INTRAINDIVIDUAL VARIABILITY OF SELF-EVALUATIONS IN THE PHYSICAL DOMAIN: PREVALENCE, CONSEQUENCES, AND SOURCES

A Dissertation

Presented to

The Faculty of the Curry School of Education

University of Virginia

In Partial Fulfillment

of the Requirement for the Degree

Doctor of Philosophy

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ABSTRACT

Research and theory have highlighted the influence of self-evaluations on achievement behaviors, cognitions, and affective responses. Nevertheless, the focus has primarily been on *level* of self-evaluations (i.e., high or low). One individual difference factor receiving increasing attention is the degree to which individuals exhibit short-term fluctuations in their self-evaluations (i.e., *intraindividual variability*). Research in developmental and social psychology has shown that intraindividual variability of global self-esteem is related to motivational and affective responses above and beyond level of self-esteem. The goal of this study was to extend the literature on self-evaluations by examining intraindividual variability of global *and* physical self-evaluations (i.e., global self-worth, physical self-worth, perceived physical competence). Specifically, the study examined: (a) the prevalence of intraindividual variability of global and physical self-evaluations; (b) the independent and combined influence of level and intraindividual variability of self-evaluations on motivation and affect toward physical activity; and, (c) the relationship between social sources of evaluative information and intraindividual variability. Middle school students ($\underline{N}$ = 167) ranging in age from 12-15 years ($\underline{M}$ = 13.48 years, $\underline{SD}$ = .56) completed questionnaires each day that they were in physical education class for 3 weeks (i.e., 6 occasions). Results revealed that the majority of the boys and girls exhibited fluctuations in their self-evaluations over the 3 weeks. Level of self-evaluations was the critical predictor of affect and intrinsic motivation in most analyses; however, stability of self-evaluations did make varying contributions to the prediction of intrinsic motivation and affect, but not effort and persistence. The influence of intraindividual variability was particularly salient for adolescents with higher levels of

global self-worth. Students with higher but relatively less stable global self-worth exhibited lower intrinsic motivation and affect than students with higher but stable global self-evaluations. Nonsignificant relationships were found between intraindividual variability and the importance that students' placed on social sources of evaluative information. Overall, results indicated that intraindividual variability of global and physical self-evaluations should be considered along with level to gain a more complete understanding of adolescents' sport and physical activity experiences.

ACKNOWLEDGEMENTS

I would like to give my sincere thanks to Amy Halliburton, Emilio Ferrer Caja, Sue Fretwell, Annemarie Miskovic, and Nancy Stegmiller for their help with data collection. I would also like to thank the physical education teachers at Sutherland Middle School, especially Jane Enot, who made it possible for the study to be conducted. Finally, I wish to thank my dissertation committee members including Marty Block, Linda Bunker, Herbert Richards, Diane Whaley, and Maureen Weiss for their input on this project. A special thanks goes out to Dr. Weiss who has been a wonderful mentor during this project and throughout my entire doctoral program!

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APPROVAL OF THE DISSERTATION

This dissertation, *Intraindividual Variability of Self-Evaluations in the Physical Domain: Prevalence, Consequences, and Sources*, has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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CHAPTER I

The study of self-evaluations has been one of the major topics investigated in sport and exercise psychology. Within this area, a variety of specific self-evaluations have been examined. For example, researchers have studied *global self-esteem* or *global self-worth* which refers to an individual's evaluation of and affect toward oneself as a person, *physical self-worth* which refers to one's evaluation of and affect toward their physical self (e.g., physical attributes, physical abilities), and *perceptions of physical competence* which refers to one's evaluation of and affect toward their abilities in sport and physical activity (e.g., athletic competence). Although these self-evaluations differ in their level of specificity (Fox, 1988, 1990), each describes how individuals think and feel about their abilities and attributes.

The importance of understanding these self-perceptions can be seen in the numerous theoretical frameworks which have implicated self-evaluations as key determinants of achievement-related behaviors, cognitions, and affect (see Weiss & Chaumeton, 1992; Weiss & Ebbeck, 1996). For example, Harter's (1985b, 1987) mediational model of global self-worth suggests that global self-worth directly influences affect and motivation. A number of motivational theories have also highlighted the role of global and domain-specific (e.g., physical) self-evaluations on these achievement-related outcomes (e.g., Deci & Ryan, 1985, Eccles [Parsons] et al., 1983; Harter, 1978, 1981a; Nicholls, 1989). While the specifics of these theories vary, each predicts that individuals with more positive self-evaluations will demonstrate higher levels of

motivation (e.g., choice, effort, preference for challenge, intrinsic interest), more positive affect (e.g., enjoyment), and less negative affect (e.g., anxiety).

Research in the physical domain has consistently found support for these theoretical predictions (see Weiss & Chaumeton, 1992; Weiss & Ebbeck, 1996). For instance, perceptions of physical competence are positively related to emotions such as happiness, excitement, and satisfaction, and negatively related to feelings such as unhappiness, nervousness, and guilt (e.g., Ebbeck & Weiss, 1998; Vlachopoulos & Biddle, 1997; Vlachopoulos, Biddle, & Fox, 1997). Both global self-esteem and perceptions of physical competence are also positively related to enjoyment of physical activity (e.g., Boyd & Yin, 1996; Brustad, 1993a) and negatively related to anxiety (e.g., Brustad, 1988; Passer, 1983; Scanlan & Passer, 1978, 1979). Together these studies provide support for the relationship between self-evaluations and affective responses.

Research has also found a strong link between self-evaluations and motivation in the physical domain (see Weiss, 1987, 1993; Weiss & Chaumeton, 1992). For example, physical self-evaluations are positively related to cognitive indices of motivation such as preference for challenge and intrinsic interest (e.g., Goudas, Biddle, & Fox, 1994; Papaioannou, 1995; Whitehead & Corbin, 1991), as well as behavioral indices of motivation such as frequency and duration of exercise participation (e.g., Dempsey, Kimiecik, & Horn, 1993; Kimiecik, Horn & Shurin, 1996, A. Smith, 1997; Sonstroem, Harlow, & Josephs, 1994) and effort and persistence in physical education classes (e.g., Curry, Biddle, Sarrizin, & Famose, 1997; Ferrer Caja, 1997). In sum, sport and exercise psychology research clearly demonstrates a number of important consequences of individuals' global and physical self-evaluations.

While these studies have added considerably to our understanding of self-perceptions and psychological outcomes, the research has focused almost exclusively on individuals' *level* of self-evaluations. That is, the key issue has been whether individuals' evaluations of themselves are relatively high or low (Greenier, Kernis, & Waschull, 1995; Kernis, 1993). There is, however, a growing body of literature that has focused on alternative aspects of individuals' self-perceptions, suggesting that the simple dichotomy of high versus low self-evaluations cannot adequately capture the complexity of this psychological characteristic (Harter, 1998; Kernis, 1995; Kernis, Greenier, Herlocker, Whisenhunt, & Abend, 1997; Kernis & Waschull, 1995). For example, the *accuracy* of self-evaluations, or the discrepancy between individuals' perceptions of competence and actual level of ability, has been examined as an individual difference variable (see Harter, 1998; Horn & Harris, 1996; Stipek & MacIver, 1989). Studies have found that, with increasing age, children and adolescents become more accurate at assessing their ability (e.g., Harter, 1982; Horn & Weiss, 1991; Phillips & Zimmerman, 1990; Yun & Ulrich, 1997). There is also a considerable amount of variability among individuals in accuracy of self-evaluations; some individuals overestimate their ability, others underestimate, and still others show relatively accurate ratings. Finally, individual differences in accuracy of self-evaluations are predictive of a variety of achievement-related responses such as motivation and affect (e.g., Connell & Illardi, 1987; Harter, 1986; Weiss & Horn, 1990). The take-home message is that this line of research points to alternative ways of examining the nature and consequences of individuals' self-evaluations.

Another alternative approach to studying self-evaluations that is receiving increasing attention in the social and developmental psychology literature is the

magnitude of intraindividual variability of self-evaluations, or variability *within* individuals (Kernis, 1993). *Intraindividual variability* refers to the pattern of fluctuations in individuals' psychological characteristics over short periods of time (e.g., weeks, days, minutes) and reflects changes that may quickly disappear (Nesselroade, 1991). Thus, intraindividual variability of self-evaluations reflects the degree to which individuals demonstrate short-term fluctuations in their evaluation of and affect toward their abilities and attributes.

Although research has only recently begun to investigate notions of intraindividual variability of self-evaluations, the existence of an unstable component of the self has been discussed by a number of scholars (e.g., Demo & Savin-Williams, 1992; Harter, Waters, & Whitesell, 1998; Heatherington & Polivy, 1991; Kernis, 1993; Markus & Kunda, 1986). For example, William James (1890) argued that the self has both a stable and variable component. He suggested that "there is a certain average tone of self-feeling which each of us carries about with him..." (p. 306). He also acknowledged that "we ourselves know how the barometer of our self-esteem and confidence rises and falls from one day to another" (p. 307). Similarly, Rosenberg (1986) differentiated between a *baseline* and *barometric* self-concept. The *baseline* self-concept is similar to James' notion of the "average tone" where individuals' self-perceptions remain relatively constant. The *barometric* self-concept, in contrast, refers to short-term fluctuations that individuals experience in their self-perceptions. These changes could be the result of factors such as receiving negative feedback from a significant other or having a poor athletic performance.

The notion of intraindividual variability of self-evaluations has received a considerable amount of attention by Kernis and his colleagues (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995). Kernis suggests individuals' *level* and *stability* (i.e., intraindividual variability) of self-evaluations are both critical components of the self-perception profile. According to Kernis and Waschull, *stability* of self-esteem refers to "the magnitude of short-term fluctuations in people's contextually-based feelings of self-worth" (p. 97). Examples include the momentary increases or decreases in an individual's self-esteem as a result of specific evaluative events such as receiving a failing grade on an important test or being ridiculed by a peer (Kernis, 1993). This aspect of one's self-perception profile can be differentiated from their *level* of self-esteem which refers to relatively stable feelings of self-worth (Kernis & Waschull, 1995). This distinction between level and intraindividual variability of self-evaluations is critical given that each has been implicated as important variables capable of influencing achievement-related affect and motivation (Demo & Savin-Williams, 1992; Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995).

To date, Kernis and his colleagues have been the primary researchers examining the antecedents and consequences of intraindividual variability of self-evaluations (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995). Their basic data collection procedures involve multiple daily assessments of individuals across a short period of time (usually 4-7 days). On the first occasion they administer a measure of global self-esteem with directions asking participants to respond to how they *typically* feel about themselves as a person. This measure is used to represent the individuals' *level* of global self-esteem. To assess *stability* of self-esteem participants are asked to

complete the measure of global self-esteem either once or twice a day for consecutive days with directions prompting them to indicate how they feel about themselves as a person *at that particular moment*. A standard deviation (i.e., index of variability) of the scores from these repeated assessments is then calculated for each individual and used as a measure of intraindividual variability. The larger the standard deviation the greater the individual's variability of self-evaluations. Kernis then examines the independent and combined effects of level and stability of self-esteem as predictors of various psychological responses.

Kernis and his colleagues have primarily focused on the consequences of individuals' level and stability of self-evaluations (Greenier et al., 1995; Kernis & Waschull, 1995). For example, they have found that the magnitude of intraindividual variability is related to affective responses such as depression, anxiety, anger, and hostility (e.g., Kernis, Grannemann, Barclay, 1989; Kernis, Grannemann, & Mathis, 1991; Rosenberg, 1986). Kernis et al. (1989) specifically examined how college undergraduates' level and stability of global self-esteem were related to feelings of anger and hostility. Results revealed that individuals with high and stable global self-esteem reported the lowest frequency of these negative emotions, while individuals who reported high but unstable global self-esteem reported the highest frequency. Kernis suggested that these high and unstable individuals were more likely to experience anger and hostility because their self-evaluations were "fragile", and therefore may react more defensively to protect their self-esteem. Intraindividual variability of self-evaluations is also related to affective responses to specific evaluative events (e.g., Kernis, Cornell, Ru Sun, Berry, & Harlow, 1993; Kernis, Grannemann, & Barclay, 1992; Kernis et al., 1997).

In a study by Kernis et al. (1993) a peer evaluator provided college undergraduates with positive or negative feedback about their social skills after hearing them give a mock speech. Results revealed that individuals with high and unstable self-esteem were more "reactive" to the feedback in comparison to their high and stable self-esteem counterparts. In particular, high and unstable participants who received positive feedback interpreted the feedback as more accurate, felt the evaluator was more competent, and experienced more positive emotional responses. In contrast, high and unstable individuals rated the evaluation as less useful and felt the evaluator was less competent following negative feedback. Further, they offered more excuses (e.g., lack of motivation, lack of concentration) than the high and stable individuals for their poor performance. In sum, the results from these studies suggest that both level and stability of global self-esteem are important contributors to individuals' reactions to evaluative events (see Kernis, 1993; Kernis & Waschull, 1995).

Intraindividual variability of self-evaluations is also an important predictor of motivation. Waschull and Kernis (1996) examined the independent and combined effects of level and stability of self-evaluations on children's academic motivational orientation (e.g., preference for challenge, curiosity/interest, independent mastery). Results revealed that level and stability of self-evaluations were independently related to these motivational indicators. Specifically, stability of global self-esteem was negatively related to preference for challenge and curiosity/interest (i.e., lower stability related to lower motivation), whereas level was positively related to preference for challenge. Similar results were reported when perceived academic competence was substituted for global self-esteem. Based on these findings, it is evident that magnitude of

intraindividual variability of self-evaluations may significantly add to our understanding of children's motivational orientation above and beyond level of self-evaluations.

Because intraindividual variability of self-evaluations is an important predictor of affect and motivation, determining its potential antecedents should also be an important research goal. Unfortunately, this has received scant attention in the literature. Nevertheless, a number of intrapersonal and social-contextual factors have been identified as possible determinants of short-term fluctuations in individuals' self-evaluations (Kernis & Waschull, 1995). These include: ego-involvement, self-concept clarity, relative importance placed on various domains (e.g., physical, social, academic), and significant others (e.g., feedback, social support, acceptance). For example, Rosenberg (1986) suggested that reliance on social sources of evaluation for determining self-worth will likely result in more unstable self-evaluations. This was based on the argument that individuals are frequently placed in situations with significant others (i.e., high potential for evaluation) and that social information may provide inconsistent and contradictory information about the self (also see Harter, 1993b; Harter, Stocker, & Robinson, 1996). Other scholars (e.g., Harter, Marold, & Whitesell, 1992; Leary & Downs, 1995; Wells, 1992) have also noted that the behaviors of significant others (e.g., contingent versus non-contingent feedback, conditional versus unconditional social support) are a key determinant of intraindividual variability of self-evaluations.

In conclusion, intraindividual variability of self-evaluations has the potential to significantly contribute to our understanding of motivational and affective consequences in the physical domain. Therefore, the purpose of the present study was to address three questions: (a) what is the prevalence of intraindividual variability in global and physical

self-evaluations within the physical achievement domain; (b) what is the relationship between intraindividual variability of self-evaluations and physical activity-related motivation and affect; and, (c) how do social sources of evaluative information relate to intraindividual variability? The following sections address the literature on self-evaluations in greater detail. First, the theoretical and empirical work on self-evaluations in the physical domain is described. This is followed by a detailed examination of the current knowledge of intraindividual variability of self-evaluations.

Conceptualization of Self-Evaluations

Interest in the study of the self dates back thousands of years, captured by the Greek philosophers' call to "know thyself" (Baumeister, 1987, 1997; Harter, 1996). Over the past century literally thousands of papers have been published on the "self". Within this vast literature, there have been numerous self-related terms identified and discussed such as self-perceptions, self-esteem, self-concept, self-efficacy, perceived competence, and so on. While research and theory in the educational, social, developmental, and sport and exercise psychology literature have produced a solid foundation of knowledge about the self, there have been some ambiguities in the terms used to define critical self-related constructs (Fox, 1998, Weiss, 1993). In fact, Weiss and Ebbeck (1996) indicated that, "The study of self-perceptions has produced a plethora of terms that are akin to a foreign language" (p. 364). In an attempt to facilitate conceptual clarity, the following section includes a discussion of "self" terminology that will be adopted throughout the remainder of this paper. While there may be some disagreement about the specific meaning of these

terms, an attempt has been made to include the most current and accepted definitions used in the psychological and sport science literature.

Definitions of Self-Related Constructs

According to Fox (1998), any self-referent statement can be captured under the umbrella of *self-perceptions*. Thus, the self-related terms discussed throughout this paper can be thought of as various self-perceptions. While there are a variety of specific self-perceptions that could be discussed, the focus of the present research is on *self-evaluations*. That is, this study is primarily interested in how individuals feel about, appraise, and regard themselves. Therefore, the remainder of the self-related terms involve concepts that incorporate individuals' evaluations of themselves.

One of the more common self-related terms found in the literature is self-concept or self-conceptions. The *self-concept* refers to individuals' multifaceted and organized awareness of themselves (Fox, 1988). From the perspective of Markus and Wurf (1987), the self-concept includes "self-representations that can be the subject of conscious reflection" (p. 305). In other words, it includes what an individual knows about him- or herself. It refers primarily to knowledge about one's personality traits, behavioral characteristics, and emotional qualities, but can also include an awareness of one's social roles and relationships (Baumeister, 1997; Weiss, 1987). For example, "I am a golfer", "I am short", " I am easy-going", and "I am a brother" all refer to statements that identify one's self-concept. As seen in these examples, self-conceptions are typically aligned with

self-description (Fox, 1988, 1990, 1998; Weiss, 1987).[1] Nevertheless, it has been argued by some that the self-concept includes an evaluative component (e.g., "I am a *good* golfer.") on the basis that self-description and self-evaluation are not easily distinguishable (Marsh, 1990a, 1990b, 1993a, 1997; Marsh & Shavelson, 1985; Shavelson, Hubner, & Stanton, 1976).

Of all the specific self-perceptions, self-esteem has received the greatest amount of attention in the literature (Wylie, 1979, 1989). According to Coopersmith (1967), *self-esteem* "expresses an attitude of approval or disapproval and indicates the extent to which an individual believes himself to be capable, significant, successful and worthy" (p. 5). It includes an individual's awareness of the "good" possessed by the self, where "good" is defined phenomenologically according to the individual's own definition (R. Campbell, 1984). Generally, self-esteem is considered a global construct indicating individuals' evaluation of their *overall* worth as a person (Harter, 1986; Rosenberg, 1986; Weiss & Ebbeck, 1996). Self-esteem has also been referred to as *self-worth* by theorists such as Harter (e.g., 1983, 1986, 1996) and Fox (e.g., 1988, 1990, 1998; Fox & Corbin, 1989). Given that the definitions of self-esteem and self-worth are identical, these terms will be used interchangeably.

The distinction between the terms self-esteem and self-concept is one area of confusion in the literature, and the terms are often used interchangeably (Berger & McInman, 1993; Byrne, 1996; Fox, 1998; Weiss & Ebbeck, 1996). However, as

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[1] Although the present focus is on how individuals currently view themselves, the self-concept can also include how they would ideally view themselves (Higgins, 1991; Markus & Wurf, 1987; Oosterwegel Oppenheimer, 1993), or how they think they ought to be (Higgins, 1987; Moretti & Higgins, 1990).

mentioned previously self-concept is generally aligned with self-description whereas self-esteem connotes self-evaluation (Fox, 1988, 1998; Weiss, 1987; Weiss & Ebbeck, 1996). While a clear distinction between the two terms may be difficult, given that self-concept is believed by some to include self-evaluation (e.g., Marsh, 1990a; Marsh & Shavelson, 1985; Shavelson et al., 1976), one approach is to view self-esteem as a specific component of the self-concept (Byrne, 1996; Fleming & Courtney, 1984; Weiss, 1987; Weiss & Ebbeck, 1996). That is, self-esteem represents the evaluation and affective responses related to one's self-description (Brown, 1993; Weiss, 1987). For clarity self-esteem and self-worth will be used to refer to self-evaluations, and self-concept or self-conceptions will be used as the broader umbrella term.

While self-esteem typically refers to a *global* or *overall* evaluation of personal worth, it has also been attached to more domain-specific self-evaluations (e.g., academic, social, physical). For example, *physical self-worth* has been defined by Fox (1990) as "general feelings of happiness, satisfaction, pride, respect, and confidence in the physical self " (p. 6), where the physical self is represented by physical attributes (e.g., physical appearance, body build, level of fitness) and abilities (e.g., competence at sport and games). Thus, individuals' physical self-worth refers to their overall evaluation of these diverse physical self-descriptors. Throughout the remainder of this paper self-esteem (and self-worth) will be differentiated by prefacing the term with the appropriate level of specificity. When referring to overall feelings of personal worth (i.e., without reference to any particular domain), the term *global* self-esteem or *global* self-worth will be used. When discussing general feelings of worth specifically within the physical domain, the term *physical* self-esteem or *physical* self-worth will be used.

Perceived competence is another self-evaluative term that has received a considerable amount of attention in the literature. *Perceived competence* has generally been defined as individuals' description and evaluation of and affect toward their abilities in a specific domain or subdomain (Horn & Harris, 1996; Weiss & Ebbeck, 1996). Perceptions of competence at the domain level include self-evaluations of physical competence, academic competence, and social acceptance to name a few (Harter, 1990a). Perceptions of competence at the subdomain level refer to the evaluation of specific abilities within each domain. For example, in the academic domain individuals may have distinct evaluations of their math and verbal ability (e.g., Byrne, 1996; Marsh, Byrne, & Shavelson, 1988). In the physical domain, perceived physical competence generally refers to individuals' evaluation of their sport or athletic ability, or can be used to refer to more specific self-evaluations such as perceptions of competence in soccer, golf, or tennis (e.g., Fox, 1998; Horn & Harris, 1996; Weiss & Ebbeck, 1996). Although this definition is similar to that of physical self-worth, the key distinction is that perceived physical competence refers to the evaluation of specific *abilities* (e.g., sport and games), whereas physical self-worth is more encompassing and involves the evaluation of all physical self-descriptors (e.g., abilities, attributes).

Self-efficacy is another self-evaluative term often studied in mainstream and sport psychology (see Bandura, 1977, 1986, 1997; Feltz, 1988, 1992; McAuley, 1992; Schunk, 1991, 1995). According to Bandura (1997), *self-efficacy* is defined as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). In other words, it includes individuals' assessment of their ability to accomplish a specific, upcoming task (Fox, 1998). For example, individuals may

evaluate their ability to successfully run a mile on a track while it is raining. This situation-specific self-evaluation is not relevant to the present study, but it is addressed in a number of theoretical models of the self and therefore is important to acknowledge.

A summary of the self-related terms and their definitions most pertinent to this project are presented in Table 1. While there may be some disagreement about the specific definitions provided depending upon one's perspective, clearly defining the key

Table 1

Definitions of Self-Referent Terms

Term	Definition
self-perception	A general term which refers to any self-referent statement.
self-evaluation	An individual's rating or assessment of him- or herself. Can range from global ratings of the self to an evaluation of specific characteristics or abilities.
self-concept	An individual's description of him- or herself. Some theorists include individuals' evaluations of their self-description within this construct.
global self-esteem	An individual's overall evaluation of and affect toward him- or herself.
global self-worth	The same as global self-esteem.
physical self-worth	An individual's evaluation of and affect toward their physical self (e.g., physical characteristics, physical abilities).
perceived physical competence	An individual's evaluation of and affect toward their abilities in sport and physical activity.
self-efficacy	An individual's assessment of their ability to successfully accomplish a specific, upcoming task.

self-related terms should facilitate a common understanding throughout the remainder of this paper. As noted, however, there is a considerable amount of confusion in the literature about the exact nature of these terms. Authors have used different labels to refer to similar constructs, and the same label is sometimes used to refer to constructs with different meanings. To maintain consistency throughout the paper the terms will be used as they are defined in Table 1.

The focus of the present study is on self-evaluations, with a particular interest in global self-esteem, physical self-esteem, and perceptions of physical competence (i.e., sport competence). Conceptual issues related to these constructs will be elaborated upon throughout the remainder of this section.

Structure of Self-Evaluations

Recent reviews by Marsh (1997; Marsh & Hattie, 1996) have discussed in detail a variety of models that have been developed over the years to explain the structure of relationships between individuals' self-evaluations. For example, Marsh (1997) indicated that a unidimensional model dominated the literature until the 1980's (also see Harter, 1996, 1998; Fox, 1998; Fox & Corbin, 1989). From this perspective, situation- and domain-specific self-evaluations were believed to be so heavily dominated by global self-worth that these specific self-evaluations could not be adequately discriminated (Coopersmith, 1967; Winne, Marx, & Taylor, 1977). This approach, however, was heavily criticized on the basis that it does not allow for individuals to have distinct self-evaluations in diverse areas or domains of life (e.g., Harter, 1983; Marsh & Smith, 1982; Rosenberg, 1979; Sonstroem, 1984; Wylie, 1979). In other words, the unidimensional

model cannot adequately account for individuals who evaluate themselves positively in one area (e.g., the physical domain) and negatively in another (e.g., academics), and thus may miss critical information. In support of this criticism, research has consistently found that the self-concept cannot be adequately understood without taking into account its multidimensional nature (Harter, 1988, 1990a, Marsh, 1997; Marsh & Hattie, 1996; Shavelson & Marsh, 1986).

Marsh (1997; Marsh & Hattie, 1996) has described a variety of more complex models which all account for the multidimensionality of self-evaluations; however, Marsh suggests that they can all be thought of as special cases of the multidimensional and hierarchical model. The notion of a multidimensional and hierarchical model of the self can be seen in the writings of theorists such as Epstein (1973) and James (1890). For example, James identified three major "constituents" of the known self including the material self, the social self, and the spiritual self. In addition to separating the self into multiple dimensions, he arranged them hierarchically (Harter, 1996). According to James, the material self was at the bottom of the hierarchy, the social self in the middle, and the spiritual self at the top given that he believed the spiritual self was "so supremely precious that rather than lose it, a man ought to be willing to give up friends and good fame, and property and life itself" (p. 203). Similarly, Epstein suggested that individuals' self-knowledge is hierarchically arranged with their self-esteem representing a superordinate construct under which all other subcategories (i.e., general competence, moral self-approval, power, love-worthiness) are organized. Further, under each subcategory Epstein suggested there are a number of lower-order factors that describe increasingly specific self-knowledge. While Epstein's and James' conceptualizations

provide early examples of multidimensional and hierarchical approaches to the self, much of the current literature points to a classic paper by Shavelson et al. (1976) as illuminating this approach.

According to Marsh and Hattie (1996), the review by Shavelson et al. (1976) was instrumental in stimulating subsequent research on self-concept. In addition to criticizing previous self-concept research as being atheoretical and suffering from measurement and definitional problems, Shavelson and colleagues provided a detailed account for how many of the shortcomings in the literature could be addressed (Marsh & Hattie, 1996). Although an extensive review of this paper is beyond the scope of the present discussion, a few key issues identified by Shavelson et al. are worthy of elaboration. Most critical to the current discussion is that they indicated the self-concept was multidimensional and the various self-conceptions were organized and structured by individuals. Specifically, a hierarchical structure was proposed with self-perceptions of situation-specific behaviors at the base of the hierarchy, inferences about the self in more broad domains of life (e.g., physical, social, academic) at the middle level, and global self-concept (self-esteem) at the apex of the hierarchy.

As an example, Shavelson and colleagues (1976) presented one possible representation of this multidimensional and hierarchical approach (see Figure 1). At the top of the hierarchy is an individual's global evaluation of the self (i.e., global self-esteem) which is a function of self-evaluations in the academic and non-academic (i.e., social, emotional, physical) domains. Each of these domain-specific self-evaluations is thought to be superordinate to self-evaluations in more specific domains or subdomains. For example, they proposed that self-evaluations in various academic subjects (e.g.,

English, history, math, science) were nested under individuals' academic self. Within each of these subdomains, self-evaluations could further consist of more specific components or facets. For example, math self-evaluations could incorporate perceptions of ability in trigonometry, algebra, calculus, and so on. This hierarchy continues until it reaches an individual's evaluation of abilities in specific situations.

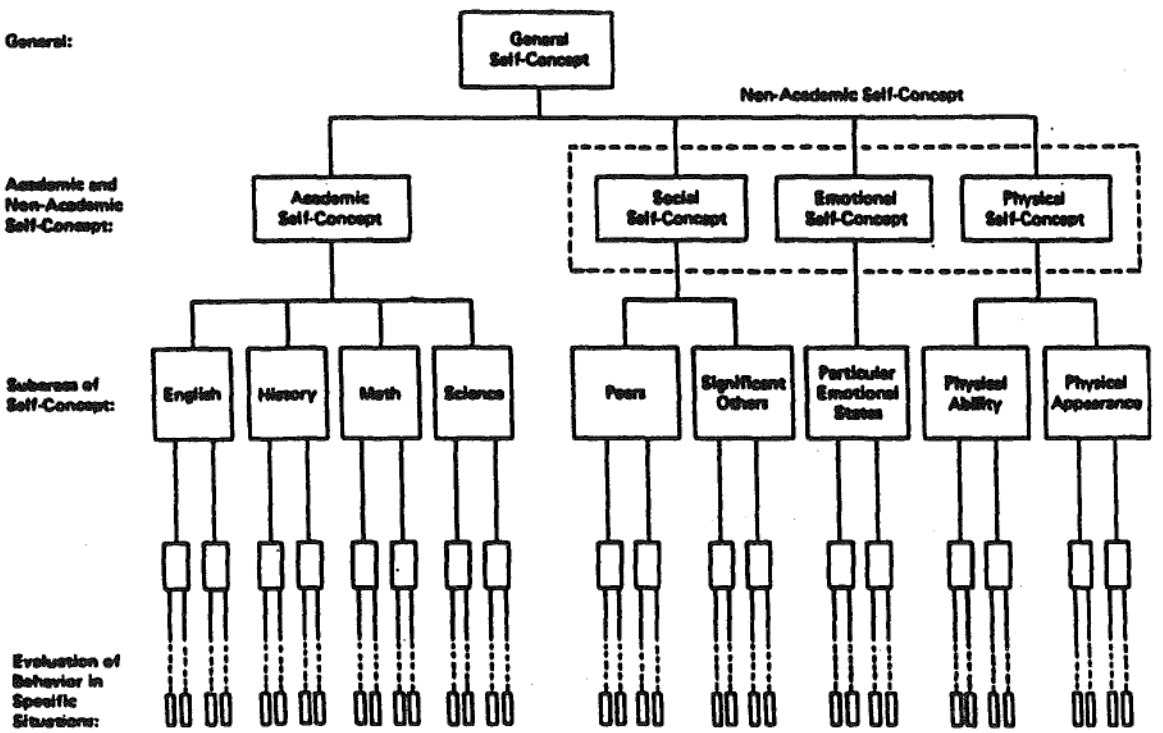

Figure 1. Shavelson and Colleagues' (1976) Multidimensional and Hierarchical Model of the Self-Concept

Another aspect of Shavelson and colleagues' (1976) conceptualization of the self is that differences in the stability of self-evaluations exist depending on their position in the hierarchy. General self-concept or global self-esteem is thought to be relatively stable over time. Moving down the self-concept hierarchy, however, the self-evaluations are increasingly more specific and less stable. This notion of stability of self-evaluations will be addressed in greater detail later in this paper.

Although the structure of self-concept depicted in Figure 1 has come to be known as the Shavelson et al. model (Marsh & Hattie, 1996), they clearly indicated that this was only one possible representation. That is, the specific content and number of salient self-conceptions may vary, for example developmentally. Specifically, they suggested that younger children possess an undifferentiated self-concept. With increasing age, however, the self-concept becomes increasingly differentiated and integrated. Given this perspective, the structure of the self-concept identified in Figure 1 may adequately represent the school-aged child, yet not sufficiently account for the self-concept of an adult. For example, the predominance of the academic self may decline with age while, at the same time, additional domain-specific self-conceptions such as job competence and romantic relationship competence become important later in life. This notion of increasing differentiation and integration has also been elaborated upon by other theorists and has received strong empirical support (e.g., Byrne & Shavelson, 1996; Harter, 1985a, 1990a; Harter & Pike, 1984; Marsh, 1989, 1993b)

The review by Shavelson and colleagues (1976) has had a tremendous influence on research and theory on self-perceptions. Since being published, numerous multidimensional and hierarchical models have been developed and refined (e.g., Hattie,

1992; Marsh & Shavelson, 1985; Shavelson & Bolus, 1982; Shavelson & Marsh, 1986; Song & Hattie, 1984). While the majority of attention has focused on the academic self (e.g., Byrne, 1996; Marsh, 1987; Marsh & Shavelson, 1985), the structure of other domain-specific self-conceptions such as the social self (e.g., Byrne & Shavelson, 1996; Hattie, 1992) and artistic self (e.g., Vispoel, 1995) have also been the focus of research efforts. Most pertinent to the present investigation, however, is the work addressing the physical self.

Currently, Western societies place a tremendous amount of importance on the body's appearance and its capabilities (Sparkes, 1997). According to Fox (1997), "more than ever, the body has become inexorably entangled with the whole self, and it has become increasingly difficult for individuals or researchers to ignore its social significance" (p. 113). In support, Harter (1990a) has consistently found that self-evaluations of physical appearance or attractiveness are more highly related to global self-worth than any other domain-specific self-evaluation in individuals ranging from 8-50 years of age. While physical attractiveness is only one aspect or component of the physical self, its relationship with global self-esteem highlights the importance of considering self-evaluations in the physical domain.

Early attempts to examine aspects of the physical self as part of the overall self-concept were rather limited in scope (Fox, 1998). For example, the model proposed by Shavelson et al. (1976) identified the physical self as a key domain-specific self-conception, and suggested that it is comprised of perceptions of physical ability and physical appearance. While no conceptual rationale for these two self-evaluations were provided by Shavelson and colleagues, subsequent research investigating the physical

self-concept initially focused on these aspects. For instance, multidimensional self-concept researchers such as Harter (e.g., 1982, 1985a, 1988; Harter & Pike, 1984) and Marsh (e.g., Marsh, 1989, 1990a; Marsh, Barnes, Cairnes, & Tidman, 1984; Marsh, Parker & Barnes, 1985) included self-evaluations of physical (athletic) ability and physical appearance in their investigations. While this research has significantly added to our understanding of the role of the physical self in the overall self-concept, Fox (1998) noted some conceptual and methodological shortcomings. He suggested that little attention had been paid to determine if physical appearance and athletic competence adequately represented the content of the physical self. Are these the key dimensions? Are there other dimensions that provide important information for understanding the structure of physical self-evaluations? Second, Fox indicated that the items used to measure these physical self-evaluations include a mixture of diverse evaluative statements that may be insufficient to adequately represent the physical self. For example, the physical ability subscale of the Self-Description Questionnaire (e.g., Marsh et al., 1985) contains items tapping diverse perceptions such as "running fast", "liking sport and games", and "having good muscles". Similarly, the physical appearance subscale from Harter's Self-Perception Profile (e.g., Harter, 1985a) asks about perceptions of hair, face, and body.

Fortunately, a more concerted effort to systematically and comprehensively examine the nature and structure of the physical self has recently been undertaken. As with the work in other achievement areas such as the academic domain (e.g., Byrne, 1996, Marsh, 1993a), the development of more comprehensive conceptual models in the physical domain has been strongly tied to measurement development. For example, a

detailed examination of the physical self-concept has been conducted by Fox and his colleagues (Fox, 1988, 1990, 1998; Fox & Corbin, 1989) who began by attempting to identify the salient dimensions of the physical self so a comprehensive measure could be developed. Through an extensive literature review, a content analysis of open-ended questionnaires, and interviews with male and female college students, they developed a measure (i.e., the Physical Self-Perception Profile) which incorporated a mixture of domain- and subdomain-specific self-evaluations. Specifically, they identified four critical subdomain-specific self-evaluations including perceived body attractiveness, sport competence, physical strength, and physical condition. Further, they included items to tap individuals' general physical self-worth. Consistent with the multidimensional and hierarchical model of self-evaluations (e.g., Shavelson et al., 1976), their measure of physical self-worth represented a domain-specific self-evaluation which was superordinate to the subdomains of body attractiveness, sport competence, physical strength, and physical condition. Fox's conceptualization of the relationship between these self-evaluations can be seen in Figure 2.

A number of subsequent studies have supported Fox's (1988, 1990; Fox & Corbin, 1989) conceptualization and measure of the physical self. Specifically, studies have found that the self-evaluations of body attractiveness, sport competence, physical strength, and physical condition represent distinct constructs and adequately represent the number and scope of dimensions necessary for understanding the physical self for college-aged individuals (e.g., Fox, 1990; Fox & Corbin, 1989; Marsh, Richards, Johnson, Roche, & Tremayne, 1994; Sonstroem, Spelitois, & Fava, 1992). For example, Fox (1990; Fox & Corbin, 1989) found that, in combination, these four subdomains

predict approximately 70% of the variance in perceptions of physical self-worth. Similar support has been reported with adults (Sonstroem et al., 1994) and children and adolescents using a modified version of the PSPP (Eklund, Whitehead, & Welk, 1997; Welk, Corbin, & Lewis, 1995; Whitehead, 1995). Strong support for the multidimensional and hierarchical model of physical self-evaluations proposed by Fox has also been reported by Sonstroem et al. and Eklund et al. Based on this research, the model proposed by Shavelson et al. (1976) could be expanded to include a wider variety of physical self-dimensions.

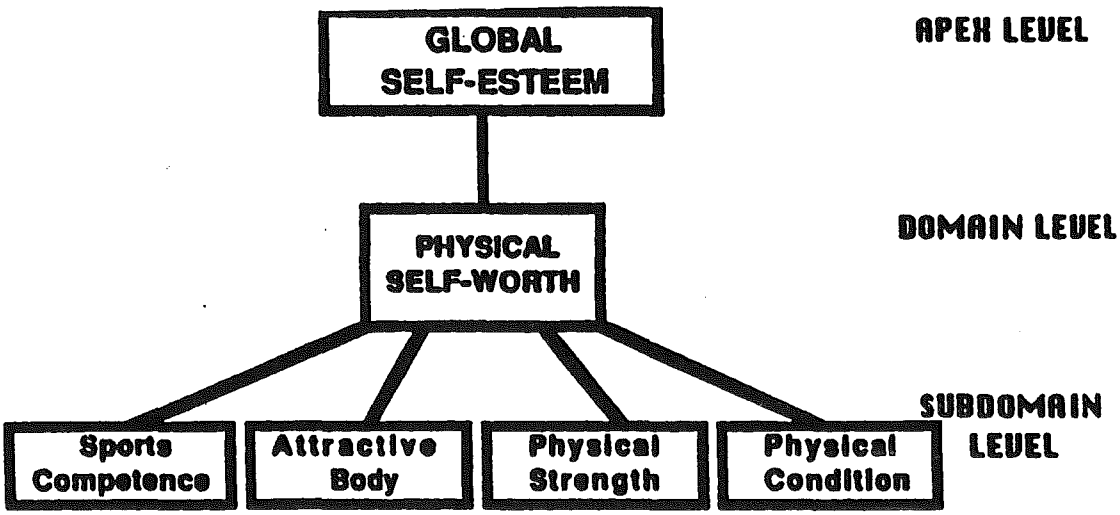

Figure 2. Fox and Corbin's (1989) Multidimensional and Hierarchical Model of the Physical Self

Marsh and his colleagues (Marsh, 1996a; Marsh, Hey, Roche, & Perry, 1997; Marsh & Redmayne, 1994; Marsh et al., 1994) have also provided a detailed examination of the structure of the physical self. Similar to Fox (1990; Fox & Corbin, 1989), Marsh began by developing a measure which incorporated a more comprehensive set of self-evaluations pertinent to the physical domain. Marsh and colleagues (Marsh & Redmayne, 1994; Marsh et al., 1994) developed the Physical Self-Description Questionnaire (PSDQ) which included self-conceptions of strength, body fat, physical activity, endurance/fitness, sport competence, coordination, health, appearance, and flexibility, as well as general physical self-concept and global self-esteem. The specific self-conceptions included in the scale were based on a review of the physical self-concept literature, an examination of existing measures (e.g., Richards, 1988), and the identification of key physical fitness markers (Marsh, 1993c, 1993d). Subsequent research using this measure has provided support for the multidimensional and hierarchical model of the self-concept (see Fox, 1998; Marsh, 1997). For example, the specific subdomain-specific self-conceptions are significantly and positively related to general physical self-concept which, in turn, is related to global self-esteem.

The work of Fox and Marsh has supported and extended the Shavelson et al. (1976) conception of a multidimensional and hierarchical structure of the self. Interestingly, however, both Fox (1990) and Marsh (1996b) have failed to support Shavelson et al.'s prediction that global self-evaluations should be more stable than specific self-evaluations. In particular, test-retest correlations of the various self-evaluations included in the multidimensional measures show that the correlations for global self-evaluations (global self-esteem, physical self-worth) are smaller than for

subdomain-specific self-evaluations (e.g., sport competence, conditioning competence), suggesting that they are less stable (e.g., Fox, 1990; Marsh, 1996b; Whitehead, 1995). While test-retest correlations confound the issue of construct stability with measurement unreliability (see Nesselroade, Pruchno, & Jacobs, 1986; Schutz, 1998), these results question the hypotheses forwarded by Shavelson et al.

In conclusion, the work by Fox, Marsh, and others have significantly increased our understanding of the physical self by identifying a more comprehensive set of critical physical self-evaluations, and supporting a multidimensional and hierarchical model of the physical self. There are a number of potential benefits of this research. For example, a hierarchical structure of the self suggests that modifying specific self-evaluations should eventually translate into changes in more global self-evaluations (e.g., Sonstroem & Morgan, 1989). Thus, interventions (e.g., weight training program) that target specific aspects of individuals' self-concept (e.g., physical strength) should, with time, provide a means of developing more positive domain-specific (physical self-worth) and global self-esteem. Similarly, certain physical self-evaluations may contribute differently to physical activity-related consequences such as behaviors, cognitions, and affective responses. Thus, a comprehensive examination of the physical self should result in a more complete understanding of these psychological processes. The following section describes the existing sport and exercise psychology literature that has examined global and physical self-evaluations.

Research on Global and Physical Self-Evaluations

A considerable amount of research in the physical domain has examined self-evaluations (Weiss & Ebbeck, 1996). Although there have been a variety of research questions and approaches that have been adopted within this literature, much of this work can be broken down into three major areas. First, studies have investigated group differences in various self-evaluations. For instance, researchers have commonly asked whether there are age and/or gender differences in global self-esteem or perceptions of physical competence. Second, there is a considerable amount of work focusing on antecedents or determinants of self-evaluations. That is, research has examined the intrapersonal and environmental factors that may enhance or undermine individuals' self-evaluations. Finally, the outcomes or consequences of possessing relatively high or low global and physical self-evaluations have been studied. Although numerous consequences have been examined, much of this work has focused on the relationship between self-evaluations and individuals' motivation and affect. The following section summarizes the literature addressing each of these three areas.

Group Differences in Self-Evaluations

Age Differences in Self-Evaluations

One of the more common questions addressed is whether there are age-related differences in children's and adolescents' level (i.e., high, low) of global and physical self-evaluations. Results from this research have revealed an inconsistent developmental pattern. For instance, in terms of global self-esteem some researchers have reported

declines across the elementary and middle school years (e.g., Marsh, 1989; Marsh et al., 1984; Zimmerman, Copeland, Shope, & Dielman, 1997), while others have reported relatively stable values during this age period (e.g., Eccles, Midgley, & Adler, 1984; Eccles et al., 1989; Harter, 1982; Wigfield & Eccles, 1994). A few studies have also found that global self-esteem remains relatively stable, but have reported a significant decline in self-esteem in the transition from elementary to middle school (e.g., Eccles et al., 1984; Eccles et al., 1989). This inconsistent pattern continues through adolescence. For example, a number of cross-sectional and longitudinal studies have revealed that global self-esteem remains relatively constant during the high school years (e.g., Chubb, Fertman, & Ross, 1997; Marsh, 1989), whereas others have found that global self-evaluations tend to increase over this time period (e.g., Demo & Savin-Williams, 1992; Harter, 1990b; Savin-Williams & Demo, 1984).

In a review of this literature, Crain (1996) questioned the utility of examining age-related differences in global self-esteem. He noted that: (a) the pattern of results are inconsistent across studies; (b) the effect sizes for the age-related differences have been small (also see Marsh, 1989); and, (c) longitudinal investigations (e.g., Block & Robins, 1993; Zimmerman et al., 1997) have revealed that individuals differ in their pattern of change over time, with some individuals increasing, others decreasing, and still others showing no change. Based on these findings, Crain concluded that chronological age is of little value in our understanding of variations in global self-esteem.

A similar conclusion could be forwarded based on a review of the literature on age-related changes and differences in physical self-evaluations. This research has also revealed an inconsistent developmental pattern. Specifically, a number of studies have

reported declining levels of physical self-evaluations with age across the childhood and early adolescent years (Eccles et al., 1989; Marsh, 1989; Marsh et al., 1984; Ulrich, 1987; Wigfield & Eccles, 1994; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991; Wigfield et al., 1997), whereas other studies have shown no age-related differences across this time period (e.g., Eccles, Wigfield, Harold, & Blumenfeld, 1993; Harter, 1982; Feltz & Brown, 1984; Marsh, 1989, 1998). Still other studies have reported age-related increases across the adolescent years in perceived sport competence (e.g., Duncan & Duncan, 1991; Petlichkoff, 1993) and perceived physical appearance (e.g., Marsh, 1989). In sum, this inconsistent pattern and the relatively small effects uncovered suggest that chronological age is not a prime individual difference factor. No doubt there are many changes that occur with increasing chronological age (e.g., cognitive, social, emotional, and physical development; changes in the school and sport environment) that may prove more important for understanding variations in self-evaluations across the childhood and adolescent years (see Harter, 1998, Horn & Harris, 1996; Eccles, Wigfield, & Schiefele, 1998; Wigfield, Eccles, & Pintrich, 1996).

Gender Differences in Self-Evaluations

A number of studies have also tested whether males and females differ in their reported level of global and physical self-evaluations. In contrast to age-related findings, this pattern of results is more similar across studies. Overall, and consistent with prevailing gender stereotypes, males tend to report more positive levels of global self-esteem (e.g., Block & Robins, 1993; Marsh et al., 1997; Welk et al., 1995; Whitehead, 1995) and perceptions of sport competence (e.g., Eccles & Harold, 1991; Feltz &

Petlichkoff, 1983; Harter, 1982; Ulrich, 1987). Starting around the middle school years males also tend to have more positive perceptions of physical appearance (e.g., Harter, 1990a, 1990b, Marsh, 1989). Further, studies using multidimensional physical self-worth scales (e.g., Fox & Corbin, 1989; Marsh et al., 1994) have shown that males report more positive self-evaluations for each of the subdomains (e.g., Marsh, 1998; Marsh, Hey, Johnson, & Perry, 1997; Welk et al., 1995; Whitehead, 1995). In sum, gender differences have typically been reported, although a few studies have not found significant differences (e.g., Marsh et al., 1984) and the magnitude of differences (i.e., effect sizes) have typically been quite small (Crain, 1996; Marsh, 1989).

While evidence exists for both age- and gender-related differences in global and physical self-evaluations, Crain (1996) cautioned that chronological age and gender are not critical individual differences capable of contributing to our understanding of self-evaluations. Instead, researchers should focus on *why* these changes or differences occur. In other words, what are the intrapersonal and environmental factors that lead to the development of higher or lower self-evaluations? The following section describes the theoretical and empirical work on the antecedents of global and physical self-evaluations.

Antecedents of Self-Evaluations

Antecedents of Global Self-Evaluations

A number of theoretical models specifying antecedents of global self-esteem have been forwarded (see Harter, 1983, 1998). One such model is Harter's (1985b, 1987) mediational model of global self-worth. Given the considerable amount of empirical support for the model's predictions (see Weiss & Ebbeck, 1996; Harter, 1985b, 1987,

1990a, 1993a, 1996), this model will be used as a framework for consolidating the literature on this topic.

An adapted version (Weiss & Ebbeck, 1996) of Harter's (1985b, 1987) model is presented in Figure 3. The model has undergone a few minor revisions since it was originally formulated (e.g., Ebbeck & Weiss, 1998; Harter, 1990a, 1993b; Weiss & Ebbeck, 1996); however, the key constructs have essentially remained the same since it was originally proposed. As seen on the left side of the Figure, the primary determinants of global self-worth are domain-specific self-conceptions, perceived social regard, and affect.

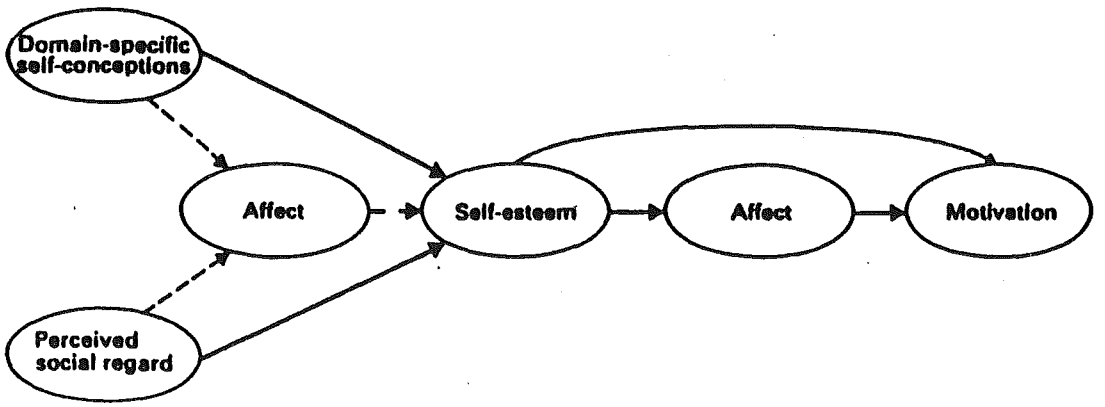

Figure 3. Weiss and Ebbeck's (1996) Modified Version of Harter's (1985b, 1987) Mediational Model of Global Self-Worth

Domain-specific self-conceptions. Based on the seminal work of James (1890), Harter (1985b, 1987, 1990a, 1993a, 1996, 1998) contends that global self-worth is

influenced by individuals' perceptions of competence in a variety of achievement domains (e.g., social, academic, physical). Moreover, Harter suggests that individuals' domain-specific self-evaluations interact with the importance they place on being successful in these domains. Individuals who feel they are competent in areas they value should experience higher levels of global self-worth. Individuals who evaluate themselves poorly in a specific domain are not necessarily going to experience lower global self-worth if the domain is not important to them or if they are able to "discount" the personal value of that domain (Harter, 1985b). For example, an individual may negatively evaluate his or her ability in music but not suffer any loss in global self-worth because he or she does not feel that music ability is important to their self-perceptions. Thus, only in those domains perceived as important will low perceptions of competence result in diminished global self-worth. This notion of importance has also been discussed by other self-theorists such as Fox (1988, 1990, 1997; Fox & Corbin, 1989) and Pelham (1991, 1995a, 1995b; Pelham & Swann, 1989).

Research has consistently supported the relationship between perceptions of physical competence and global self-worth (e.g., Ebbeck & Stuart, 1993, 1996; Ebbeck & Weiss, 1998; Fox & Corbin, 1989; Marsh et al., 1997; Sonstroem et al., 1992, 1994). For example, Ebbeck and Weiss (1998) found that perceptions of physical competence influenced global self-worth in boys and girls ranging from 8-13 years of age. Specifically, they found that a model in which perceived physical competence mediated the relationship between affect and global self-worth provided a good fit to the data and was capable of predicting a large amount of the variance in global self-esteem (49%).

Some studies have found that individuals' ratings of domain importance have added to the prediction of global self-worth above and beyond perceptions of competence (e.g., Ebbeck & Stuart, 1993, 1996; Fox, 1990; Harter, 1987, 1990a; Sonstroem, Harlow, Gemma, & Osborne, 1991; Sonstroem et al., 1994; Whitehead, 1995). For example, Ebbeck and Stuart (1993) examined whether perceptions of physical competence, perceived individual importance of physical competence, and perceptions of group importance could predict global self-esteem in a sample of 11-14 year-old football players. The results suggested that these three perceptions significantly predicted a large portion of the variance in global self-esteem; however, only perceived competence and individual importance was uniquely related to self-esteem. In an extension study Ebbeck and Stuart (1996) also found that, in combination, perceived physical competence and perceptions of individual, parent, coach, and team importance were predictive of global self-esteem in a sample of 3rd through 8th grade basketball players.

Theoretically, the interaction between domain-specific self-conceptions and perceived domain importance should result in the best prediction of global self-worth. However, Marsh (e.g., 1986, 1993a, 1994, Marsh & Sonstroem, 1995) has noted that only a small amount of the variance in global self-worth is accounted for by including domain importance. As an example, in the studies by Ebbeck and Stuart (1993, 1996) almost all of the variance in global self-esteem was contributed by perceptions of physical competence. Although Marsh (e.g., 1995) has acknowledged that conceptually including individuals' ratings of domain importance makes sense, the lack of empirical support questions the utility of including importance above and beyond self-evaluations alone.

Perceived social regard. Another determinant of global self-worth in Harter's (1985b, 1987) model is perceived social regard. Based on the early theorizing of symbolic interactionists such as Cooley (1902) and Mead (1925, 1934), Harter suggests that individuals' global self-worth is influenced by how they perceive others view them. That is, we infer how important others (e.g., parents, peers, teachers, coaches, relatives) evaluate us and these reflected appraisals influence our self-evaluations. The link between perceived social regard and global self-worth has also been addressed by other scholars (e.g., Felson, 1993; Markus & Cross, 1990), and has received a considerable amount of support by Harter and her colleagues (see Harter, 1985b, 1986, 1987, 1990a, 1993a, 1998; Harter et al., 1996).

The important role of significant others has also been highlighted in various motivational theories. For example, Eccles and colleagues' (Eccles et al., 1998) expectancy-value theory suggests that reflective appraisals and behaviors of significant others (e.g., parents, teachers) can play a major role in determining individuals' global and domain-specific self-evaluations, the value they place on tasks, and their goals and motivation. Harter's (1978, 1981a) competence motivation theory suggests that children's domain-specific self-evaluations are influenced by feedback and modeling from significant others. Other theories such as self-determination theory (Deci & Ryan, 1985, 1991) and achievement goal theory (Ames, 1984, 1992a; Dweck & Leggett, 1988; Nicholls, 1984, 1989; Urdan & Maehr, 1995) have also highlighted the beliefs and behaviors of significant others as determinants of individuals' self-evaluations.

Research in the physical domain validates the important role of significant others on individuals' self-evaluations. For example, several studies have shown that parents

play a major role in children's and adolescents' physical self-perceptions (e.g., Brustad, 1993a, 1996a, Dempsey et al., 1993; Kimiecik et al., 1996). In particular, these studies have found parental beliefs (e.g., goal orientations, physical activity enjoyment, perceptions of child's ability) and behaviors (e.g., encouragement, involvement) have a significant influence on children's and adolescents' physical self-evaluations (see Brustad, 1996b, for a review). Teachers and coaches also influence children's and adolescents' physical self-evaluations (e.g., Allen & Howe, 1998; Amorose & Weiss, 1998; Black & Weiss, 1992; Horn, 1985, Smoll, Smith, Barnett, & Everett, 1993). The results of these studies have indicated that high frequencies of positive (e.g., praise, encouragement) and informational (e.g., mistake-contingent technical instruction) feedback given contingent to performance are related to more positive self-evaluations (see Horn, 1987, 1992; R. Smith & Smoll, 1996, for reviews). Considerably less attention has been paid to the influence of peers on self-evaluations in the physical domain; however, there have been a few investigations to suggest that peer relationships (i.e., peer acceptance, friendship) are an important antecedent of physical self-evaluations (e.g., A. Smith, 1997; Weiss & Duncan, 1992; Weiss, Smith, Theeboom, 1996). The general results from this handful of studies are that perceptions of peer acceptance and friendship are positively related to children's and adolescents' physical self-evaluations. In summary, both theory and research have indicated that the beliefs and behaviors of adults and peers are critical determinants of individuals' global and physical self-evaluations.

Affect. Although not originally identified as an antecedent in Harter's (1985b, 1987) mediational model, hence the broken lines in Figure 3, affect has been added as

another key determinant of global self-esteem (Ebbeck & Weiss, 1998; Weiss & Ebbeck, 1996). This addition was based on the results of various studies examining the relationship between affect and self-evaluations. First, there is considerable evidence which suggests that affect is an outcome of both domain-specific self-conceptions (e.g., Brustad, 1993a; Ebbeck & Weiss, 1998; Pelham & Swann, 1989; Scanlan, Stein, & Ravizza, 1989) and perceived social regard (e.g., Brustad, 1988; Passer, 1988; R. Smith, Smoll, & Barnett, 1995). Secondly, Harter and colleagues (e.g., Harter, 1993b; Harter & Marold, 1997; Harter & Jackson, 1993) have recently found a bidirectional influence between affect and global self-worth. Specifically, Harter found that a model in which affect leads to global self-worth fits the data equally as well as a model where global self-worth leads to affect (see Harter & Marold, 1997). Thus, while Harter (1985b, 1987) originally proposed that affect was a consequence of global self-worth, these results suggest that it should also be included as a determinant of global self-worth. Support for the role of affect as a determinant of global self-worth has recently been demonstrated in the physical domain by Ebbeck and Weiss (1998).

In summary, theory and research have identified a number of determinants of global self-evaluations. In particular, self-evaluations in domains that are perceived to be important, perceptions of significant others' beliefs and behaviors, and individuals' affective responses are important antecedents of global self-esteem. Research and theory have also implicated significant others' influence and affect as sources or determinants of perceived physical competence.

Sources of Perceived Physical Competence

Researchers in the educational and sport psychology literature have examined the sources of information children and adolescents use to evaluate their perceptions of competence in specific achievement domains (see Horn & Amorose, 1998; Horn & Harris, 1996; Stipek & MacIver, 1989). Most of the research in the physical domain has been based on Harter's (1978, 1981a) competence motivation theory which suggests that contingent approval and positive reinforcement for independent mastery attempts, rather than performance outcomes, will help children gradually internalize two critical systems. First, children will develop a self-reward system where they are capable of judging and reinforcing their own mastery attempts. Second, children will internalize a system of mastery goals or standards that will focus their achievement striving toward a self-selected level of performance. As a consequence of this internalization process, children are capable of making independent judgments concerning the quality of their performance attempts, as well as whether they have achieved their self-set goals. In other words, children will gradually become less dependent on external sources of competence information (e.g., parent and coach feedback), and instead use their developed internal standards. Harter goes on to suggest that the internalization of a self-reward and mastery goal system will not occur for children who experience a negative socialization pattern (e.g., lack of favorable performance feedback, disapproval for independent mastery attempts). Rather, these children and adolescents will continue to be dependent upon external sources of competence information to judge the quality of their achievements, as well as dependent on externally-defined goals for their behavior.

A series of studies by Horn and her colleagues have shown that these developmental changes in competence sources occur in the physical domain (Horn, Glenn, & Wentzell, 1993; Horn & Hasbrook, 1986, 1987; Horn & Weiss, 1991; Weiss, Ebbeck, & Horn, 1997). Specifically, younger children tend to rely on parental feedback and task accomplishment to evaluate their abilities. A decrease in the use of parental feedback and an increase in peer comparison and evaluation occur during later childhood and early adolescence. Finally, another age-related shift occurs with older adolescents deemphasizing peer comparison and moving toward the use of more internal standards (e.g., accomplishment of self-set goals, personal improvement). These studies, however, have also found that children and adolescents use multiple sources of information to evaluate their physical ability and that within-age variability exists. Further, during adolescence gender differences begin to emerge with females rating self comparison and internal information as well as evaluations from significant others (i.e., peers, spectators, coaches) as more important, while males rate the use of competitive outcomes and speed/ease of learning as more important (Horn et al., 1993).

The relationship between various sources of competence information and selected personality characteristics has also been a topic studied to test Harter's (1978, 1981a) theoretical predictions. For example, studies have examined characteristics such as perceptions of physical competence and performance control (Horn & Hasbrook, 1987), achievement goal orientation (Williams, 1994), and trait anxiety and global self-esteem (Weiss et al., 1997). In each of these studies, certain sources of competence information were related to selected personality characteristics. For example, consistent with Harter's predictions, Horn and Hasbrook found that higher perceptions of competence and internal

perceptions of performance control were positively related to the use of self-referenced sources of information.

In summary, certain cues of ability are more or less important depending upon individuals' developmental level and personality characteristics. Nevertheless, children and adolescents use multiple sources of competence information including intrapersonal (e.g., speed or ease of learning, effort, attraction to activity), performance-related (e.g., achievement of self-set goals, game performance statistics, game outcome, skill improvement), and interpersonal (e.g., parent, coach, peer, and spectator feedback, peer comparison) sources. Aspects of the social environment (e.g., motivational climate, league structure) may also influence which sources of competence information are most important (see Horn & Harris, 1996; Stipek & MacIver, 1989).

The previous section has highlighted a variety of antecedents of both global self-esteem and physical self-evaluations. This literature provides important information about the factors that influence individuals' self-evaluations and provides some guidelines for practitioners to help facilitate the development of positive self-evaluations (Horn & Harris, 1996). This is particularly critical given that self-evaluations influence a number of achievement-related behaviors, cognitions, and affective responses. The theory and research on the consequences of global and physical self-evaluations are reviewed in the following section.

Consequences of Self-Evaluations

Theoretical Perspectives

The linkage between self-evaluations and achievement-related behaviors, cognitions, and affective responses has been highlighted in various theoretical frameworks. For example, Harter's (1985b, 1987) mediational model, which was presented in Figure 3, indicates that global self-worth directly influences affect and motivation. Several theories have also identified domain-specific self-evaluations as a key determinant of motivation and affective responses (e.g., Deci & Ryan, 1985; Eccles [Parsons] et al., 1983; Harter, 1978, 1987; Nicholls, 1989, 1990). Although certain aspects of these theories vary, each predicts that positive self-evaluations should result in higher levels of motivation (e.g., choice, effort, persistence, preference for challenge, intrinsic interest) and positive affective responses (e.g., enjoyment, satisfaction). Conversely, low perceptions of global self-esteem and domain-specific self-evaluations should result in lower motivation and negative affective responses (e.g., anxiety). The following section provides a summary of the sport and exercise psychology research that has provided support for these relationships.

Self-Evaluations and Affect

The relationship between affective responses and various psychological characteristics including self-evaluations has been the focus of considerable research (see Brustad, 1993b; Gould, 1993; Passer, 1988; Scanlan & Simons, 1992). For instance, perceptions of physical competence are positively related to feelings such as happiness, excitement, satisfaction, pride, and relaxation, and negatively related to feeling such as

unhappiness, nervousness, and guilt (e.g., Ebbeck & Weiss, 1998; Vlachopoulos & Biddle, 1997; Vlachopoulos et al., 1997). While these results highlight the role of self-evaluations in a diverse range of positive and negative affective responses, research conducted in the physical domain has typically focused either on individuals' enjoyment or anxiety.

Enjoyment. A number of studies in sport and exercise psychology have focused on the construct of sport enjoyment (Scanlan & Simons, 1992). Although the definition of this construct has been debated (e.g., Kimiecik & Harris, 1996; Wankel, 1997), the most common definition has been forwarded by Scanlan and colleagues (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993; Scanlan, Carpenter, Lobel, & Simons, 1993; Scanlan & Simons, 1992) who define enjoyment as a "positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking, and fun" (Scanlan & Simons, 1992, p. 202-203). From their perspective enjoyment is a more general construct than specific emotions such as pride, but more differentiated than global positive affect (Scanlan, Carpenter, Lobel et al., 1993; Scanlan & Simons, 1992).

Support for the predicted relationship between self-evaluations and enjoyment has been consistently found (see Scanlan & Simons, 1992). For example, perceptions of physical competence are a strong and positive predictor of children's and adolescents' enjoyment of sport (e.g., Boyd & Yin, 1996; Scanlan & Lewthwaite, 1986; Wankel & Sefton, 1989). Similar findings have been reported for children's and adolescents' attraction to physical activity participation (e.g., Brustad, 1993a, 1996a; A. Smith, 1997). It should be noted, however, that a few studies have not found a significant relationship between self-evaluations and enjoyment (e.g., Brustad, 1988; Fox, Goudas, Biddle, Duda,

& Armstrong, 1994; Scanlan, Carpenter, Lobel, & Simons, 1993). For example, Brustad (1988) uncovered a positive relationship between enjoyment and global self-esteem but not for perceived physical competence.

Anxiety. Negative affective responses in the physical domain have been studied in the form of individuals' level of state and trait anxiety. State anxiety refers to moment-to-moment feelings of apprehension, worry, and tension (Gould & Krane, 1992; Speilberger, 1966). Trait anxiety, on the other hand, is a more dispositional personality characteristic that predisposes individuals to perceive a wide range of situations as threatening and increases the likelihood of responding with heightened levels of state anxiety (Gould, 1993; Gould & Krane, 1992).

In general, a negative relationship between self-evaluations and both state and trait anxiety has been uncovered in the physical domain. For instance, a negative relationship between children's and adolescents' trait anxiety and global self-esteem has been reported (e.g., Brustad, 1988; Kerr & Goss, 1997). Similarly, Brustad and Weiss (1987) and Passer (1983) found that high trait anxious children and adolescents were lower in global self-esteem, although perceived physical competence was not found to vary between high- and low-anxiety groups. Scanlan and Passer (1978, 1979) showed that global self-esteem was negatively related to youth sport athletes' pre-competitive state anxiety; however, Scanlan and Lewthwaite (1984) found no significant relationship between these variables. Perceptions of physical competence have also been shown to be negatively related to college athletes' pre-competitive state anxiety (Gould, Petlichkoff, & Weinberg, 1984). However, no significant relationship between perceived physical competence and state anxiety were reported in a group of youth sport athletes (Gould,

Eklund, Petlichkoff, Peterson, & Bump, 1991). While there are some inconsistencies, results from these studies have revealed a negative relationship between children's and adolescents' trait and state anxiety and their self-evaluations, particularly global self-esteem.

In summary, the results of several studies suggest that individuals who report higher levels of global self-esteem and perceptions of physical competence experience higher levels of enjoyment and lower anxiety. Conversely, lower self-evaluations are related to higher anxiety and less enjoyment. These relationships are critical given that research and theory have indicated that both self-evaluations and affective responses influence motivation (e.g., Eccles et al., 1998; Harter, 1978, 1981a, 1985b, 1987). Specifically, self-evaluations are predicted to influence motivation directly and indirectly through affect (Harter, 1985b, 1987; see Figure 3).

Self-Evaluations and Motivation

The motivational theories previously mentioned (e.g., Ames, 1992c; Deci & Ryan, 1985; Eccles et al., 1998; Harter, 1978, 1987; Nicholls, 1989) predict that positive self-evaluations result in higher levels of motivation, such as selection of optimally challenging tasks and the demonstration of effort, persistence, and interest. A number of studies in the physical domain have supported these linkages (see Weiss, 1987, 1993; Weiss & Chaumeton, 1992; Weiss & Ebbeck, 1996). For instance, Sonstroem and colleagues (e.g., Sonstroem, 1997; Sonstroem et al., 1994) found that subdomain-specific physical self-evaluations (e.g., sport competence, body attractiveness, physical conditioning, physical strength) and physical activity self-efficacy were predictive of

frequency and duration of physical activity participation in adults. Physical self-evaluations were also predictive of children's and adolescents' physical activity participation (e.g., Dempsey et al., 1993; Kimiecik et al., 1996; A. Smith, 1997), as well as effort and persistence in physical education classes (e.g., Cury et al., 1997; Ferrer Caja, 1997). In sum, these studies have consistently found strong support for the positive relationship between physical self-evaluations and motivated behavior in the physical domain.

Self-evaluations are also a key predictor of cognitive indices of motivation. For example, studies have found that physical self-evaluations are positively related to children's and adolescents' intrinsic motivational orientations in terms of preference for challenging tasks, curiosity/interest, independent mastery, independent judgments, and criteria for success (e.g., A. Smith, 1997; Weiss, Bredemeier, & Shewchuk, 1986; Williams & Gill, 1995). The positive link between physical self-evaluations and intrinsic motivation in the form of self-determination has also been supported (e.g., Goudas & Biddle, 1994; Goudas et al., 1994; Kavussanu & Roberts, 1996; Papaioannou & Theodorakis, 1996). Similarly, perceptions of physical competence mediated the relationship between verbal feedback and intrinsic motivation (e.g., Vallerand & Reid, 1984, 1988; Whitehead & Corbin, 1991). These studies provide strong support for the role of physical self-evaluations as a key determinant of achievement-related motivation.

In summary, strong support for the linkage between self-evaluations and motivation has been demonstrated. Results show that global and physical self-evaluations are capable of predicting both cognitive (e.g., intrinsic interest/enjoyment, preference for challenge) and behavioral (e.g., choice, effort, persistence) indices of

motivation. When combined with the results from the previous section on affective responses, sport and exercise psychology research clearly indicates a number of important achievement-related consequences of individuals' global and physical self-evaluations.

While this research has provided a wealth of information, the work discussed in the previous sections have focused almost exclusively on individuals' *level* of self-evaluations. That is, the key issue in this research has been whether individuals' evaluation of themselves are relatively high or low (Greenier et al., 1995; Harter, 1998; Kernis, 1993; Kernis et al., 1993). There is a growing body of literature that has focused on alternative aspects of the self-perception profile, suggesting that the simple dichotomy of high versus low self-evaluations cannot adequately capture the complexity of the role of self-evaluations in psychological processes (Kernis, 1995; Kernis et al., 1997).

An example of an alternative approach comes from the educational and sport psychology literature on the *accuracy* of self-evaluations (see Harter, 1998; Horn & Harris, 1996; Stipek & MacIver, 1989). Instead of only considering children's and adolescents' level of perceived competence, researchers have used the discrepancy between their perceptions of competence and their actual level of ability as an individual difference variable. From this approach a number of studies have focused on developmental trends in accuracy, and have shown that with increasing age children and adolescents become more accurate at assessing their ability (e.g., Harter, 1982; Horn & Weiss, 1991; Yun & Ulrich, 1997). Nevertheless, there are individual differences at all ages in the degree to which children and adolescents are accurate in their self-evaluations (Phillips & Zimmerman, 1990). That is, some children overestimate their ability, others underestimate, and still others are relatively accurate. Interestingly, these individual

differences in accuracy are predictive of a variety of achievement-related responses (e.g., Connell & Ilardi, 1987; Harter, 1986; Phillips, 1987; Weiss & Horn, 1990). For example, Weiss and Horn (1990) examined the relationship between the accuracy of 8-13 year-old children's perceptions of physical competence and perceptions of control, intrinsic/extrinsic motivational orientation, and trait anxiety. Children were divided into groups based on whether their reported perceptions of competence were higher than their teacher's rating of their actual competence (overestimators), congruent with their teacher's rating (accurate estimators), or lower than their teacher's rating (underestimators). Results indicated that underestimating girls reported more external perceptions of control, lower challenge motivation, and higher trait anxiety in comparison to accurate or overestimating girls. Further, underestimating boys reported higher unknown control in comparison to the other groups.

The take-home message is that this research points to alternative aspects of individuals' self-perception profile that may contribute to our understanding of achievement-related behaviors, cognitions, and affect beyond simply the level of self-evaluations. One approach that is receiving increasing attention in the social psychology literature is the role of intraindividual variability in self-evaluations. The next section describes how the magnitude of short-term fluctuations in self-evaluations is an individual difference factor with important achievement-related consequences.

Intraindividual Variability

One of the controversies that has surrounded psychology is the extent to which psychological characteristics, such as self-evaluations, are relatively stable or malleable (see Nesselroade, 1988, 1990, 1991). A number of scholars argue that the self is persistent and stable and that maintaining a stable sense of self is one of the most powerful motives (Epstein, 1990; Greenwald, 1980; La Ronde & Swann, 1993; Lecky, 1945; Markus, 1977; Rosenberg, 1979, 1986). For example, Swann (e.g., 1985, 1987; Swann, Pelham, & Krull, 1989) provided evidence that individuals go to great lengths to seek information that confirms their self-concept and are resistant to information that contradicts it.

Nevertheless, both theory and research indicate that individuals' self-perceptions are not necessarily stable or constant but rather exhibit a fair degree of variability or change (see Kernis, 1993; Waschull & Kernis, 1995). There are, however, multiple ways to conceptualize this instability. One approach, which has been forwarded by Nesselroade (1991), is to distinguish between *intraindividual change* and *intraindividual variability*. According to Nesselroade (1991), *intraindividual change* refers to changes in individuals which are relatively enduring in nature. These changes can occur as a result of a number of factors such as cognitive maturation or a successful intervention. Most of the self-evaluation literature interested in instability has been devoted to understanding these long-term intraindividual changes. For example, the longitudinal studies presented earlier examining age-related trends in global and physical self-evaluations (e.g., Duncan & Duncan, 1991; Eccles et al., 1989; Wigfield et al., 1993, 1997) described the pattern of

changes in self-evaluations over extended periods of time, with observed changes assumed to represent shifts in how individuals typically view themselves. Other examples include studies testing various interventions on individuals' self-evaluations (e.g., Berger & McInman, 1993; Ebbeck & Gibbons, 1998; Gruber, 1986; Marsh & Peart, 1988; Sonstroem, 1991; Sonstroem & Morgan, 1989; R. Smith & Smoll, 1990). For instance, Ebbeck and Gibbons (1998) found significant effects of an 8-month team-building intervention on 6th-7th graders' global and domain-specific self-evaluations. The underlying assumption is that the observed changes from pre- to post-intervention are reflective of a positive shift or "growth" in the individuals' self-evaluations. This type of instability (i.e., intraindividual change) is illustrated as the smooth line in Figure 4. In this example, an individual is shown demonstrating a gradual increase in some characteristic (e.g., global self-esteem), followed by a slight decline. The key is that these changes occur slowly over an extended period of time (e.g., months, years).

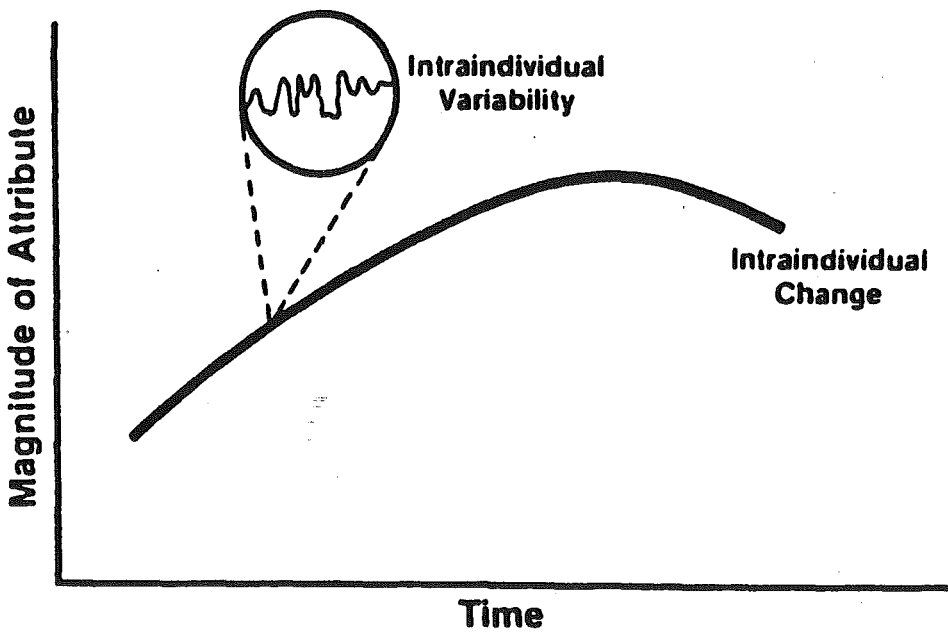

Figure 4. A Graphical Example Integrating the Concepts of Intraindividual Change and Intraindividual Variability (Nesselroade, 1991).

While patterns of intraindividual change provide important information, they do not solely account for the dynamic nature of individual change. Individuals can also exhibit a considerable degree of short-term instability. This form of instability, which is depicted in Figure 4 as the oscillating line within the circle, has been labeled *intraindividual variability* by Nesselroade (1991), and defined as "relatively short-term changes that are construed as more or less reversible and that occur more rapidly than the intraindividual changes" (p. 215).[2] In other words, intraindividual variability refers to the pattern of fluctuations in individuals' psychological characteristics over short periods of time (e.g., days, weeks, minutes) and reflects changes that may quickly disappear. Competitive state anxiety is an example of how intraindividual variability is experienced over time. One's level of state anxiety may be low when he or she is in the locker room before a competition but, when he or she steps onto the playing field and sees opponents and fans, anxiety is likely to increase. Once the game has started, state anxiety may decrease as he or she settles into the game. The point is that even over very short periods of time individuals may demonstrate varying degrees of fluctuations in their psychological characteristics. Given that individuals' thoughts and feelings, such as their level of anxiety, can have a significant influence on behavior (e.g., motivation, performance), understanding how individuals vary in these psychological constructs over time should be an important goal for researchers. Only recently has research begun to focus on intraindividual variability of self-evaluations. Given its lack of attention, the purpose of the present study was to examine intraindividual variability of self-evaluations

[2] Intraindividual variability has also been described as "state" as opposed to "trait" variability (see Jones & Nesselroade, 1990; Nesselroade, 1988; Nesselroade & Ford, 1987).

in the physical domain. The following section describes the conceptual and empirical work that identifies intraindividual variability as an important component of individuals' self-perception profiles.

Conceptualization of Intraindividual Variability of Self-Evaluations

Although intraindividual variability, or short-term fluctuations in self-evaluations, is a relatively recent research focus, the existence of an unstable component of the self has been discussed for quite some time by a number of researchers.[3] For example, as far back as the turn of the century James (1890) argued that the self has both a stable and variable component. He suggested that "there is a certain average tone of self-feeling which each of us carries about with him...", although he also acknowledged that "we ourselves know how the barometer of our self-esteem and confidence rises and falls from one day to another" (pp. 306-307). Thus, according to James individuals possess an average or typical assessment of their overall self-worth, but how they feel on any particular occasion may vary. Similarly, Rosenberg (1986) differentiated between the *barometric* and *baseline* self-concept. The barometric self-concept refers to rapid short-term fluctuations that an individual experiences. For example, he suggested that individuals' self-evaluations are capable of changing dramatically as a result of events such as receiving negative feedback or performing poorly. The baseline self-concept is similar to James' (1890) notion of the "average tone" where individuals' self-perceptions

[3] Intraindividual variability will also periodically be referred to as stability given that it is often used in the literature this way (e.g., Kernis, 1993). While stability and variability may initially appear to be distinct concepts, stability can actually be considered one possible pattern of variability (i.e., lack of variability).

remain relatively constant. That is not to say that these perceptions are incapable of changing, but this change would take place slowly over an extended amount of time (i.e., intraindividual change). Rosenberg noted that it was also possible that individuals' baseline self-concept could remain constant while at the same time their barometric self-concept may demonstrate large fluctuations.

Demo and Savin-Williams (1992) have also discussed the issue of stability and change in self-evaluations. From their perspective, self-evaluations are represented by a baseline level around which slight variations occur. For example, "an adolescent who, on most occasions, has high self-regard may experience temporary self-doubts following a rejection, poor grade on a test, or a lackluster athletic performance" (p. 133-134). Demo and Savin-Williams provided support for this conceptualization with a small sample of adolescents (10th graders). They had participants carry a beeper for a week and when signaled at random times they were asked to complete Rosenberg's (1965) Self-Esteem Scale. Results indicated that about half the participants had relatively stable levels of self-esteem across the week while the other half reported varying levels of instability, ranging from moderate to extreme levels.

Intraindividual variability in self-evaluations has received a considerable amount of attention by Kernis and his colleagues (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995). Based heavily on the work of Rosenberg (1986) and Demo and Savin-Williams (1992; Savin-Williams & Demo, 1983), Kernis suggests that individuals' *level* of and *stability* (i.e., intraindividual variability) of self-evaluations are both critical components of individuals' self-perception profiles. According to Kernis and Waschull (1995), *stability* of self-esteem refers to "the magnitude of short-term fluctuations in

people's contextually-based feelings of self-worth" (p. 97). While individuals may experience dramatic shifts in their self-evaluations at times (Rosenberg, 1986), Kernis (e.g., Kernis & Waschull, 1995) suggests that individuals more commonly vary or fluctuate in the extent to which their global self-evaluations are positive or negative. According to Kernis, this aspect of one's self-perception profile can be differentiated from individuals' *level* of self-esteem which refers to typical and relatively stable baseline feelings of self-worth (Kernis & Waschull, 1995). These typical appraisals, which are similar to Rosenberg's notion of the baseline level of self-esteem, essentially refer to summary evaluations that are based on individuals' numerous experiences (Kernis & Johnson, 1990). Consequently, these self-evaluations are predicted to remain relatively stable and not change substantially in response to one or a few specific evaluative events.

Other researchers (e.g., Heatherington & Polivy, 1991; Kernis, Jadrich, Gibert, & Sun, 1996; Kernis & Johnson, 1990; Leary & Downs, 1995; Leary, Haupt, Strasser, & Chokel, 1998) have couched the intraindividual variability issue within a trait-state distinction. From this perspective *trait* self-esteem represents how individuals' typically evaluate their overall self-worth. *State* self-esteem, on the other hand, represents individuals' feelings of self-worth at a particular moment. These self-evaluations are still in reference to how individuals feel about themselves overall as a person, but they access individuals' ratings of themselves at a specific point in time. A variety of experimental studies have provided support for the differentiation of these constructs (Heatherington & Polivy, 1991; Kernis & Johnson, 1990; Kernis et al., 1996). For example, feedback manipulations result in changes in state self-esteem but do not necessarily influence levels of trait self-esteem.

Markus and her colleagues (e.g., Markus & Kunda, 1986; Markus & Nurius, 1986; Markus & Wurf, 1987) have provided another perspective to the intraindividual variability issue. Her approach, which is based heavily on a cognitive-informational processing perspective, suggests that the self-concept is a multifaceted and dynamic set of representations. However, only a portion of these representations is available or accessible at any particular time. The subset of self-conceptions that are presently available or active in thought and memory represent individuals' *working self-concept.* According to Markus and Nurius the working self-concept is constantly active and the specific self-conceptions available for processing are continually changing. These changes can occur as a result of fluctuations in one's internal states or in the immediate social environment. Consequently, the content of the working self-concept is likely to vary considerably even over short periods of time.

This dynamic representation of the self provides a mechanism for intraindividual variability in self-evaluations. Markus and her colleagues (Markus & Kunda, 1986; Markus & Nurius, 1986; Markus & Wurf, 1987) suggest that at any point individuals are capable of evaluating the active set of self-conceptions as positive or negative. Given the fluctuating nature of what individuals are actively thinking about themselves, Markus and Nuris contend that global self-esteem is not necessarily stable, but rather varies depending upon individuals' evaluation of the specific self-conceptions currently available in their working self-concept. Consequently, individuals' overall evaluation of themselves may exhibit a considerable degree of short-term variability. Markus (1977; Markus & Wurf, 1987), however, also notes that core self-conceptions or self-schema, which are self-descriptors perceived to be particularly important to an individual's sense

of self, may be chronically activated and less responsive to variations in the social environment or to the internal state of the individual (Markus & Wurf, 1987). Thus, short-term variations in the evaluation of these self-conceptions may exhibit a higher degree of stability. In sum, Markus' conceptualization accounts for both a stable and variable self-concept.

Harter has posited a somewhat different notion of intraindividual variability in the form of relational self-worth (Harter, 1998; Harter et al., 1998). For example, Harter et al. found individuals' level of global self-worth varies depending upon whom they are interacting with at the time. Specifically, they reported that adolescents varied considerably in their feelings of self-worth with parents, teachers, male classmates, and female classmates. The degree of variability was not uniform, with some individuals reporting similar levels of global self-worth regardless of whom they were interacting with. Others, however, reported quite variable self-evaluations. In fact, some of the participants reported the entire range of possible scores (e.g., one female indicated the lowest possible global self-worth score when she was with her parents but the highest with female classmates). Similar results were reported by Wells (1988) who found that mothers exhibited modest fluctuations in their self-evaluations depending on the social situation and who they were interacting with at the time.

Although these scholars have offered slightly different approaches and terminology, there is widespread agreement that individuals' self-evaluations may exhibit a degree of short-term variability around a relatively stable baseline level. That is, while individuals may typically have relatively positive or negative self-evaluations, at any particular time they may feel more or less positive about themselves and their abilities.

While very little research has been conducted, the following section describes a number of antecedents that have been hypothesized to influence intraindividual variability of self-evaluations.

Antecedents of Intraindividual Variability of Self-Evaluations

A variety of factors have been identified as potential determinants of intraindividual variability of self-evaluations (Kernis & Waschull, 1995). These include: ego-involvement, self-concept clarity, relative importance placed on various domains (e.g., physical, social, academic), and significant others (e.g., feedback, social support, acceptance). While scant empirical research has been conducted, several scholars have described how these intra- and interpersonal factors may influence short-term fluctuations in self-evaluations.

The relative importance that individuals place on certain sources of self-evaluative information is one of the factors implicated as an antecedent of intraindividual variability of self-evaluations (Greenier et al., 1995; Kernis et al., 1993; Kernis & Waschull, 1995; Rosenberg, 1986). For example, Rosenberg suggested that the tendency to excessively rely on social sources of evaluation as the basis for determining self-worth will likely result in more unstable self-evaluations. This was based on the argument that individuals are frequently placed in situations with significant others (high potential for evaluation) and that social information may provide inconsistent and contradictory information about the self. Similarly, Harter (Harter, 1993b; Harter et al., 1996) suggested that individuals who endorse a "looking glass self" orientation (i.e., the belief that social regard from others leads to feelings of self-worth) are more likely to experience fluctuating self-

evaluations. Thus, similar to predictions that individuals' level of global self-worth is determined by their self-evaluations in domains perceived as important (e.g., Harter, 1996; Marsh, 1995; Pelham, 1995a, 1995b), importance placed on evaluative information sources is also a critical determinant of intraindividual variability in global self-esteem. Initial support for this prediction was provided by Kernis et al. who assessed the stability of domain-specific self-evaluations (i.e., competence, social acceptance, physical attractiveness) and importance ratings to global self-esteem in college-aged females. Results indicated that both the stability of self-evaluations and importance placed on domains predicted the degree to which global self-esteem exhibited short-term fluctuations. Specifically, higher variability in domain-specific self-evaluations was related to greater variability in global self-esteem, *especially* if the domain was rated high in importance.

The degree to which individuals are ego-involved has also been identified as a potential cause of intraindividual variability of self-evaluations (Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995; Waschull & Kernis, 1996). That is, individuals who are concerned with demonstrating competence relative to others are more likely to experience unstable self-evaluations. These individuals feel as if their self-worth is continually "on the line" and consequently tend to interpret a greater number of events as providing important self-evaluative information. With this increased emphasis on self-relevant information, ego-involved individuals are more likely to seek and interpret both positive and negative cues and consequently experience greater fluctuations in their self-evaluations.

Interestingly, Kernis and his colleagues (e.g., Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995; Waschull & Kernis, 1996) have focused on ego-involvement as a dispositional characteristic (e.g., goal orientation). Nevertheless, achievement goal theory suggests that the degree to which individuals are ego-involved is a function of both their dispositional goal orientation and their perception of the social environment (Nicholls, 1984, 1989). In other words, individuals' perceptions of which achievement goals and definitions of success are important in the immediate situation (i.e., motivational climate) can influence the degree to which they become situationally ego-involved. Thus, perceptions of an ego-oriented motivational climate may promote higher levels of ego-involvement, and consequently promote more variable self-evaluations.

Self-concept clarity is another potential determinant of short-term fluctuations in self-evaluations (Baumgardner, 1990; Kernis & Waschull, 1995; J. Campbell, 1990; J. Campbell & Lavallee, 1993). According to J. Campbell and Lavallee, self-concept clarity refers to how clearly and confidently individuals describe themselves. Thus similar to Markus' (1977) notion of a well-developed self-schema, self-concept clarity denotes the degree to which people know themselves (e.g., who they are, their strengths and weaknesses, their likes and dislikes) and feel confident in these self-descriptions. Given this definition incorporates the degree to which individuals are confident in their self-beliefs, it is unlikely that any specific event will be capable of significantly altering the self-evaluations of individuals with high levels of self-concept clarity. Thus, a high degree of self-concept clarity should translate into more stable self-evaluations over short periods of time.

In addition to the aforementioned intrapersonal factors, several interpersonal determinants of intraindividual variability of self-evaluations have been identified (e.g., Harter et al., 1992; Kernis & Waschull, 1995; Leary & Downs, 1995). In particular, scholars have noted the critical role played by individuals' perceptions of the behaviors exhibited by significant others. For example, Kernis and his colleagues (Greenier et al., 1995; Kernis & Waschull, 1995) suggested that the feedback provided by significant others (e.g., parents, teachers) during childhood may influence self-esteem stability. Specifically, noncontingent and controlling feedback may cause individuals to lack a clear understanding of their own capabilities and limitations (i.e., low self-concept clarity), as well as pressure them into thinking and behaving in certain ways that ultimately result in higher ego-involvement. Harter's (Harter, 1993a, 1996, 1998; Harter et al. 1992) work on conditional versus unconditional social support may also have implications for understanding the development of intraindividual variability in self-evaluations. Conditional social support is provided by significant others contingent upon some specified level of performance or behavior, while unconditional support is given regardless of any specific behavior. Harter contends that individuals who receive a high frequency of conditional support may constantly feel as if their behaviors are being evaluated, and thus result in becoming ego-involved. As noted previously, high ego-involvement may result in more unstable self-evaluations.

From a slightly different perspective, Leary and Downs (1995) suggested that cues of social exclusion may influence an individual's state self-esteem (i.e., "right now feelings" of overall self-worth). Specifically, they forwarded the notion of a sociometer which is a self-system responsible for monitoring the social environment for indications

of disapproval, rejection, or exclusion. When any of these cues are detected, this system alerts the individual via negative affective reactions that translate into decreases in the individuals' state level of self-esteem. Leary and Downs go on to suggest that individuals' sociometer may be more or less reactive, thus causing variations in the extent to which social exclusion information influences fluctuations in state self-esteem.

The relationship between these antecedents and intraindividual variability in self-evaluations has received limited attention. Nevertheless, a variety of intrapersonal and social-contextual factors likely contribute to the degree to which individuals experience short-term fluctuations. The present study will attempt to fill this gap by examining the importance placed on social sources of evaluative information as a precursor of intraindividual variability of global and physical self-evaluations. Uncovering critical antecedents should be an important area for future research, especially given that intraindividual variability in self-evaluations has been cited as a variable capable of extending our knowledge about the nature and consequences of self-evaluations (Demo & Savin-Williams, 1992; Greenier et al., 1995; Kernis, 1993, 1995; Kernis & Waschull, 1995). The following section describes the handful of studies that have examined the outcomes of intraindividual variability of self-evaluations.

Consequences of Intraindividual Variability of Self-Evaluations

The majority of studies that have examined the consequences of intraindividual variability of self-evaluations have focused on the magnitude of short-term fluctuations. For example, Eizenman, Nesselroade, Featherman, and Rowe (1997) explored the nature and consequences associated with intraindividual variability in perceptions of

competence and control in a sample of older adults (M = 77 years, SD = 7.3). Participants completed a battery of self-report measures one day each week for a total of 25 occasions of measurement. Included were items which assessed perceptions of competence (e.g., "I can do just about anything I set my mind to") and perceptions of control (e.g., "I have quite a lot of influence on the degree to which I can be involved in activities"). Individuals' scores on each variable were averaged across the 25 occasions of measurement and the standard deviation was used as an indicator of the magnitude of intraindividual variability. As a group intraindividual variability was not particularly large, but there were considerable individual differences in variability suggesting that some individuals were relatively stable in their perceptions whereas other were quite variable. Further, they found that magnitude of intraindividual variability in perceptions of competence and control was a risk factor in mortality in these older adults. After controlling for level of perceived competence and control, results indicated that individuals who were less variable on perceived control measures had a significantly higher probability of still being alive about 5.5 years after the primary data collection.

A similar approach has been adopted by Kernis and colleagues (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995) who have conducted the majority of the research in the area of intraindividual variability of self-evaluations. Their research has focused on how short-term fluctuations in individuals' global self-esteem (i.e., stability of self-esteem) interact with their typical self-evaluations (i.e., level of self-esteem) to predict a variety of psychological responses. Their basic procedures involve multiple assessments of individuals across a short period of time, usually four days to a week. On the first occasion they administer Rosenberg's (1965) Self-Esteem Scale with

instructions for individuals to rate how they typically feel about themselves. This measure is used to represent the individual *level* of global self-esteem. To assess short-term variability, participants are asked to complete the Self-Esteem Scale either once or twice a day for consecutive days with directions to evaluate how they feel about themselves at that particular point in time. Similar to Eizenman et al. (1997), the standard deviation of the total scores from these repeated assessments are calculated for each individual and used as a measure of *intraindividual variability*. The larger the standard deviation, the greater the variability the individual exhibits. Thus, Kernis is also interested in the *magnitude* of short-term fluctuations in self-evaluations.

Descriptive statistics for level and stability of global self-esteem from studies conducted by Kernis and his colleagues are presented in Table 2. Of particular interest is the magnitude of the short-term fluctuations that are depicted under the Stability heading. The mean represents the average intraindividual variability for all individuals within that sample. While these values are not particularly large, they suggest that, as a group, individuals exhibit short-term fluctuations in their self-evaluations. As evidenced by the standard deviations, there also exists a fair degree of interindividual variability in the magnitude of individuals' fluctuations in their global self-esteem. Relationships between individuals' level and stability of self-esteem are also presented in Table 2. Although the majority of the correlations are relatively low, the negative relationship suggests that higher instability is associated with lower self-esteem. However, Kernis and colleagues noted that instability is found across all levels of self-esteem, and that the relatively low correlations suggest that level and stability are distinct dimensions on which individuals can be characterized (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995).

Table 2

Descriptive Statistics of Self-Evaluations Level and Stability[a]

	Level		Stability		Correlation (Level and Stability)
Study	M	SD	M	SD	
Kernis et al. (1989)	40.47	6.57	5.20	3.31	-.10
Kernis et al. (1991)	39.79	5.79	6.47	4.25	-.15
Kernis et al. (1992)	39.78	5.89	6.79	4.22	-.26
Kernis et al. (1993)[b]	38.77	7.91	5.77	4.04	-.26
Kernis et al. (1993)[c]	39.44	6.38	6.04	4.54	-.17
Kernis et al. (1997)	40.29	6.17	6.61	3.94	-.30
Waschull & Kernis (1996)	19.59	3.79	1.89	1.37	-.42

[a]Self-esteem level scores were made on a 5-point scale (total score range 10-50) with the exception of Waschull and Kernis (1996) which was made on a 4-point scale (total score range 6-24). Stability scores were made on 10-point scales with the exception of the study by Waschull and Kernis which used a 4-point scale. College-aged participants were used in all studies with the exception of Waschull and Kernis, who examined 5th graders.

[b] Study 1.

[c] Study 2

According to Kernis (1993), both the level *and* stability of self-evaluations should be considered because important individual differences would be obscured if they were not. Consequently, Kernis and his colleagues have examined the independent and combined effects of level and stability of global self-esteem as predictors of various psychological responses, such as affective responses and motivation. Results consistently demonstrate that inclusion of intraindividual variability can help explain these psychological responses beyond level alone (see Greenier et al., 1995; Kernis, 1993; Kernis & Waschull, 1995).

Intraindividual Variability and Affect

Affective or emotional responses such as depression, anxiety, anger, and hostility have been examined as outcomes of level and stability of global self-esteem (e.g., Kernis et al., 1989; Kernis et al., 1991; Rosenberg, 1986). For instance, Kernis et al. (1989) investigated how level and stability of global self-esteem were related to anger and hostility. They suggested that experiencing a threat to one's self-esteem might elicit anger and hostility, particularly in individuals with unstable or "fragile" self-evaluations. Level and stability of college-aged students' global self-esteem were assessed, followed by a series of anger and hostility measures one week later. Results indicated that individuals with high and stable global self-esteem reported the lowest anger and hostility, whereas individuals with high and unstable self-esteem reported the highest values. Those with low self-esteem, either stable or unstable, fell between these extremes. Kernis et al. suggested that highly unstable individuals were more likely to feel as if their self-esteem was continually "on the line" and therefore react more defensively to protect their self-evaluations.

In another study, Kernis et al. (1991) examined the relationship between stability and level of global self-esteem and depression. They noted that research consistently found a negative relationship between level of self-esteem and depression; however, they argued that the predictive utility of self-esteem level may vary depending upon the extent to which individuals fluctuate in their daily self-evaluations. A measure of depressive symptoms was administered to college-aged students about 4-5 weeks after they completed assessments of level and stability of global self-esteem. As expected results indicated that level of self-esteem was a significant predictor of depression, but an

interaction of level and stability was also uncovered. These results revealed that individuals who reported a consistently (i.e., stable) low level of self-esteem were most likely to experience depressive symptoms, while individuals with high and stable self-esteem were the least likely. Individuals with unstable self-evaluations fell between these extremes. In sum, the results of these two studies indicate that the level and stability of global self-esteem are related to individuals' affective or emotional responses.

Studies have also found that intraindividual variability of self-evaluations are related to affective responses to specific evaluative events (e.g., Kernis et al., 1993; Kernis et al., 1992; Kernis et al., 1997). For example, Kernis et al (1993) predicted that high and unstable individuals, because of their fragile self-feelings, would be prone to self-handicap following successful performances. That is, they would be likely to provide excuses for their performance (e.g., fatigue, low motivation) to suggest that they succeeded despite unfavorable conditions. Following unsuccessful performances they were expected to feel threatened by the evaluative event, and thus attempt to minimize the threat by making external attributions, having adverse reactions, and actively attempting to undermine the legitimacy of the treat. Individuals with unstable and low self-esteem were not expected to engage in self-handicapping strategies, but were expected to make efforts to avoid negative self-views through various self-protective strategies. Stable and low self-esteem individuals, on the other hand, were not expected to engage in either self-enhancing or self-protective strategies. After completing the standard procedures to assess stability and level of global self-esteem, participants were exposed to an experimental protocol that consisted of giving a speech in front of a peer evaluator and then receiving the evaluator's impression of their social skills. Half of the

participants received a positive evaluation (i.e., she was confident and possessed strong social skills), whereas the others received a negative evaluation (i.e., she does not have strong social skills and probably feels anxious around others). The participants then completed a series of measures that included: (a) positive (e.g., excited, happy) and negative (e.g., irritated, uneasy) affective reactions; (b) rating the evaluation procedures and the evaluator; and, (c) reasons for their performance (e.g., lack of concentration, lack of motivation). Results revealed that reactions varied according to a combination of the individuals' level and stability of global self-esteem. As predicted individuals with high but unstable self-esteem had more extreme reactions to the evaluate events compared to those with high but stable self-esteem. Specifically, they interpreted positive feedback as more accurate, felt the evaluator was competent and attractive, and experienced positive emotional responses to the feedback. Following negative feedback, these individuals rated the evaluation as less useful and felt the evaluator was less competent and attractive. Further, they tended to offer more excuses for their poor performance. Contrary to predictions, however, low and unstable self-esteem was related only to feelings that negative feedback and evaluation procedures were accurate.

In another study, Kernis et al. (1992) examined the relationship between individuals' level and stability of global self-esteem and their reactions to success or failure on an academic exam. Again, they hypothesized that individuals with more unstable self-evaluations would react more strongly to evaluative events, although the specific reactions might be different for individuals with high versus low levels of global self-esteem. College students were also asked to identify a minimum grade they could receive on an upcoming midterm and still feel satisfied. Success and failure groups were

formed on the basis of whether the objective exam grade was above or below the participants' minimal acceptable grade. After receiving the exam grades, participants were asked to complete a measure of excuse making (e.g., fatigue, lack of motivation, exam questions were too picky). Analyses revealed that individuals with high self-esteem instability made more excuses following success but not failure. Low and unstable global self-esteem was related to greater excuse making following failure but not success. The interpretation of these results was that high and unstable individuals use excuses to self-enhance while low and unstable individuals use excuses as a self-protective mechanism.

Reactions to positive and negative evaluative events were also found to vary as a function of individuals' level and stability of global self-esteem in a study by Kernis et al. (1997). Level and stability of self-esteem were assessed, followed by a measure of how college-aged participants would react to having done well or poorly at any evaluative event. Possible reactions were categorized as: (a) reasonable such as feeling happy following success and feeling disappointed following failure; (b) defensive/aggrandizing such as blaming their failure on factors beyond their control or boasting to a friend following a success; or, (c) self-deprecating such as feeling lucky or stupid for not doing better. Results revealed significant differences in the reactions of unstable and stable individuals with high self-esteem. Unstable individuals reported being less likely to take pleasure in a good performance and to attribute success to luck or ease of the task. However, they also were more likely to feel superior and boast to friends about their success. Following poor performances, these individuals were more likely to doubt their ability, make external attributions, and feel angry at the person who devised the task.

Kernis et al. suggested that this pattern of results was consistent with their view that unstable individuals may be more ego-involved.

In combination, the results from these studies suggest that stability and level of self-esteem are important contributors to individuals' psychological responses. In particular, individuals with unstable global self-esteem are more reactive than their stable self-esteem counterparts. Individuals with unstable and high self-esteem engage in self-protective and self-enhancing strategies following their performance failures and successes, while individuals with low and unstable self-esteem react in a self-protective manner. Further, high and unstable global self-esteem is associated with less positive emotions when compared to their high and stable counterparts. In sum, intraindividual variability in self-evaluations adds significantly to our understanding of individuals' psychological responses. Recently, motivation has been added to the list of potential consequences of stable or unstable self-evaluations.

Intraindividual Variability and Motivation

In interpreting the results of their research, Kernis and his colleagues (e.g., Greenier et al., 1995; Kernis et al., 1997; Waschull & Kernis, 1995) hypothesized that unstable self-evaluations are related to heightened ego-involvement. That is, these individuals are more likely to feel that the outcomes of their daily activities are particularly relevant to their overall self-evaluations. Using this rationale, Waschull and Kernis (1996) tested the hypothesis that individuals who possess unstable self-evaluations would report lower levels of intrinsic motivation. This relationship was proposed based on the evidence that heightened ego-involvement can be detrimental to intrinsic

motivation, particularly when perceived competence is low (Nicholls, 1984, 1989). To test this prediction Waschull and Kernis (1996) had fifth grade boys and girls complete assessments of level and stability of global self-esteem and domain-specific self-evaluations (i.e., academic competence, social acceptance), as well as intrinsic/extrinsic motivational orientation in the classroom. While a significant interaction between level and stability was not uncovered, the results indicated that each was independently predictive of motivation. Specifically, unstable global self-esteem was related to a lower preference for challenge and less curiosity/interest, while level of global self-esteem was positively related to preference for challenge. Similar results were reported when perceived academic competence was substituted for global self-esteem. Finally, level of perceived academic competence mediated the relationship between intrinsic motivation and individuals' level and stability of global self-esteem.

In summary, research suggests that intraindividual variability of self-evaluations is an important individual difference factor that contributes to our understanding of the nature and consequences of self-perceptions. Unfortunately, this issue has not been addressed in the sport and exercise psychology literature. Given the potential benefit for further understanding the role of self-evaluations on physical activity behavior, cognitions, and affect, the purpose of the present study was to examine intraindividual variability more closely by replicating and extending the work of Kernis and colleagues in the physical domain.

Purposes of the Present Study

Purpose 1: Prevalence of Intraindividual Variability of Self-Evaluations

Given that intraindividual variability has not been examined in the physical domain, the first purpose was to document the prevalence of short-term fluctuations in young adolescents' global and physical self-evaluations. Further, the magnitude of fluctuations was compared between individuals' global and physical self-evaluations (i.e., global self-worth, physical self-worth, perceived physical competence). Global self-evaluations have been hypothesized to be more stable than domain- or subdomain-specific self-evaluations (e.g., Fox, 1988, 1990; Fox & Corbin, 1989; Shavelson et al., 1976). Research examining this phenomenon, however, has not provided strong support for these predictions (e.g., Fox, 1990; Marsh, 1996b; Whitehead, 1995). These studies suggest that individuals' global self-evaluations (e.g., global self-esteem, physical self-worth) vary over time more so than their domain-specific self-evaluations (e.g., perceived sport competence, conditioning competence). However, to date research has not examined whether the magnitude of short-term fluctuations differs among these self-evaluations.

While Kernis and his colleagues (see Kernis & Waschull, 1995) have not revealed significant gender differences in stability of global self-esteem, Rosenberg (1986) noted that during adolescence females demonstrate more unstable barometric self-esteem (i.e., intraindividual variability. Given the lack of previous research on intraindividual variability, the present study examined whether gender is an important individual difference factor. Thus, the first purpose of this study was to describe the degree of

intraindividual variability of global and physical self-evaluations, and compare the magnitude of variability in these self-evaluations in males and females.

Purpose 2: Achievement-Related Consequences of Intraindividual Variability of Self-Evaluations

Assuming that individuals do exhibit short-term fluctuations in their global and physical self-evaluations, the second purpose was to determine whether there are achievement-related consequences of this variability. Given the theoretical and empirical support provided throughout the literature review, this study examined whether adolescents' level and stability of self-evaluations predict their motivation and affect. Specifically, the study replicated and extended the work of Kernis and colleagues (e.g., Waschull & Kernis, 1996) by examining the independent and combined effects of individuals' level and stability of self-evaluations on physical activity-related motivation and affect.

Consistent with theory and sport psychology research (see Weiss & Ebbeck, 1996; Weiss & Chaumeton, 1992), individuals who report more positive self-evaluations (i.e., high level) were predicted to also report greater motivation and more positive affect. However, a significant level by stability interaction was also expected. Individuals with higher and more unstable self-evaluations were predicted to report lower motivation and less positive affect in comparison to individuals with higher but stable self-evaluations. Further, those with lower and stable self-evaluations were expected to demonstrate lower motivation and less positive affect than individuals with lower and more unstable self-evaluations.

Purpose 3: Antecedents of Intraindividual Variability of Self-Evaluations

Although little research has investigated the factors that lead to intraindividual variability of self-evaluations, a number of potential antecedents have been proposed such as reliance on social sources of evaluative information, ego-involvement, feedback from significant others, and self-concept clarity. The final purpose of this study was to address this issue by examining the importance that individuals place on social sources of evaluative information as a determinant of intraindividual variability. Consistent with the predictions of Rosenberg (1986) and Harter (1993b; Harter et al., 1996), it was expected that individuals who rate appraisals by significant others (i.e., parents, teachers, peers) as an important source of competence information will experience greater short-term fluctuations in their global and physical self-evaluations.

CHAPTER II

METHOD

Participants

Students (N = 167) enrolled in two eighth-grade physical education classes at a middle school in central Virginia were recruited to participate in the study. Participants were 70 males and 97 females who ranged in age from 12-15 years (M = 13.48 years, SD = .56). This age group was targeted because: (a) a significant decline in physical activity participation begins to occur during early adolescence (Sallis & Patrick, 1994; U. S. Department of Health and Human Services, 1996); and, (b) instability and change in self-perceptions are common during this developmental period (Demo & Savin-Williams, 1992; Harter, 1990b, 1998; Rosenberg, 1986). Participants were recruited from physical education classes because all middle school students in this particular school district were required to take physical education during the eighth grade, and thus the sample was likely to vary in their physical self-evaluations, motivation, and affect toward physical activity.

The middle school had a total of 217 eighth-graders enrolled in two separate physical education classes.[4] The study procedures required multiple occasions of measurement with the same students, and missing data were anticipated. Therefore, requirements for inclusion in the final sample were that students must have completed all

[4] This did not include a small number of students with developmental disabilities who were excluded from the study.

measures on the first and last day of data collection and on at least 4 of the 5 days where intraindividual variability was assessed.[5] Given these requirements and exclusion of students with unusable questionnaires (e.g., failed to follow directions), the final sample comprised 167 students. This represented 80.4% of the students in one class (n = 103 of 128) and 71.1% (n = 64 of 90) of the students in the other class.

The sample consisted of predominantly White (87.3%) respondents, with the remaining participants describing themselves as African-American (6%), Asian (3.6%), Native American (1.8%), or Hispanic (1.2%). The vast majority of the students (88%) indicated that they had engaged in some form of organized sport or physical activity participation (males 98%, females 83%), and just over half of the participants (55.2%) indicated that they were currently participating (males 61%, females 51%).

Overview of Data Collection

Data were collected each day that the students were in physical education class, which was every other day.[6] A total of 6 occasions of measurement were taken over the course of a 3-week period (2 occasions per week). The schedule of measures administered on each occasion is presented in Table 3.

The first occasion included an assessment of the students' level of self-evaluations and the importance they placed on social sources of competence information. The second through sixth occasion of measurement included the assessment of intraindividual

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[5] Four data points were considered to be the minimum number of occasions necessary for calculating a standard deviation to be used as an indicator of intraindividual variability.

[6] The two classes had physical education on alternate days, as well as different times of the day. The schedule of classes also varied from week to week. For example, during the first week one of the classes met on Monday, Wednesday, and Friday in the afternoon, whereas the other class met on Tuesday and Thursday mornings. For each of the subsequent weeks the classes would switch schedules.

variability of self-evaluations. During the sixth and final occasion of measurement, the participants also completed measures designed to assess their physical activity-related motivation and affect, as well as background information. At this time one of the primary physical education teachers was given a questionnaire on which to rate each student's effort and persistence in physical education class over the course of the study (i.e., the 3 weeks). The female instructor responsible for these assessments had being teaching physical education for about 10 years and had contact with each of the students every other day throughout the year. This measure was returned approximately 2 weeks later. Each of the measures is described in detail in the following section.

Table 3

Schedule of Scale Administration

Occasion	Measures
1	Global Self-Worth[a] Physical Self-Worth[a] Perceived Physical Competence[a] Importance of Social Sources of Competence Information
2-6	Global Self-Worth[b] Physical Self-Worth[b] Perceived Physical Competence[b]
6	Physical Activity-Related Affect Intrinsic Motivation Background Information Teacher Rating of Effort and Persistence

[a] Individuals responded with how they *typically* evaluated themselves.
[b] Individuals responded with how they evaluated themselves *at that particular moment.*

Measures

Level of Self-Evaluations

Global Self-Worth

The global self-worth subscale from Harter's (1985a) Self-Perception Profile for Children was used to measure participants' level of global self-worth. This subscale is designed to tap how an individual *typically* thinks and feels about him- or herself as a person. For example, respondents rate the extent to which they generally like themselves as a person and whether they are happy with the way they are leading their lives. The scale is presented in a structured alternative format, which was designed by Harter (1982) to reduce socially desirable answers. This format requires respondents to make two choices per item (see Figure 5). First, the respondent is asked to read two opposing statements and select which option is the most like him- or herself. Following this choice, the respondent decides whether the statement he or she selected is *really true* or *sort of true*.

Really True for me	Sort of True for Me				Sort of True for me	Really True for Me
☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐

Figure 5. An Example of Harter's (1985a) Structured Alternative Format.

The subscale consists of 6 items, which are presented in Table 4. Scoring of the items ranged from 1 to 4 with higher scores denoting more positive self-evaluations. The mean score of the 6 items is used as an indicator of individuals' *level* of global self-worth. Reliability and validity information for this measure have been provided by Harter (1985a). Further, the measure has been used in a number of studies conducted in the physical domain (see Weiss & Ebbeck, 1996 for a review), with reports of good reliability and factorial and construct validity (see Fox, 1998).

Table 4

Global Self-Worth Items

1.	Some kids are often unhappy with themselves BUT Other kids are pretty pleased with themselves
2.	Some kids don't like the way they are leading their life BUT Other kids do like the way they are leading their life
3.	Some kids are usually happy with themselves as a person BUT Other kids are not happy with themselves
4.	Some kids like the kind of person they are BUT Other kids often wish they were someone else
5.	Some kids are very happy being the way they are BUT Other kids wish they were different
6.	Some kids are not happy with the way they do a lot of things BUT Other kids think the way they do things is fine

For the present investigation, this scale was modified to present participants with a wider range of response alternatives as a way to increase the variability of responses. Specifically, after the participant selected which statement was more like him- or herself, the respondent was asked to determine whether the statement was *really true*, *pretty true*, or *sort of true* (see Figure 6). Thus, item scoring ranged from 1 to 6 with higher scores

representing more favorable self-perceptions. This modification has been previously used by Brustad (1993a) and Weitzer (1989). Further, pilot testing of this response format was completed by a handful of seventh-grade students (N = 6) prior to the study. Each of these students thought that the wording and response options were understandable (e.g., *pretty true for me* fit in between the *really true for me* and *sort of true for me* options).

Really True for me	Pretty True for me	Sort of True for Me				Sort of True for me	Pretty True for me	Really True for Me
☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐

Figure 6. An Example of the 6-Point Structured Alternative Format Adopted for this Study.

Physical Self-Worth

The physical self-worth subscale from the Children's Physical Self-Perception Profile (Whitehead, 1995) was completed by each participant. Consistent with the original Physical Self-Perception Profile (Fox, 1990; Fox & Corbin, 1989), the 6 items in the children's version of this scale are designed to assess respondents' evaluation and affect toward their overall physical self (e.g., physical characteristics, physical abilities). The main difference between the children's version and Fox's original measure is that the wording of the items was modified to be more appropriate for children and young adolescents (ages 8-13 years). This subscale uses a structured alternative format, and was

adapted to the 6-point item response format described for the global self-worth measure. The mean score of the 6 items, which are presented in Table 5, was used as an indicator of physical self-worth with higher scores representing more favorable self-evaluations.

Fox's (1990; Fox & Corbin, 1989) Physical Self-Perception Profile and Whitehead's (1995) children's version have demonstrated strong psychometric properties (see Fox, 1998; Marsh, 1997). Exploratory and confirmatory factor analyses have supported the factorial validity of the measure, and relationships between physical self-perceptions and physical activity behaviors and cognitions support the measure's construct validity.

Table 5

Physical Self-Worth Items

1.	Some kids are proud of themselves physically BUT Other kids don't have much to be proud about physically
2.	Some kids are happy with how they are and what they can do physically BUT Other kids are unhappy with how they are and what they can do physically
3.	Some kids don't feel very confident about themselves physically BUT Other kids feel really good about themselves physically
4.	Some kids have a positive feeling about themselves physically BUT Other kids have a somewhat negative feeling about themselves physically
5.	Some kids wish they could feel better about themselves physically BUT Other kids always seem to feel good about themselves physically
6.	Some kids are very satisfied with themselves physically BUT Other kids are often dissatisfied with themselves physically

Perceived Physical Competence

The athletic competence subscale from Harter's (1985a) Self-Perception Profile for Children was used to assess participants' level of perceived physical competence.

This subscale assesses the degree to which respondents favorably evaluate their abilities in sports and games. As with the global and physical self-worth subscales, this measure was presented in a 6-point structured alternative format. This measure has demonstrated acceptable reliability and factorial and construct validity (see Harter, 1985a, Fox, 1998). The mean of the 6 items (see Table 6) was used to indicate respondents' level of perceived physical competence, with higher scores representing more positive self-evaluations.

Table 6

Perceived Physical Competence Items

1.	Some kids do very well at all kinds of sports BUT Other kids don't feel that they are very good when it comes to sports
2.	Some kids wish they could be a lot better at sports BUT Other kids feel they are good enough at sports
3.	Some kids think they could do well at just about any new sport activity they haven't tried before BUT Other kids are afraid they might not do well at sports they haven't ever tried
4.	Some kids feel they are better than others their age at sports BUT Other kids don't feel that they can play as well
5.	In games and sports some kids usually watch instead of play BUT Other kids usually play rather than watch
6.	Some kids don't do well at new outdoor games BUT Other kids are good at new games right away

Intraindividual Variability of Self-Evaluations

To assess intraindividual variability of self-evaluations, participants completed the self-evaluation measures previously described but with slightly different instructions. Specifically, they were asked to respond to the items according to how they thought and felt about themselves *at that particular moment.* The three self-evaluation measures (i.e.,

global self-worth, physical self-worth, perceived physical competence) were administered on multiple occasions, and a mean score for each subscale was calculated for each occasion of measurement. Consistent with Kernis and his colleagues (see Kernis & Waschull, 1995), the standard deviation of the repeated assessments was then calculated and used as an indicator of intraindividual variability. A smaller standard deviation represents more stable or less variable self-evaluations (i.e., lower intraindividual variability).

Consequences of Self-Evaluations

Motivation

Participants' motivation was assessed using both cognitive and behavioral indicators. To assess intrinsic motivation, students completed the Motivational Orientation in Sport scale (Weiss, Bredemeier, & Shewchuk, 1985). This scale is an adapted version of Harter's (1980, 1981b) measure of intrinsic versus extrinsic motivation in the academic classroom. Harter's measure was developed to determine the degree to which individuals were predominantly intrinsically or extrinsically oriented in five areas: preference for challenge, curiosity/interest, independent mastery, independent judgment, and internal criteria. Harter's (1981b) psychometric testing with third through ninth grade students indicated that the first three subscales were reflective of motivational orientation, while the last two subscales reflected cognitive-informational sources. Weiss and her colleagues modified the wording of the items to reflect children's motivational orientation toward sport and physical activity. Although the sport-specific version of the scale resulted in a slightly different factor structure, research in the physical domain has

provided support for the reliability and validity of the measure (e.g., Brustad, 1988; A. Smith, 1997; Weiss et al., 1986).

For the present investigation, participants completed the preference for challenge and curiosity/interest subscales as indices of individuals' motivational orientation toward sport and physical activity. The 6-point structured alternative format was used, with higher scores representing a more intrinsic motivational orientation. The items representing each of the subscales are presented in Tables 7 and 8. One of the items from the preference for challenge scale was deleted because it was not consistent with the construct of challenge ("some kids would rather just learn only what they have to in physical education BUT other kids would rather learn as much as they can").

Table 7

Preference for Challenge Items

1.	Some kids like hard sport skills because they are a challenge BUT Other kids prefer easy sport skills that they are sure they can do
2.	Some kids like difficult skills because they enjoy trying to become good at them BUT Other kids don't like to try difficult sport skills
3.	Some kids like to try new skills that are more difficult to do BUT Other kids would rather stick to skills which are pretty easy
4.	Some kids like sports that are easy BUT Other kids like those sports that make them work pretty hard to be good
5.	Some kids don't like difficult sport skills because they have to work too hard BUT Other kids like difficult sport skills because they find them more challenging

Table 8

Curiosity/Interest Items

1.	Some kids work on skills to learn how to do them BUT Other kids work on skills because you're supposed to
2.	Some kids practice because their physical education teacher tells them to BUT Other kids practice to find out how good they can become
3.	Some kids practice sport skills because they are interested in the sport BUT Other kids practice skills because their physical education teacher wants them to
4.	Some kids ask questions in physical education because they want to learn new things BUT Other kids ask questions because they want their physical education teacher to notice them
5.	Some kids work extra hard so they can get better grades BUT Other kids work extra hard because they learn more about sports
6.	Some kids work really hard to get good grades in physical education BUT Other kids work hard because they really like to improve their sport skills

As a measure of motivated behavior, one of the students' primary physical education teachers rated each student's effort and persistence using a modified version of the Teacher's Rating of Academic Achievement Motivation (Stinnett, Oheler-Stinnett, & Stout, 1991). The original version includes four factors and 29 items reflecting students' tendency to work to the best of their ability, mastery behavior (i.e., persistence in the face of difficulty, curiosity, preference for seeking optimal challenges), preference for competitive versus cooperative tasks, and difficulty in response acquisition. Reliability and validity of this measure have been provided by Stinnett and colleagues in the academic domain (e.g., Schuck, Oheler-Stinnett, & Stinnett, 1995; Stinnett & Oheler, 1992). For the present study, the physical education teacher completed only the 5 items reflecting students' effort and persistence because: (a) they represent critical indices of students' motivated behavior, and (b) the inclusion of only 5 items would lessen the demands on the teacher. Items were altered to reflect students' motivation in physical

education (see Table 9). The items were prefaced with the statement, "In physical education class over the last 3 weeks, [*name of student*]...". Items were scored on a 5-point Likert-type scale with anchors ranging from *strongly disagree* (1) to *strongly agree* (5). The mean score of these items was used as an indicator of motivated behavior, with higher scores reflecting greater effort and persistence. Ferrer Caja (1997) demonstrated adequate reliability and factorial validity of this measure in the context of physical education.

Table 9

Effort and Persistence Items

1.	Often makes effort to learn how to perform physical education skills
2.	Prefers easy tasks to more difficult tasks
3.	Will try a new task again even if he/she was not successful the first time
4.	Is not discouraged easily even after failures
5.	Gives up easily on tasks that are difficult or challenging

Physical Activity-Related Affect

Three of the five subscales from the Children's Attraction to Physical Activity Scale (Brustad, 1993a) were used as a measure of participants' affect toward physical activity. The original subscales included: liking of games and sports, fun of physical exertion, liking of vigorous exercise, peer acceptance, and importance of exercise/health. The present investigation only included the first three subscales because they align more closely with the concept of affect. Each subscale consists of 5 items (see Tables 10-12) in a structured alternative format. The 6-point response format employed for other

measures in this study was used, with higher scores representing more positive affect. The wording of some of the items was adapted to obtain a parallel structure.[7] Subscale scores were calculated using the mean of the 5 items representing each affect dimension. This measure has been used with children (Brustad, 1993a, 1996a) and adolescents (A. Smith, 1997). The subscales used in the present investigation have demonstrated acceptable internal consistency, and low-moderate to moderate-high correlations among the subscales (i.e., .29 - .68). Results of studies using this measure have also provided evidence of factorial and construct validity.

Table 10

Liking of Games and Sports Items

1.	Some kids like playing outdoor games and sports BUT Other kids don't like playing outdoor games and sports
2.	Some kids have more fun playing games and sports than anything else BUT Other kids have more fun playing other things
3.	Some kids wish they didn't have to play games and sports BUT Other kids wish they could play more games and sports
4.	For some kids games and sports is their favorite thing BUT For other kids, games and sports is not their favorite thing
5.	Some kids look forward to playing games and sports BUT Other kids don't look forward to playing games and sports

[7] The wording of items 1, 2, and 4 on the Liking of Games and Sports subscale, and items 1 and 2 on the Fun of Physical Exertion subscale were slightly altered so that each of the statements referenced the same activity. For example, the right side statement of item 1 on Liking of Games and Sports was changed from "would rather play indoors" to "don't like to play outdoor games and sports". The specific changes were based on modifications made by A. Smith (1997).

Table 11

Fun of Physical Exertion Items

1.	Some kids don't like getting sweaty when they exercise or play hard BUT Other kids do like getting sweaty when they exercise or play hard
2.	Some kids don't like getting out of breath when they play hard BUT Other kids do like getting out of breath when they play hard
3.	Some kids like to burn a lot of energy by playing hard BUT Other kids don't like to burn energy by playing hard
4.	Some kids feel bad when they run hard BUT Other kids feel good when they run hard
5.	Some kids don't like to run very much BUT Other kids do like to run a whole lot

Table 12

Liking of Vigorous Exercise Items

1.	Some kids don't like to exercise very much BUT Other kids like to exercise a whole lot
2.	Some kids feel really tired after they exercise or play hard BUT Other kids don't feel so tired after they exercise or play hard
3.	Some kids don't enjoy exercise very much BUT Other kids enjoy exercise a whole lot
4.	Some kids think that they will feel really good after they exercise or play hard BUT Other kids think that they will feel bad after they exercise or play hard
5.	Some kids really don't like to exercise BUT Other kids do like to exercise

Antecedents of Self-Evaluations

The main antecedent of self-evaluation stability examined was the importance that students placed on social sources of evaluative information. Participants completed appropriate items from the Physical Competence Information Scale (Horn et al., 1993; Horn & Hasbrook, 1986; Horn & Weiss, 1991). These sources include parent feedback,

coach feedback, and peer evaluation. For the present study, *Physical Education Teacher* was substituted for *Coach*. Each of the sources is represented by 3 items (see Table 13). Respondents were asked to rate on a 5-point Likert-type scale how important each item was in helping them know how good they are in sport and physical activity. The anchors range from *not important at all* (1) to *extremely important* (5). This measure has shown strong psychometric properties in studies with children and adolescents (see Horn & Amorose, 1998).

Table 13

Importance of Social Sources of Evaluative Information Items

1.	What my parents say to me about the way I play
2.	Whether or not my parents tell me I am good
3.	How good my mom or dad thinks I am
4.	What my physical education teacher says to me in practices and games
5.	Whether or not my physical education teacher tells me I am doing O.K.
6.	Whether my physical education teacher thinks I am good at sports
7.	What my classmates say about the way I play
8.	Whether or not my classmates think I am good at sport
9.	What my classmates say about me

Background Information

Participants were asked general background information including age, gender, racial/ethnic background, and physical activity participation history. This information was obtained as a means of describing the sample.

Procedure

Approval for this study was first obtained from the University of Virginia Institutional Review Board (IRB) (see Appendix A). Arrangements were made with a middle school physical education teacher in the Albemarle County school district to carry out the study. A letter detailing the purpose and procedures of the study, consent forms, and questionnaires were then sent to the Albemarle County school district for review. During the review process, the teacher and principal requested that passive consent procedures be adopted due to previous problems with students returning signed forms from parents. These procedures were subsequently approved by the IRB.

A letter describing the purpose and procedures of the study was sent to all parents who had a child enrolled in one of the eighth-grade physical education classes (see Appendix A). Parents were told that their child's participation was completely voluntary, but if they did not want their child to be involved they should return a signed form or contact the school office. Data collection began approximately 10 days after this mailing.

During the first day of data collection, the primary investigator described the purpose and procedures of the study to the students. During this time the students were asked to read and sign a consent form if they agreed to participate. The students were then given the first packet of questionnaires (see Appendix B). Instructions focused on how to properly respond to the structured alternative format and included both a verbal and visual demonstration. Students were specifically asked to respond to the items with how they *typically* thought and felt about themselves. Questions were answered and then students proceeded to complete the measures. When the participants were finished, they were asked to raise their hand and one of the researchers would come around and collect

their questionnaires. Students were asked to sit quietly until all the other students had finished. This first day of data collection lasted about 30-35 minutes.

Two days later, during the second measurement session, the primary researcher again verbally explained and visually demonstrated the procedures for responding to the structured alternative format. Moreover, the participants were told that the measures they were about to fill out were similar to the questions they completed last time, but that they were to respond with how they thought and felt about themselves *at that particular moment.*[8] A distinction between *typically* felt and felt *right now* was provided. Following these directions, the participants were provided with the packet of questionnaires (see Appendix B). On this occasion the data collection lasted about 10-15 minutes.

The third through fifth occasions of measurement also lasted approximately 10-15 minutes. Prior to passing out the questionnaires the students were again reminded that they should respond with how they thought and felt about themselves *at that particular moment,* regardless of how they felt the last time. To help the students focus on *that moment*, and discourage them from simply recalling their previous responses, the specific order of the self-evaluation items was changed for each repeated assessment. The measures administered at each occasion are included in Appendix B.

The sixth and final occasion of measurement lasted approximately 20-25 minutes. Prior to passing out the questionnaires the students were told that the packets contained two sets of items. Similar to the previous data collections, the first set of questions

[8] To help prevent the students from simply recalling their responses from the previous data collection, the order of the self-evaluation items and subscales were varied across each measurement occasion.

focused on how they thought and felt about themselves *at that particular moment.* The remainder of the items, however, asked the students about how they *typically* or *usually* thought and felt about participating in sport and physical activity.[9] During this last day, one of the primary physical education teachers was given the measure designed to assess each student's effort and persistence in class over the course of the study. The teacher was asked to return the completed assessment 7-10 days later.

The data collection occurred during the 1998-1999 school year and began about 7 weeks into the spring semester. The start of the data collection coincided with the start of a new section of the physical education curriculum called "family life". During this section the students spent half of the 90-minute class period in "health class" and the other half in "physical education". During health class the students learned about human sexuality with a particular focus on sexual behavior and sexually transmitted diseases. In the physical education portion of the class, students participated in various forms of dance and physical conditioning. Specifically, during the 3 weeks of the study the students participated in square dancing, folk dancing, and country line dancing. Periodically, the class would also participate in aerobic dance activities. All classes were coeducational and taught by a group of five experienced health and physical education instructors.

[9] Originally these measures were to be administered during separate occasions. However, students missed physical education class twice during the 3 week period (one snow day, one class assembly). Because spring break was about to begin and the study could not continue without interruption, the number of occasions was reduced.

Design and Data Analysis

A correlational design was employed to test the relationships between the variables of interest. Prior to testing the primary research questions, preliminary analyses were conducted. These analyses included descriptive statistics (e.g., mean, standard deviation, range), internal consistency estimates (i.e., alpha coefficient), and correlations among all study variables. To assure that the self-evaluation constructs were being reliably assessed across the repeated measurements, longitudinal factor analyses were conducted using structural equation modeling (McArdle & Nesselroade, 1994). Next, analyses were performed to determine whether to combine all participants in the main study analyses by testing for differences in the study variables between students enrolled in the two classes, and between students who completed 4 versus 5 intraindividual variability assessments. Following these preliminary analyses, tests of the three primary research questions were conducted.

Purpose 1: Prevalence of Intraindividual Variability of Self-Evaluations

The first purpose was to describe the degree of intraindividual variability of global and physical self-evaluations experienced by adolescents, and compare the magnitude of variability in these self-evaluations in males and females. The prevalence of intraindividual variability was first described through means, standard deviations, and ranges. Similarities and differences in the patterns of fluctuations experienced by the students were also described. Next, differences in intraindividual variability among global self-worth, physical self-worth, and perceived physical competence were

compared using matched-sample t-tests. Finally, gender differences were compared using univariate and multivariate analyses of variance.

Purpose 2: Achievement-Related Consequences of Intraindividual Variability of Self-Evaluations

The second purpose was to determine the achievement-related consequences of intraindividual variability of global and physical self-evaluations. Specifically, the independent and combined effects of level and stability (i.e., intraindividual variability) of self-evaluations on affect and motivation were tested through a series of hierarchical regression analyses. Structural equation modeling analyses determined whether the relationships uncovered in the regression analyses were invariant for male and female students.

Purpose 3: Antecedents of Intraindividual Variability of Self-Evaluations

The final purpose was to determine whether the importance adolescents placed on social sources of evaluative information was related to intraindividual variability of their self-evaluations. A series of multiple regression analyses were conducted to examine whether the importance placed on competence information from parents, teachers, and peers was predictive of short-term fluctuations in students' global and physical self-evaluations.

CHAPTER III

RESULTS

Preliminary Analyses

Descriptive Statistics

Alpha coefficients were computed for all measures to determine their internal consistency. All coefficients were above the minimum criterion of .70 (Nunnally, 1978) indicating that each of the measures reliably assessed the construct of interest (see Table 14). Table 14 also presents the mean and standard deviation for each of the measures. The specific measurement occasion (i.e., 1-6) is identified for those measures that were assessed on multiple days (e.g., global self-worth 1, global self-worth 2, etc.). In general, the participants had relatively positive self-evaluations and affect, as well as high levels of intrinsic motivation, with group means around 4.0 to 4.5 on a 6-point scale. Interestingly, the students as a group tended to report more positive global self-worth in comparison to physical self-worth or perceived physical competence. Also, the teacher felt that most of the students put forth a fair amount of effort and persistence in class, with a group mean of 2.81 on a 5-point scale. Finally, students tended to place greater importance on information from their parents to evaluate their physical competence, followed by peers and teachers. Another noteworthy observation is that there was a considerable amount of variability between the students on each of the measures, with the majority of standard deviations above 1.0.

Table 14

Descriptive Statistics and Alpha Coefficients for All Measures

Variable (occasion)	N	M	SD	alpha
global self-worth (1)	167	4.66	0.99	.85
global self-worth (2)	161	4.68	1.01	.88
global self-worth (3)	146	4.69	1.01	.91
global self-worth (4)	143	4.66	1.08	.92
global self-worth (5)	139	4.74	0.99	.90
global self-worth (6)	167	4.72	1.06	.92
physical self-worth (1)	167	4.36	1.16	.88
physical self-worth (2)	161	4.40	1.19	.94
physical self-worth (3)	146	4.49	1.12	.93
physical self-worth (4)	143	4.41	1.19	.93
physical self-worth (5)	139	4.44	1.14	.92
physical self-worth (6)	167	4.46	1.21	.94
perceived competence (1)	167	4.00	1.24	.88
perceived competence (2)	161	4.15	1.15	.88
perceived competence (3)	146	4.21	1.14	.88
perceived competence (4)	143	4.11	1.11	.87
perceived competence (5)	139	4.15	1.12	.88
perceived competence (6)	167	4.17	1.13	.88
liking of games and sports	167	4.33	1.21	.88
fun of physical exertion	167	3.92	1.15	.81
liking of exercise	167	3.94	1.00	.79
curiosity/interest	167	4.20	0.96	.80
preference for challenge	167	4.16	1.20	.91
effort and persistence	167	2.81	1.07	.94
importance of parents	167	3.30	0.93	.77
importance of teachers	167	2.86	0.92	.71
importance of peers	167	3.02	1.16	.88

Correlations (r's) among variables were examined to determine whether multicollinearity (r > .70) existed between conceptually similar measures (e.g., affect

subscales).[10] A number of correlations above this criterion were uncovered. For example, an r of .77 was found between students' preference for challenge and curiosity/interest. Similarly, the three affect subscales (i.e., liking of games and sport, fun of physical exertion, liking of exercise) were all highly correlated (r's ranging from .62 to .74). Given the conceptual similarity of these two sets of variables, two composite variables were created. *Intrinsic motivation* was defined as the mean of the preference of challenge and curiosity/interest subscales. The mean and standard deviation of this newly created variable were 4.18 and 1.02, respectively, and an alpha coefficient of .91 was obtained. *Affect* was created by averaging the three affect subscales. This variable had a mean of 4.06 (SD = 1.00) and an alpha coefficient of .92. Corrrelations between the study measures were again examined with the addition of these two composite variables. Interestingly, the correlation between the newly created intrinsic motivation and affect variables was also quite high (r = .87). Based on the literature, a strong relationship between intrinsic motivation and affect would be expected (see Deci & Ryan, 1985; Weiss & Chaumeton, 1992). Nevertheless, theoretically these variables represent distinct constructs. Therefore, rather than combine them into a single variable all subsequent analyses using these variables were conducted separately. A word of caution regarding the results examining these constructs is warranted, however, given the high statistical overlap.

[10] The relationships between many of the study variables will be addressed in the main analyses. Correlation matrices are included in Appendix C.

Longitudinal Factor Models

Because the same items were used to assess self-evaluations during each occasion of measurement, it is possible that short-term fluctuations may be a result of changes in the way individuals responded to the questionnaire items (McArdle & Nesselroade, 1994). That is, the constructs measured at the beginning and end of the study may be different as a result of repeated assessment (i.e., testing effects; see D. Campbell & Stanley, 1966; Thomas & Nelson, 1996). Consequently, any observed fluctuations in the students' self-evaluations would not necessarily be the result of actual changes in the way the students felt about themselves, but rather a result of changes in the measures.

To test whether the questionnaire items were measuring the same construct at the beginning and end of the study, longitudinal factor analyses were conducted to determine the pattern of relationships between the specific questionnaire items and the latent variables they represent (i.e., global self-worth, physical self-worth, perceived physical competence). If an invariant model, which forces the factor loadings to be equal across occasions, fits the data reasonably well (e.g., nonsignificant χ^2 value; RMSEA < .08; GFI, NNFI, & CFI > .90), one can conclude that the same construct is being assessed across multiple occasions (McArdle & Nesselroade, 1994; Meredith, 1964).

Separate analyses were conducted for each of the three self-evaluations included in the study. The models tested the invariance of the measures collected at the second and sixth day of data collection. These corresponded to the first and last assessments of the students' *right now* self-evaluations (i.e., those used to assess intraindividual

variability).[11] In all three cases, the results suggested that a model specifying invariant factor loadings provided an adequate fit to the observed data: global self-worth, χ^2 (52) = 100.55, $p < .05$, RMSEA = .08, GFI = .91, NNFI = .95, CFI = .96; physical self-worth, χ^2 (52) = 110.01, $p < .05$, RMSEA = .08, GFI = .91, NNFI = .96, CFI = .97; perceived physical competence, χ^2 (52) = 112.99, $p < .05$, RMSEA = .09, GFI = .90, NNFI = .94, CFI = .95. Thus, we can conclude that the specific items were measuring the same self-evaluation construct at the first and last occasion of measurement. Therefore, observed fluctuations in the students' self-evaluations across the course of the study are assumed to reflect changes in their thoughts and feelings about themselves rather than measurement error.

Group Differences: Class and Number of Assessments

Prior to pooling participants into a single sample, group differences on the set of study variables were examined between students enrolled in the two separate classes, and between students who completed 4 versus 5 intraindividual variability assessments. For each analysis a MANOVA was conducted. The means and standard deviations of dependent variables included in these analyses are presented in Tables 15 and 16, respectively. Given the high correlation between the affect and intrinsic motivation variables, group differences were examined separately for affect using independent sample t-tests.

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[11] Invariance tests across all occasions (i.e., 2-6) were not conducted given the large number of possible combinations. If the first and last occasion showed invariant factor loadings, it could be reasonably assumed that the intervening measures were also invariant (Eizenman et al., 1997).

No significant group differences emerged. Specifically, class differences were nonsignificant, Wilks' $\lambda = .95$, $F\ (11,155) = .76$, $p < .68$; $t\ (165) = -.97$, $p < .33$. Similarly, nonsignificant differences were found for number of intraindividual variability assessments, Wilks' $\lambda = .96$, $F\ (11,155) = .66$, $p < .77$; $t\ (165) = .24$, $p < .81$. Given these results, all subsequent analyses were conducted using the entire sample of 167 students. The descriptive statistics for the final sample are presented in Table 17.

Table 15

Descriptive Statistics by Class

	Class			
	1 [a]		2 [b]	
Variable	M	SD	M	SD
global self-worth level	4.53	1.00	4.85	0.95
global self-worth stability	0.40	0.30	0.38	0.28
physical self-worth level	4.22	1.15	4.59	1.14
physical self-worth stability	0.38	0.29	0.34	0.26
perceived competence level	3.90	1.23	4.15	1.26
perceived competence stability	0.35	0.26	0.34	0.21
affect	4.00	1.00	4.16	1.00
intrinsic motivation	4.15	1.05	4.24	0.98
effort and persistence	2.85	1.08	2.76	1.04
importance of parents	3.22	0.95	3.42	0.91
importance of teachers	2.86	0.90	2.88	0.96
importance of peers	2.98	1.17	3.08	1.15

[a] $n = 103$. [b] $n = 64$.

Table 16

Descriptive Statistics by Occasions of Intraindividual Variability Measurement

	Occasions of Intraindividual Variability Measurement			
	4 [a]		5 [b]	
Variable	M	SD	M	SD
global self-worth level	4.71	1.00	4.61	1.00
global self-worth stability	0.37	0.29	0.41	0.29
physical self-worth level	4.47	1.17	4.27	1.14
physical self-worth stability	0.35	0.29	0.37	0.27
perceived competence level	4.04	1.31	3.96	1.18
perceived competence stability	0.35	0.24	0.34	0.25
affect	4.08	0.98	4.05	1.02
intrinsic motivation	4.19	0.97	4.17	1.06
effort and persistence	2.72	1.01	2.90	1.11
importance of parents	3.41	0.95	3.19	0.92
importance of teachers	2.90	0.93	2.83	0.91
importance of peers	3.12	1.19	2.93	1.14

[a] n = 79. [b] n = 88.

Table 17

Descriptive Statistics for Final Sample (N=167)

Variable	M	SD
global self-worth stability	0.39	0.29
global self-worth level	4.65	0.99
physical self-worth stability	0.36	0.28
physical self-worth level	4.36	1.16
perceived competence stability	0.35	0.24
perceived competence level	4.00	1.24
affect	4.06	1.00
intrinsic motivation	4.18	1.02
effort and persistence	2.81	1.07
importance of parents	3.30	0.93
importance of teachers	2.86	0.92
importance of peers	3.02	1.16

Main Analyses

Prevalence of Intraindividual Variability of Self-Evaluations

The first research question focused on documenting the prevalence of intraindividual variability in adolescents. Therefore, the mean, standard deviation, and range of intraindividual variability of self-evaluations were examined. Stability of self-evaluations was further described by examining the pattern of fluctuations experienced by each student. This was accomplished by graphing and comparing each participant's self-evaluation scores across the 5 occasions of measurement.

Differences in the magnitude of intraindividual variability were also examined. To determine whether there were differences in the stability of global and physical self-evaluations, matched-sample t-tests were used to compare the intraindividual variability of global self-esteem, physical self-esteem, and perceived physical competence. Gender differences in the magnitude of short-term fluctuations were also compared.

Descriptive Statistics for Intraindividual Variability of Self-Evaluations

Descriptive statistics for intraindividual variability of global self-worth, physical self-worth, and perceived physical competence are presented in Table 18 under the column labeled Stability. The mean represents the average intraindividual variability across the group of students. The standard deviation represents the variability *between* students in their short-term fluctuations. Although the mean intraindividual variability of the entire group was not particularly large for any of the self-evaluations, the standard deviations suggest that there were some individuals who demonstrated considerable fluctuations in their self-evaluations. However, it is also clear that a number of the

students' self-evaluations remained stable across the study. This between-participant variability can further be seen in the minimum and maximum values. For each of the three self-evaluations there were individuals who demonstrated no fluctuations in their self-evaluations over the course of the study (i.e., min. = 0.0). That is, their scores were exactly the same across the 4 or 5 occasions where intraindividual variability was assessed. Conversely, the magnitude of intraindividual variability was as large as 1.69 for one student's perceived physical competence. The key point is that some individuals demonstrate short-term fluctuations in their self-evaluations, and in certain cases these variations are rather large.

The correlations between intraindividual variability and level of self-evaluations are also reported in Table 18. For all three of the self-evaluations a negative relationship between level and stability emerged. This is consistent with research findings by Kernis and his colleagues (see Kernis & Waschull, 1995), and suggests that individuals with less positive self-evaluations tend to experience greater short-term fluctuations. The magnitude of correlations are somewhat higher than those reported by Kernis for stability of global self-esteem in college-aged participants, but they are similar to those reported by Waschull and Kernis (1996) using fifth grade children.

Table 18

Descriptive Statistics for Level and Intraindividual Variability of Self-Evaluations

	Level		Stability				
Variable	M	SD	M	SD	Min.	Max.	Correlation (stability and level)
global self worth	4.65	0.99	0.39	0.29	0.00	1.42	-0.43
physical self-worth	4.36	1.16	0.36	0.28	0.00	1.45	-0.41
perceived competence	4.00	1.24	0.35	0.24	0.00	1.69	-0.11

Pattern of Short-Term Fluctuations in Self-Evaluations

Although the main focus of the study is on the *magnitude* of intraindividual variability, describing the pattern of fluctuations in students over the course of the study may provide important information. The general patterns of short-term fluctuations are presented in Figure 7. This graph represents the group's average score on each of the three self-evaluations across the six occasions of measurement. For each of the self-evaluations, the first occasion represents the mean of the participants' *typical* self-evaluations (i.e., level). The remaining 5 occasions represent the average of the participants' *right now* self-evaluations at each assessment. The broken line in the graph reflects that the measures at occasion 1 and occasions 2-6 represent different constructs. The patterns observed in the Figure show that, across the course of the study, the students reported higher levels of global self-worth in comparison to either of the two physical self-evaluations (i.e., physical self-worth, perceived physical competence). Further, the pattern of scores across time suggests that students' self-evaluations remained relatively positive and stable during the three weeks.

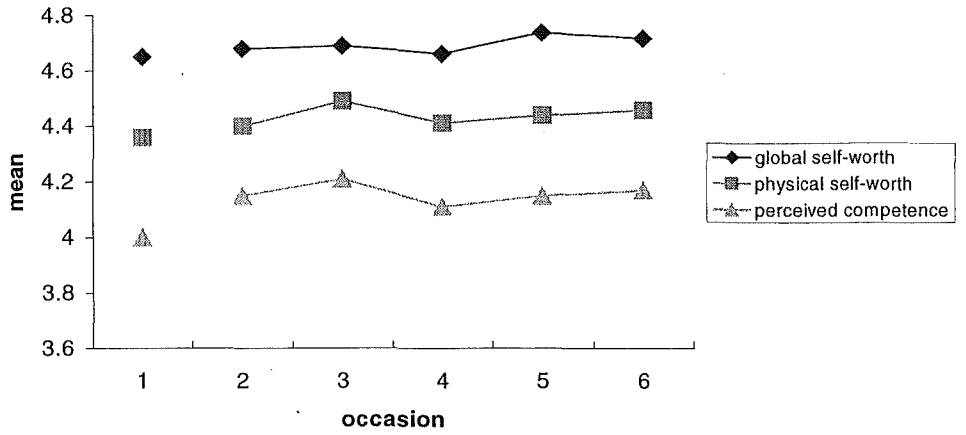

Figure 7. Mean Global and Physical Self-Evaluation Scores Across the 6 Occasions of Measurement

While Figure 7 illustrates the pattern of change in self-evaluations averaged across all participants, the *individual* student patterns reveal considerable between-participant variability over the course of the study. A presentation of each individual's pattern of change is beyond the scope of this study, but some of the general trends are interesting to report. For illustrative purposes, examples of similarities and differences in the patterns of physical self-worth are presented in Figures 8a-8g. First, there were a number of participants (about 16%) who demonstrated extremely stable self-evaluations across the duration of the study. This is clearly seen in Figure 8a which shows the physical self-worth scores of 2 different students across occasions 2-6.

While a number of students could be characterized as exhibiting little or no variation in their self-evaluations over time, many students demonstrated at least some fluctuation. Interestingly, however, the pattern of these fluctuations was quite diverse. For example, a number of students (about 13%) had relatively stable self-evaluations across the study with a single exception where they felt more or less positive than usual.

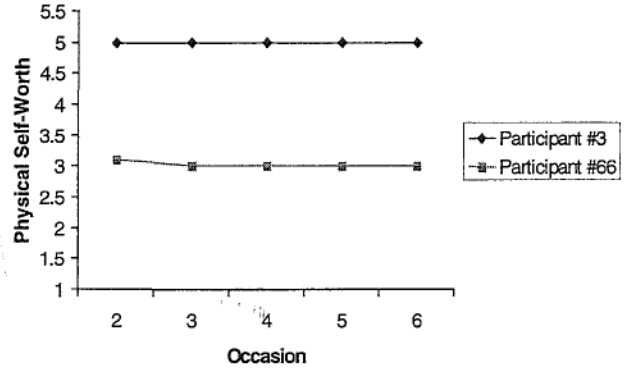

Figure 8a. Example of Stable Pattern of Change

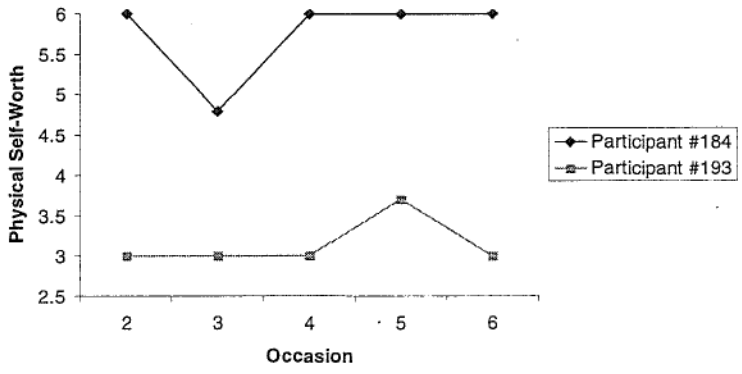

Figure 8b. Example of Single Fluctuation Pattern

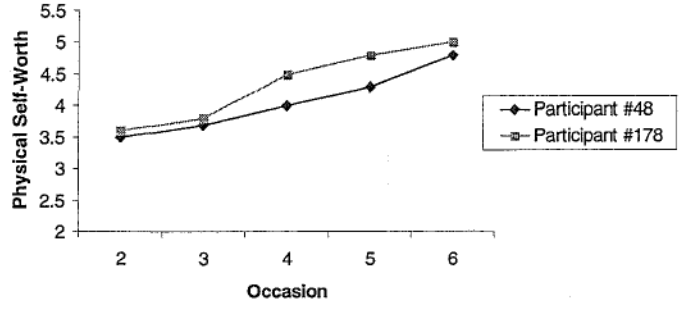

Figure 8c. Example of an Increasing Pattern of Change

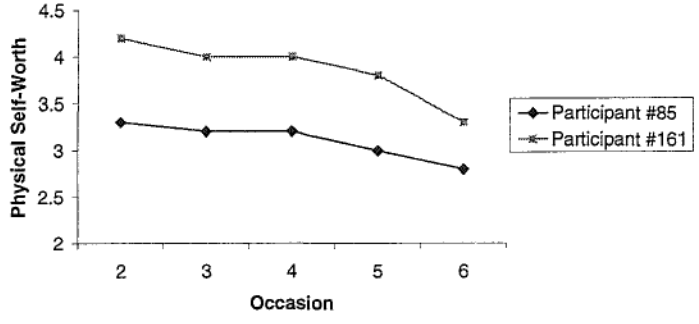

Figure 8d. Example of Decreasing Pattern of Change

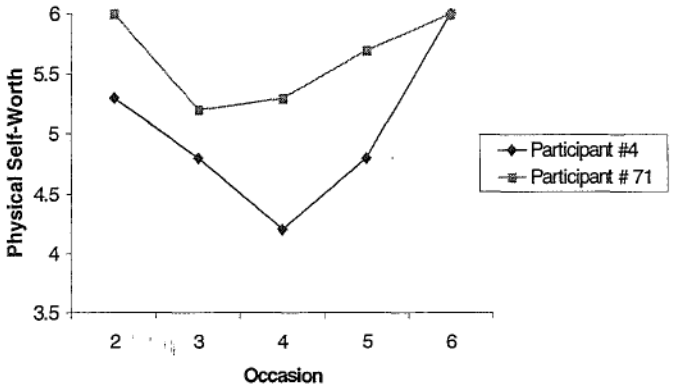

Figure 8e. Example of U-Shaped Pattern of Change

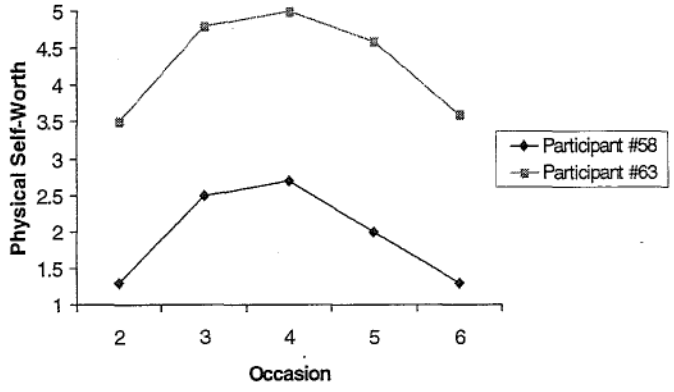

Figure 8f. Example of an Inverted U-Shaped Pattern of Change

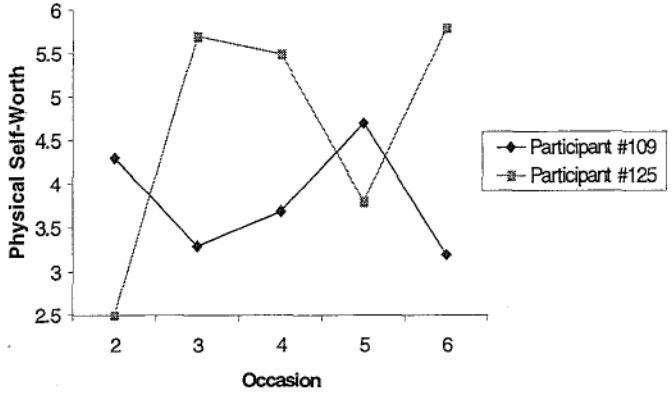

Figure 8g. Example of Multiple Fluctuations

Examples of this single fluctuating pattern can be seen in Figure 8b. Other students showed a greater number of fluctuations across the study. As seen in Figure 8c, there were students (about 6%) who showed a linear increase in their physical self-worth across time. In contrast, a handful of students (about 6%) exhibited a linear decrease in their self-evaluations (see Figure 8d), although the magnitude of the decreases was typically quite small. Other students demonstrated a U-shaped (Figure 8e) or inverted-U (Figure 8f) pattern (about 11% and 14%, respectively).

Examples of the most common pattern of change, however, can be seen in Figure 8g. Many participants (about 34%) demonstrated multiple fluctuations across time. For instance, participant #109 reported an extremely large increase in her physical self-worth from occasion 2 to 3. Over the next few days, the evaluation of her physical self decreased, yet shot back up again on the last day. While this student exhibited rather extreme fluctuations, the majority of students demonstrated similar up-and-down patterns in a less pronounced manner.

An intriguing aspect of these individual patterns is that, in many cases, individuals who had a similar magnitude of intraindividual variability showed different trends in their short-term fluctuations. For example, participant #161 in Figure 8d and participant #193 in Figure 8b had similar intraindividual variability scores (.32 and .30, respectively), but their pattern of short-term fluctuations were quite different. Although the current study is focused on the *magnitude* of intraindividual variability, regardless of the pattern, future studies might examine whether the pattern of short-term fluctuations is an important predictor of individuals' behaviors, cognitions, and affective responses in physical activity contexts.

Differences in Intraindividual Variability of Global and Physical Self-Evaluations

Based on a multidimensional and hierarchical conceptualization of the self, a number of researchers have argued that global self-evaluations should be more stable than more specific self-evaluations (e.g., Fox, 1988; Fox & Corbin, 1989; Shavelson et al., 1976). However, this proposition has not been tested using intraindividual variability as an indicator of stability. Matched-sample t-tests were used to compare the magnitude of intraindividual variability for each of the three self-evaluations. The results of these comparisons provided no support for the hypothesis that global self-evaluations are more stable. Specifically, a comparison of global self-worth ($\underline{M} = 0.39$) and physical self-worth ($\underline{M} = 0.36$) revealed a nonsignificant difference in the magnitude of intraindividual variability, $\underline{t}(166) = 1.40$, $\underline{p} < .16$. Nonsignificant differences were also found when comparing perceived physical competence ($\underline{M} = 0.35$) and physical self-worth, $\underline{t}(166) = 0.87$, $\underline{p} < .39$. Significant differences between global self-worth and perceived physical competence were uncovered, $\underline{t}(166) = 2.01$, $\underline{p} < .05$. Contrary to predictions, though, global self-worth was found to be less stable (i.e., higher intraindividual variability) than the more domain-specific physical competence. Nevertheless, the strength of this difference was inconsequential ($\underline{ES} = .15$).[12]

[12] Effect size was calculated using the formula from Thomas, Salazar, and Landers (1991): effect size = $M_1 - M_2/SD_{pooled}$. In this equation M_1 and M_2 represent the means of global self-worth stability and perceived physical competence stability, respectively. The SD_{pooled} represents the pooled standard deviation of the two self-evaluations.

Gender Differences in Global and Physical Self-Evaluations

Despite Rosenberg's (1986) claims that female adolescents are more unstable in their self-perceptions compared to males, little work has directly examined gender differences in the magnitude of intraindividual variability. Descriptive statistics for magnitude of intraindividual variability of self-evaluations for males and females are presented in the first three rows of Table 19. To test whether the magnitude of these fluctutations was different, a univariate ANOVA was conducted for each self-evaluation. Results indicated no significant gender differences in global self-worth, $F(1,165) = .05$, $p < .82$; physical self-worth, $F(1,165) = .08$, $p < .77$; or, perceived physical competence, $F(1,165) = .00$, $p < .97$. These results suggest that gender may not be a key individual difference variable when investigating short-term fluctuations in adolescents' self-evaluations.

Nevertheless, researcher have consistently found significant differences between males and females on their *level* of self-evaluations and other achievement-related constructs (see Eccles et al., 1998; Ruble & Martin, 1998). Thus, a second analysis tested whether there were gender differences in the entire set of study variables (see Table 19). Gender differences in the set of variables were examined using a MANOVA, with the exception of affect which was examined separately in a oneway ANOVA due to the high correlation with intrinsic motivation.

Table 19

Descriptive Statistics for Study Variables by Gender

Variable	Females [a]		Males [b]	
	M	SD	M	SD
global self-worth stability	0.39	0.30	0.38	0.28
physical self-worth stability	0.36	0.28	0.37	0.27
perceived competence stability	0.35	0.22	0.35	0.28
global self-worth level	4.58	1.00	4.75	0.98
physical self-worth level	4.17	1.18	4.62	1.07
perceived competence level	3.71	1.14	4.39	1.28
affect	3.96	0.97	4.20	1.03
intrinsic motivation	4.10	0.92	4.30	1.14
effort and persistence	2.54	1.04	3.19	0.98
importance of parents	3.30	0.91	3.30	0.97
importance of teachers	2.95	0.82	2.75	1.04
importance of peers	3.07	1.01	2.95	1.35

[a] $n = 97$. [b] $n = 70$.

Results revealed significant gender differences on the set of variables, Wilks' $\lambda = .84$, $F\ (11, 155) = 2.72$, $p < .003$. Follow-up discriminant and univariate analyses were conducted to determine which dependent variables were most important for maximizing gender differences. The results are presented in Table 20. Discriminant function coefficients were relied on more heavily given their multivariate nature. Coefficients clearly indicated that level of perceived physical competence and effort and persistence were the variables that maximized gender differences. The importance of teachers as a source of competence information and level of physical self-worth also emerged as salient contributors. These results suggest that male adolescents reported higher levels of physical self-worth and perceived physical competence, and were rated higher in effort

and persistence by their teacher. Further, female adolescents placed greater importance on using information from their teachers to evaluate their physical competence. Importantly, eta-squared (1-λ), which is a measure of effect size or the strength of these gender differences, indicated that gender accounted for 16% of the variance in the dependent variables. Affect did not differ for males and females, F (1, 165) = 2.43, p < .12. Given the magnitude of gender differences found, especially in self-evaluations and motivation, gender may be an important variable to consider when examining the

Table 20

Univariate and Discriminant Function Coefficients for Analysis of Gender Differences

Variable	Univariate F Values	Standardized Discriminant Coefficients
global self-worth stability	0.05	0.04
physical self-worth stability	0.08	0.06
perceived competence stability	0.00	-0.02
global self-worth level	1.10	-0.24
physical self-worth level	6.23*	0.33
perceived competence level	12.83*	0.61
intrinsic motivation	1.71	-0.39
effort and persistence	16.91*	0.68
importance of parents	0.00	0.05
importance of teachers	1.96	-0.45
importance of peers	0.41	0.03

* $p < .05$

relationships between self-evaluations and physical activity-related motivation and affect. Thus, subsequent analyses tested whether relationships were invariant for males and females.

Achievement-Related Consequences of Intraindividual Variability of Global and Physical Self-Evaluations

The second study purpose was to determine whether the independent and combined effects of level and stability of self-evaluations predicted intrinsic motivation and affect toward physical activity. To answer these questions, a series of hierarchical multiple regression analyses were conducted. In each analysis, the criterion variable included either affect, intrinsic motivation, or effort and persistence. The predictor variables included individuals' self-evaluation level, stability, and interaction of level and stability. Each self-evaluation was investigated in separate analyses. The independent effects of level and stability were examined first by entering them together on step one of the hierarchical regression. The influence of the combined effects of these variables was examined by adding the interaction term (i.e., product of level and intraindividual variability scores) on the second step. In the case of a significant interaction, predicted values were calculated to determine how the interaction between level and stability of the self-evaluation related to the variable of interest.

Given that significant gender differences were found for several variables, a test of the invariance of the regression equation for males and females was conducted for each analysis using structural equation modeling. This was done to determine whether the

relationships between the variables were the same for males and females, or whether gender-specific analyses should be conducted.

Global Self-Worth

The results for global self-worth are presented in Table 21. The regression models testing the independent effects of level and stability ($Model_{ind}$) and the interaction term ($Model_{full}$) are presented for each of the three dependent variables. All regression models were significant. Nevertheless, an examination of the changes in R^2 revealed that addition of the interaction term did not always lead to a significant improvement in the prediction of the criterion variable. Each analysis is described more fully in the following paragraphs.

Affect. Results revealed that the interaction between level and stability of global self-worth accounted for a significant amount of variance in affect above and beyond the independent effects alone ($\Delta R^2 = .07$, $p < .05$). Therefore, the full model predicting 19% of the variance in affect was deemed the most appropriate. The regression coefficients revealed that each of the three predictors (i.e., level, intraindividual variability, interaction) was significantly related to affect. Given the significant interaction, predicted scores were calculated following procedures outlined by Cohen and Cohen (1983). Specifically, predicted values were computed by systematically substituting values equal to +/- 1 SD for both level ($M = 5.64$, $M = 3.66$, respectively) and intraindividual variability ($M = 0.68$, $M = 0.10$, respectively) into the final regression equation. As a result, separate regression lines could be plotted for individuals with relatively higher and lower levels of global self-worth.

Table 21

Summary of Hierarchical Regression Models for Global Self-Worth

					Unstandardized Regression Coefficients (standard error)			
Model	df	F	R^2	ΔR^2	Intercept	Level	Stability	Interaction
Global Self-Worth and Affect								
$Model_{ind}$	2, 164	11.05*	.12	--	2.87 (.44)*	0.29 (.08)*	-0.37 (.28)	--
$Model_{full}$	3, 163	12.42*	.19	.07*	1.24 (.62)*	0.64 (.12)*	3.13 (.99)*	-0.80 (.22)*
Global Self-Worth and Intrinsic Motivation								
$Model_{ind}$	2, 164	13.21*	.14	--	2.81 (.45)*	0.33 (.08)*	-0.36 (.28)	--
$Model_{full}$	3, 163	12.36*	.19	.05*	1.42 (.63)*	0.62 (.13)*	2.61 (1.01)*	-0.68 (.22)*
Global Self-Worth and Effort and Persistence								
$Model_{ind}$	2, 164	3.87*	.05	--	2.01 (.49)*	0.19 (.09)*	-.22 (.31)	--
$Model_{full}$	3, 163	2.85*	.05	.00	1.54 (.71)*	0.29 (.14)*	0.78 (1.14)	-0.23 (.25)

* $p < .05$.

As illustrated in Figure 9a, the resultant regression lines revealed partial support for the study hypotheses. Specifically, little change in affect was observed as intraindividual variability increased (i.e., less stability) in individuals with *lower levels* of global self-worth. However, for individuals with *higher levels* of global self-worth, an increasing magnitude of short-term fluctuations was associated with less positive affect. In fact, individuals who possessed higher levels of global self-worth but demonstrated higher fluctuations reported a similar level of affect toward physical activity as individuals with lower global self-worth. It should be noted, however, that these students still maintained relatively positive levels of affect toward sport and physical activity (i.e., scored above the midpoint). A test of equality of the regression equations, where the regression coefficients, intercept, and R^2 were fixed to be equal for males and females, determined that this pattern of relationships was invariant for male and female students (see Table 22).

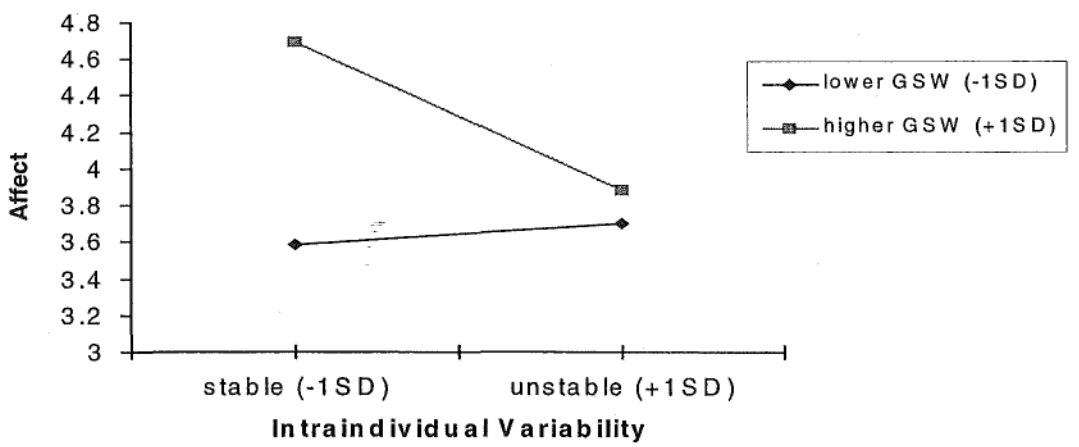

Figure 9a. Regression Lines for the Interaction of Global Self-Worth Level and Stability on Affect

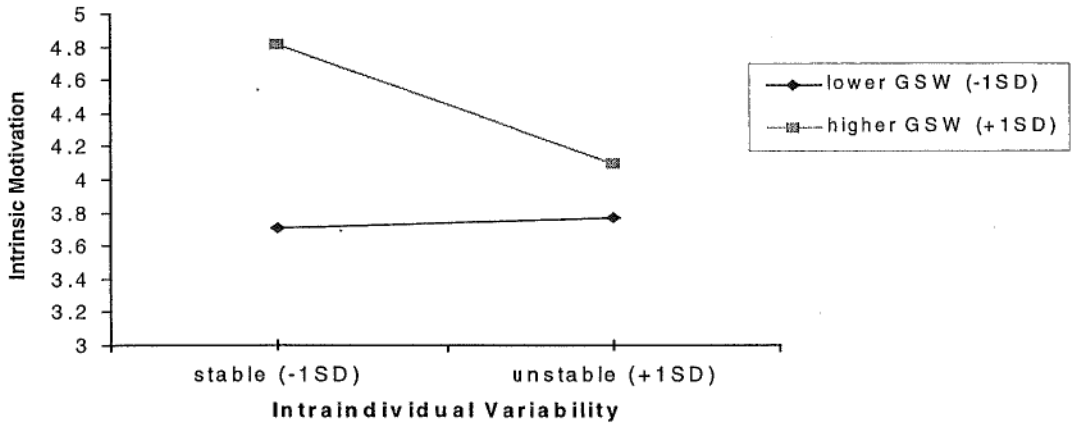

Figure 9b. Regression Lines for the Interaction of Global Self-Worth Level and Stability on Intrinsic Motivation

Table 22

Model Fit Indices for Tests of the Equality of Global Self-Worth Regression Equations for Male and Female Students

Analysis	χ^2	df	p	RMSEA	GFI	NNFI	CFI
affect[a]	3.94	5	.56	.00	1.00	1.00	1.00
intrinsic motivation[a]	8.09	5	.15	.06	.98	.99	.99
effort and persistence[b]	0.98	3	.81	.00	.99	1.11	1.00

[a] invariant model. [b] parallel model.

Intrinsic Motivation. Similar results were found for intrinsic motivation. As seen in Table 21, the addition of the interaction term in the full model ($Model_{full}$) significantly increased the amount of variance explained in intrinsic motivation ($\Delta R^2 = .05$, $p < .05$). Regression coefficients for the full model revealed that both the independent and combined effects of level and intraindividual variability were significant predictors. Given the significant interaction, predicted values were calculated and the resultant regression lines are displayed in Figure 9b. Results revealed little change in intrinsic motivation as intraindividual variability increased for students with *lower levels* of global self-esteem. However, for students with *higher levels* of global self-esteem higher levels of intraindividual variability were associated with lower levels of intrinsic motivation, although these values were still favorable (i.e., scores above the midpoint of the scale). These relationships were the same for male and female students (see Table 22).

Effort and Persistence. The analysis for effort and persistence revealed a different pattern of relationships. The interaction term did not significantly increase the amount of variance explained in effort and persistence above and beyond the independent effects of level and stability of global self-worth ($\Delta R^2 = .00$) (see Table 21). Therefore, the regression equation for independent effects only (i.e., $Model_{ind}$) was the best fitting model (i.e., most parsimonious). Regression coefficients indicated that level of global self-worth was the only significant predictor of effort and persistence, with higher levels of global self-worth associated with greater effort and persistence. It should be noted, however, that only a small amount of the variance in effort and persistence was explained by this model ($R^2 = .05$). The regression equations for males and females were found to

be parallel. That is, the R^2 and the regression coefficients were equivalent, but the regression lines for males and females crossed the y-axis at different points.

In summary, results of these analyses reveal that intraindividual variability of global self-worth is associated with various achievement-related consequences. While stability of global self-worth was not related to effort and persistence, it was for affect and intrinsic motivation. In both cases higher intraindividual variability (i.e., lower stability) was associated with lower affect and motivation, but only for students with relatively higher levels of global self-worth. The take-home message is that the magnitude of short-term fluctuations in adolescents' global self-worth can help explain why some individuals have more or less positive affect and intrinsic motivation for physical activity participation beyond only level of global self-worth.

Physical Self-Worth

A summary of the regression models testing the independent and combined effects of physical self-worth level and intraindividual variability on motivation and affect are presented in Table 23. Results indicated that all of the models were capable of predicting a significant amount of the variance in motivation and affect. Nevertheless, the best fitting or most parsimonious models varied depending upon the criterion variable in question.

Affect. Inclusion of the interaction term significantly increased the amount of variance explained in affect ($\Delta R^2 = .06$). Regression coefficients revealed that all three predictors were significantly related to affect. Because of the significant interaction, predicted values were calculated by substituting values +/- 1 SD of physical self-worth

Table 23

Summary of Hierarchical Regression Models for Physical Self-Worth

					Unstandardized Regression Coefficients (standard error)			
Model	df	F	R^2	ΔR^2	Intercept	Level	Stability	Interaction
Physical Self-Worth and Affect								
$Model_{ind}$	2, 164	48.78*	.37	--	1.82 (.31)*	0.52 (.06)*	-0.01 (.24)	--
$Model_{full}$	3, 163	40.52*	.43	.06*	0.74 (.40)	0.77 (.09)*	2.30 (.64)*	-0.60 (.15)*
Physical Self-Worth and Intrinsic Motivation								
$Model_{ind}$	2, 164	40.73*	.33	--	2.06 (.32)*	0.50 (.06)*	-0.11 (.26)	--
$Model_{full}$	3, 163	33.92*	.38	.05*	0.98 (.43)*	0.75 (.09)*	2.27 (.68)*	-0.61 (.16)*
Physical Self-Worth and Effort and Persistence								
$Model_{ind}$	2, 164	9.95*	.11	--	1.14 (.39)*	0.33 (.07)*	.64 (.31)*	--
$Model_{full}$	3, 163	6.89*	.11	.00	0.81 (.53)	0.41 (.11)*	1.35 (.86)	-0.18 (.20)

$p < .05$.

level ($\underline{M}$ = 5.52, $\underline{M}$ = 3.2, respectively) and magnitude of intraindividual variability ($\underline{M}$ = 0.64, $\underline{M}$ = 0.08, respectively) in the final regression equation. The resultant regression lines are depicted in Figure 10a. For individuals with *lower levels* of physical self-worth, increases in intraindividual variability were related to slightly more positive affect. In contrast, for individuals with *higher levels* of physical self-worth higher intraindividual variability was associated with less positive affect, although the affect scores were still positive in an absolute sense (i.e., 4.3 on a 6-point scale). Tests of the equality of the regression equation revealed that the influence of physical self-worth level and stability on affect was the same for both male and female adolescents (see Table 24).

While the interaction term resulted in a significant change in R^2, it should be noted that level of physical self-worth is the most salient contributor to the relationship. The full model explained 43% of the variance in affect, yet the independent model where level was the only significant predictor explained 37% of this variance. Further, the regression lines in Figure 10a clearly show that across all levels of stability, individuals with higher levels of physical self-worth reported higher levels of positive affect. Thus, while the interaction of level and stability was statistically significant the contribution is small relative to the independent effect of level of physical self-worth on affect.

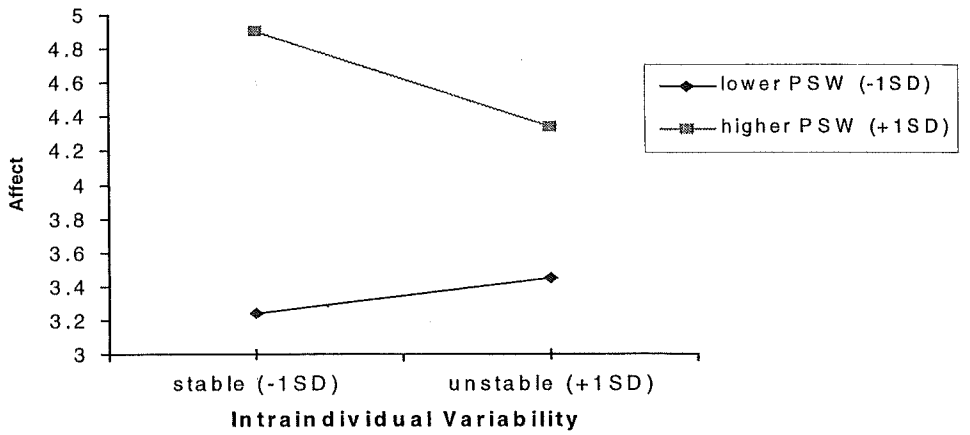

Figure 10a. Regression Lines for the Interaction of Physical Self-Worth Level and Stability on Affect

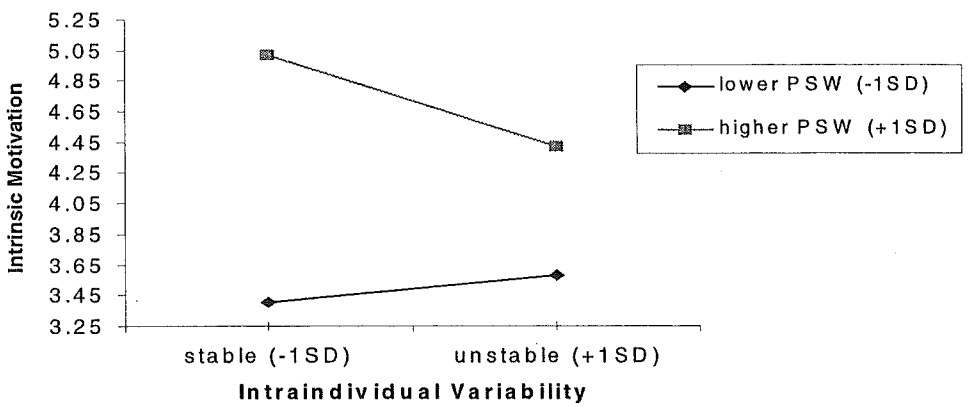

Figure 10b. Regression Lines for the Interaction of Physical Self-Worth Level and Stability on Intrinsic Motivation

Table 24

Model Fit Indices for Tests of the Equality of Physical Self-Worth Regression Equations for Male and Female Students

analysis	χ^2	df	p	RMSEA	GFI	NNFI	CFI
affect[a]	1.65	5	.90	.00	1.00	1.02	1.00
intrinsic motivation[a]	4.51	5	.48	.00	.98	1.00	1.00
effort and persistence[b]	1.00	3	.81	.00	.99	1.11	1.00

[a] invariant model. [b] parallel model.

Intrinsic Motivation. The findings for intrinsic motivation were similar to those for affect. As seen in Table 23, a significant increase in R^2 was offered by the interaction term ($\Delta R^2 = .05$). In combination, level, intraindividual variability, and the level by stability interaction of physical self-worth predicted 38% of the variance in intrinsic motivation. The regression coefficients further indicated that each of the predictor variables was significantly related to intrinsic motivation. Predicted values were calculated, and the resultant regression lines are illustrated in Figure 10b. Consistent with study hypotheses, greater intraindividual variability was negatively related to intrinsic motivation in the case of higher levels of physical self-worth. For individuals with lower levels of physical self-worth, higher intraindividual variability was associated with slightly higher intrinsic motivation. Moreover, these relationships were the same for male and female students (see Table 24). As with affect, although the interaction term

was statistically significant, level of physical self-worth was the key variable predicting intrinsic motivation ($R^2 = 33\%$).

Effort and Persistence. The interaction term did not significantly add to the prediction of effort and persistence ($\Delta R^2 = .00$). Thus, the regression equation that included only level and stability of physical self-worth was selected as the most appropriate model, and both were significantly and positively related to effort and persistence (see Table 23). These results suggest that higher levels of physical self-worth and greater intraindividual variability were associated with higher effort and persistence on the part of the students. Further, the regression equations for males and females were parallel (see Table 24).

In summary, results suggested that the magnitude of short-term fluctuations in adolescents' physical self-worth was related to their affect and motivation toward sport and physical activity. While the pattern of relationships supported the study hypotheses, the relative contribution of intraindividual variability to variations in motivation and affect was small in comparison to physical self-worth level. Nevertheless, including the stability of adolescents' physical self-worth adds to our understanding of achievement-related behaviors, cognitions, and affective responses in the physical domain.

Perceived Physical Competence

Results examining the influence of level and stability of perceived physical competence on physical activity-related motivation and affect are summarized in

Table 25. All regression models significantly predicted motivation and affect; however, the relative importance of the various predictors varied depending on the specific analysis.

Affect. The magnitude of intraindividual variability of perceived competence was not an important predictor of affect (see Table 25). The regression equation with only the independent effects of level and stability was deemed the best fit, but the regression coefficients indicated that only level of perceived competence was a significant predictor. Specifically, higher levels of perceived competence were associated with more positive affect. Results revealed that this pattern of relationships were consistent for both males and females (see Table 26).

Intrinsic Motivation. Results indicated that the full regression model was the most appropriate. Specifically, results indicated that the interaction term significantly contributed to the prediction of intrinsic motivation (see Table 25). Consequently, predicted scores were calculated by systematically substituting values +/- 1 SD of perceived physical competence level ($M = 5.24$, $M = 2.76$, respectively) and magnitude of intraindividual variability ($M = 0.59$, $M = 0.11$, respectively) into the final regression equation. As depicted in Figure 11, the influence of intraindividual variability was different for students with higher versus lower levels of perceived competence. For students with lower levels of perceived physical competence, intraindividual variability made no difference on intrinsic motivation. Conversely, greater intraindividual variability was associated with lower intrinsic motivation for individuals with higher levels of perceived physical competence. Analyses indicated that the pattern of relationships was invariant for males and females (see Table 26). What is also evident

Table 25

Summary of Hierarchical Regression Models for Perceived Physical Competence

					Unstandardized Regression Coefficients (standard error)			
Model	df	F	R^2	ΔR^2	Intercept	Level	Stability	Interaction
Perceived Physical Competence and Affect								
$Model_{ind}$	2, 164	69.49*	.46	--	2.10 (.22)*	0.53 (.05)*	-0.42 (.24)	--
$Model_{full}$	3, 163	48.09*	.47	.01	1.64 (.33)*	0.64 (.08)*	0.86 (.74)	-0.31 (.17)
Perceived Physical Competence and Intrinsic Motivation								
$Model_{ind}$	2, 164	67.28*	.45	--	2.21 (.22)*	0.53 (.05)*	-0.45 (.24)	--
$Model_{full}$	3, 163	48.34*	.47	.02*	1.57 (.34)*	0.69 (.08)*	1.33 (.75)	-0.44 (.18)*
Perceived Physical Competence and Effort and Persistence								
$Model_{ind}$	2, 164	14.70*	.15	--	1.49 (.29)*	0.33 (.06)*	-.00 (.32)	--
$Model_{full}$	3, 163	9.78*	.15	.00	1.39 (.45)	0.36 (.10)*	0.27 (1.00)	-0.01 (.23)

* $p < .05$.

Table 26

Model Fit Indices for Tests of the Equality of Perceived Physical Competence Regression Equations for Male and Female Students

Analysis	χ^2	df	p	RMSEA	GFI	NNFI	CFI
affect[a]	4.52	4	.34	.03	.99	.99	1.00
intrinsic motivation[a]	6.62	5	.25	.05	.98	.99	1.00
effort and persistence[b]	.86	3	.84	.00	1.00	1.24	1.00

[a] invariant model. [b] parallel model.

in Figure 11 is that regardless of magnitude of intraindividual variability, students with higher perceptions of competence reported higher levels of intrinsic motivation compared to students with lower perceptions of competence. Further, while the full model explained 47% of the variance in intrinsic motivation, the addition of the interaction term only explained an additional 2% of the variance. Thus, while the interaction of level and stability was statistically significant, the influence on intrinsic motivation was rather small relative to the influence of *level* of perceived competence

Effort and Persistence. Intraindividual variability was not a predictor of motivated behavior. As seen in Table 25, there was no difference between the independent and full models in the amount of variance explained in effort and persistence. Therefore, the more parsimonious independent model was selected as the final model (R^2 = 15%). Regression coefficients indicated that only level of perceived competence was a significant predictor of motivated behavior. In this case, higher levels

of perceived physical competence were associated with greater effort and persistence during physical education classes. Results also revealed that the regression equations for males and females were parallel (see Table 26).

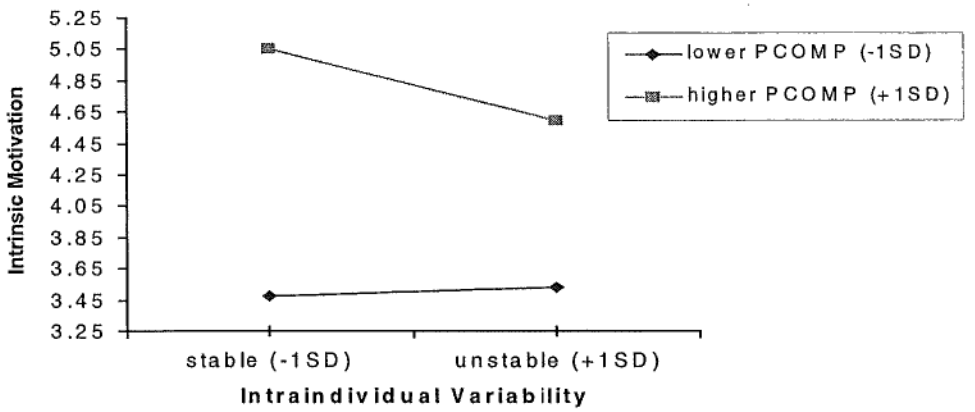

Figure 11. Regression Lines for the Interaction of Perceived Physical Competence Level and Stability on Intrinsic Motivation

In summary, these results revealed that intraindividual variability of perceived competence was not a key variable in the prediction of motivation and affect. Even in the case of intrinsic motivation where the interaction term was statistically significant, the amount of variance explained by intraindividual variability was quite small, especially relative to the contribution of level of perceived physical competence. Thus, level of perceived competence was the consistent significant predictor of motivation and affect in this adolescent sample.

Antecedents of Intraindividual Variability of Self-Evaluations

The final purpose of this study was to determine why adolescents may vary in the stability of their global and physical self-evaluations. Based on suggestions by Rosenberg (1986) and Harter (1993b; Harter et al., 1996), individuals who place greater importance on social sources of self-evaluative information may experience greater intraindividual variability. Therefore, this study examined whether the importance that students placed on evaluative information from parents, teachers, and peers was predictive of short-term fluctuations in their self-evaluations.

A series of multiple regression analyses was conducted to examine the relationships between these constructs. For each analysis, the predictor variables were the importance rating assigned to each of the three social sources of competence information (i.e., parents, teacher, peers). The criterion variable was the magnitude of intraindividual variability in global self-worth, physical self-worth, or perceived physical competence. The three self-evaluations were examined in separate analyses.

Results revealed that the importance of social sources of competence information was not significantly related to stability of self-evaluations. Specifically, the regression analysis for global self-worth, F (3, 163) = 1.45, $p < .23$; physical self-worth, F (3, 163) = 1.20, $p < .31$; and perceived physical competence, F (3, 163) = 0.30, $p < .83$, were all nonsignificant. These results suggest that the importance of social sources of information was not related to intraindividual variability of self-evaluations in these adolescents.

Chapter IV

DISCUSSION

Research and theory have highlighted the role of self-evaluations in a variety of achievement-related behaviors, cognitions, and affective responses (see Eccles et al., 1998; Harter, 1998; Weiss & Ebbeck, 1996). The primary focus of much of this literature has been on individuals' *level* of global and domain-specific self-evaluations. That is, this research has concentrated on whether individuals' evaluations of self-worth and specific achievement competencies are relatively *high* or *low*. Recently, researchers (e.g., Kernis, 1995; Kernis & Waschull, 1995) have argued that there are other aspects of individuals' self-evaluations that may provide important information above and beyond *level* of self-evaluation. The goal of this study was to extend the self-perception literature by examining *intraindividual variability* or *stability* of global and physical self-evaluations. In particular, this study was designed to document the prevalence of short-term fluctuations in adolescents' self-evaluations, as well as investigate consequences and antecedents of intraindividual variability. The results showed that intraindividual variability of global and physical self-evaluations exists in young adolescents and these fluctuations made varying contributions to explaining achievement-related consequences. A systematic discussion of the results is organized by each of the study purposes.

Prevalence of Intraindividual Variability of Self-Evaluations

The first purpose was to document the prevalence of intraindividual variability of global and physical self-evaluations in a sample of young adolescent physical education students. This included describing the patterns of intraindividual variability, determining whether the magnitude of these fluctuations differed between global and physical self-evaluations, and testing whether there were gender differences in stability of self-evaluations. Results indicated that the majority of students experienced some fluctuation in their global and physical self-evaluations over the course of the 3-week study. As a group the magnitude of intraindividual variability was not large, but there was a considerable degree of between-participant variability in the size of these fluctuations. A number of students demonstrated very stable self-evaluations across the three weeks, while other students exhibited rather large fluctuations in their self-evaluations. For the most part, however, the majority of students demonstrated small fluctuations in their global and physical self-evaluations.

The magnitude of these fluctuations is difficult to compare to previous research on intraindividual variability of self-evaluations because different assessment strategies have been used (cf., Demo & Savin-Williams, 1992; Eizenman et al., 1997; Kernis et al., 1993). Nevertheless, results support Kernis (e.g., Kernis & Waschull, 1995) and Demo and Savin-Williams (1992) who concluded that individuals tend to experience *slight* variations rather than dramatic shifts in their self-evaluations. Regardless of the magnitude, the short-term fluctuations in self-evaluations found provide support for the scholars who have identified an unstable component of the self (e.g., Harter, 1998; James, 1890; Kernis, 1993; Markus & Wurf, 1987; Rosenberg, 1986).

Results also revealed that greater intraindividual variability was generally associated with lower levels of self-evaluations. This was especially true for global self-worth and physical self-worth where correlations between level and stability were -.43 and -.41, respectively. Kernis and his colleagues also found that individuals with less positive global self-worth tend to experience greater fluctuations in their self-evaluations (see Kernis & Waschull, 1995). Nevertheless, the magnitude of these relationships has typically been smaller in samples of young adults, with $\underline{r}$ = -.10 to the high -.20's. Waschull and Kernis (1996), however, reported an $\underline{r}$ of -.42 between global self-worth level and stability in a sample of fifth grade children. Thus, based on the limited research it appears that the negative relationship between level and stability of self-evaluations may be more pronounced in children and adolescents. Why this relationship occurs is unclear, but may signal developmental differences in the tendency for individuals with varying levels of self-evaluations to experience short-term fluctuations.

As a way to further describe the prevalence of intraindividual variability, differences in stability of global and physical self-evaluations were examined. Based on the suggestions of Shavelson and colleagues (1976), global self-worth was predicted to be more stable than physical self-evaluations given that it is a more generalized self-perception, based on numerous experiences and information, and should be less influenced by any specific evaluative event. Interestingly, however, no support for this hypothesis was found. The magnitude of intraindividual variability was essentially identical for global and physical self-evaluations. The only difference that emerged was that global self-worth was slightly *less* stable than perceived physical competence. These results question the hypothesis that global self-evaluations are more stable.

One possible explanation for these unexpected findings involves differences in the amount of specific evaluative information available to the students for assessing their global and physical self-evaluations. According to a multidimensional and hierarchical conception of the self (Fox, 1988; Harter, 1998; Shavelson et al., 1976), individuals' global self-worth can be influenced by self-evaluations in a number of specific domains (e.g., academic, social, physical). Any change experienced in these domain-specific self-evaluations could lead to a corresponding change in one's global self-worth, especially if the domain is perceived as important to the individual (Harter, 1990a, 1998; Pelham, 1985b). Thus, global self-worth may ultimately be influenced by events or information spanning a diverse range of areas and activities. Domain-specific self-evaluations, on the other hand, should only be influenced by events or information specific to that domain (e.g., receiving an A+ on a math exam should influence perceived math ability but not perceived sport competence).

Given that many students in the study (about 45%) reported that they were not physically active outside of physical education class, and they were only in class for 90 minutes every other day, it is possible that the students did not encounter or experience a great deal of evaluative information relevant to their perceptions of physical competence. For instance, the dance unit emphasized in the curriculum during the time the students participated in the study may not have provided specific information that would alter their ability perceptions in sports and games, which was how perceived physical competence was operationalized. Thus, the relatively lower fluctuations observed in perceived physical competence compared to global self-worth may be due to fewer opportunities to encounter evaluative information specific to their abilities in sports and games. Over the

course of the three weeks, however, it is likely that the students were exposed to frequent information about themselves in other areas (e.g., academics, social). Therefore, the adolescents may have experienced more frequent opportunities to receive both positive and negative evaluative information that ultimately affected their feelings of global self-worth. Consequently, global self-evaluations were less stable than specific physical self-evaluations in this particular youth sample.

Using a different indicator of stability, other studies have also failed to support the conclusion that global self-evaluations should be more stable than domain- and subdomain-specific self-evaluations. In particular, test-retest correlations for global self-evaluations, with intervals ranging from 2 weeks to 14 months, have been smaller in magnitude compared to more specific self-evaluations (e.g., Fox, 1990; Marsh, 1996b; Whitehead, 1995). These results question the hypotheses of Shavelson et al. (1976), and perhaps signal a need for a revision in this theorizing.

Results of this study also failed to support the prediction that female adolescents would experience greater intraindividual variability. To date, research has not examined gender differences in stability of self-evaluations. Kernis and his colleagues (e.g., Kernis et al., 1993; Kernis et al., 1997) have either investigated female participants only or have not tested for gender differences. The hypothesized gender differences were based on Rosenberg's (1986) suggestion that adolescent females would have less stable self-evaluations given they are more sensitive to others' thoughts and feelings, and are more dependent on social sources of evaluative information. While Rosenberg documented some supporting evidence of gender differences, his conceptualization of stability is

different than that adopted in the present study, and consequently may account for the failure to support his conclusions.

According to Rosenberg (1986), an individual is considered *unstable* if he or she experiences dramatic shifts between positive and negative self-evaluations. For instance, Rosenberg's (1965) Stability of Self Scale asks respondents to endorse the statement, "some days I have a very good opinion of myself; other days I have a very poor opinion of myself." *Stability* in the present study was assessed as the standard deviation of students' self-evaluation measured over multiple occasions. Consequently, students could possess unstable self-evaluations even if they exhibited only small fluctuations in the extent to which they felt positive or negative about themselves and their abilities. While it is possible that some females (and males) in this sample were more likely to experience the dramatic shifts discussed by Rosenberg, gender differences were not found when intraindividual variability was averaged across all students.

Although there were no significant gender differences found in magnitude of intraindividual variability, *level* differences were uncovered. Consistent with previous research (e.g., Eccles & Harold, 1991; Marsh, 1998; Welk et al., 1995; Whitehead, 1995), males reported higher levels of physical self-worth and perceived physical competence. These results are not surprising given the prevailing stereotype that sport and physical activity is a masculine domain, and that males and females are likely to experience different socialization patterns into and through sport and physical activity (Coakley, 1993; Greendorfer, 1992). For instance, males typically have more opportunities to participate, and receive more instruction and positive feedback for their physical achievement strivings. Consequently, males may be more likely to be motivated to

participate and feel more positive about their abilities in these activities (see Eccles & Harold, 1991; Eccles et al., 1998). Higher physical self-evaluations reported by male students may also be a result of being less likely to disclose that they feel unskilled in sport and physical activity. That is, given the importance placed on achievement in this domain for adolescent boys, they may feel the need to protect their self-image by reporting more positive physical self-evaluations (see Eccles et al., 1998). In contrast, females are more likely to discount the importance of physical competence (see Eccles et al., 1998; Harter, 1990a), and thus be more likely to admit feelings of low ability.

In summary, results indicated that the majority of students exhibited short-term fluctuations in their self-evaluations. However, there were no differences in intraindividual variability between global and physical self-evaluations, or between male and female adolescents. Importantly, results of the longitudinal factor analyses suggested that the observed fluctuations were not simply due to the repeated assessments. The self-evaluation items were measuring the same construct at the beginning *and* end of the study, and thus one can confidently conclude that the observed fluctuations reflected actual changes in the students' thoughts and feelings about themselves. This is critical to the argument that intraindividual variability of self-evaluations is a legitimate psychological construct (Kernis, 1993; McArdle & Nesselroade, 1994). Further evidence for this argument was found in the relationship between short-term fluctuations in self-evaluations and students' physical activity-related motivation and affect.

Consequences of Intraindividual Variability of Self-Evaluations

After documenting that students exhibit intraindividual variability of self-evaluations, the second research question focused on whether these fluctuations were associated with achievement-related consequences. In particular, the study sought to determine the independent and combined effects of *level* and *stability* of self-evaluations on students' physical activity-related motivation and affect. Based on theory and research (see Weiss & Chaumeton, 1992; Weiss & Ebbeck, 1996), more positive self-evaluations (i.e., higher levels) should relate to higher levels of motivation and positive affect. However, based on the work of Kernis and his colleagues (see Greenier et al., 1995; Kernis & Waschull, 1995), a significant level by stability interaction was hypothesized to contribute beyond *level* of self-evaluations alone. Specifically, greater intraindividual variability (i.e., less stability) was expected to be associated with lower motivation and less positive affect, but only for students with higher levels of self-evaluations. For students with lower self-evaluations greater intraindividual variability was predicted to relate to higher motivation and more positive affect.

Results revealed partial support for the study hypotheses. As expected, significant level by stability interactions emerged in a number of the analyses, especially those predicting intrinsic motivation and affect. The regression lines for the significant interactions revealed relatively strong support for the expected influence of intraindividual variability for those students with *higher levels* of self-evaluations. This pattern of results was particularly strong when considering global self-worth, where greater intraindividual variability was associated with lower intrinsic motivation and less positive affect.

These results are similar to those reported by Waschull and Kernis (1996) who found that greater intraindividual variability of global self-esteem in fifth grade students was associated with lower intrinsic motivation across all levels of global self-worth. Waschull and Kernis explained their results by suggesting that instability reflected a heightened sense of ego-involvement, where individuals feel that their self-evaluations are continually "on the line" and are overly concerned with demonstrating superior performance (Greenier et al., 1995, Kernis, 1993; Kernis & Waschull, 1995). Consequently, individuals with higher but unstable self-evaluations are more likely to take steps to protect their self-worth. For example, these individuals are likely to prefer less challenging activities because they can minimize the chances of demonstrating poor performance and perceiving inadequate ability. They are also more likely to engage in activities for external (e.g., demonstrate superior ability) rather than intrinsic reasons (e.g., learn and improve), and are less likely to enjoy the activity.

Assuming that greater intraindividual variability is a result of high ego-involvement, study findings for global self-worth are also consistent with research and theory on intrinsic motivation (Deci & Ryan, 1985, 1991). However, they are inconsistent with predictions of achievement goal theory (Nicholls, 1989), where individuals who are ego-involved are expected to demonstrate maladaptive achievement patterns, but *only* when combined with low self-evaluations. For individuals with higher self-evaluations, an ego orientation should not relate to diminished motivation and affect. The results of this study, however, found that greater intraindividual variability was negatively related to motivation and affect for students with *higher* global self-evaluations. These findings do not support the theory that unstable self-evaluations and

high ego involvement covary. Kernis and colleagues (e.g., Greenier et al., 1995; Kernis & Waschull, 1995) have identified other potential antecedents of intraindividual variability (e.g., self-concept clarity, socialization history) which may provide better explanations for the mechanisms underlying the influence of stability of self-evaluations on achievement outcomes.

The influence of intraindividual variability on intrinsic motivation and affect in students with higher *physical* self-evaluations also provided some support for the study hypotheses, but the effect was less pronounced. As with global self-worth, results indicated that greater intraindividual variability was associated with lower intrinsic motivation and less positive affect for students with higher levels of physical self-worth. This pattern also emerged in the analysis for perceived competence and intrinsic motivation, but not affect.

While these findings generally support the study hypotheses, results examining physical self-evaluations clearly revealed that *level* was the critical aspect of the students' self-evaluations. For example, the amount of variance explained in intrinsic motivation and affect by the level by stability interactions was typically small relative to that accounted for in the regression model where *level* was the lone significant predictor. Further, based on the regression lines it was clear that, regardless of intraindividual variability, students who reported relatively higher physical self-evaluations also reported greater intrinsic motivation and more positive affect in comparison to students who reported lower self-evaluations, either stable or unstable. Thus, even though stability of physical self-evaluations contributed to the prediction of intrinsic motivation and affect, the effect of *level* appeared to dominate the relationship.

It is also important to note that while greater intraindividual variability in students with higher levels of global and physical self-evaluations was associated with lower intrinsic motivation and less positive affect, these individuals still reported positive affect and intrinsic motivation (e.g., predicted values around 4 or higher on a 6-point scale). Thus, while the expected relationships between intraindividual variability and intrinsic motivation and affect for students with higher levels of self-evaluations generally emerged, determining whether the effect is great enough to result in negative achievement patterns (e.g., dropout) remains to be seen. Nevertheless, results suggest that the most positive achievement-related outcomes were associated not only with students with higher levels of self-evaluations, but those who *consistently* felt good about themselves.

Results were less supportive for the hypothesis that greater intraindividual variability would be associated with higher motivation and positive affect in students with *lower levels* of self-evaluations. The idea was that, on some occasions, these students (i.e., low and unstable) would feel good about themselves which should translate into more positive achievement-related outcomes compared to individuals who consistently had negative self-evaluations (i.e., low and stable). In a few cases, results revealed a slight trend for greater intraindividual variability to be associated with more positive outcomes, but for the most part the regression lines suggested that the magnitude of intraindividual variability had little influence on motivation and affect for students with lower self-evaluations.

One potential explanation for these findings is that the students may not have exhibited extreme enough scores. For each of the three self-evaluations a score of 1 SD below the mean corresponded to a score around the midpoint of the 6-point scale. It

could be that the positive influence of greater intraindividual variability for individuals with lower self-evaluations occurs only in cases where the individuals demonstrate truly low self-evaluations (i.e., 1 or 2 on a 6-point scale).

Kernis and his colleagues have found inconsistent results for individuals with low levels of global self-worth (see Kernis & Waschull, 1995). Although the outcome variables differ from those included in the present study, Kernis (e.g., Kernis et al., 1991; Kernis et al., 1993) found that greater stability was sometimes related to adaptive outcomes (e.g., lower future depression, more external attributions following failures), whereas other times higher intraindividual variability was associated with less positive outcomes (e.g., viewing negative feedback as more accurate). The underlying cause of these discrepant results is unclear; however, Kernis (e.g., Kernis & Waschull, 1995) suggested that examining varying patterns in fluctuations (e.g., decreasing trend, inverted-U pattern) may help determine the exact nature of intraindividual variability in individuals with lower levels of self-evaluations.

Although stability of self-evaluations was generally found to significantly contribute to intrinsic motivation and affect, nonsignificant or weak relationships were found between intraindividual variability and effort and persistence. For all three self-evaluations, level emerged as a significant predictor of motivated behavior. Consistent with previous research (e.g., Cury et al., 1997; Sonstroem et al., 1994) more positive self-evaluations were related to greater effort and persistence on the part of the students. The interaction of level and stability, however, did not contribute to predicting students' behavior. In fact, the only instance where intraindividual variability was related to effort and persistence was the unexpected finding that more unstable physical self-worth was

associated with greater effort and persistence, regardless of students' physical self-worth level. Perhaps individuals with more variable physical self-worth put forth more effort and persistence to learn and improve as a way to demonstrate competence. Another possibility is that these students have learned that significant others, particularly teachers, are likely to provide high frequencies of positive reinforcement for high effort (see Brophy & Good, 1986; Horn, 1987). This may inspire students to try hard and sustain effort to gain social approval and thus facilitate their self-evaluations (Greenier et al., 1995; Harter, 1998). Nevertheless, results suggest that intraindividual variability of self-evaluations has a limited role in the prediction of motivated behavior.

Research on intraindividual variability of self-evaluations has typically focused on cognitive outcomes (e.g., attributions, affect, intrinsic motivation), with little emphasis on actual behavior. Given that self-evaluations involve individuals' thoughts and feelings, the successful prediction of affect and intrinsic motivation, but not effort and persistence, may be the result of shared method variance (i.e., students assessing each variable). Moreover, behavior is determined by a number of factors including both cognitive and environmental influences. Therefore, the ability to successful predict behavior may require more predictors than just one's self-evaluations. This is evidenced by the small amount of variance explained in effort and persistence in all analyses. Another consideration is the difficulty in assessing effort and persistence. One of the teachers rated each of the students; but given the number of youths in each class the teacher may have only been able to observe each student for a limited amount of time. Thus, providing an accurate assessment of the students' effort across the three weeks may have been a difficult task for the teacher, and consequently, may have affected the validity of

the measure and subsequent results. An important avenue of research is to determine whether short-term fluctuations, or the interaction of level and stability, of self-evaluations are capable of influencing overt behavior such as sustained involvement and performance.

In general, results indicated that when combined with level of self-evaluations intraindividual variability was related to students' intrinsic motivation and affect, but not effort and persistence. While the magnitude of intraindividual variability was not always related to achievement-related outcomes, *level* of self-evaluations consistently emerged as a significant predictor. In cases were stability did not add to the prediction of motivation or affect, either independently or in combination with level, *level* was still found to be significantly and positively related to the achievement outcome. Moreover, even when there was a significant level by stability interaction *level* of self-evaluation emerged as the key predictor, accounting for the majority of the variance in motivation and affect. These findings suggest that intraindividual variability can help explain various achievement-related outcomes, but the critical aspect of individuals' self-evaluations appears to be the extent to which one views him- or herself positively or negatively.

The positive influence of *level* of global and physical self-evaluations on achievement-related behaviors, cognitions, and affect is consistent with theory and research (see Weiss & Chaumeton, 1992; Weiss & Ebbeck, 1995). For instance, the major motivational theories employed in sport and exercise psychology suggest that more positive self-evaluations will translate into more adaptive achievement outcomes (e.g., Ames, 1992c; Deci & Ryan, 1985; Eccles et al., 1983; Harter, 1978, 1987; Nicholls, 1989). Findings support investigations conducted in the physical domain that have found

positive self-evaluations related to higher intrinsic motivation (e.g., Weiss et al., 1986; Williams & Gill, 1995), effort and persistence (Cury et al., 1997; Kimiecik et al., 1996; Sonstroem et al., 1994), positive affect (Brustad, 1993a, 1996a; Scanlan & Lewthwaite, 1986), and less negative affect (e.g., Brustad, 1988; Brustad & Weiss, 1987; Scanlan & Passer, 1978, 1979). Clearly, level of self-evaluations plays a critical role in the achievement experiences of sport and physical activity participants.

In conclusion, results suggested that intraindividual variability of self-evaluations is capable of enhancing our understanding of achievement-related behaviors, cognitions, and affective responses. While *level* of self-evaluations appears to be the critical aspect in predicting affect and motivation, short-term fluctuations added to their prediction in several instances. Intraindividual variability was particularly influential for students with higher global self-evaluations. Findings suggest that not all individuals with positive self-evaluation levels exhibit the same affect and intrinsic motivation concerning sport and physical activity participation. Further, the pattern of relationships was found to be the same for male and female students. That is, even though gender differences emerged for some of the study variables (e.g., physical self-worth, perceived physical competence, effort and persistence), the interrelationships among the variables were equivalent for males and females. Thus when combined with level of self-evaluations, intraindividual variability should be considered as a potentially important predictor of achievement-related consequences in adolescent boys and girls.

Antecedents of Intraindividual Variability of Self-Evaluations

The final study purpose was to examine whether the importance that students placed on social sources of information was predictive of short-term fluctuations in global and physical self-evaluations. Based on suggestions by Rosenberg (1986) and Harter (1993b; Harter et al., 1996), students who rated social sources as more important for evaluating themselves were expected to demonstrate more unstable self-evaluations. The rationale was that individuals are constantly interacting with others, increasing the potential for social evaluation, and this information may provide inconsistent and contradictory cues about the self. That is, evaluative information from others is likely to contain a mixture of both positive and negative cues, and therefore individuals who place a great deal of weight on this information for evaluating themselves are at greater risk for experiencing fluctuating self-perceptions. Interestingly, however, results did not support these conclusions. The importance that the students placed on evaluative information from parents, teachers, and peers was not related to intraindividual variability of global or physical self-evaluations.

There are a few factors that may account for the nonsignificant findings. First, the rationale provided by Rosenberg (1986) assumes that social information is characterized by inconsistent and contradictory cues about the self. If individuals are receiving and internalizing a mixture of positive and negative cues it seems reasonable that they would demonstrate fluctuations in their self-evaluations, especially if they place a great deal of importance on this information. Nevertheless, this study did not assess the type and valence of information that was provided to the students throughout the study. It is possible that students received consistently positive or negative cues about their abilities

and worth as a person from parents, peers, and teachers. If this were the case, it makes sense that students who rated social sources as important demonstrated stable self-evaluations over the course of the study. The key may not simply be the *importance* that individuals place on social sources, but also whether the evaluative information provides consistent or variable cues to individuals over time.

Scholars have suggested that individuals go to great lengths to seek information that confirms, and are resistant to information that contradicts, their self-perceptions (e.g., Lecky, 1945; Swann, 1985, 1987; Swann et al., 1989). In other words, individuals may filter the evaluative information they receive, accepting those cues which reinforce their current self-perceptions and rejecting information that is disconfirming. This may have implications for the ability of any one source of evaluative information to positively or negatively influence an individual's self-evaluations. Even if students placed a great deal of importance on social sources of evaluative information, and they were actually receiving inconsistent and conflicting cues about themselves from these sources, the students may have only internalized the information consistent with their current self-views. Direct evidence for this explanation is not available, yet the motive for self-consistency and the resultant strategies used by individuals may help account for the present results (Lecky, 1945; Swann, 1985, 1987).

Another possible explanation for the nonsignificant results is that the importance of social sources of information is only one potential antecedent of intraindividual variability. There are many sources of evaluative information available to individuals in the physical domain including performance outcome, peer comparison, achievement of goals, effort, and improvement, to name a few (see Horn & Amorose, 1998; Horn &

Harris, 1996). Given the public nature of sport and physical activity, it is possible that these other cues are equally, if not more, important than social sources of information. Similarly, scholars have identified other potential antecedents of intraindividual variability of self-evaluations such as ego-involvement and self-concept clarity (see Greenier et al., 1995; Harter, 1998; Kernis & Waschull, 1995). It may be that a combination of these sources would be more predictive of intraindividual variability. For example, explaining the magnitude of fluctuations in self-evaluations may require knowing both the importance that individuals place on certain cues of ability (e.g., social sources), and whether those cues are providing consistent or contradictory information about the self (e.g., a mixture of positive and negative feedback).

Finally, the students rated the importance they placed on social sources of information to evaluate their *ability in sports and games*. They were not asked to rate how important parents, peers, and teachers were to evaluations of their overall self (i.e., global self-worth) or evaluations of their physical self (i.e. physical self-worth). The point is that the measure may not have adequately assessed the importance that students place on social sources of information for evaluating their physical and global self-worth, therefore limiting the probability of uncovering a significant relationship with intraindividual variability. Nevertheless, importance placed on social sources of competence information was not related to intraindividual variability in perceived physical competence, and thus additional antecedents should be considered in the future.

Future Research Directions

This study represented a first attempt to examine intraindividual variability of self-evaluations in the physical domain, and therefore many questions still remain. My goal is to offer some clear directions for future studies based on limitations of the present study as well as questions arising from the results.

One of the main goals of this study was to examine the antecedents and consequences of intraindividual variability of global and physical self-evaluations. As a starting point, this study focused on motivation and affect as outcomes, and importance of social sources of evaluative information as a determinant of intraindividual variability. Clearly there are numerous other constructs that may be related to intraindividual variability. For example, Kernis and his colleagues (see Kernis & Waschull, 1995) investigated the role of stability of global self-esteem on reactions to specific evaluative events (e.g., academic exams, social feedback). Reactions have ranged from causal attributions made for performance to specific affective responses to the evaluative event. It would be interesting to determine whether similar results would emerge when considering reactions to performance in sport and physical activity. There are also indices of motivation and affect not included in this study that would be interesting to examine. For instance, what role does intraindividual variability of physical self-evaluations have on individuals' decision to persist in or withdraw from an activity? Are unstable self-evaluations predictive of competitive anxiety? Findings from the present study revealed a strong correlation ($r = .87$) between intrinsic motivation and affect. Although theoretically distinct constructs, they showed a strong empirical relationship. Analyzing these variables separately may give the impression that intraindividual

variability is significantly related to a variety of achievement-related outcomes, but the results may simply be due to empirical overlap between affect and intrinsic motivation. Therefore, future studies may want to use indicators of affect and intrinsic motivation that are more distinct as a way to determine the differential influence of intraindividual variability and level of self-evaluations on these constructs. Further, future research should investigate additional achievement outcomes to determine the utility and scope of intraindividual variability of self-evaluations as a predictor.

There are also a variety of potential antecedents of intraindividual variability that could be investigated. For example, research on sources of competence information has identified a number of cues children and adolescents use to determine how good they are at sport (see Horn & Harris, 1996). Studies have shown that reliance on certain sources of competence information is related to selected personality characteristics such as level of perceived physical competence, global self-esteem, anxiety, and perceived control (e.g., Horn & Hasbrook, 1987; Weiss et al., 1997). It is possible that the use of certain sources, or combination of sources, may increase the probability that individuals experience fluctuations in their self-evaluations. Conversely, individuals with more or less stable self-evaluations may seek out particular evaluative cues.

Scholars investigating intraindividual variability of global self-worth have hypothesized other potential determinants of short-term fluctuations (see Harter, 1998; Kernis, 1993; Kernis & Waschull, 1995). One that is consistently mentioned is ego involvement. The popularity of achievement goal orientations in the physical domain (see Duda & Whitehead, 1998) make this a logical avenue for future study. For example, studies could examine the relationship between individuals' achievement goal profiles

(i.e., ego, task, and social goal orientation) and the tendency to exhibit short-term fluctuations in their self-evaluations. This would provide a more direct test of Kernis and colleagues' (e.g., Kernis & Waschull, 1995) hypothesis that intraindividual variability is a result of heightened ego-involvement. Another avenue would be to examine the influence of perceived motivational climate (Ames, 1992a, 1992b) on intraindividual variability of self-evaluations. Achievement goal theory suggests that the degree to which individuals are ego-involved is a function of both their dispositional goal orientations and their perceptions of the social environment (Nicholls, 1989). In other words, individuals' perceptions of the achievement goals and definitions of success that are emphasized in a particular social context will influence the degree to which they become situationally ego-involved. Therefore, perceived motivational climate may be an important determinant of the degree to which individuals experience short-term fluctuations in the self-evaluations. Given that stability was related to affect and intrinsic motivation, future research should address the antecedents of intraindividual variability. This information may ultimately help educators develop practical strategies designed to facilitate positive and stable global and physical self-evaluations.

Future research should carefully consider the measurement of intraindividual variability. The current study assessed intraindividual variability of self-evaluations by measuring the students' *right now* self-evaluations on five occasions and calculating a standard deviation of the repeated assessments. These measures were completed each day the students were in physical education, which was every other day. While 4 or 5 occasions should be sufficient for calculating intraindividual variability, additional assessments may provide a more sensitive measure (Eizenman et al., 1997; Kernis &

Waschull, 1995). Similarly, future research may consider varying the timing of the assessments. The current study measured the students at the beginning of each class period. Assuming that events or information available during class (e.g., scoring a goal, feedback from the teacher) can influence the students' right now self-evaluations, it may useful to measure self-evaluations before and after each class period. Another strategy may be to measure the students at random points in the day (Demo & Savin-Williams, 1992). These data collection strategies may provide a more representative sample of individuals' current self-evaluations, and consequently their tendency to exhibit fluctuations. While these suggestions may strengthen the assessment of intraindividual variability, the data collection procedures need to be balanced with a consideration of the participant sample. For example, limitations in motivational and attentional capabilities may require that fewer or more spread out repeated assessments be conducted when working with children and teenagers.

According to Kernis and his colleagues (Greenier et al., 1995; Kernis and Waschull, 1995), certain individuals are more prone to experience short-term fluctuations in their self-evaluations. In other words, Kernis suggests that stability of self-evaluations is a dispositional characteristic. However, a variety of specific environmental events are also predicted to influence how an individual feels about him- or herself at any time. Determining whether intraindividual variability of self-evaluations is a function of more dispositional or situational factors may provide important information about the nature of intraindividual variability. Future studies may want to examine the pattern of fluctuations over longer periods of time (i.e., greater than 3 weeks) to see whether certain individuals

are consistently variable in their self-evaluations across time and different situations, or whether fluctuations are more a function of isolated or specific environmental influences.

Considering alternative indices of intraindividual variability could also contribute to a greater understanding of the nature and consequences of short-term fluctuations in self-evaluations. Consistent with previous research (e.g., Eizenman et al., 1997; Kernis et al., 1993), the current study focused on the *magnitude* of short-term fluctuations in students' self-evaluations. However, results clearly revealed that individuals differed in the *pattern* of these fluctuations, even when the magnitude of the changes was similar. In some cases students demonstrated a linear increase in their self-evaluations; others showed a decreasing trend. Some students exhibited multiple up-and-down fluctuations, whereas others varied only on a single occasion. Still others showed a U-type pattern, whereas others demonstrated an inverted-U pattern of fluctuations. These individual patterns may provide important information about the nature of intraindividual variability not captured in the simple *magnitude* of fluctuations. For example, there may be different consequences associated with a decreasing versus increasing trend. Future research should investigate this aspect of intraindividual variability more closely.

Future research may also want to investigate the relative impact of intraindividual variability across different self-evaluations. Results indicated that the relative influence of intraindividual variability, when combined with level, appeared strongest in predicting intrinsic motivation and affect when global self-worth was considered. For the physical self-evaluations, level was clearly the dominant predictor, although stability did make varying contributions. The majority of work to date has focused only on global self-worth (see Kernis & Waschull, 1995); however additional studies may determine that

intraindividual variability is more or less important depending on the specific self-evaluation considered. Based on the results of the current study, for instance, intraindividual variability may be less important for more domain-specific self-evaluations. Alternatively, there may be something unique about the physical domain which influences the nature and consequences of intraindividual variability.

Finally, future studies should examine the stability of self-evaluations in other groups of individuals and different environments. The current study selected young adolescents because intraindividual variability should be greatest at this developmental stage (e.g., Harter, 1998; Rosenberg, 1986), but future studies should include individuals across the life span. Intraindividual variability of self-evaluations may also prove to be more or less important for particular groups of individuals. For example, stability of perceived athletic competence might be a determinant of achievement outcomes in competitive athletes, but relatively unimportant for recreational exercisers. This study was conducted during a dance and sex education section of the students' physical education and health curriculum. The content and activities that the students experienced in this environment may have had a specific or unique influence on the students' self-evaluations, motivation, and affect, thus limiting the generalizability of the results. Future studies should therefore investigate the nature and consequences of intraindividual variability when individuals are engaged in other activities (e.g., soccer, running, swimming). Given the lack of research on intraindividual variability, especially in the physical domain, there are numerous possibilities for future studies in the area.

Conclusion

The goal of this study was to extend the literature on self-perceptions by examining intraindividual variability or stability of global and physical self-evaluations. The contribution of intraindividual variability of self-evaluations to young adolescents' affect and intrinsic motivation toward physical activity suggest that this aspect should be included along with *level* as part of an individual's self-perception profile. Further, although its specific determinants remain unclear, uncovering the antecedents of short-term fluctuations will be critical for developing practical strategies that are capable of facilitating positive *and* stable self-evaluations.

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APPENDIX A

HUMAN SUBJECTS PROTOCOL

Institutional Review Board for the Behavioral Sciences
University of Virginia
Washington Hall, East Range
P.O. Box 9025
Charlottesville, Virginia, 22906

In reply, please refer to: Project # 99-045

March 8, 1999

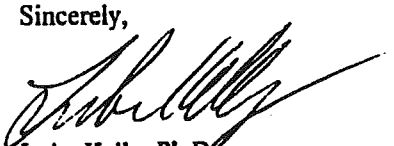
Anthony Amorose
Maureen Weiss
Human Services
213 Memorial Gym

Dear Anthony Amorose and Maureen Weiss:

The Institutional Review Board for the Behavioral Sciences has approved your research project entitled "Self-Esteem and Motivation in Physical Activity Among Middle School Aged Students". You may proceed with this study. Please use the enclosed Consent Form as the master for copying forms for subjects.

This project # 99-045 has been approved for the period 2/10/99 to 2/10/2000. If the study continues beyond the approval period, you will need to submit a continuation request to the Review Board. If you make changes in the study, you will need to notify the Board of the changes.

Sincerely,



Luke Kelly, Ph.D.
Chair, Institutional Review Board for the Behavioral Sciences

Parent Informed Consent Agreement
University of Virginia
Project Title: Self-Esteem and Motivation in Physical Activity Among Middle School-Aged Students

Please read this consent agreement carefully before you let your child participate in the study.

Purpose of the research study:
The purpose is to understand how your child thinks and feels about himself or herself and their participation in sport and physical activity.

What will you do in the study:
Over the course of a three week period your child will complete several questions about their thoughts and feelings and their participation in sport and physical activity. This will occur each day they are in physical education class for a total of 8 days.

Time required:
The first and last day of the study will take about 20-30 minutes each. The other 6 days of the study will take about 10-15 minutes each. The total time involved will be about 1 hour and 40 minutes to 2 hours and 30 minutes..

Risks:
There is no risk to your child for completing these questions.

Benefits:
There are no benefits to your child for participating in this study. The results may help us understand how to make physical education more enjoyable and interesting for your child.

Confidentiality:
Your child's questionnaires will be handled confidentially. Your child will be asked to write their date of birth and first and last initials on each packet of questions. This is so we can match their packets for each day. Your child's name will not be used in any report and we will not show their responses to anyone else. The questionnaires will be kept in a locked file and destroyed once the data have been analyzed.

Voluntary participation:
Your child's participation is completely voluntary.

Right to withdraw from the study:
Your child may stop answering questions at any time and there will be no penalties for doing so.

How to withdraw from the study:
If your child wants to stop, he or she can tell Anthony and he will collect their questionnaire and dispose of it, and any others they have completed. There is no penalty for stopping. If your child withdraws, he or she will be asked to sit quietly until the other students are finished.

Payment:
Your child will receive no payment for participating in the study.

Who to contact if you have questions about the study:
Anthony Amorose, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7168.
Dr. Maureen R. Weiss, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7860.

Who to contact about your child's rights in the study:
Dr. Luke Kelly, Chairman, Institutional Review Board for the Behavioral Sciences, 287 Rufner Hall, University of Virginia, Charlottesville, VA 22903. Telephone: (804) 924-3606.

Agreement:
I do not agree to have my child participate in the research study described above. Please exclude him or her from participating.

Name of the Student: _____

Signature: _____ **Date:** _____
You will receive a copy of this form for your records

Project # 99-045 Approved from 2/10/99 to 2/10/2000

Physical Education Students
Informed Consent Agreement
University of Virginia
Project Title: Self-Esteem and Motivation in Physical Activity Among Middle School-Aged Students

Please read this consent agreement carefully before you decide to participate in this study.

Purpose of the research study:
The purpose is to understand how you think and feel about yourself and your participation in physical activity.

What will you do in the study:
Over the course of the next three weeks you will complete several questions about your thoughts and feelings about yourself and participation in sport and physical activity. This will occur each day you are in physical education class for a total of 8 days.

Time required:
The first and last day of the study will take about 20-30 minutes each. The other 6 days of the study will take about 10-15 minutes each. The total time involved in the study will be about 1 hour and 40 minutes to 2 hours and 30 minutes.

Risks:
There is no risk for completing these questions.

Benefits:
There are no benefits to you for participating in this study. The results may help us understand how to make physical education more enjoyable and interesting for you.

Confidentiality:
The information you give in this study will be handled confidentially. You will be asked to write your date of birth and first and last initials on each packet of questions. This is so we can match your packets for each day. Your name will not be used in any report and we will not show your responses to anyone else. The questionnaires will be kept in a locked file and destroyed once the data have been analyzed.

Voluntary participation:
Your participation is completely voluntary.

Right to withdraw from the study:
You may stop answering questions at any time and there are no penalties for doing so.

How to withdraw from the study:
If you want to stop, raise your hand and Anthony will collect your questionnaire and dispose of it, and any others you have completed. There is no penalty for stopping. If you withdraw, you will be asked to sit quietly until the other students are finished.

Payment:
You will receive no payment for participating in the study.

Who to contact if you have questions about the study:
Anthony Amorose, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7168.
Dr. Maureen R. Weiss, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7860.

Who to contact about your rights in the study:
Dr. Luke Kelly, Chairman, Institutional Review Board for the Behavioral Sciences, 287 Rufner Hall, University of Virginia, Charlottesville, VA 22903. Telephone: (804) 924-3606.

Agreement:
I agree to participate in the research study described above.

Signature: _____ **Date:** _____

You will receive a copy of this form for your records

Project # 99-045 Approved from 2/10/99 to 2/10/2000

Teacher Informed Consent Agreement
University of Virginia
Project Title: Self-Esteem and Motivation in Physical Activity Among Middle School-Aged Students

Please read this consent agreement carefully before you let your child participate in the study.

Purpose of the research study:
The purpose is to understand how your students' think and feel about themselves and their participation in sport and physical activity.

What will you do in the study:
Over the course of a three week period your students will complete several questions about their thoughts and feelings and their participation in sport and physical activity. This will occur each day they are in physical education class for a total of 8 days. You will be asked to complete questions that measure each of your student's motivation in class.

Time required:
The questions you will answer will require about 1 hour to complete. These questions can be answered in your spare time and can be turned in anytime before the completion of the study. For your students, the first and last day of the study will take about 20-30 minutes each. The other 6 days of the study will take about 10-15 minutes each. The total time involved in the study will be about 1 hour and 40 minutes to 2 hours and 30 minutes.

Risks:
There is no risk to you or your students for completing these questions.

Benefits:
There are no benefits to you or your students for participating in this study. The results may help us understand how to make physical education more enjoyable and interesting for your students.

Confidentiality:
The information you give will be handled confidentially. Your name will not appear on the measure of students' motivation and we will not show your responses to anyone else. The measure will be kept in a locked file and destroyed once the data have been analyzed.

Voluntary participation:
Your participation is completely voluntary.

Right to withdraw from the study:
You may stop answering questions at any time and there will be no penalties for doing so.

How to withdraw from the study:
If you want to stop, give the measure to Anthony and he will dispose of it. There is no penalty for stopping.

Payment:
You will receive no payment for participating in the study.

Who to contact if you have questions about the study:
Anthony Amorose, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7168.
Dr. Maureen R. Weiss, Department of Human Services, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-7860.

Who to contact about your child's rights in the study:
Dr. Luke Kelly, Chairman, Institutional Review Board for the Behavioral Sciences, 287 Rufner Hall, University of Virginia, Charlottesville, VA 22903.
Telephone: (804) 924-3606.

Agreement:
I agree to participate in the research study described above.

Signature: _____ **Date:** _____

You will receive a copy of this form for your records

Project # 99045 Approved from 2/10/99 to 2/10/2000

CURRY SCHOOL OF EDUCATION
DEPARTMENT OF HUMAN SERVICES

3-3-99

Dear Parents,

As highlighted in the recent U.S. Surgeon General's Report, there are numerous benefits of engaging in physical activity. However, teenagers vary greatly in their motivation and enjoyment of physical activity. To better understand why some kids are motivated and enjoy sport and physical activity, while others show little interest and dislike participating, students enrolled in physical education classes at Sutherland Middle School are going to be asked to complete a survey which asks about their thoughts and feelings about themselves and their participation in sport and physical activity. Ultimately, this information should help us develop effective strategies to keep students interested in participating in sport and physical activity and have more positive experiences when doing so.

I am writing this letter because your child is currently enrolled in physical education at Sutherland Middle School and I was hoping that you would agree to allow him or her to participate in the survey. Details about the survey are included on the enclosed parental consent form. Your child's participation will be completely voluntary and their responses will be kept confidential. If you have any questions about the survey, please feel free to contact me at (804) 924-7168 or at the address listed below. Agreeing to allow your child to participate in the survey requires no further action on your part. However, if you do not want your child to participate, please sign the consent form and have your child return it to his or her physical education teacher, Jane Enot, or call her at (804) 975-0599. I hope that you will agree to allow your child to participate because this survey should provide important and practical information about teenagers' physical activity participation. Thank you.

Sincerely,

Anthony Amorose
Dept. of Health and Human Services
Curry School of Education
University of Virginia
Charlottesville, VA 22903
(804) 924-7168

Protocol for a Project Submitted for Review to the Institutional Review Board for the Behavioral Sciences University of Virginia

1. Project Title: Self-Esteem and Motivation in Physical Activity Among Middle School-Aged Students

2. Principal Investigator:

Name: Anthony J. Amorose
Address: 213 Memorial Gymnasium
University of Virginia
Charlottesville, VA 22903
Telephone: (804) 924-7168 Email: aja6m@virginia.edu

3. Faculty Advisor:

Name: Dr. Maureen R. Weiss
Address: 201 Memorial Gymnasium
University of Virginia
Charlottesville, VA 22903
Telephone: (804) 924-7860 Email: mrw5d@virginia.edu

4. Department: Human Services

5. Project Period: March-June 1999

6. Is this project a continuation of a previously approved project? No

7. Funding Source: None

8. Location where study will be conducted: Middle School Physical Education Classes in the Charlottesville or Albemarle School Districts

9. Participants (subjects):

Number: Approximately 200
Ages: 11-13 years
Gender: Males and Females

Methods to be used in recruiting participants: A letter will be sent to a middle school physical education teacher with information about the study and requesting permission to recruit students

from her classes. Once the teacher agrees, the school district research board will be sent the study proposal for review. Upon approval, a date will be selected when the researcher can attend the physical education classes to introduce the study to the students and hand out parental consent forms. Those students who return signed parental consent forms will be eligible to participate in the study.

10. Criteria to be used in selecting participants: Middle school students enrolled in physical education classes will be recruited for participation. These participants were selected because: (a) early adolescents are underrepresented in sport and exercise psychology research; (b) early adolescence is a developmental period where self-perceptions are constantly changing; and, (c) students enrolled in required physical education classes are likely to vary in self-esteem, motivation, and enjoyment of physical activity.

11. Brief Description of the Research: Research has consistently found that individuals with relatively high self-esteem (i.e., feel good about themselves and their abilities) are more likely to demonstrate positive achievement-related thoughts, feelings, and behaviors (e.g., higher motivation, more enjoyment, lower anxiety). Recently, studies have indicated that the degree to which individuals fluctuate (i.e., vary from day to day) in their self-esteem is also predictive of these achievement-related responses. The goal of this study is to examine these aspects of adolescents' self-esteem (i.e., whether it is high or low, how much it fluctuates) in the physical achievement domain. Specifically, this study will examine the antecedents and consequences of early adolescents' self-esteem. First, aspects of students' self-esteem (i.e., whether it is high or low, how much it fluctuates) will be examined in relation to motivation and enjoyment of physical activity. Second, the influence of significant others (parents, peers, teachers) and students' achievement goals will be assessed and examined in relation to self-esteem. These study variables will be measured through paper and pencil questionnaires administered to the students. Teachers will also rate students on measures of effort and persistence to obtain an objective measure of student motivation in the classroom.

12. What will the subjects do in the study? The participants will respond to a series of questionnaires designed to measure self-esteem, achievement goals, significant others influence, enjoyment, and motivation (see attached measures). Questionnaires will be administered on multiple occasions over the course of 3 weeks. Data will be collected each day the students are in physical education class, which is every other day, for a total of 8 days. The specific measures that the students will complete on each of these days, along with the approximate time it will take for them to complete the packet of measures, are presented in the Table below.

Schedule of Scale Administration

Occasion	Measures	approximate time in minutes
1	Global Self-Worth (Harter, 1985)[a] Physical Self-Worth (Whitehead, 1995)[a] Perceived Physical Competence (Harter, 1985)[a] Task and Ego Orientation in Sport Questionnaire (Duda, 1989) [measures achievement goals] Physical Competence Information Scale (Horn et al., 1993) [measures significant others' influence]	20-30 (40 items)
2-7	Global Self-Worth (Harter, 1985)[b] Physical Self-Worth (Whitehead, 1995)[b] Perceived Physical Competence (Harter, 1985)[b]	10-15 (18 items)
8	Children's Attraction to Physical Activity (Brustad, 1993) Motivational Orientation in Sport Questionnaire (Weiss et al., 1985) Teacher Rating of Achievement Motivation (Stinnett et al., 1991) [completed by the teacher and returned on this day]	20-30 (26 items)

[a] These self-esteem measures will ask individuals to respond with how they *typically* evaluate themselves.

[b] These self-esteem measures will ask individuals to respond with how they evaluate themselves *at that particular moment.*

13. Are there any aspects of the study kept secret from the participants? No

14. Is any deception used in the study? No

15. Are participants misled about any aspects of the study? No

16. Will participants be recorded on video or audio tape? No

17. What are the possible physical or psychological risks and hazards for the participants? There is some minimal risk that the participants might experience some nervousness or discomfort as they answer questions about their thoughts and feelings about themselves and their abilities.

18. What will you do to protect participants from these hazards? Students will be told there are no right or wrong answers to the questions. They will also be told that their answers will remain confidential (only the researcher will see their responses), and that they may discontinue at any time without penalty. Students will be administered the measures in a classroom setting where they will be able to respond to the questions privately and comfortably.

19. How will you obtain advised consent from participants and/or parents? Students will be asked to take a consent form home to their parents and bring it back signed the next time they come to physical education class. Prior to the start of data collection, those students who returned a completed parental consent form will be asked to sign their own consent agreement. Only those who have both consent forms completed will be allowed to participate in the project.

20. How will you protect the confidentiality of your participants?

__ Identifying names or numbers will not be collected (data are anonymous)

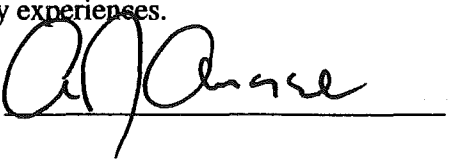
X Codes will be used on data: the list linking codes to personal identifiers will be kept secure.

__ Other: Please describe:

Participants will be asked to record their date of birth (month, day, year) and first and last initial on each packet of questionnaire. This is necessary in order to match participants' responses across the multiple days of data collection. The participants will be told that only the researcher will have access to the data.

21. Will participants be debriefed? No

22. What benefits can reasonably be expected from the study? There are no direct benefits to the participants. However, the results of the study will further researchers' and educators' understanding of the antecedents and consequences of students' self-esteem. Moreover, information gained from this research will allow us to provide teachers with recommendations for enhancing adolescents' physical activity experiences.

Signature of the Principal Investigator:  Date: 1-29-99

Institutional Review Board for the Behavioral Sciences
University of Virginia
Washington Hall, East Range
P.O. Box 9025
Charlottesville, Virginia, 22906

In reply, please refer to: Project #99-045

February 11, 1999

Anthony Amorose
Maureen Weiss
Human Services
213 Memorial Gym

Dear Anthony Amorose and Maureen Weiss:

Thank you for submitting your project entitled "Self-Esteem and Motivation in Physical Activity Among Middle School Aged Students". The Board reviewed and approved your Protocol and Consent form on February 10, subject to the following changes.

1. Under How to withdraw from the study, clarify what the alternate activity will be for students who don't want to participate or who wish to withdraw.

Please submit the revised materials and a copy of this letter noting your actions before you start the study. A final approval letter will be sent to you upon receipt of this revised form.

Sincerely,

Luke Kelly, Ph.D.
Chair, Institutional Review Board for the Behavioral Sciences

March 5, 1999

Luke Kelly, Ph.D.
Chair, IRB for the Behavioral Sciences
University of Virginia
Washington Hall, East Range
Charlottesville, VA 22903

Dear Dr. Kelly,

As requested by the Board, the following change has been made to our project entitled "Self-Esteem and Motivation in Physical Activity Among Middle School Aged Students" (Project #99-045).

1. Under how to withdraw from the study (Student and Parent Consent Forms), a sentence explaining that students who choose to withdraw from the study will be asked to sit quietly until the other students are finished was added to both the parent and student consent forms. This alternative activity was suggested by the middle school teacher who's students will be recruited for participation.

We are also requesting that the following change be made to the protocol. After reviewing the project, the teachers and principal at Sutherland Middle School, where the data will be collected, have suggested that we use passive consent from the parents. This was suggested as a way to help alleviate problems with students taking home and returning parental consent forms. To comply with their suggestion, we are requesting that passive consent be granted. As a way to assure that the parents are informed of the study, we plan on sending a letter via mail to each child's home. The letter, which has been included in our revised protocol, describes the study and indicates that the parents have a choice in their child's participation. Most importantly, if they do <u>not</u> want their child to participate the parents have been asked to call the school and decline participation, or return a signed consent form (also included in the letter) which indicates they want their child excluded from the study. The parental consent form has therefore been revised so that a signed form indicates that the parents do not want their child to participate (see Agreement).

I hope these revisions are acceptable and that our protocol will be approved. If any additional changes are required, please feel free to contact either Maureen Weiss or myself. Thank you.

Sincerely,

Anthony Amorose
Principal Investigator
213 Memorial Gymnasium
Health and Physical Education
University of Virginia
Charlottesville, VA 22903
(804) 924-7168
aja6m@virginia.edu

APPENDIX B

QUESTIONNAIRES

Occasion 1 Questionnaire



University of Virginia
Sport and Physical Activity Survey



Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you **USUALLY** feel

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
	☐	☐	☐	Some kids like to eat pizza more than anything else	**BUT**	Other kids like foods other than pizza	☐	☐	☐
	☐	☐	☐	Some kids would rather eat vanilla ice cream	**BUT**	Other kids would rather eat chocolate ice cream	☐	☐	☐
1.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
2.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐
3.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
4.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐
5.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐
6.	☐	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
7.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
8.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
9.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
10.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐
11.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
12.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐
13.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐
14.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐
15.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
16.	☐	☐	☐	Some kids are not happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
17.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
18.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐

THINGS I KNOW ABOUT MYSELF

Some kids think they are pretty good at sports and physical activity but other kids think they are not so good.

We want to know **how you know or decide** whether you are good or not so good at sports and physical activity. Listed below are some things that might help you know.

How important is each item in helping you know how good you are at sports and physical activity?

		Extremely Important	Very Important	Somewhat Important	Not Very Important	Not at all Important
1.	What my parents say to me about the way I play	☐	☐	☐	☐	☐
2.	What my teacher says to me during or after class	☐	☐	☐	☐	☐
3.	What my classmates say about the way I play	☐	☐	☐	☐	☐
4.	Whether or not my parents tell me I am good	☐	☐	☐	☐	☐
5.	Whether or not my teacher tells me I am doing O.K.	☐	☐	☐	☐	☐
6.	Whether or not my classmates think I am good at sports	☐	☐	☐	☐	☐
7.	How good my parents think I am	☐	☐	☐	☐	☐
8.	Whether my teacher thinks I am good at sports	☐	☐	☐	☐	☐
9.	What my classmates say about me	☐	☐	☐	☐	☐

Thanks!

Please go back and check to see that you answered every item.

Occasion 2 Questionnaire



University of Virginia
Sport and Physical Activity Survey



Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you feel **RIGHT NOW**

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
2.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐
3.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐
4.	☐	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
5.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
6.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐
7.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
8.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐
9.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
10.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
11.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐
12.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐
13.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
14.	☐	☐	☐	Some kids are not happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
15.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
16.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐
17.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
18.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐

Thanks!

Please go back and check to see that you answered every item.

Occasion 3 Questionnaire



University of Virginia
Sport and Physical Activity Survey



Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you feel **RIGHT NOW**

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
2.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐
3.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
4.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐
5.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐
6.	☐	☐	☐	Some kids wish they could be alot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
7.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
8.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐
9.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
10.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
11.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
12.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐
13.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐
14.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐
15.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
16.	☐	☐	☐	Some kids are not happy with the way they do alot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
17.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
18.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐

Thanks!

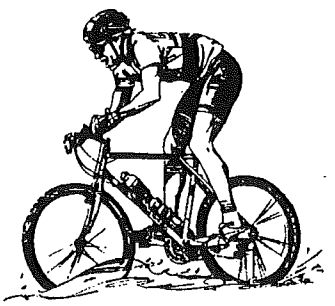
Please go back and check to see that you answered every item.

Occasion 4 Questionnaire



University of Virginia
Sport and Physical Activity Survey





Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you feel **RIGHT NOW**

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐
2.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐
3.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
4.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐
5.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
6.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐
7.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
8.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐
9.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐
10.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
11.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
12.	☐	☐	☐	Some kids are not happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
13.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
14.	☐	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
15.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
16.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐
17.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
18.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐

Thanks!

Please go back and check to see that you answered every item.

Occasion 5 Questionnaire



University of Virginia
Sport and Physical Activity Survey



Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you feel **RIGHT NOW**

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐
2.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
3.	☐	☐	☐	Some kids are not happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
4.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐
5.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
6.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐
7.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐
8.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
9.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐
10.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
11.	☐	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
12.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
13.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
14.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐
15.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
16.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
17.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐
18.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐

Thanks!

Please go back and check to see that you answered every item.

Occasion 6 Questionnaire



University of Virginia
Sport and Physical Activity Survey



Initials (first and last): _____

Birthday (month, day): _____

WHAT I AM LIKE

Please respond to these statements with how you feel **RIGHT NOW**

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids wish they could feel better about themselves physically	**BUT**	Other kids always seem to feel good about themselves physically	☐	☐	☐
2.	☐	☐	☐	In games and sports some kids usually watch instead of play	**BUT**	Other kids usually play rather than watch	☐	☐	☐
3.	☐	☐	☐	Some kids are not happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is fine	☐	☐	☐
4.	☐	☐	☐	Some kids don't feel very confident about themselves physically	**BUT**	Other kids feel really good about themselves physically	☐	☐	☐
5.	☐	☐	☐	Some kids think they could do well at just about any new sport activity they haven't tried before	**BUT**	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐	☐
6.	☐	☐	☐	Some kids like the kind of person they are	**BUT**	Other kids often wish they were someone else	☐	☐	☐
7.	☐	☐	☐	Some kids are proud of themselves physically	**BUT**	Other kids don't have much to be proud about physically	☐	☐	☐
8.	☐	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐	☐
9.	☐	☐	☐	Some kids don't like the way they are leading their life	**BUT**	Other kids do like the way they are leading their life	☐	☐	☐
10.	☐	☐	☐	Some kids are happy with how they are and what they can do physically	**BUT**	Other kids are unhappy with how they are and what they can do physically	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
11.	☐	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐	☐
12.	☐	☐	☐	Some kids are usually happy with themselves as a person	**BUT**	Other kids are not happy with themselves	☐	☐	☐
13.	☐	☐	☐	Some kids are very satisfied with themselves physically	**BUT**	Other kids are often dissatisfied with themselves physically	☐	☐	☐
14.	☐	☐	☐	Some kids don't do well at new outdoor games	**BUT**	Other kids are good at new games right away	☐	☐	☐
15.	☐	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐	☐
16.	☐	☐	☐	Some kids have a positive feeling about themselves physically	**BUT**	Other kids have a somewhat negative feeling about themselves physically	☐	☐	☐
17.	☐	☐	☐	Some kids feel they are better than others their age at sports	**BUT**	Other kids don't feel that they can play as well	☐	☐	☐
18.	☐	☐	☐	Some kids are very happy being the way they are	**BUT**	Other kids wish they were different	☐	☐	☐

Please respond to the questions on the next pages with how you <u>usually</u> feel.

Please respond to these statements with how you **USUALLY** feel

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
1.	☐	☐	☐	Some kids work on sport skills to learn how to do them	**BUT**	Other kids work on skills because you're supposed to	☐	☐	☐
2.	☐	☐	☐	Some kids like playing outdoor games and sports	**BUT**	Other kids don't like playing outdoor games and sports	☐	☐	☐
3.	☐	☐	☐	Some kids don't like getting sweaty when they exercise or play hard	**BUT**	Other kids do like getting sweaty when they exercise or play hard	☐	☐	☐
4.	☐	☐	☐	Some kids like hard sport skills because they are a challenge	**BUT**	Other kids prefer easy sport skills that they are sure they can do	☐	☐	☐
5.	☐	☐	☐	Some kids don't like to exercise very much	**BUT**	Other kids like to exercise a whole lot	☐	☐	☐
6.	☐	☐	☐	Some kids practice because their physical education teacher tells them to	**BUT**	Other kids practice to find out how good they can become	☐	☐	☐
7.	☐	☐	☐	Some kids have more fun playing games and sports than anything else	**BUT**	Other kids have more fun playing other things	☐	☐	☐
8.	☐	☐	☐	Some kids don't like getting out of breath when they play hard	**BUT**	Other kids do like getting out of breath when they play hard	☐	☐	☐
9.	☐	☐	☐	Some kids like difficult sport skills because they enjoy trying to become good at them	**BUT**	Other kids don't like to try difficult sport skills	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
10.	☐	☐	☐	Some kids feel really tired after they exercise or play hard	**BUT**	Other kids don't feel so tired after they exercise or play hard	☐	☐	☐
11.	☐	☐	☐	Some kids practice sport skills because they are interested in the sport	**BUT**	Other kids practice skills because their physical education teacher wants them to	☐	☐	☐
12.	☐	☐	☐	Some kids wish they didn't have to play games and sports	**BUT**	Other kids wish they could play more games and sports	☐	☐	☐
13.	☐	☐	☐	Some kids like to burn a lot of energy by playing hard	**BUT**	Other kids don't like to burn energy by playing hard	☐	☐	☐
14.	☐	☐	☐	Some kids like to try new skills that are more difficult to do	**BUT**	Other kids would rather stick to skills which are pretty easy	☐	☐	☐
15.	☐	☐	☐	Some kids don't enjoy exercise very much	**BUT**	Other kids enjoy exercise a whole lot	☐	☐	☐
16.	☐	☐	☐	Some kids ask questions in physical education because they want to learn new things	**BUT**	Other kids ask questions because they want their physical education teacher to notice them	☐	☐	☐
17.	☐	☐	☐	For some kids games and sports is their favorite thing	**BUT**	For other kids, games and sports is not their favorite thing	☐	☐	☐
18.	☐	☐	☐	Some kids feel bad when they run hard	**BUT**	Other kids feel good when they run hard	☐	☐	☐
19.	☐	☐	☐	Some kids like sports that are easy	**BUT**	Other kids like those sports that make them work pretty hard to be good	☐	☐	☐

	Really True for me	Pretty True for Me	Sort of True for Me				Sort of True for me	Pretty True for Me	Really True for Me
20.	☐	☐	☐	Some kids think that they will feel really good after they exercise or play hard	**BUT**	Other kids think that they will feel bad after they exercise or play hard	☐	☐	☐
21.	☐	☐	☐	Some kids work extra hard in physical education so they can get better grades	**BUT**	Other kids work extra hard because they learn more about sports	☐	☐	☐
22.	☐	☐	☐	Some kids look forward to playing games and sports	**BUT**	Other kids don't look forward to playing games and sports	☐	☐	☐
23.	☐	☐	☐	Some kids don't like to run very much	**BUT**	Other kids do like to run a whole lot	☐	☐	☐
24.	☐	☐	☐	Some kids don't like difficult sport skills because they have to work too hard	**BUT**	Other kids like difficult sport skills because they find them more challenging	☐	☐	☐
25.	☐	☐	☐	Some kids really don't like to exercise	**BUT**	Other kids like to exercise	☐	☐	☐
26.	☐	☐	☐	Some kids work really hard to get good grades in physical education	**BUT**	Other kids work hard because they really like to improve their sport skills	☐	☐	☐

BACKGROUND INFORMATION

How old are you? _____ Circle your gender: Female Male

How do you describe yourself? (circle one)

African American | Asian | Hispanic | Native American | White

Have you ever participated in organized sport or physical activity outside of physical education class? (circle one)

Yes No

If you circled yes, please list the activities and how long you participated in them

	Activity	Years
example	Baseball	2

Do you currently participate in organized sport or physical activity outside of physical education class? (circle one)

Yes No

Thanks!

Please go back and check to see that you answered every item.

TEACHER RATINGS

In physical education class over the last 3 weeks, _____ ...
(name of student)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Often made effort to learn how to perform physical education skills	☐	☐	☐	☐	☐
Preferred easy tasks to more difficult tasks	☐	☐	☐	☐	☐
Tried new tasks again even if he/she was not successful the first time	☐	☐	☐	☐	☐
Was not discouraged easily even after failures	☐	☐	☐	☐	☐
Gave up easily on tasks that were difficult or challenging	☐	☐	☐	☐	☐

APPENDIX C

CORRELATION TABLES

Table 27
Correlations and Descriptive Statistics for all Measured Variables

		Variables																	
	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	gsw1	1.00																	
2	gsw2	.82	1.00																
3	gsw3	.69	.72	1.00															
4	gsw4	.70	.74	.79	1.00														
5	gsw5	.67	.75	.75	.83	1.00													
6	gsw6	.65	.71	.81	.84	.87	1.00												
7	psw1	.67	.62	.58	.62	.58	.59	1.00											
8	psw2	.66	.71	.66	.65	.63	.65	.86	1.00										
9	psw3	.60	.62	.72	.71	.66	.67	.77	.86	1.00									
10	psw4	.57	.63	.68	.83	.68	.72	.75	.81	.89	1.00								
11	psw5	.57	.62	.66	.70	.74	.73	.78	.84	.84	.83	1.00							
12	psw6	.55	.58	.64	.71	.69	.76	.74	.83	.85	.86	.88	1.00						
13	comp1	.43	.35	.36	.40	.40	.47	.69	.65	.63	.61	.59	.66	1.00					
14	comp2	.42	.43	.41	.43	.44	.50	.68	.74	.65	.62	.63	.69	.87	1.00				
15	comp3	.42	.36	.39	.47	.42	.47	.62	.69	.68	.65	.62	.68	.87	.87	1.00			
16	comp4	.43	.40	.44	.55	.40	.53	.70	.72	.71	.73	.64	.73	.86	.85	.90	1.00		
17	comp5	.35	.37	.40	.46	.51	.55	.61	.66	.62	.62	.72	.75	.80	.83	.84	.84	1.00	
18	comp6	.41	.42	.46	.52	.53	.61	.65	.71	.69	.69	.73	.82	.84	.83	.87	.87	.91	1.00
19	p. challenge.	.31	.34	.35	.43	.39	.48	.54	.56	.57	.56	.56	.68	.62	.60	.69	.72	.74	.74
20	curiosity	.38	.37	.40	.38	.41	.45	.54	.56	.56	.54	.57	.62	.63	.63	.71	.69	.69	.70
21	effort	.21	.10	.26	.23	.14	.21	.29	.22	.29	.28	.21	.26	.39	.30	.38	.35	.34	.34
22	liking games	.27	.31	.32	.37	.36	.41	.52	.53	.54	.51	.51	.62	.66	.65	.72	.71	.72	.74
23	fun of exertion	.31	.28	.36	.41	.28	.39	.57	.52	.52	.53	.42	.58	.57	.59	.58	.65	.58	.62
24	like exercise	.30	.31	.31	.43	.34	.40	.54	.54	.52	.54	.48	.59	.53	.52	.55	.58	.55	.61
25	parents	.13	.14	.12	.11	.16	.19	.18	.20	.17	.17	.19	.25	.27	.27	.29	.26	.31	.32
26	teacher	.02	.06	.13	.07	.14	.18	.10	.13	.17	.14	.22	.23	.11	.16	.13	.15	.21	.24
27	peers	-.06	.02	-.01	.00	.13	.08	.10	.15	.03	.07	.24	.18	.15	.20	.17	.19	.26	.23
	M	4.65	4.68	4.69	4.66	4.74	4.72	4.36	4.40	4.49	4.41	4.44	4.46	4.00	4.15	4.21	4.11	4.15	4.17
	SD	.99	1.01	1.01	1.08	.99	1.06	1.16	1.19	1.12	1.19	1.14	1.21	1.24	1.15	1.14	1.11	1.12	1.23

Table 27 (Continued)

	Variables	19	20	21	22	23	24	25	26	27
1	gsw1									
2	gsw2									
3	gsw3									
4	gsw4									
5	gsw5									
6	gsw6									
7	psw1									
8	psw2									
9	psw3									
10	psw4									
11	psw5									
12	psw6									
13	comp1									
14	comp2									
15	comp3									
16	comp4									
17	comp5									
18	comp6									
19	p. challenge.	1.00								
20	curiosity	.77	1.00							
21	effort	.26	.33	1.00						
22	liking games	.81	.71	.33	1.00					
23	fun of exertion	.75	.67	.33	.69	1.00				
24	like exercise	.70	.68	.28	.61	.74	1.00			
25	parents	.29	.25	.15	.23	.24	.17	1.00		
26	teacher	.17	.14	.13	.14	.09	.06	.55	1.00	
27	peers	.19	.23	-.04	.19	.15	.07	.47	.49	1.00
	M	4.16	4.20	2.81	4.33	3.92	3.94	3.30	2.86	3.02
	SD	1.20	.96	1.07	1.21	1.15	1.00	.93	.92	1.16

Table 28

Correlations and Descriptive Statistics for the Study Variables

		Variables											
	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.	global self-worth level	1.00											
2.	global self-worth stability	-.43	1.00										
3.	physical self-worth level	.67	-.42	1.00									
4.	physical self-worth stability	-.34	.64	-.41	1.00								
5.	perceived competence level	.43	-.16	.69	-.19	1.00							
6.	perceived competence stability	-.20	.52	-.23	.64	-.11	1.00						
7.	affect	.33	-.23	.61	-.26	.67	-.17	1.00					
8.	intrinsic motivation	.36	-.24	.58	-.26	.66	-.18	.87	1.00				
9.	effort and persistence	.21	-.14	.29	.02	.39	-.05	.35	.31	1.00			
10.	importance of parents	.13	.00	.18	-.05	.27	.04	.24	.29	.15	1.00		
11.	importance of teachers	.02	-.05	.10	-.10	.11	-.03	.11	.17	.13	.55	1.00	
12.	importance of peers	-.06	.11	.10	.04	.15	.00	.16	.22	-.04	.47	.49	1.00
	M	4.65	.39	4.36	.36	4.00	.35	4.06	4.18	2.81	3.30	2.86	3.02
	SD	.99	.29	1.16	.28	1.24	.24	1.00	1.02	1.07	.93	.92	1.16

Table 29

Correlations and Descriptive Statistics for the Study Variables: Males

		Variables											
	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.	global self-worth level	1.00											
2.	global self-worth stability	-.31	1.00										
3.	physical self-worth level	.65	-.31	1.00									
4.	physical self-worth stability	-.23	.55	-.32	1.00								
5.	perceived competence level	.43	-.22	.73	-.23	1.00							
6.	perceived competence stability	-.11	.45	-.06	.56	-.03	1.00						
7.	affect	.40	-.26	.62	-.38	.62	-.12	1.00					
8.	intrinsic motivation	.36	-.26	.59	-.33	.64	-.18	.90	1.00				
9.	effort and persistence	.25	-.16	.31	.04	.37	-.07	.28	.29	1.00			
10.	importance of parents	.15	-.14	.26	-.14	.33	-.04	.29	.30	.38	1.00		
11.	importance of teachers	.06	-.16	.18	-.15	.17	-.07	.13	.11	.24	.65	1.00	
12.	importance of peers	.01	-.07	.22	-.12	.29	-.17	.30	.28	.16	.49	.53	1.00
	M	4.75	.38	4.62	.37	4.39	.35	4.20	4.30	3.19	3.30	2.75	2.95
	SD	.98	.28	1.07	.27	1.28	.28	1.03	1.14	.98	.97	1.04	1.35

Table 30

Correlations and Descriptive Statistics for the Study Variables: Females

		Variables											
	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.	global self-worth level	1.00											
2.	global self-worth stability	-.50	1.00										
3.	physical self-worth level	.69	-.49	1.00									
4.	physical self-worth stability	-.41	.70	-.48	1.00								
5.	perceived competence level	.42	-.12	.64	-.18	1.00							
6.	perceived competence stability	-.28	.59	-.39	.73	-.20	1.00						
7.	affect	.27	-.20	.59	-.18	.71	-.23	1.00					
8.	intrinsic motivation	.36	-.22	.57	-.21	.69	-.17	.84	1.00				
9.	effort and persistence	.15	-.13	.21	.00	.31	-.03	.37	.30	1.00			
10.	importance of parents	.12	.10	.14	.02	.23	.12	.21	.29	.00	1.00		
11.	importance of teachers	.01	.04	.09	-.05	.12	.02	.12	.26	.11	.47	1.00	
12.	importance of peers	-.12	.28	.02	.20	.03	.20	.03	.16	-.18	.44	.44	1.00
	M	4.58	.39	4.17	.36	3.71	.35	3.96	4.09	2.54	3.30	2.95	3.07
	SD	1.00	.29	1.18	.28	1.14	.22	.97	.92	1.04	.91	.82	1.01