, such as socioeconomic status, race, age, and sexual orientation. Although the research findings are often equivocal, data suggest higher rates of body image disturbances in the upper social classes (Crisp, Palmer, & Kalucy, 1976), among Caucasians (Gray, Ford, & Kelly, 1987), and homosexual individuals (Drewnowski & Yee, 1987). Therefore, the possible diversity of the current sample, coupled with the lack of ethnic representation in the sport advertisements, could lead to difficulties in attending to the model-only sport advertisements.

Celebrity endorsements. Previous researchers have indicated that top athletes frequently attempt to reduce their body weight and change their body shape in attempt to perform better (Powers, 1996). It was initially reported that sport advertisers portray successful athletes who themselves represent the ideal body, thus potentially further hindering the consumers' evaluations of their own body shape and size. However, in the current research, there were only two sport and fitness celebrities represented in the model-only sport advertising, which is an indication of the dearth of sport celebrities used in current sport advertisements directed toward females. Therefore, the impact of these

images may not have been more influential in affecting body image disturbances.

Additionally, Stotlar, Veltri, and Viswanathan (1998) found that female celebrities were not recognized in several product endorsements, thus substantiating the aforementioned contention that the impact of these messages may not have been more influential in affecting body image disturbances.

Predisposition to body image disturbances. In addition to physical attraction, ethnic diversity, and celebrity status, researchers have demonstrated that the comparative nature of individuals is affected by the degree of body image disturbances (Gunther & Mundy, 1993; Harris, 1995; Martin & Kennedy, 1993). According to Martin and Kennedy (1993), the tendency to compare oneself with others is greater among those with lower self-esteem and lower self-perception of attractiveness. Similarly, Harris (1995) indicated that individuals with body image disturbances and low body satisfaction also express greater tendencies to compare themselves to others. Therefore, it is likely that the individuals in the current sample that indicated a desire to lose weight, despite being objectively classified as normal and healthy by current standards, employed the social comparison theory, consequently further enhancing their body image disturbances. This comparison probably contributed to the trends in the research that demonstrated higher means on the body image modalities for individuals exposed to model-only sport advertising.

In addition to these trends, significant multivariate results were identified pertaining to participants with predispositions to body image disturbances. The participants were asked to report their current weight and ideal weight, in addition to height. Although individuals may distort estimates of their current body weight, these

distortions are not likely to have biased the results of this study, since actual physical parameters were not being assessed, but rather the participants' perceived size, cognitions, affect, and behaviours. In the current study, 70% of the participants were objectively classified as normal weight, based on their calculated BMIs. However, these individuals reported their ideal weight as being significantly lower than their current weight ( $t = 10.73$ ,  $p = 0.01$ ), identifying probable body image disturbances.

By partitioning the current sample according to BMI, there were significant findings on the effects of sport advertising on body image. Female participants who identified previous body image disturbances, based on their reported current and ideal weights, demonstrated significantly greater body image disturbances following model-only sport advertising exposure. The significant time and group effect, and interaction, in this segment of the current sample is an interesting observation, but one that is supported in previous research (i.e., David & Johnson, 1998, Pinhas et al., 1998, Thornton & Maurice, 1997). Therefore, it is possible that the effects of sport advertising on the cognitive, affective, and behavioural modalities of body image were dependent on an individual's predisposition to body image disturbances. However, caution must be taken in this observation, since it appears that any individuals that are exposed to advertising are susceptible to the effects of advertising. According to Thornton and Maurice (1997), a lack of report of previous body image disturbances did not indicate individuals' resistance or immunity to the influence of advertising and media effects. In their study, females with low adherence to an attractiveness ideal (i.e., a form of body image disturbance) did not choose to expose themselves to the advertising depicting the ideal figure, but were susceptible to the negative consequences that exposure to such

depictions are capable of eliciting (Thornton & Maurice, 1997). Therefore, sport advertising may have an enduring effect on body image disturbances. The awareness of the possible impact of sport advertising on consumers' perceptions and beliefs should be forefront in marketing research.

#### Attitudes Towards Sport Advertising

The ATSA (Rabak-Wagener et al., 1998) was used as an independent measure of body image. The repeated measures ANOVA resulted in a significant group by time interaction ( $F = 3.896, p = 0.022$ ), indicating that participants' scores were dependent on the format of sport advertising exposure. Specifically, model-only sport advertising exposure group mean scores increased from the pre to the post-test, whereas control group mean scores decreased from the pre-test to the post-test. Product-only sport advertising exposure group mean scores also decreased from the pre-test to the post-test. Aside from possible experimental conditions accounting for the decrease in control group mean scores, such as testing, reaction, and placebo effects, exposure to model-only sport advertising was evidently a factor in increasing body image scores. This observation is not surprising since the ATSA (Rabak-Wagener et al., 1998) questions addressed a specific link between body image and sport advertising. Sport marketing professionals should therefore be aware of the possible link between self-reported female body image disturbances and the effects of advertising.

It is possible that the ATSA could be used in the multidimensional model of body image when studying the effects of advertising, however this contention requires further analysis and does not emanate from a theoretical base. The scale was significantly correlated to the other instruments used in the current study ( $r = .362-.769, p \leq 0.01$ ). The

ATSA scale has demonstrated adequate structural properties to be considered for future use in sport marketing studies attempting to measure female consumers' perceptions, beliefs, and behaviours pertaining to advertising.

### Implications for Sport Marketing

The current findings and notable trends are indicative of possible differences between product and model-only sport advertisements. Sport marketing professionals need to be aware of possible differences in the advertising format, and the effects on the various modalities of body image. Despite insignificant results in the multivariate mixed analysis, the extrapolated trends allude to possible marketing implications respecting each of the modalities of body image. For instance, the within-group increase in discrepancy scores on the SMBI following model-only sport advertising exposure suggests possible cognitive effects of advertising exposure. These results indicate that individuals actually thought their current figure was larger following the exposure to model-only sport advertisements. Furthermore, although all scores on the Social Physique Anxiety Scale (Martin et al., 1997) increased from the pre-test to the post-test, the within-group differences in the model-only sport advertising exposure group were significantly increased. Additionally, mean scores in the model-only sport advertising exposure group approached significant differences between the pre and post-test on the ATSA (Rabak-Wagener et al., 1998). Therefore, there are consequences to the use of model-only sport advertisements.

It is possible that measuring the effects of advertising on body image requires separate analyses depending on the modality of the construct, or the consequences of the outcome, as suggested by David and Johnson (1998). The multidimensional nature of

body image may not be effective in displaying possible body image disturbances as a result of advertising exposure, as demonstrated in the insignificant between-group differences. However, the within-group trends and certain significant findings could be indicative of the importance of studying each aspect of body image separately. The cognitive aspect of body image was dependent on the sport advertising exposure, whereas the effects of sport advertising were evident in all groups pertaining to the affective dimension. Furthermore, the behavioural modality of body image did not demonstrate any effects of advertising exposure, as all group scores decreased very slightly from the pre-test to the post-test on the weight/appearance management subscale of the REI. This is an interesting observation, since it implies that exposure to sport advertisements, whether model-only or product-only format, did not alter the participants' reasons for exercising. Overall, implications for sport marketers are evident from the results of the current research, and future considerations should be directed at the potential to study consumers' perceptions, beliefs, and attitudes independently.

### Advertising Intentions

Implications for sport marketers become evident in observing the effects of model and product-only advertising, and the association with the intended and unintended consequences of sport advertising. Advertising intentions include increasing product awareness and sales, and these intentions are primarily met by creating needs and new anxieties among current and prospective consumers (Evan et al., 1997; Lasch, 1978; Pollay, 1986). According to Berkowitz et al. (1995) consumer needs, which are defined as the perceived difference between consumers' ideal and actual situations, are the focus of the marketing concept. Since there were no significant group effects of sport

advertising on body image measures in the current investigation, it is possible that the advertisements employed did not introduce or emphasize needs or create new anxieties among this sample. This is a consistent hindrance in advertising that employs sex appeal, such as sport advertising, as some experts argue that such appeals distract the audience from the purpose of the advertisement (Berkowitz et al., 1995). Therefore the results may imply difficulties in increasing product awareness and recognition in the sport environment, specifically athletic footwear.

Consequently, the importance of advertising appeal becomes apparent. According to Schultz and Schultz (1998), advertisers are required to identify the current and potential consumers' relevant needs and then direct their messages toward the appropriate segment of the population. It is unclear upon analyzing the results of the study whether sport marketers have accurately identified consumers' needs as they relate to body image. Psychologists have identified several human needs such as the innate primary needs (e.g., water, food, shelter, and security) and the learned or secondary needs such as power, status, achievement, esteem, of which body image is an integral aspect, and affiliation (Wortman & Loftus, 1981). Advertising appeals in sport and fitness industries may attempt to address secondary needs using both positive messages and implications. As a result, sport advertisements indirectly or directly indicate that something pleasant (i.e., strong, fit, physically attractive appearance) will happen if the product is used (Schultz & Schultz, 1998). It is possible that while attempting to introduce positive appeals by employing sport and fitness models, the resultant reaction is apathetic. The model-only sport advertisements may not address the secondary human needs, which could lead to hindering product purchase. Berkowitz et al. (1995) supports



this statement in arguing that many sex appeal advertisements are only successful at gaining the attention of the audience, but have little impact on how consumers think, feel, or act. In the current study, the insignificant findings between the experimental groups could be a result of the use of models in sport advertising compared to the use of products, thus highlights potential similarities and differences between the product-only and model-only sport advertising.

Advertisements that emphasize the product require the use of informational material in order to highlight advantages of the product, which enables the consumer to make more intelligent purchase decisions (Schultz & Schultz, 1998). Information that is made available to consumers can include price, quality, components and contents, and performance data, which can incorporate motivational and achievement-oriented statements. By employing positive appeals, this information can indirectly infer fulfilling secondary needs such as power, achievement, and esteem. Furthermore, if the outcome advocated in the message is either implied or known to be socially desirable, the advertising effects are more likely to be conceded by the consumer (Gunther & Mundy, 1993). It is possible that the outcome advocated in certain advertisements in the present study was not considered socially desirable, such as muscular builds. Salusso-Deonier, Markee, and Pedersen (1993) claimed that females tended to emphasize avoiding excessive bulk, whether fat or muscle. Sport marketers should be aware of the impact that social desirability can have on consumers' perceptions, beliefs, and behaviours.

Advertising and marketing implications that become apparent as a result of the current findings are primarily focused around the intentions of the sport marketers. The differences in body image mean scores within the product-only and model-only sport

advertising exposure groups, and the control group allude to possible differences between the sport advertising formats. One of the primary intentions of advertising, aside from product awareness, is to create needs and promote self-doubt and new anxieties (Lasch, 1978). The trends extrapolated from the current results introduced important notions regarding the effectiveness of employing female models in sport advertising in order to create needs and new anxieties, and promote self-doubt. As mentioned earlier, it is likely that individuals compared themselves to the models, and may have been more positively influenced by the products, however there was a lack of significant differences between the groups on the effects of model-only and product-only sport advertising. These observations have both defensive and critical implications for sport advertising. In its defense, sport advertising may not affect females' body image disturbances to the same extent as fashion advertising. Furthermore, the use of sport and fitness models may create new anxieties and promote self-doubt, which may induce consumers' struggle to attain the body shapes and sizes depicted in model-only sport advertising, which helps to perpetuate the sales of magazines and the products within (Seagal, 1997). Additionally, the differences between product-only and model-only advertising were not present in the study, therefore models depicted in the sport advertisements may not create more anxieties and promote more self-doubt compared to the messages and visual representations of the products themselves. This observation could warrant support from individuals who focus on advertising's social role. However, advertising effectiveness, purchase behaviours and the economic function and impact of the product may be hindered if the sport advertisements do not successfully create needs or highlight the

product (Pollay, 1986). This may also affect brand name and company recognition, attitudes towards the company, and the product quality (Dawar & Parker, 1994).

### Market Segmentation

There are several possible implications pertaining to the social and economic functions of sport marketing, including the importance of market segmentation and target markets in sport. The unique properties of the sporting industry require novel approaches to advertising the product (Mullin et al., 1993). However, these novel approaches have not been evident in past research, since sport marketers have placed more emphasis on mass marketing techniques rather than specific market segments (Fullerton & Dodge, 1995).

The insufficient differences between the groups exposed to model-only and product-only sport advertising, and the no exposure control group could be partially examined in terms of market segmentation. It is possible that current study participants typify a segment of the sport and fitness market that is referred to as prospective consumers. Prospective consumers are individuals that are not currently involved in or associated with sport and fitness, but have future capabilities and desires to become consumers (Mullin et al., 1993). Since prospective sport consumers are essential to the proliferation of sport marketing and advertising, it is important to address the needs and desires of this market segment. If such prospective consumers are not physically fit or have not been exposed to a sporting environment in the past, it is possible that they will not relate to the models that are employed in sport advertising. However, a visual representation of potential products that are used in the environment, in addition to written text that describes features and the positive attributes of the product, could be

more influential to prospective consumers (Ogilvy, 1983; Schultz & Schultz, 1998). According to Dalrymple and Parsons (1995), message creativity is often vital to the consumers' awareness and recognition of the products being advertised. The importance of this pronouncement is validated by Kuzma et al., (1993), in that the recognition and awareness of the sport product and organization are the most vital outcomes of sport marketing. Since prospective consumers will likely include large female market segments, focusing on these individuals will enhance the sport marketing organization's recognition, and indirectly influence product sales and consumer purchase behaviours.

### Advertising Effectiveness

The importance of measuring the recall and recognition of the advertisements was not considered in the current study. Several implications of studying consumers' perceptions and beliefs pertaining to sport marketing relate to the effectiveness of the advertising, which is predominantly measured using recall and recognition tests (Evans et al., 1998; Mullin et al., 1993; Schultz & Schultz, 1998). Survey questions that specifically address the recall and recognition of the advertisements could provide more insights into the effects of sport advertising on the cognitive, affective, and behavioural modalities of body image. A manipulation check could also be feasible in the future. Heinberg and Thompson (1995) administered a manipulation check at the end of the study, which consisted of questions regarding the advertising exposure. The answers were obvious and could easily be answered by subjects who had adequately completed the demands of the study. The subjects were then conditionally included in the experimental results upon the successful completion of four of the five questions. The vitality of considering the recall and recognition of the advertisements is the noted

correlation between advertisement recall and effectiveness (Schultz & Schultz, 1998). In the current study, the number and variety of advertisements could have affected the effects of the advertising. Laboratory studies on magazine advertisements have shown that the ability to recall the advertisements is more difficult when the exposure is comprised of a number of products or ads for competing brands of the same product (Burke & Srull, 1988; Keller, 1987 & 1991). The implications of these limitations in the current study direct attention to the importance of measuring consumers' recall and recognition while investigating the effects of advertising.

The influence of sport advertising is of importance in attempting to alleviate the current prevalence of body image disturbances. If the strong, physically fit, attractive, thin figure depicted in sport advertising does become the new ideal, individuals will likely see themselves further from this ideal and consequently their self-image will suffer. Sport marketing professionals need to be aware of the possible impact of employing models with these characteristics of the potential new ideal figure, and hone in on the use and importance of product-only advertising. Product-only sport advertisements appear to be individually-focused and subjectively internalized, socially desirable, informative, and less likely to affect the cognitive, affective, and behavioural modalities of body image. Therefore, the benefits of employing product-only sport advertisements exceed the possible repercussions of their use.

## CHAPTER VI

### Conclusions

#### Summary

This study conceptualized the possible effects of sport advertising on the multidimensional construct of body image. The exploratory nature of the study was conducive to determining that the cognitive, affective, and behavioural modalities of body image are compatible measurement instruments for the multidimensionality of body image in females. Exposure to sport advertisements depicting athletic footwear that employ human models did not have a significantly greater effect on body image than product-only sport advertising. However, independent of advertisement exposure, participants' body image disturbances were affected. Participants in all groups reported significant differences between mean body image scores from the pre-test to the post-test, which was conducted one month later. This could be attributed to the exploratory design of the study, or the pre-existing effects of media and advertising on body image. The significant time effect primarily exists as a result of the self-reported mean scores on the SPAS (Martin et al., 1997). The scores were significantly different between the pre and post-tests, and additionally there was a significant difference between the control group and the product-only sport advertising exposure group. This finding is indicative of the importance of mental schemas in marketing research, and the subjective perceptions that result from the consumers' use of mental schemas. Furthermore, the importance of investigating public anxiety in marketing research also becomes evident, given the vitality of this measure in the current study.

As a result of this exploratory investigation, the possibility of a relationship between sport advertisements and body image disturbances becomes possible, yet not conclusive. The identified trends within each exposure group support this relationship. Participants exposed to model-only sport advertisements showed greater self-reported body image disturbances than those individuals exposed to product-only sport advertisements, and participants who were not exposed to a sport advertising manipulation. Additionally, while observing the effects of sport advertisements on the enhancement of body image disturbances in female participants who are objectively within their normal and healthy body weight range, there are potentially detrimental consequences to sport advertising exposure. Multivariate analyses conducted on individuals with predispositions to body image concerns demonstrated significant differences in the cognitive, affective, and behavioural measures of body image following exposure to sport advertisements. Thus, predispositions to body image disturbances are of functional concern to the study of the effects of sport advertisements.

Overall, the scarcity of research in advertising in general, and specifically the overall lack of research in sport advertising, supports the necessity of continued investigations on the impact of sport advertisements on body image. The awareness of the potential impact of sport advertisements on consumers' perceptions, beliefs, and behaviours should be established in marketing research.

#### Future Recommendations

Based on the current research findings, and the assumptions and limitations pertaining to this exploratory research, there are several future recommendations that should be addressed.

In order to enhance the implications that result from studying body image disturbances in sport marketing, the concept of market segmentation is of functional importance. In addition to the concern for prospective sport consumers, the need to address other possible target markets that can be equally affected by the effects of sport advertisement exposure is required. It is important to study the effects of sport advertising images on individual's body image to determine whether the exposure is enhancing lifestyles and health or acting as a potential deterrent. The increased numbers of females taking part in sport and physical fitness as both participants and spectators have introduced a distinct target market in sport marketing. According to Wyatt et al. (1998), marketing to female consumers through the athletic and sport medium has become a valuable means for sports marketers. It is therefore important to consider the beliefs, perceptions, and behaviours of the female sport consumers, and the study of the effects of sport advertisements on body image is an introduction to this area of research. Since there is no evidence of previous research in this area, it is essential to continue to investigate the link between sport marketing and female body image disturbances.

In addition to advertisements that portray individuals with different body figures, different ages would also be beneficial to portray in sport advertisements. Research has shown that body image disturbances are also prevalent in older adults (Hallinan & Schuler, 1993). Sport marketers' should begin to investigate the effects of advertising on body image in the ever-increasing aging population. According to Schewe (1988), behavioural scientists believe that the self-concept is a major contributor to life satisfaction and is affected by an individuals' body image. However, the body image disturbances in the elderly and older adult populations are more readily a result of the



aging process and these disturbances are enhanced by advertising exposure (Schewe, 1988). Since the aging population is a very rewarding target market from a financial perspective, sport marketers should attempt to research the effects of advertising sport and fitness products, which includes but is not limited to athletic footwear, on this segment.

The importance of individualizing marketing strategies to diversified sport consumers based on their physical attributes becomes evident following the current research. As such, advertisements that portray individuals of varying body size and shape proportions, and ages, may enhance the individuals' possible association to the advertisements. Subsequently the product quality would be enhanced, organizational recognition would increase, thus indirectly influencing the financial benefits related to product sport advertising (Dixon, 1993; Kuzma et al., 1993).

Tiered marketing strategies based on body figures and age would potentially assist in reducing the negative consequences of advertising. Marketing strategies based on the desirability of the outcome are also a concern to the future research in sport marketing (see Figure 6). Marketing professionals should be aware of the perceived outcomes pertaining to the advertisements, including social desirability and personal risk. Studies that examine the viability of investigating the effects of sport advertising according to the consequences of the effects rather than the specific modalities of body image should be conducted.

In addition to recommendations based on marketing strategies and research, future investigations on the effects of sport advertising on body image should be conducted with certain recommendations. The wording of instructions pertaining to the

SMBI (Stunkard et al., 1983) in the current study could influence the participants' responses, and should therefore be examined. Thompson and Psaltis (1988) reported that changing the wording of the instructions on the Silhouette measure produced significantly different answers. There were augmented scores for the current figure chosen if the instructions asked participants to select the figure on the basis of how they *felt* they looked, rather than how they *thought* they looked (Thompson & Psaltis, 1988). The change in conceptual nature of the instrument based on the wording of the instructions should be examined in further detail in sport advertising and marketing research pertaining to consumers' perceptions, beliefs, and behaviours.

In addition to the change of wording pertaining to the SMBI (Stunkard et al., 1983), research on the actual perceived weights of the figures in the scale should be conducted. Furthermore, the development of a scale that conceptualizes more than one dimension of the human body should be conducted. Body figures should be represented on several dimensions, in which individuals could then more accurately rate themselves on the scale. Finally, the SMBI (Stunkard et al., 1983) scale should be given to participants to record an analysis of the models' body figures in sport advertisements. It would be interesting to determine the mean body figure that such models represent, and the discrepancy between this mean and the participants' reported body figure. The identification of body figures most represented by models in sport advertisements would also enhance the attention given to the advertisements, and could therefore also improve the recall and recognition.

Investigations that are relevant to studying social physique anxiety using the SPAS (Martin et al., 1997) could potentially benefit from employing median splits on the

mean scores, as indicated in previous research (i.e., Heinberg & Thompson, 1995; Lavine et al., 1999). Median splits allow for individuals who are reportedly high in social physique anxiety to be analyzed separately from individuals who report lower social physique anxiety scores. Research investigating the effects of sport advertising on body image could also be conducted employing median splits on measures of BMI. Additional analyses were conducted in the current research to determine the possible effects of individuals' BMIs, and it appears that these scores influence the degree of sport advertising effects on body image. Research in this area is important due to the possible detrimental effects of sport advertising on individuals who report a predisposition to body image disturbances.

Research in leadership and management studies that employs the SPAS (Martin et al., 1997) should also be conducted. The importance of self-presentation and impression management in management settings has been documented, thus the effects of reported social physique anxiety in organizations warrants further research. It is important to investigate possible body image disturbances in management and organizational environments due to the potential unfavorable consequences of these disturbances, and the effects on an individual's perceptions, beliefs, and behaviours in both group and independent situations. Furthermore, Frederick and Morrison (1996) have reported that individuals with high social physique anxiety are more likely to be externally motivated and driven by external merit. This contention could be important for managers in all disciplines, since it is a never-ending struggle to individually motivate all employees. An indicator, such as social physique anxiety, could assist the manager in developing

individualized programs and productivity reports that could essentially enhance organizational commitment.

Future research pertaining to the use of the REI (Silberstein et al., 1986) and the ATSA (Rabak-Wagener et al., 1998) is also required. The REI should be further investigated according to the four distinct yet internally consistent subscales reported in the current research (weight/appearance management, fitness/health management, stress/mood management, and socializing). The ATSA warrants further research due to the lack of use in research studies pertaining to body image, to determine whether this scale is a potentially viable link between sport advertising and body image.

Investigations that compare and contrast the advertising formats should be conducted. A question that remains following the current study results is whether there are conceptual and theoretical differences between model-only and product-only sport advertisements. Important variables to consider include, but are not limited to, written text and visual messages, the use of mental schemas, the perceived social desirability of the advertisements, and the importance of name brands and trademarks.

A final recommendation for future research involves the importance of investigating recall and recognition in studies pertaining to sport advertisements. Sport marketing research requires the consideration of advertisement recall and recognition, and several studies have included relevant questions that accurately assess consumers' recollect. Product purchase behaviours, relevant perceptions of the organization or sponsoring company, and financial benefits or repercussions are dependent on the consumers' ability to recall or recognize the products and services that are advertised. Future investigations concerning the effects of sport advertising on body image would

benefit from considering the participants' recall and recognition of the advertisements, which would also be important to potentially discern which aspect of sport advertising messages is the most influential or distressing to current and potential sport consumers.

The vitality of future research in the area of sport marketing and the effects of sport advertisements on body image disturbances in females is evident. Accounting for individual and personal characteristics, including perceptions, beliefs, and behaviours, could have endearing effects on the success of sport marketing, which could also mutually benefit the current and potential sport consumers. Sport marketing professionals need to extend the boundaries of current research beyond the economic impact to include health and social factors that are indirectly related to the outcome of sport advertising.

The current research findings revealed that body image could be adequately quantified as a multidimensional construct. However, further support is necessary in order to ensure the generalizability of the multidimensional nature of body image. In addition to the body image scales that were used concomitantly, the ATSA was a separate and appropriate measure of body image pertaining to sport advertising. In the current study, athletic shoe sport advertisements did not affect the combined measures of body image, however given the novelty of studying sport advertising effects on consumer behaviours, perceptions, and beliefs, future research is necessary. Areas of further study can include, but should not be limited to, market segmentation, the effectiveness of the sport advertisements, the possible differences between model and product-only sport advertisements, and the continued use of the body image measures employed in the present research.

## REFERENCES

- Altabe, M., & Thompson, J. K. (1993). Body image changes during early adulthood. International Journal of Eating Disorders, *13*, 323-328.
- Andersen, A. E., & DiDomenico, L. (1990). Diet vs shape content of popular male and female magazines: A dose-response relationship to the incidence of eating disorders? International Journal of Eating Disorders, *11* (3), 283-287.
- Andersen, A. E., Woodward, P. J., Spalder, A., & Koss, M. (1993). Body size and shape characteristics of personal ("In search of") Ads. International Journal of Eating Disorders, *14* (1), 111-116.
- Bane, S., & McAuley, E. (1998). Body image and exercise. In J. L. Duda (Ed.), Advances in sport and exercise psychology measurement. Morgantown, WV: Fitness Information Technology.
- Barber, N. (1998). Secular changes in standards of bodily attractiveness in women: Tests of a reproductive model. International Journal of Eating Disorders, *23*, 449-454.
- Baumgartner, T., & Strong, C. (1998). Conducting and reading research in health and human performance. Boston, MA: WCB McGraw-Hill.
- Beasley, B. A. (1999). Perceptions of ideal female body images: A study of African-American students' responses to fashion magazine advertising. Unpublished doctoral dissertation, The University of Southern Mississippi, Mississippi.
- Berkowitz, E. N., Crane, F. G., Kerin, R. A., Hartley, S. W., Rudelius, W. (1995). Marketing. Toronto, ON: Times Mirror.

- Bordo, S. (1993). Unbearable weight: Feminism, western culture, and the body. Berkeley, CA: University of California.
- Boutilier, M. A., & SanGiovanni, L. (1983). The sporting women. Champaign, IL: Human Kinetics.
- Branch, D. (1995). Tapping new markets: Women as sport consumers. Sport Marketing Quarterly, 4 (4), 9-12.
- Bredemeier, B. J. (1984). Sport, gender, and moral growth. In J. M. Silva & R. S. Weinberg (Eds.), Psychological foundations of sport (pp. 400-413). Champaign, IL: Human Kinetics.
- Brown, K. (1997). From fashion to fitness? A sociocultural analysis of the representation of thinness within the mass media. Unpublished doctoral dissertation, University of Toronto, Ontario.
- Brownell, K. (1991). Personal responsibility and control over our bodies: When expectation exceeds reality. Health Psychology, 10 (5), 303-310.
- Bryant, J. (1980). A two-year selective investigation of the female athlete in sport as reported in the paper media. Arena Review, 4, 32-44.
- Bunnell, D., Cooper, P., Hertz, S., & Shenker, R. (1992). Body shape concerns among adolescents. International Journal of Eating Disorders, 11, 79-83.
- Burke, R. R. & Srull, T. R. (1988). Competitive interference and consumer memory for advertising. Journal of Consumer Research, 15, 55-68.
- Butters, J., & Cash, T. (1987). Cognitive and behavioural treatment of women's body image dissatisfaction. Journal of Consulting and Clinical Psychology, 55 (6), 889-897.

Canadian Society for Exercise Physiology. Available at: <http://www.hc-sc.gc.ca/hppb/paguide/>

Carron, A., & Prapavessis, H. (1997). Self-presentation and group influence. Small Group Research, 28, 500-516.

Cash, T. F. (1994). Body-image attitudes: Evaluation, investment, and affect. Perceptual and Motor Skills, 78, 1168-1170.

Cash, T. F., & Brown, T. A. (1987). Body Image in anorexia nervosa and bulimia nervosa: A review of the literature. Behavior Modification, 11, 487-521.

Cash, T. F., Cash, D. W., & Butters, J. W. (1983). "Mirror, mirror on the wall...?": Contrast effects and self-evaluations of physical attractiveness. Personality and Social Psychology Bulletin, 9, 351-358.

Cash, T. F., Counts, B., Hangen, J., & Huffine, C. E. (1989). How much do you weigh?: Determinants of validity of self-reported body weight. Perceptual and Motor Skills, 69, 248-250.

Cash, T. F., & Henry, P. E. (1995). Women's body images: The results of a national survey in the U.S.A.. Sex Roles, 33 (1), 19-27.

Cash, T. F., & Hicks, K. L. (1990). Being fat versus thinking fat: Relationships with body image, eating behaviors, and well-being. Cognitive Therapy and Research, 14 (3), 327-341.

Cash, T. F., Novy, P. L., & Grant, J. R. (1994). Why do women exercise? Factor analysis and further validation of the Reasons for Exercise Inventory. Perceptual and Motor Skills, 78, 539-544.



Cash, T. F., & Pruzinsky, T. (1990). Body images: Development, deviance, and change. New York, NY: Guilford.

Cecil, H., & Stanley, M. A. (1997). Reliability and validity of adolescents' scores on the body esteem scale. Educational and Psychological Measurement, 57, 340-356.

Coakley, J. (1998). Sport in society: Issues and controversies. Boston, MA: McGraw-Hill.

Cohn, L. D., Adler, N. E., Irwin, C. E., Millstein, S. G., Kegeles, S. M., & Stone, G. (1987). Body figure preferences in male and female adolescents. Journal of Abnormal Psychology, 96, 276-279.

Cohn, L. D., & Adler, N. E. (1992). Female and male perceptions of ideal body shapes. Psychology of Women Quarterly, 16, 69-79.

Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairburn, C. G. (1987). The development and validation of the Body Shape Questionnaire. International Journal of Eating Disorders, 6, 485-494.

Crawford, S., & Eklund, R. C. (1994). Social physique anxiety, reasons for exercise, and attitudes toward exercise settings. Journal of Sport and Exercise Psychology, 16, 70-82.

Crisp, A., Palmer, R., & Kalucy, R. (1976). How common is anorexia nervosa? A prevalence study. British Journal of Psychiatry, 128, 549-554.

Dalrymple, D., & Parsons, L. J. (1995). Marketing management: Text and cases. Toronto: John Wiley and Sons.

- David, P., & Johnson, M. (1998). The role of self in third person effects about body image. Journal of Communication, 48 (4), 37-58.
- Davis, C., Brewer, H., & Weinstein, M. (1993). A study of appearance anxiety in young men. Social Behavior and Personality, 21, 63-74.
- Dawar, N., & Parker, P. (1994). Marketing Universals: Consumers' use of brand name, price, physical appearance, and retailer reputation as signals of product quality. Journal of Marketing, 58, 81-95.
- Delene, L., & Brogowicz, A. (1990). Student healthcare needs, attitudes, and behavior: Marketing implications for college health centers. Journal of American College Health, 38, 157-164.
- Deutsch, F. M., Zalenski, C. M., & Clark, M. E. (1986). Is there a double standard of aging? Journal of Applied Social Psychology, 16 (9), 771-785.
- Dionne, M., Davis, C., Fox, J., & Gurevich, M. (1995). Feminist Ideology as a Predictor of Body Dissatisfaction in Women. Sex Roles, 33 (4), 277-285.
- Dixon, D. (1993). How an event on foreign soil is setting the trend for the future of big event sponsorship. Sport Marketing Quarterly, 2, 13-16.
- Drewnowski, A., & Yee, D. K. (1987). Men and body image: Are males satisfied with their weight? Psychosomatic Medicine, 49, 626-634.
- Dwyer, J. T., & Mayer, J. (1968). The psychological effects of variation in physical appearance. Adolescence, 3, 353-380.
- Eklund, R., Mack, D., & Hart, E. (1996). Factor validity of the Social Physique Anxiety Scale for females. Journal of Sport and Exercise Psychology, 18, 281-295.

- Etcoff, N. (1999). Survival of the prettiest: The science of beauty. New York, NY: Anchor Books.
- Evans, J.R., Berman, B., & Wellington, W.J. (1997). Marketing. Scarborough, ON: Prentice Hall Canada Inc.
- Fallon, A. E., & Rozin, P. (1985). Sex differences in perceptions of desirable body shape. Journal of Abnormal Psychology, *94* (1), 102-105.
- Festinger, L. (1954). A theory of social comparison processes. Human Relations, *7*, 117-140.
- Frederick, C. M. & Morrison, C. S. (1996). Social physique anxiety: Personality constructs, motivations, exercise attitudes, and behaviours. Perceptual and Motor Skills, *82*, 963-972.
- Fullerton, S., & Dodge, H. R. (1995). An application of market segmentation in a sports marketing arena: We all can't be Greg Norman. Sport Marketing Quarterly, *5* (3), 43-47.
- Gardner, W. L. & Avolio, B. J. (1998). The charismatic relationship: A dramaturgical perspective. Academy of Management Review, *23* (1), 32-58.
- Garner, D. (1997). The 1997 body image survey results. Psychology Today, *30* (1), 30-36.
- Glucksman, M. L., & Hirsch, J. (1969). The response of obese patients to weight reduction. Psychosomatic Medicine, *31*, 1-7.
- Gravetter, F., & Wallnau, L. (1992). Statistics for the behavioural sciences: A first course for students of psychology and education. St. Paul, Co: West.

Gray, J. J., Ford, K., & Kelly, L. (1987). The prevalence of bulimia in a black college population. International Journal of Eating Disorders, *6*, 733-740.

Gunther, A. C., & Mundy, P. (1993). Biased optimism and the third person effect. Journalism Quarterly, *70*, 58-67.

Gustavson, C. R., Gustavson, J. C., Pumariega, A. J., Reinartz, D. E., Dameron, R., Gustavson, A. R., Pappas, T., & McCaul, K. (1990). Body-image distortion among male and female college and high school students, and eating-disordered patients. Perceptual and Motor Skills, *71*, 1003-1010.

Hallinan, C. J., & Schuler, P. B. (1993). Body-shape perceptions of elderly women exercisers and nonexercisers. Perceptual and Motor Skills, *77*, 451-456.

Harris, S. M. (1995). Family, self, and sociocultural contributions to body image attitudes of African American women. Psychology of Women Quarterly, *19*, 129-145.

Hart, E. A., Leary, M. R., & Rejeski, W. J. (1989). The measurement of social physique anxiety. Journal of Sport and Exercise Psychology, *11*, 94-104.

Heinberg, L. J., & Thompson, J. K. (1992). Social comparison: Gender, target importance ratings, and relation to body image disturbance. Journal of Social Behavior and Personality, *7*, 335-344.

Heinberg, L. J., & Thompson, J. K. (1995). Body image and televised images of thinness and attractiveness: A controlled laboratory investigation. Journal of Social and Clinical Psychology, *14* (4), 325-338.

Ibbetson, J. (1996). Body image and self-esteem: Factors that affect each and recommendations for fitness professionals. NIRSA Journal, *21*, 22-27.

Irving, L. (1990). Mirror images: Effects of the standard of beauty on the self and body esteem of women exhibiting varying levels of bulimic symptoms. Journal of Social and Clinical Psychology, 9 (2), 230-242.

Kane, M. J. (1988). Media coverage of the female athlete before, during, and after Title IX: Sports Illustrated revisited. Journal of Sport Management, 2, 87-99.

Kane, M. J. (1989). The post Title IX female athlete in the media: Things are changing, but how much? Journal of Physical Education, Recreation, and Dance, 60, 58-62.

Keller, K. L. (1987). Memory factors in advertising: The effect of advertising retrieval cues on brand evaluations. Journal of Consumer Research, 14, 316-333.

Keller, K. L. (1991). Memory and evaluation effects in competitive advertising environments. Journal of Consumer Research, 17, 463-476.

Kenrick, D. T., & Gutierrez, S. E. (1980). Contrast effects and judgments of physical attractiveness: When beauty becomes a social problem. Journal of Personality and Social Psychology, 38, 131-140.

Keeton, W. P., Cash, T. F., & Brown, T. A. (1990). Body image or body images?: Comparative, multidimensional assessment among college students. Journal of Personality Assessment, 54, 213-230.

Kinney, L., & McDaniel, S. R. (1996). Strategic implications of attitude-toward-the-ad in leveraging event sponsorships. Journal of Sport Management, 10 (3), 250-261.

Koff, E., & Kiekhofer, M. (1978). Body part size estimation in children. Perceptual and Motor Skills, 47, 1047-1050.

Koff, E., & Rierdan, J. (1990). Gender, body image, and self-concept in early adolescence. Journal of Early Adolescence, 10 (1), 56-68.

Korthase, K. M., & Trenholme, I. (1982). Perceived age and perceived physical attractiveness. Perceptual and Motor Skills, 54, 1251-1258.

Korthase, K. M., & Trenholme, I. (1983). Children's perceptions of age and physical attractiveness. Perceptual and Motor Skills, 56, 895-900.

Kuzma, J. R., Shanklin, W. L, McCally, J. F. (1993). Number one principle for sporting events seeking corporate sponsors: Meet benefactor's objectives. Sport Marketing Quarterly, 2 (3), 27-32.

Larkin, J. C., & Pines, H. A. (1979). No fat persons need apply: Experimental studies of the overweight stereotype and hiring preference. Sociology of Work and Occupations, 6 (3), 312-327.

Lasch, C. (1978). The culture of narcissism: American life in an age of diminishing expectations. New York, NY: Norton.

Lavine, H., Sweeney, D., & Wagner, S. H. (1999). Depicting women as sex objects in television advertising: Effects on body dissatisfaction. Personality and Social Psychology Bulletin, 25 (8), 1049-1058.

Levine, S. & Feldman, R. (1997). Self-presentational goals, self-monitoring, and nonverbal behaviour. Applied Social Psychology, 19 (4), 505-518.

Lintott, M. M. (1992). The role of television commercials in promoting body image disparagement in women (advertising). Unpublished doctoral dissertation, Fairleigh Dickinson Univeristy, New Jersey.

Lori, D. (1991). Marketing functions and market orientation constructs in the primary nonbusiness sponsor of physical activity in Canada: The case of Fitness Canada. Unpublished master's dissertation, University of Windsor, Ontario.

Markula, P. (1995). Firm but shapely, fit but sexy, strong but thin; The postmodern aerobicizing female bodies. Sociology of Sport Journal, 12, 424-453.

Martin, M. C., & Kennedy, P. F. (1993). Advertising and social comparison: Consequences for female preadolescents and adolescents. Psychology and Marketing, 10, 513-530.

Martin, K. A. & Mack, D. (1996). Relationships between physical self-presentation and sport competition trait anxiety: A preliminary study. Journal of Sport and Exercise Psychology, 18, 75-82.

Martin, K., Rejeski, W. J., Leary, M., McAuley, & Bane (1997). Is the Social Physique Anxiety Scale really multidimensional? Conceptual and statistical arguments for a unidimensional model. Journal of Sport and Exercise Psychology, 19, 359-367.

Mathes, E. W., Brennan, S. M., Haugen, P. M., Rice, H. B. (1985). Ratings of physical attractiveness as a function of age. Journal of Social Psychology, 125 (2), 157-168.

Mazis, M. B., Ringold, D. J., Perry, E. S., & Denman, D. W. (1992). Perceived age and attractiveness of models in cigarette advertisements. Journal of Marketing, 56, 22-37.

Mazur, A. (1986). U.S. trends in feminine beauty and overadaptation. The Journal of Sex Research, 22 (3), 281-303.

McAuley, E., & Burman, G. (1993). The Social Physique Anxiety Scale: Construct validity in adolescent females. Medicine and Science in Sports and Exercise, 25, 1049-1053.

McCarthy, E. J., Shapiro, S. J., & Perreault, W. D. (1994). Basic marketing. Burr Ridge, IL: Irwin.

McDonald, K., & Thompson, J. K. (1992). Eating disturbance, body image dissatisfaction, and reasons for exercising: Gender differences and correlational findings. International Journal of Eating Disorders, 11, 289-292.

McFarlane, A. J. (1994). An analysis of the social marketing of physical activity promotion: The comparative case study of Participaction and Fitness Ontario. Unpublished master's dissertation, University of Windsor, Ontario.

Melamed, L., & Moss, M. (1975). The effect of context on ratings of attractiveness of photographs. Journal of Psychology, 90, 129-136.

Mercurio, S. & Guilfoyle, K. (1996). Gender-based perceptions of recreational sports managers. NIRSA Journal, 21, 31-36.

Motl, R., & Conroy, D. (2000). Validity and factorial invariance of the Social Physique Anxiety Scale. Medicine and Science in Sports and Exercise, 32, 1007-1017.

Mueller, W. H., Joos, S. K., & Schull, W. J. (1985). Alternative measurements of obesity: Accuracy of body silhouettes and reported weights and heights in a Mexican-American sample. International Journal of Obesity, 9, 193-200.

Mullin, B., Hardy, S., & Sutton, W. (1993). Sport marketing. Champaign, IL: Human Kinetics.



Myers, P. N., & Biocca, F. A. (1992). The elastic body image: The effects of television advertising and programming on body distortions in young women. Journal of Communication, 42 (3), 108-131.

Nebenzahl, I., & Hornik, J. (1985). An experimental study of the effectiveness of commercial billboards in televised sports arena. International Journal of Advertising, 4, 27-36.

Ogilvy, D. (1983). Ogilvy on advertising. Toronto, ON: John Wiley and Sons.

Parker, S., Nichter, M., Nichter, M., Vuckovic, N. (1995). Body image and weight concerns among African American and White adolescent females: Differences that make a difference. Human Organization, 54, 103-110.

Petrie, T., Diehl, N., Rogers, R., & Johnson, C. (1996). The Social Physique Anxiety Scale: Reliability and construct validity. Journal of Sport and Exercise Psychology, 18, 420-425.

Pinhas, L., Toner, B. B., Ali, A., Garfinkel, P. E., & Stuckless, N. (1999). The effects of the ideal of female beauty on mood and body satisfaction. International Journal of Eating Disorders, 25, 223- 226.

Pollay, R. W. (1986). The distorted mirror: Reflections of the unintended consequences of advertising. Journal of Marketing, 50, 18-36.

Powers, P. (1996). Ultra slim & fast. Psychology Today, 29 (2), 17-18.

Rabak-Wagener, J., Eickoff-Shemek, J., & Kelly-Vance, L. (1998). The effects of media analysis on attitudes and behaviors regarding body image among college students. Journal of American College Health, 47, 29-35.

Reid, L. N., & Soley, L. C. (1979). Sport Illustrated's coverage of women in sports. Journal Quarterly, 56, 861-862.

Richins, M. L. (1991). Social comparison and the idealized images of advertising. Journal of Consumer Research, 18, 71-83.

Riva, G., Melis, L., & Bolzoni, M. (1997). Treating body-image disturbances. Communications of the Association for Computing Machinery, 40 (8), 69-71.

Rocchio, L. M. (1995). The pursuit of beauty through thinness and the impact of advertising on college women's attitudes (eating disorders). Unpublished doctoral dissertation, University of Rhode Island, Rhode Island.

Ross, J. (1999). The diet cure. New York, NY: Viking.

Roth, D., Harris, R., & Snyder, C. (1988). An individual differences measure of attributive and repudiative tactics of favourable self-presentation. Journal of Social and Clinical Psychology, 6 (2), 159-170.

Rozin, P., & Fallon, A. E. (1988). Body image, attitudes to weight, and misperceptions of figure preferences of the opposite sex: A comparison of men and women in two generations. Journal of Abnormal Psychology, 97 (3), 342-345.

Salusso-Deonier, C., Markee, N., & Pedersen, E. (1993). Gender differences in the evaluation of physical attractiveness ideals for male and female body builds. Perceptual and Motor Skills, 76, 1155-1167.

Schewe, C. (1988). Marketing to our aging population: Responding to physiological changes. Journal of Consumer Marketing, 5 (3), 61-74.

Schultz, D. P. & Schultz, S. E. (1998). Psychology and work today: An introduction to industrial and organizational psychology. Upper Saddle River, NJ: Prentice-Hall.

Segal, S. (1997). The effectiveness of the thin-ideal model as product endorser in mass circulation women's fashion magazines: A preliminary empirical investigation of behavioral and attitudinal moderators. Unpublished doctoral dissertation, Nova Southeastern University, Florida.

Shaw, S. M., & Kemeny, L. (1989). Fitness promotion for adolescent girls: The impact and effectiveness of promotional material which emphasizes the slim ideal. Adolescence, 24, 677-687.

Shannon, J. R., & Turley, L. W. (1997). The influence of in-arena promotions on purchase behaviour and purchase intentions. Sport Marketing Quarterly, 6 (4), 53-59.

Silberstein, L. R., Striegel-Moore, R. H., Timko, C., & Rodin, J. (1988). Behavioral and psychological implications of body dissatisfaction: Do men and women differ? Sex Roles, 19, 219-233.

Silverstein, B., Perdue, L., Peterson, B., & Kelly, E. (1986). The role of the mass media in promoting a thin standard of bodily attractiveness for women. Sex Roles, 14, (9/10), 519-532.

Spink, K. (1992). Relation of anxiety about social physique to location of participation in physical activity. Perceptual and Motor Skills, 74 (2), 1075-1078.

Stephens, T. (1987). Secular trends in adult physical activity: Exercise boom or bust? Research Quarterly for Exercise and Sport, 58, 94-105.

Stotlar, D. K., & Johnson, D. A. (1989). Assessing the impact and effectiveness of stadium advertising on sport spectators at Division I institutions. Journal of Sport Management, 3, 90-102.

Stotlar, D., Veltri, F., & Viswanathan, R. (1998). Recognition of athlete-endorsed sports products. Sport Marketing Quarterly, 7 (1), 48-56.

Strauss, J., Doyle, A., & Kriepe, R. (1994). The paradoxical effect of diet commercials on reinhibition of dietary restraint. Journal of Abnormal Psychology, 103 (3), 441-444.

Stunkard, A., & Mendelson, M. (1967). Obesity and the body image: I. Characteristics of disturbances on the body image of some obese persons. American Journal of Psychiatry, 10, 1296-1300.

Stunkard, A. J., Sorenson, T., & Schulsinger, F. (1983). Use of the Danish adoption register for the study of obesity and thinness. In S. Kety (Ed.), The genetics of neurological and psychiatric disorders (pp. 115-120). New York, NY: Raven.

Tabachnick, B., & Fidell, L. (1989). Using multivariate statistics. New York, NY: Harper & Row.

Tanke, E. D. (1982). Dimensions of the physical attractiveness stereotype: A factor/analytic study. The Journal of Psychology, 110, 63-74.

Taylor, C. B., Sharpe, T., Shisslak, C., Bryson, S., Estes, L., Gray, N., McKnight, K. M., Crago, M., Kraemer, H. C., & Killen, J. D. (1996). Factors associated with weight concerns in adolescent girls. International Journal of Eating Disorders, 24, 31-42.

Thompson, J. K., & Psaltis, B. A. (1988). A replication and extension of Fallo and Rozin (1985). International Journal of Eating Disorders, 7 813-817.

Thornton, B., & Maurice, J. (1997). Physique effect: Adverse impact of idealized body images for women. Sex Roles, *37* (6), 433-439.

Tiggemann, M., & Pennington, B. (1990). The development of gender differences in body-size dissatisfaction. Australian Psychologist, *25* (3), 306-313.

Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. International Journal of Eating Disorders, *20* (2), 199-201.

Timko, C., Striegel-Moore, R., Silberstein, L., & Rodin, J. (1987). Femininity/masculinity and disordered eating in women: How are they related? International Journal of Eating Disorders, *6*, 710-712.

Turco, D. (1996). The effects of courtside advertising on product recognition and attitude change. Sport Marketing Quarterly, *5* (4), 11-15.

University of Windsor Human Rights Office: Available at:  
<http://cronus.uwindsor.ca/units/hro/hro.nsf/main?OpenForm>.

Wernick, M., & Manaster, G. J. (1984). Age and the perception of attractiveness. The Gerontologist, *24* (4), 408-414.

Wilmore, W. & Costill, D. (1994). Physiology of sport and exercise. Champaign, IL: Human Kinetics.

Wortman, C., & Loftus, E. (1981). Psychology. New York, NY: A. Knopf.

Wyatt, T. J., McCullough, L., & Wolgemuth, W. (1998). A content analysis of television consumer advertising during the 1996 and 1997 NCAA Final Four basketball tournaments. Sport Marketing Quarterly, *7* (3), 47-54.

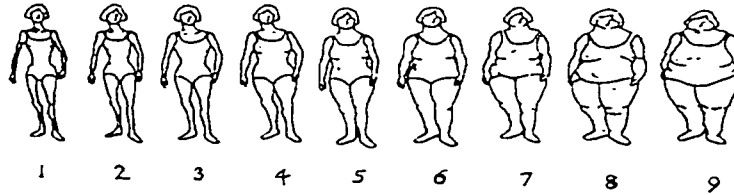
Zimbardo, P. (1986). Psychology and life. Glenview, IL: Scott Foresman.

## APPENDIX A

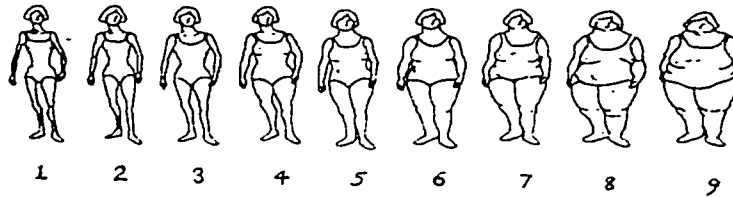
### Silhouette Measure of Body Image

Please respond to the following questions using the scales and pictorial descriptions below by circling the number and figure below.

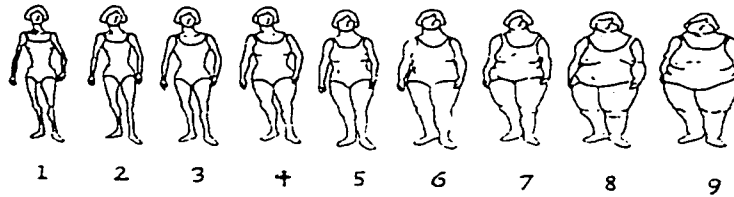
1. Which drawing looks most like your own figure?



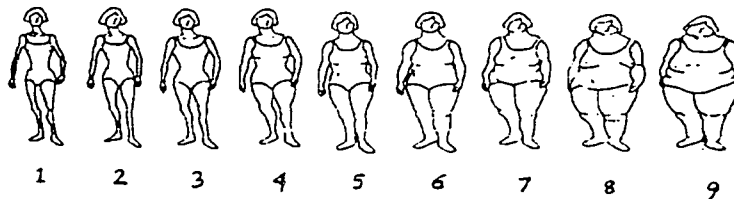
2. Which figure do you most want to look like?



3. Which figure do you think men find most attractive?



4. Which figure do you think most women want to look like or find most attractive?



## APPENDIX B

### Social Physique Anxiety Scale

Please indicate the degree to which the statements below are characteristic or true of you

Not at All (1)	Slightly (2)	Moderately (3)	Very (4)	Extremely (5)
-------------------	-----------------	-------------------	-------------	------------------

1. I wish I wasn't so uptight about my figure	1	2	3	4	5
2. There are times when I am bothered by thoughts that other people are evaluating my weight or muscular development negatively	1	2	3	4	5
3. Unattractive features of my figure make me nervous in certain social settings	1	2	3	4	5
4. In the presence of others, I feel apprehensive about my figure	1	2	3	4	5
5. I am comfortable with how fit my body appears to others	1	2	3	4	5
6. It would make me uncomfortable to know others were evaluating my figure	1	2	3	4	5
7. When it comes to displaying my figure to others, I am a shy person	1	2	3	4	5
8. I usually feel relaxed when it is obvious that others are looking at my figure	1	2	3	4	5
9. When in a bathing suit, I often feel nervous about the shape of my body	1	2	3	4	5

## APPENDIX C

### Reasons for Exercise Inventory

People exercise for a variety of reasons. When people are asked why they exercise, their answers are sometimes based on the reasons they *should* have for exercising. What we want to know are the reasons people *actually* have for exercising. Please respond to the items below as honestly as possible. To what extent is each of the following an important reason that you have for exercising? Using the scale below, ranging from 1 to 7, in giving your answers. (If you do not exercise, please skip this section)

	Not at All Important (1)	(2)	(3)	Moderately Important (4)	(5)	(6)	Extremely Important (7)
1. To be slim	1	2	3	4	5	6	7
2. To alter a specific area on my body	1	2	3	4	5	6	7
3. To improve my mood	1	2	3	4	5	6	7
4. To improve my muscle tone	1	2	3	4	5	6	7
5. To maintain my physical well-being	1	2	3	4	5	6	7
6. To improve my endurance, stamina	1	2	3	4	5	6	7
7. To improve my overall body shape	1	2	3	4	5	6	7
8. To lose weight	1	2	3	4	5	6	7
9. To be sexually desirable	1	2	3	4	5	6	7
10. To have fun	1	2	3	4	5	6	7
11. To improve my strength	1	2	3	4	5	6	7
12. To maintain my current weight	1	2	3	4	5	6	7
13. To improve my flexibility, coordination	1	2	3	4	5	6	7
14. To socialize with friends	1	2	3	4	5	6	7
15. To be attractive to members of the opposite sex	1	2	3	4	5	6	7
16. To increase my resistance to illness and disease	1	2	3	4	5	6	7
17. To increase my energy level	1	2	3	4	5	6	7
18. To redistribute my weight	1	2	3	4	5	6	7
19. To meet new people	1	2	3	4	5	6	7
20. To improve my appearance	1	2	3	4	5	6	7
21. To improve my overall health	1	2	3	4	5	6	7
22. To cope with stress, anxiety	1	2	3	4	5	6	7
23. To cope with sadness, depression	1	2	3	4	5	6	7
24. To improve my cardiovascular fitness	1	2	3	4	5	6	7



## APPENDIX D

### Attitudes Toward Sport Advertising Survey

Please respond as accurately and honestly as possible to the questions pertaining to your attitudes towards sport advertising. Use the scale below to rate your level of agreement to the statements.

	Strongly Disagree						Strongly Agree
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Adult models in sport advertisements have an ideal body size and shape	1	2	3	4	5	6	7
2. Women would be more attractive if their body size or shape looked like most of the female models in sport advertising	1	2	3	4	5	6	7
3. My peers would be more attractive if their body size or shape looked like most of the models in sport advertising	1	2	3	4	5	6	7
4. It would be good for my health if my body size and shape were similar to the body size and shape of female sport advertising models	1	2	3	4	5	6	7
5. I would feel more satisfied with myself if my body looked more like female sport advertising models	1	2	3	4	5	6	7
6. The main impact of sport advertisements is that they influence people to buy the product	1	2	3	4	5	6	7
7. When I shop for or buy athletic shoes at a store, I am conscious of the influence that sport advertisements have had on my selections	1	2	3	4	5	6	7
8. One reason I watch what I eat is because I feel pressured to have a body size or shape that is similar to the shapes and sizes of many females in the sporting industry	1	2	3	4	5	6	7
9. One reason I exercise or work out is because I feel pressured to have a body size or shape that is similar to the shapes and sizes of many females in the sporting industry	1	2	3	4	5	6	7
10. If I don't make attempts to look like similar female sport models, I will be perceived as less attractive than other people	1	2	3	4	5	6	7
11. I make decisions about dieting or exercising based more upon how I look than on my health status	1	2	3	4	5	6	7

## APPENDIX E

### The Effects of Sport Advertising on the Cognitive, Affective, and Behavioural Modalities of Body Image

#### **LETTER OF INFORMATION**

I would like to take this time to introduce myself and explain the research that is being conducted. My name is Cathi Sabiston and I am a master's student in the Faculty of Human Kinetics at the University of Windsor. As partial fulfillment of my degree requirements, I am expected to complete a research study. I have chosen to focus my research on areas pertaining to sport marketing and sport psychology, in the field of Sport Management.

As a potential or current sport consumer, your beliefs, attitudes, and behaviours are very important. It is crucial that sport marketers understand the role you play in the decision to buy products and attend sporting games, in addition to participating in fitness activities. This research is designed to help link potential and current sport consumers, like yourself, to the sport marketer. To this end, the completion of this study is very important, but by no means a requirement.

You will be asked to complete a questionnaire booklet consisting of no more than 60 questions on two separate occasions. The first experimental session will require approximately 20 minutes, in which you will simply complete all questions provided to you. Prior to the second experimental session you will be exposed to sport advertising and then asked to complete the same questionnaire booklet as in the first experimental session. The second session will require approximately 30 minutes to complete, and will be scheduled to take place three weeks following the first session.

Participation is completely voluntary. You may refuse to participate, refuse to answer any question(s), or withdraw from the study at any time without penalty. The questionnaires are only for the use of the investigators. All results are completely confidential.

If you have any questions, please feel free to contact the researcher prior to, during, or following the experimental sessions. If you agree to participate in this study, please complete the attached sheet and return it to the researcher.

Thank you,

Cathi Sabiston, BScK  
Faculty of Human Kinetics  
University of Windsor  
(519) 254-9258  
[sabiston75@hotmail.com](mailto:sabiston75@hotmail.com)

Krista Munroe, PhD  
Faculty of Human Kinetics  
University of Windsor  
(519) 253-3000 ext. 2446  
[kmunroe@uwindsor.ca](mailto:kmunroe@uwindsor.ca)

APPENDIX E (CON'T)

The Effects of Sport Advertising on the Cognitive, Affective, and Behavioural Modalities  
of Body Image

CONSENT FORM

I have read the accompanying letter of information, understand the nature of the study,  
and agree to participate. Please sign and return to the researcher.

Date\_\_\_\_\_

Name of Participant (Please Print)\_\_\_\_\_

Signature of Participant\_\_\_\_\_

Cathi Sabiston, BScK  
Faculty of Human Kinetics  
University of Windsor  
(519) 254-9258  
[sabiston75@hotmail.com](mailto:sabiston75@hotmail.com)

Krista Munroe, PhD  
Faculty of Human Kinetics  
University of Windsor  
(519) 253-3000 ext. 2446  
[kmunroe@uwindsor.ca](mailto:kmunroe@uwindsor.ca)

APPENDIX F

Scale Reliabilities

Scale	Alpha Time 1	Alpha Time 2	Alpha if item deleted (Time 1)	Alpha if item deleted (Time 2)
SMBI	.6874	.7130		
SPAS	.8942	.9057		
ATSA	.8711	.8784		
REI Weight Control	.3620	.4159	.7928 (Item 12)	.7924 (Item 12)
REI Fitness	.8058	.8187		
REI Mood	.5482	.8042	.7666 (Item 17)	.7815 (Item 17)
REI Health	.8424	.5521	.8175 (Item 16)	.8067 (Item 16)
REI Attraction	.8360	.6649	.7289 (Item 9)	.7414 (Item 9)
REI Enjoyment	.7993	.3963	.8540 (Item 10)	.8464 (Item 10)
REI Tone	.6096	.4689	all items	all items

## VITA AUCTORIS

NAME: Catherine Michelle Sabiston

PLACE OF BIRTH: Scarborough, Ontario, Canada

YEAR OF BIRTH: 1975

EDUCATION: Dalhousie University, Halifax, Nova Scotia  
1994 - 1998 BSc Kinesiology.

University of Windsor, Windsor, Ontario  
1999 - 2001 M.H.K.

AWARDS & SCHOLARSHIPS: Ontario Graduate Scholarship  
Ministry of Training, April 2001

Human Kinetics Graduate Alumni Award  
University of Windsor, April 2001.

Tuition Scholarship – Academic Excellence  
University of Windsor, 2000-2001

Dean’s List – Academic Excellence  
Dalhousie University, 1998

### CONFERENCE PROCEEDINGS:

Sabiston, C. M. & Munroe, K. J. (2001). An introduction to the Attitudes Towards Sport Advertising Scale as a measure of body image. The Eastern Canada Sport and Exercise Psychology Seminar – London, Ontario, March 2001.

Sabiston, C. M., & Munroe, K. (2001). The effects of sport advertising on the cognitive, affective, and behavioural modalities of body image. North American Society for Sport Management- Virginia Beach, Virginia, June 2001.

Bell, D.G., Jacobs, I., McClellan, T., Myasaki, M., & Sabiston, C. (1998). The effects of caffeine and ephedrine ingestion on thermal regulation in the heat. The Canadian Society for Exercise Physiology – Toronto, Ontario, October 1998.

### PUBLICATIONS:

Bell, D. G., McClellan, T., & Sabiston, C. M. (2002). Caffeine, Ephedrine, and 10km Run. *Accepted for publication, Medicine and Science in Sport and Exercise, Jan, 2002.*

Bell, D.G., Jacobs, I., McClellan, T., Myasaki, M., & Sabiston, C. (1998). Thermal regulation in the heat during exercise after caffeine and ephedrine ingestion. Aviation, Space, and Environmental Medicine, 70 (6), 583-588.