DEFENSIVE VERSUS GROWTH ORIENTATIONS: SELF-ESTEEM AND SELF-REGULATION EFFECTS ON OBTAINING REGULAR PHYSICAL ACTIVITY AND SUBJECTIVE WELL-BEING

by

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(Under the Direction of Michael H. Kernis)

ABSTRACT

The differential implications of self-esteem contingency, self-esteem stability, regulatory style, and regulatory focus were considered in reference to a defensive versus a growth motivational orientation. These relationships were investigated in relation to individuals' pursuit of the goal to obtain regular physical activity as well as their subjective well-being. Daily diary methods were used to track participants' self-esteem, self-regulation, physical activity, and subjective well-being. Compared with growth-oriented individuals, defensively orientated individuals experienced lower levels of self-esteem and subjective well-being. Regardless of motivational orientation, individuals' experienced lower subjective well-being on days when they were not physically active than on days when they were active. This discrepancy was larger for defensively oriented individuals than for those with a growth orientation. No differences were observed between defensive versus growth oriented individuals in frequency of physical activity or maintenance of regular physical activity over time.

INDEX WORDS: self-esteem, self-regulation, subjective well-being, motivation, physical activity

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DEDICATION

This work is dedicated to my mother, Barbara J. Herrmann, in appreciation of her unyielding

patience, encouragement, and faith in me and to Grandma K., I hope you are smiling up there.

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CHAPTER 1

INTRODUCTION

Why do you do the things that you do? What motivates you? Do you engage in activities because you want to or because you feel that you have to?

That depends, would probably be the first response for most of us. Certainly it depends upon the specific activities being referred to. Additionally, the answers that any one of us would give to these questions are likely to be very different from those that someone else would provide. Our own answers contribute significantly toward making each of us who we are. The things that we do and the reasons why we do them function in the creation of our unique selves.

A broad distinction can be drawn between activities that target the self defensively versus those that are growth oriented. This distinction hinges upon the motivational underpinnings inherent in each orientation. Generally, activities that are engaged in for defensive reasons can be viewed as vehicles to avoid the variety of negative consequences that not engaging in them might produce for the self. Examples of such defensive processes can be seen in Arkin & Baumgartner's (1985) conceptualization of self-handicapping, Baumeister, Tice, and Hutton's (1989) view of low self-esteem, Norem and Cantor's (1986) discussion of defensive pessimism, and Greenberg, Solomon, and Pyzsczynski's (1997) terror management theory. In contrast, activities that are engaged in with a growth orientation are done in an effort to maximize the individual's potentials by undertaking actions in a self-determined way. Examples can be found in Maslow's (1954) hierarchy of human needs, Csikszentmihalyi's (1990) conceptualization of flow, and Deci and Ryan's (1995) discussion of intrinsically motivated behaviors.

This paper considers how various self-regulatory and self-esteem constructs relate to defensive versus growth oriented goal pursuits. Specifically, the interrelations between self-esteem stability (Greenier, Kernis, & Waschull, 1995), self-esteem contingency (Crocker & Wolfe, 2001; Deci & Ryan, 1995; Kernis , 2003), regulatory style (Ryan & Connell, 1989; Sheldon & Kasser, 1995), and regulatory focus (Higgins, 1996) are examined in the implication of two distinct motivational orientations; defensive versus growth. Here the particular pursuit of engaging in regular physical activity was considered. Depending upon pursuit orientation, differences were expected in whether or not physical activity was regularly engaged in and in individuals' subjective well -being.

I will begin by discussing the general distinction between defensive and growth orientations. Next, I will discuss the aforementioned self-esteem and self-regulatory constructs, generally and as they relate to this distinction. Following this, I will consider the relevance of each of these constructs and distinctions for the specific goal of obtaining regular physical activity. As a part of this discussion, I will substantiate the importance of this particular goal. I will also introduce the notion that obtaining regular physical activity will be more closely tied to the daily subjective well-being of some individuals as compared to others. Finally I will present an overview of the investigation conducted, the hypotheses tested, the methods employed, the findings and their implications.

Defensive Versus Growth Orientations

Defensive Orientation

Behaviors that are defensive in nature are motivated by a desire to avoid possible negative outcomes for the self by limiting one's likelihood of encountering potentially threatening self-relevant information. As such, defensively oriented behaviors are self-

protective, stemming from efforts to protect one's self-concept and self-esteem. Defensive

behaviors can be characterized as cautious and risk avoidant, thereby facilitating a relatively low

likelihood of negative outcome (Liberman, Molden, Idson, & Higgins, 2001). Furthermore, I

believe that a defensive orientation is accompanied by feelings of pressure, tenseness, and

anxiety in association with goal related behaviors. That is, individuals with a defensive

orientation are pressured by desires to reduce possible negative implications for the self and to

avoid failure (Deci & Ryan, 1995; Higgins, 1997; Wolfe & Crocker, in press). These pressures

are magnified by the heightened ego-involvement and self-investment in behavioral outcomes

that also characterize individuals with a defensive orientation. A number of examples of a

defensive orientation exist in the literature, to be described next.

Self-Handicapping

Self-handicapping behaviors can be defensive in nature inasmuch as they are sometimes

directed toward avoiding negative self-relevant information. Specifically, individuals engaging

in self-handicapping behave in an effort to avoid an accurate, but negative, evaluation of their

abilities (Arkin & Baumgartner, 1985). Tice (1991) has shown that for low, but not high, self-

esteem individuals, self-handicapping often is directed toward enabling the discounting of

adverse implications of poor performances or negative evaluations.

Low Self-Esteem

Baumeister, Tice, and Hutton's (1989) view of low self-esteem presents another

conceptualization of a defensively oriented behavioral style. As they state, " ...low self-esteem

can be understood as a cautious, prudent, self-protective style of presenting oneself"

(Baumeister, et al., 1989, pp. 554). They go on to describe individuals who score low on self-

esteem measures as being generally cautious and risk avoidant in their endeavors. For

Baumeister and his colleagues, low self-esteem reflects a conservative and self-protective style of self-presentation motivated by social anxiety and a focus on failure avoidance.

Defensive Pessimism and Terror Management Processes

Norem and Cantor's (1986) discussion of defensive pessimism provides another clear example of a defensive orientation. Individuals using the strategy of defensive pessimism use the anxiety generated by keeping an acute awareness of the possibility of negative outcomes to motivate them to achieve their goals (Norem & Cantor, 1986). Additionally, Greenberg, Solomon, and Pyzsczynski's (1997) terror management theory is illustrative of a defensive orientation in that it points toward anxiety, specifically regarding death, and the efforts to reduce this anxiety as the primary motive in individuals' strivings.

<div align="center">*Growth Orientation*</div>

In contrast to defensive behaviors, growth oriented behaviors are motivated by a desire for self-expansion. They are choice-based, self-determined, and associated with more positive affect than are behaviors that are defensively oriented. Stated differently, growth oriented behaviors stretch one's talents and abilities thereby helping the individual to grow. Growth oriented behaviors have been characterized as challenge seeking and curiosity based, and geared toward improving one's talents and increasing one's capabilities rather than toward the achievement of success or avoidance of failure per se (Deci & Ryan, 1995). As conceptualized here, a growth orientation is reflected in an individual's desire for self-expansion and growth that typically will result in positive affective experiences. Low levels of ego-involvement in relation to behaviors and a relative lack of concern with self and others' evaluations may accompany such an orientation. While examples of a growth orientation are not as prevalent as examples of

a defensive orientation in the psychological literature, several current theories do correspond to such an orientation. Following is a brief discussion of three particularly relevant theories.

Maslow's Theory of Needs

In specifying a hierarchical structure of individuals' needs, Abraham Maslow (1954) differentiated between needs along a continuum from those that are basic for one's survival to those aimed toward the fulfillment of one's potential. According to Maslow, once an individual has satisfied all of their more basic needs, strivings become aimed toward fulfilling the need for self-actualization. As with growth-oriented behaviors, engaging in self-actualizing behaviors reflects efforts to promote personal growth and self-enhancement.

Flow

Csikszentmihalyi's (1990) conceptualization of flow also fits into a growth orientation. His line of research focuses on understanding the deep state of concentration that accompanies behaviors in which an individual is completely engaged, seeking to understand their quality of experience. Outcomes of behaviors are not specifically focused upon. According to Csikszentmihalyi, an absence of self-consciousness is common to many individuals' flow experiences.

Intrinsic Motivation

Finally, Deci and Ryan's (1995) discussion of intrinsically motivated behaviors falls directly in line with a growth orientation. These authors point generally toward individuals' needs to feel competent and self-determined as their motivation for behavior. Behaviors are said to be intrinsically motivated when they involve "active engagement with tasks that people find interesting and that, in turn promote growth" (Deci & Ryan, 1995, pp. 9). Intrinsically motivated

behaviors are engaged in due to a genuine interest and enjoyment in the activity, irrespective of performance feedback or evaluation (Deci & Ryan, 1995).

Having distinguished between defensive and growth behavioral orientations, I will now review the principal domains under investigation: self-esteem and self-regulation. Specific constructs within these domains will initially be addressed generally and then in reference to defensive orientations. As self-esteem is a broader personality variable, it was used to predict self-regulation and therefore will be considered first. The ensuing discussion will focus on the distinctions between contingent and true self-esteem, to be followed by stable and unstable self-esteem.

Self-Esteem

Contingent Versus True Self-Esteem

Contingent self-esteem is dependent upon the realization of specific outcomes such as a positive evaluation or a particular achievement. As such, individuals with contingent self-esteem are controlled by a reward system comprised of relative increases and decreases in self-esteem or self-esteem related affect (Ryan & Deci, 2000). In this way, contingencies of self-esteem are linked to individuals' goals and standards. Specific contingencies are employed as guides toward preferred situations as well as actual behaviors (Crocker, Luhtanen, Cooper, & Bouvrette, in press). Contingent self-esteem can be considered in contrast with true self-esteem, which is autonomous and not dependant upon obtaining specific outcomes. Unlike contingent self-esteem, true self-esteem does not need to be defended or bolstered by specific external reinforcements and is relatively invulnerable to external threats (Deci and Ryan, 1995). In other words, low levels of ego-involvement and a lack of concern with self-evaluation are thought to

accompany true self-esteem. Research that investigates this relationship directly has yet to be conducted.

Individuals can be characterized generally as possessing varying degrees of contingent self-esteem (Kernis, 2003). When distinguishing between individuals on this basis, relevant contingencies are thought to involve meeting performance standards, evaluations, and expectations of the self and others (Deci & Ryan, 1995; Kernis & Paradise, 2002). In this view, people vary in the extent to which their self-esteem is contingent, with self-esteem that is contingent reflecting an inter-individual quality.

Another view, espoused by Crocker and her colleagues, is that everyone possesses self-esteem that is contingent and where people differ is in the domains in which their self-esteem is based. According to Crocker and Wolfe (2001), the common domains of contingency among college students are appearance, others' approval, outdoing others in competition, academic competency, love and support from family, virtue, and God's love. Both an inter-individual and an intra-individual conception of contingent self-esteem have merit. The investigation reported here included measures of each.

Contingent self-esteem is considered to be defensive because it is associated with being caught up in defending and protecting a fragile sense of self-worth. In contrast, true self-esteem is associated with a growth orientation because it is relatively free of these self-esteem protective concerns. Stated differently, individuals with true self-esteem are thought to be better able to focus on their desires for self-expansion and growth as well as accompanying positive affective experiences.

Contingent Self-Esteem and a Defensive Orientation

What little research exists considering contingent self-esteem supports its inclusion within a defensive behavioral orientation as conceptualized in this paper (Paradise, 2001). Previous findings suggest that individuals with contingent self-esteem may experience feelings of pressure, tenseness, and anxiety in association with goal related behaviors (Crocker & Wolfe, 2001). Research also suggests that individuals with contingent self-esteem may be motivated by desires to reduce possible negative implications for the self and to avoid failure (Ryan, 1982). Finally, there is evidence for the presence of both heightened ego-involvement and self-investment in behaviors and cautious behavioral strategies among individuals with contingent self-esteem (Covington, 1984; Crocker & Wolfe, 2001; Sommers & Crocker, 2000). A review of specific theoretical and research examples follows.

Investigations into the motivational properties of contingent self-esteem have yielded interesting findings with regard to its association with various behavioral outcomes. First, students who are highly contingent on the domain of appearance report spending comparatively more time exercising than peers who are less contingent on this domain (Crocker, 2002). Second, students possessing self-esteem that is highly contingent upon the domain of academic competence gain higher levels of acceptance to graduate school than do their peers who are not highly contingent on this domain.

However, the motivation produced by having one's self-esteem based in a particular domain does not necessarily result in greater successes in that domain (Crocker & Park, 2003). Students with self-esteem that is highly contingent in the academic domain report studying more than other students whose self-esteem is less contingent. Yet, the former (contingent) students'

grade point averages were *not* significantly higher than those of the latter (non-contingent) group (Crocker and Wolfe, 2001).

The feelings of pressure, tenseness, and anxiety that often accompany goal related behaviors among individuals with contingent self-esteem provide one explanation for these mixed findings. While the aforementioned feelings may at times be motivational, in situations such as studying they could prove counterproductive by taking individual's attention away from the task at hand and onto evaluative concerns instead. Thus, contingent self-esteem is in itself a mixed blessing. Further investigation into the relationship between feelings of pressure, tenseness, and anxiety and how they relate to goal directed behaviors and contingent self-esteem is warranted.

Wolfe and Crocker's (2002) conclusion that individuals often devote considerable effort toward achievement in endeavors encompassed by contingent domains could be explained by the desire of individuals with contingent self-esteem to reduce possible negative implications for their selves and to avoid failure. Crocker and Wolfe (2001) suggested that the motivational mechanism at work when contingencies are activated may be similar to that found by other researchers. In particular, Elliot and his colleagues have demonstrated that placing value on a particular competency increases motivation to engage in competency related behaviors (Elliot, Faler, Campbell, Sedikes, & Harackiewicz, 2000). These findings could be viewed as support for the role of failure avoidance as a motivational mechanism.

Contingent self-esteem has also been implicated in numerous negative behavioral consequences. These consequences may be the result of individuals' over-investment of self in behavioral outcomes that fall within the domains of contingency. Wolfe and Crocker (2002) note that individuals are likely to engage in behaviors that are socially destructive or self-

defeating, for example responding to repeated failures in contingent domains by disengaging from their pursuits altogether rather than seeking realistic and incremental improvements. These outcomes are consistent with the findings of Carver & Scheier (1998) that subordinate contingencies are abandoned when failed at in favor of other subordinate contingencies that can satisfy the overarching super-ordinate contingency.

Wolfe and Crocker (2002) have also suggested that contingencies of self worth may lead individuals to avoid situations in contingent domains when the likelihood of success is uncertain. Evidence for this type of behavior can be seen in the fact that students who base their self-esteem on school performance display an increased tendency to avoid scholastic challenges (Covington, 1984). Research with college students suggest that in an academic context, contingent individuals possess a tendency to withdraw from self-esteem related activities altogether rather than face the threat of negative outcomes (Robins and Beer, 2001). In related research, Waschull and Kernis (1996) reported that, compared to sixth grade children with stable self-esteem, children with unstable self-esteem engage in a highly self-protective learning style, as opposed to a curiosity-based, challenge seeking learning style (especially girls). Each of these findings is illustrative of individuals with contingent self-esteem behaving cautiously, out of efforts to reduce possible negative implications for their selves and to avoid failure.

In addition, research to date suggests that when individuals' self-esteem is contingent, they tend to be ego-involved and self-invested in their behaviors. Investigations of specific domains of contingency support the existence of this relationship. Crocker and Wolfe (2001) cite evidence indicating individuals' affective reactions to be stronger when events are related to highly contingent domains. When considering college students after they received either acceptance or rejection notices from graduate schools, affective reactions were stronger among

students with high as opposed to low academic contingency (Crocker, Sommers, & Luhtanen, 2002). These strong affective reactions presumably reflect heightened ego-involvement and self-investment in admittance outcomes. Additional research is needed to provide direct support for this explanation.

In general, while the reviewed theory and findings can be viewed as support for a relationship between contingent self-esteem and a defensive orientation, additional research is required to directly examine this relationship. Only recently have investigations focused on general contingencies (Kernis & Paradise, 2002; Neighbors, Larimer, Geisner, & Knee, in press). Further investigations are required to directly support the fit of low contingent self-esteem within a growth orientation.

Unstable Versus Stable Self-Esteem

Kernis and his colleagues have done extensive research on self-esteem that is unstable (see Kernis & Goldman, 2002, for review). Unstable self-esteem shares many of the characteristics of Deci and Ryan's (1995) conceptualization of contingent self-esteem. Most importantly, the central characteristic of unstable self-esteem is that it reflects heightened ego-involvement in everyday activities (Greenier, Kernis, & Waschull, 1995). Like true self-esteem, stable self-esteem is possessed when individuals' self-worth is secure and does not require constant validation (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000).

Specifically, unstable self-esteem is conceptualized as the propensity to experience transient changes in feelings of self-worth that interact with particular environmental factors to produce specific patterns of fluctuations. These patterns are characterized by significant variations in individuals' current feelings of self-worth (Kernis, Cornell, Sun, Berry & Harlow, 1993). Stability of self-esteem has been shown to be largely independent of global self-esteem

level (Kernis, et. al, 1993; Kernis, Grannemann & Barclay, 1992; Kernis & Waschull, 1995).

Unstable Self-Esteem and a Defensive Orientation

Findings generated by research investigating unstable self-esteem support its fit within a defensive orientation as specified in this paper. Research demonstrates that the goal related behaviors of individuals with unstable self-esteem are associated with feelings of pressure and tenseness (Kernis, et. al, 2000). Findings further demonstrate that individuals with unstable self-esteem may be motivated by efforts to reduce possible negative implications for the self and to avoid failure. Heightened ego-involvement and self-investment in behaviors as well as cautious behavioral strategies have also been related to unstable self-esteem in previous findings. Specific research examples follow.

Kernis and his colleagues (2000) have demonstrated a relationship between unstable self-esteem and experiences of pressure and tenseness. Specifically, compared to those with stable self-esteem, individuals possessing unstable self-esteem reported experiencing stronger feelings of pressure and tenseness in reference to their personal goal strivings. These findings correspond directly with a defensive orientation.

Sixth grade children with unstable self-esteem have reported a tendency to avoid potential self-esteem threats, exhibiting preferences for a cautious learning style and comparably safe routes to the pursuit of positive outcomes (Waschull & Kernis, 1996). In particular, children with unstable self-esteem reported lower preference for challenge and less curiosity and interest in relation to learning than did children with more stable self-esteem. These findings directly map on to a defensive orientation in which cautious behaviors are motivated by efforts to reduce possible negative outcomes for the self and to avoid failure. The findings are also demonstrative

of heightened ego-involvement and self-investment in behaviors being related to unstable self-esteem.

Further evidence of the relationship between heightened ego-involvement and self-investment in behaviors and unstable self-esteem can be found in research indicating that the more unstable an individual's self-esteem, the more their feelings about themselves are affected by everyday positive and negative events (Greenier, Kernis, McNamara, Waschull, Berry, Herlocker & Abend, 1999). In addition, negative events more adversely affect individuals with unstable as compared with stable self-esteem (Butler, Hokanson & Flynn, 1994; Kernis, Wisenhunt, Waschull, Greenier, Berry, Herlocker, & Anderson, 1998; Roberts & Monroe, 1992). Taken together these findings provide both direct and indirect support for a relationship between unstable self-esteem and heightened ego-involvement and self-investment in one's behaviors.

In sum, previous research has yielded evidence of a relationship between unstable self-esteem and a defensive orientation as conceptualized in this paper. Research has tended to focus upon unstable rather than stable self-esteem. However, like contingent self-esteem, unstable self-esteem is a continuous rather than a categorical construct. Accordingly, research investigating unstable self-esteem contrasts individuals with less stable self-esteem with individuals whose self-esteem is more stable. Therefore, results of the research reviewed in support of individuals with unstable self-esteem fitting into a defensive orientation could also be viewed in light of individuals with more stable self-esteem. Considering the research from this angle is supportive of a relationship between stable self-esteem and a growth orientation as conceptualized in this paper. Further, Kernis and his colleagues (2000) have demonstrated that relatively stable self-esteem is associated with greater internal and identified styles of self-regulation.

Self-Regulation

Regulatory Styles

In Deci and Ryan's (1995) discussion of their self-determination theory, they distinguish behaviors that are autonomous, intrinsically motivated, and self-determined, from behaviors that are extrinsically motivated. Extrinsically motivated behaviors can become self-determined via the processes of internalization and integration. Both processes can serve to strengthen the association between the behavior in question and the true self (Deci & Ryan, 1995).

According to Deci and Ryan (1995), people can regulate their behaviors in one of four ways that reflect varying degrees of self-determination (Ryan & Connell, 1989). At one extreme, *external regulation* involves the absence of self-determination. With external regulation, people behave specifically to gain rewards or to avoid punishments. As such, externally regulated behaviors are contingency dependent and control engaging in them. The next category, *introjected regulation,* reflects a minimal amount of self-determination. In this type of self-regulation, affective and self-esteem contingencies are self administered such that one's self-worth is dependant upon the behavior. Not engaging in the behavior can result in guilt or shame. Moving along this continuum toward greater self-determination, *identified regulation* involves freely endorsing a behavior's value for one's growth and identity. Finally, *intrinsic regulation* involves the highest level of self-determination, as behaviors are engaged in purely for the fun and enjoyment that they provide.

Ryan and Connell (1989) have conducted research supporting this conceptualization of self-regulatory styles. Ryan, Rigby, and King (1993) have summarized these styles in the following manner: External and introjected behaviors are performed because individuals feel as though they should do them to satisfy contingencies that have been set forth by another person,

organization, or society generally. In contrast, identified and intrinsic behaviors are performed because they provide satisfaction to the individual in some way.

Regulatory Styles and Defensive versus Growth Orientations

Research focusing on regulatory styles indicates a fit between those styles that reflect relatively little self-determination and a defensive orientation. Specifically, the heightened ego-involvement and self-esteem investment that are characteristic of external and introjected regulation are consistent with a defensive orientation (Deci & Ryan, 1995). In contrast, regulatory styles that reflect more self-determination fit into a growth orientation. Specifically, the focus on personal growth, fun, and enjoyment that are characteristic of identified and intrinsic regulation are consistent with a growth orientation (Deci & Ryan, 1995).

External and introjected regulations involve processes through which behavior is controlled. The source of this control includes values and ideals that are external to the individual performing the behavior. This type of control fits into a defensive orientation, as it is likely to be accompanied by feelings of pressure, tenseness, and anxiety in association with goal related behaviors. Research has in fact demonstrated that behaviors regulated by introjection are coupled with feelings of pressure and tension (Deci, Eghrari, Patrick & Leone, 1994).

In contrast, identification and intrinsic regulations involve processes in which behavior is motivated by desires, values, and ideals that have been fully internalized within the individual performing the behavior. These types of regulation fit a growth orientation, as they are likely to be associated with a desire for self-expansion and growth that should typically result in positive affective experiences. Consistent with this reasoning, research has demonstrated that increases in well-being are associated with the attainment of internalized and intrinsic goals but, not with the attainment of external or introjected goals (for a review, see Deci & Ryan, 2000). In

addition, Sheldon and Kasser (1995) reported that individuals' self-regulatory styles are associated with self-esteem level, life satisfaction, and affect. Specifically, individuals who regulate their goal-directed behaviors in a self-determined manner experience higher self esteem, greater life satisfaction, and more positive moods than do individuals who regulate in non self-determined ways.

In their review of the literature, Deci and Ryan (1995) summarized conclusions from a broad range of research considering regulatory styles. In their view, findings generally demonstrate that compared with less internalized regulation, more fully internalized regulation is associated with stronger behavioral maintenance, more effective behavioral performance, and better mental and physical health. In sum, there is evidence for self-regulatory styles fitting within the more general defensive and growth orientations.

Regulatory Focus

Another way to consider an individual's self-regulation is by the type of regulatory focus they employ in their goal related behaviors. The current investigation focused on the distinction between prevention and promotion regulatory focus in relation to defensive and growth motivational orientations. The cognitions underlying a prevention focus are similar to those of external and introjected regulatory styles while the cognitions underlying a promotion focus are similar to those of identified and integrated regulatory styles (Higgins, 1996). Generally, prevention focused behavior is directed toward the maintenance of security and the fulfillment of responsibilities while promotion focused behavior is directed toward the achievement of aspirations and ideals (Higgins, 1997).

In addition, the cognitions underlying a social comparison focus (i.e., engaging in a behavior merely to compare favorably with others) are often similar to those of external and

introjected regulatory styles, whereas the cognitions underlying an intrinsic, pleasure motivated

regulatory focus are consistent with those of identified and integrated regulatory styles. For

example, Lyubomirsky and Ross (1997) note that social comparison processes have repeatedly

been associated with pressured thoughts of how one should be. In contrast, by definition an

intrinsically oriented focus is associated with feelings of pleasure and enjoyment.

Regulatory Focus and Defensive versus Growth Orientations

Research has shown that regulatory focus moderates individuals' emotional responses to

goal attainment. Specifically, differences have been demonstrated in both the type and degree of

emotion individuals experience upon goal attainment depending upon whether their regulatory

focus is of prevention or promotion (Higgins, Shah, & Friedman, 1997). The realization of a

goal with a prevention focus is accompanied by feelings of quiescence whereas the realization of

a goal with a promotion focus is accompanied by feelings of cheerfulness. On the other hand,

the failure to realize a goal with a prevention focus is accompanied by feelings of agitation while

the failure to realize a goal with a promotion focus results in feelings of dejection.

Higgins and his colleagues (1997) suggest that the construal of a goal as a necessity that

must be accomplished (i.e., prevention focus) results in feelings of anxiety that are relieved upon

goal attainment. Feelings of anxiety in relation to goal related behaviors fall in line with the

characterization of defensively oriented goal related behaviors as being accompanied by feelings

of pressure, tenseness, and anxiety. Higgins and colleagues further suggest that the construing a

goal as an opportunity for reaching one's ideals promotes feelings of joy when it is achieved.

Feelings of joy in relation to goal related behaviors are similar to the characterization of a growth

orientation as reflecting desires for self-expansion and growth that should result in positive

affective experiences.

Higgins (1997) has also shown that situational factors can induce prevention and promotion modes of regulatory focus. Specifically, emphasizing means of avoiding impediments to goal attainment induces a prevention focus (Higgins, Rooney, Crowe & Hymes, 1994). This further supports the inclusion of a prevention focus within a defensive orientation that associates goal related behaviors with feelings of pressure, tenseness, and anxiety. At the same time, emphasizing how to take advantage of an opportunity induces a promotion focus (Higgins, et al., 1994). This supports the inclusion of a promotion focus within a growth orientation that characterizes behaviors as reflecting desires for self-expansion and growth that are associated with positive affective experiences.

In considering individuals' attention to social comparisons, Lyubomirsky and Ross (1997) found that happy individuals are less likely than unhappy individuals to reference social comparisons. Specifically, they found that individuals who focused on social comparisons in laboratory projects experienced less positive moods than those who did not focus on social comparisons. These findings and the previously mentioned association between feelings of pressure and social comparison support the inclusion of a social comparison focus within a defensive orientation that couples goal related behaviors with feelings of pressure, tenseness, and anxiety.

On the other hand, research has demonstrated an intrinsic, pleasure motivated regulatory focus to be associated with positive affective experiences. Ryan and LaGuardia (2000) have noted that, after childhood, many of the activities that individuals engage in are not strictly intrinsically motivated. However, investigations into individuals' activities have found that behaviors engaged in with an intrinsic, pleasure-oriented focus are associated with heightened levels of positive affect (Deci & Ryan, 1985).

Taken together, the research reviewed in this section supports the characterization both a prevention regulatory focus and a regulatory focus guided by social comparison within a defensive motivational orientation. In contrast, the reviewed research supports the characterization of both a promotion regulatory focus and an intrinsic, pleasure motivated regulatory focus within a growth motivational orientation

Subjective Well-Being

I now will review the construct of subjective well-being and relevant research. Following that, I will specifically address the importance of the goal of obtaining regular physical activity. Finally, I will discuss the suggestion that relationships between individuals' subjective well-being and their pursuit of the goal of obtaining regular physical activity will vary depending upon whether their motivational orientation is defensive or growth in nature.

Subjective well-being is affected by a multitude of factors including life events and personality factors. It is determined in part by individuals' evaluations of their emotional experiences and their life satisfaction. The construct is comprised of both a cognitive and an affective component. Individuals who report being generally satisfied with their lives as well as experiencing comparably more positive than negative affect are thought of as possessing high levels of subjective well-being. By definition, subjective well-being is determined from the individual's own perspective (Diener & Lucas, 1999).

Relationships have been demonstrated between how individuals frame their goals and their subjective well-being. In particular, Elliot and his colleagues (1997) have reported that when compared with those who frame their goals in approach terms, students who frame their goals in avoidance terms report lower levels of subjective well-being at the beginning of the semester. Further, these researchers reported that students with avoidance goals experienced a

decrease in subjective well-being over the course of a semester while those with approach goals did not experience such a change in their subjective well-being (Elliot, Sheldon, & Church, 1997).

Emmons and his colleagues (1994) have found that individuals working actively toward the prevention of certain outcomes have less physical and psychological well-being, less life satisfaction, and less pleasant affect than those striving toward the promotion of outcomes (Emmons, Shepard, & Kaiser, 1994). Further, research investigating daily goals and life goals has demonstrated that individuals who pursue daily goals in an effort to avoid their worst fears experience lower levels of subjective well-being than those who strive toward daily goals in an effort to achieve their life goals (King, Richards, & Stemmerich, 1998). Taken together, the reviewed findings demonstrate that the focus of individuals' goals holds implications for subjective well-being beyond whether or not goals are obtained per se.

The Goal Considered: Obtaining Regular Physical Activity

Goals concerning physical fitness are some of the most widely held in our society. Roberts and Robins (2000) investigated the importance that people placed on 38 various goals. They reported that "being in good physical condition" was rated very highly (overall M = 4.4 on a 5-point scale). Only five other goals were rated as highly (having a career, having a satisfying marriage/relationship, having harmonious relationships with family members, and having fun and feeling a real purpose in life).

Getting regular physical activity is one of the essential components of being in good physical condition. Despite this, The United States Department of Health and Human Services (1996) has reported that more than 60% of adults in the United States are not regularly active and 25% of all adults are wholly inactive. This is concerning because regular physical activity is

essential to maintain an optimal level of emotional and physical well being, (United States Department of Health and Human Services, 1996; National Institute of Health, 1996).

The psychological benefits of physical activity are numerous (Gauvin, Spence, & Anderson, 1999; Martin & Dubbert, 1982; Roth, 1989; Roth & Holmes, 1987).   For decades researchers have been providing empirical evidence that engaging in regular physical activity results in more favorable self-views and higher levels of generalized well-being (Berger & McInman, 1993; Fox, 1997; Morgan, 1985). The relationship between self-esteem levels and regular physical activity has been shown to be particularly strong (Folkins & Sime, 1981; Hughes, 1984).

In an effort to understand why so many people fail to obtain regular physical activity, researchers in the field of exercise science have considered the relationship between exercise and self-esteem. In so doing, they have stressed the importance of considering self-esteem multi-dimensionally (Fox & Corbin, 1989; Sonstroem & Morgan, 1989; Sonstroem, Harlow, Gemma & Oxborne, 1991). Components of self-esteem included in exercise research models target specific aspects of individuals' evaluations of their physical selve s. A typical model includes self-evaluations of physical self-worth, body esteem, strength esteem and feelings referencing overall physical condition (Fox & Corbin, 1989). Considering more specific components of self-esteem over time has enabled researchers to distinguish individual differences in sources of self-esteem and to detect greater levels of self-esteem change in conjunction with increased levels of physical activity (McAuley, Mihalko & Bane, 1997; McAuley, Blissmer, Katula, Duncan & Mihalko, 2000).   While this work has been informative, I believe that focusing on self-esteem stability and contingency will provide us with a greater understanding of how self-esteem relates to individuals' efforts to obtain regular physical activity.

The Current Investigation

The fact that so many people possess the goal of being in good physical condition is not surprising. However, why so many people who have this goal fail to maintain regular physical activity merits further investigation. The current analysis points toward defensive orientations in an effort to understand the widespread inconsistency between possessing the goal to obtain regular physical activity and the (lack of) realization of this goal. In so doing, this analysis considers individuals' self-esteem, self-regulation, and subjective well-being in relation to the specific goal directed behavior of engaging in regular physical activity.

Fitting within a defensive orientation are unstable self-esteem and contingent self-esteem. Individuals with these kinds of self-esteem were expected to engage in pursuits with the less self-determined external and introjected regulatory styles and a prevention and social comparison based regulatory focus. Individuals employing this type of self-regulation were expected to display heightened levels of ego-involvement and self-investment in their goal pursuits, linking pursuits to their self-esteem. Consequently, heightened levels of pressure, tenseness, and anxiety were expected in relation to their goal pursuits. Additionally these individuals' subjective well-being was expected to vary in relation to their goal directed behaviors.

Fitting within a growth orientation are self-esteem that is relatively stable and that which is not highly contingent upon any particular domain. Individuals with these kinds of self-esteem were expected to display a tendency to engage in pursuits with the more self-determined identified and intrinsic regulatory styles and a promotion regulatory focus that is intrinsic and pleasure oriented. Individuals employing this type of self-regulation were expected to approach their goals with an aim toward self-expansion and growth that is coupled with low levels of ego-involvement and a relative lack of concern with self-evaluation. Consequently, individuals with

a growth orientation were expected to experience high levels of positive affect in relation to their goal pursuits and subjective well-being that are not closely tied to their goal directed behaviors.

My first hypothesis is that the more unstable and contingent individuals' self-esteem, the greater their tendencies to endorse external and introjected regulatory styles and the lower their tendencies to endorse identified and intrinsic regulatory styles.

Second, I hypothesize that the more unstable and contingent an individual's self-esteem and the less self-determining an individual's self-regulatory style, the more their regulatory focus toward obtaining regular physical activity would be prevention focused and guided by social comparison as opposed to promotion focused and intrinsic and pleasure motivated.

Third, I hypothesize that the more unstable and contingent an individual's self-esteem and the less self-determining and more prevention focused and based upon social comparison their self-regulation, the more individuals would experience heightened levels of pressure, tenseness, and anxiety (and the less they would experience enjoyment) generally and while engaging in regular physical activity, and the more they would experience feelings of guilt, particularly on the days when they are not physically active.

Fourth, I hypothesize that the more unstable and contingent an individual's self-esteem and the less self-determining and more prevention focused and based upon social comparison their self-regulation, the lower their self-esteem and subjective well-being would be generally and the more closely linked their daily self-esteem and daily subjective well-being would be to their efforts to obtain regular physical activity.

Fifth, I hypothesize that the more unstable and contingent an individual's self-esteem and the less self-determining and more prevention focused and based upon social comparison their

self-regulation, the greater an individual's preference would be for con sistency versus variety in the type of physical activities that they engaged in.

Finally, I hypothesized that the more unstable and contingent an individual's self -esteem and the less self-determining and more prevention focused and based upon social comparison their self-regulation, the less persistence they would demonstrate over time in their efforts to obtain regular physical activity (hypothesis 6).

To test these hypotheses, participants were followed over the course of seven weeks. I used the daily diary method to obtain regular reports of participants' physical activity, self - esteem, regulatory focus toward physical activity, and subjective well-being. This method allowed me to track changes in, as well as interrelations among, these factors. Results of this investigation provide insight into why so many individuals do not engage in regular physical activity even though the espoused value and known benefits of doing so are widespread.

CHAPTER 2

METHOD

Participants

One hundred twelve, male (35) and female (77) undergraduate students at a large state university in the southeastern United States participated in this study in exchange for credit toward a course research participation requirement (other alternatives for completing the requirement were available). A majority of the participants were Caucasians (83%) attending either their first or second year of college (77%) who grew up in suburban neighborhoods (71%). The mean age of participants was 19.7 (SD = 2.5). Eighty-four percent of participants (N=94) were regularly physically active at the onset of the study. Sixty-one percent (N=68) of participants had been regularly active for more than six months and eleven participants were members of a university sports team at the time of the study.

Participation was limited to native English speakers. Participation was further limited to those who reported having the goal of being regularly physically active. All participants expressed the intent to accumulate at least thirty minutes of moderate physical activity each day on most, if not all, days of the week. Potential participants were instructed to consider moderate physical activity to be equivalent to walking at the pace of three to four miles per hour. The guidelines set forth by The Centers for Disease Control and The American College of Sports Medicine were used in selecting these operationalizations of moderate and regular physical activity (Pate, Pratt, Blair, Haskell, Macera, Bouchard, Buchner, Ettinger, Heath, King, Krista, Leon, Marcus, Morris, Paffenbarger, Patrick, Pollock, Rippe, Sallis, & Wilmore, 1995).

Overview

This study took place over the course of one academic semester and was comprised of five separate phases. During Phase 1, 112 participants completed several personality measures. One hundred six participants completed Phase 2, during which their self-esteem stability was assessed over the course of one week. Phases 3 and 4 each consisted of a two-week daily diary session during which participants responded to questions regarding their physical activity, self-regulation, affective experiences, and life satisfaction. Phases 3 and 4 were separated by a three-week break period (i.e., spring break and the surrounding weeks). One hundred six participants took part in Phase 3 and 97 participants took part in Phase 4. Finally, the fifth phase of the study consisted of a debriefing session. Ninety-six participants completed Phase 5.

All responses from one participant were excluded from analyses due to a large amount of missing data at all phases of the experiment (N = 111 for all Phase 1 measures). Calculations using the self-esteem stability measure are based upon the 97 participants whose responses were determined to be reliable. Specifically, at Phase 5 participants identified any forms that they had filled out inaccurately or at the wrong time and these forms were excluded from their data file. Only those participants with six or more of the eight stability measures were included in the analyses. During the course of the investigation, I learned that one participant joined the study at Phase 3 and therefore data from this participant were excluded from the analyses.

Preliminary examinations of the data were done with the daily measures combined across Phases three and four and again separately for each phase. Each examination of the data revealed a similar pattern of relationships; however some relationships were found to vary from Phase 3 to Phase 4. At the daily level, basic relationships emerged consistently across phases, however the inter-relationships between variables were unclear at Phase 4. It was therefore

decided to report findings for Phase 3 exclusively, unless otherwise noted. Descriptive statistics and results for Phase 4 can be found in appendices L – N.

Measures

Demographic information. Participants completed a questionnaire that included questions regarding their age, gender and ethnicity. Participants also responded to whether they were currently members of a University sports team. It was believed that this information could prove important in interpreting the findings. A copy of this questionnaire appears in Appendix A.

Physical Activity Questionnaire. Participants' physical activity was assessed at the onset of the study using a brief questionnaire. The questionnaire served as a safeguard to ensure that participants held the goal of obtaining regular physical activity. One participant was excluded from participation in the study due to the failure to express this goal. A copy of this measure is included in Appendix B.

Physical activity. Participants' daily activity was tracked via self-report through questions whether they were physically active on that day, the type of physical activity that they participated in, and to what degree they felt positive and negative emotions while engaging in physical activity. Emotional experience during physical activity was indicated on a 5-point scale (1 = *did not feel at all* to 5 = *felt very much*). A copy of this measure appears in the daily diary question series; Appendix J, questions 1-3.

Regulatory style. Regulatory style was measured by asking participants to indicate the importance of different reasons for obtaining regular physical activity. Ratings were be made along a 5-point scale (1 = *is not at all a reason* to 5 = *is an extremely important reason*).

At Phase 1, two reasons were included for each regulatory style, as in Kernis, et al. (2000). Following recommendations by Ryan and Connell (1989), less overall self-determination was calculated as follows: (2*external + introjected) – (2*intrinsic + identified). A copy of this measure appears in Appendix C.

During phases three and four, one reason was given for each regulatory style. At these phases participants were asked to indicate the importance of the first reason in each category listed below in relation to engaging in physical activity on that day. A copy of this form of the measure appears in the daily diary question series; Appendix J, question 4.

External reasons are: *I do it because somebody else wants me to or because I will get something from somebody if I do*. And *I do it because something about my external situation forces me to do it*. Introjected reasons are: *I force myself to do it to avoid feeling guilty or anxious*. And *I do it because I know I should do it*. Identified reasons are: *I do it because it ties into my personal values and beliefs*. And *I do it because I feel that doing it will help me grow or develop in a way that is personally important to me*. Intrinsic reasons are: *I do it because of the fun and pleasure of doing it*. And *I do it because of the interest and enjoyment of doing it*.

Regulatory focus toward physical activity. Regulatory focus toward physical activity was measured by asking participants to rate the extent to which they agreed with prevention and promotion framed statements that provided reasons for engaging in physical activity. Prevention and promotion statements were generated from pilot data collected by the researcher. The most common prevention and promotion statements generated by participants (N = 132) on the pilot measures were selected for inclusion. Ratings were made along a 5-point scale (1 = *Not at all Why I Engage In Physical Activity* to 3 = *Sometimes Why I Engage In Physical Activity* to 5 = *Really Explains Why I Engage in Physical Activity*). Participants also rated the extent to which

they agreed with statements indicating an intrinsic regulatory focus and statements indicating a regulatory focus based on social comparison. Ratings were made along a 5-point scale (1 = *No Agreement* to 3 = *Some Agreement* to 5 = *Very Much Agreement*). A copy of this measure appears in Appendix D.

At phases three and four, participants again responded to prevention and promotion statements, using a 5-point scale referencing their physical activity on that particular day (1 = *Not at all Why I Engaged In Physical Activity Today* to 3 = *Partially Explains Why I Engaged In Physical Activity Today* to 5 = *Really Explains Why I Engaged in Physical Activity Today*). A copy of this measure appears in the daily diary question series in Appendix J, question 5.

Prevention framed statements indicating reason for engaging in physical activity included; *I don't want to gain weight or get fat, I don't want to be lazy,* and *I don't want to get sick or have health problems*. Promotion framed statements included; *I want to get in/stay in shape, I want to be/stay healthy, I want to feel good/better about myself, and I want to look good/better*. Intrinsic statements included; *I enjoy physical activity*. Social comparison statements included; *I am motivated in my physical activities by making comparisons between myself and others*. Participants' endorsement of prevention, promotion, intrinsic, and social comparison framed reasons for engaging in physical activity were treated as continuous variables that represented aspects of their regulatory focus toward physical activity. This method was chosen over the alternative of having participants generate free responses, because the validity of such methods has come into question (Key, Mannella, McCombs Thomas & Gilroy, 2000).

Examination of the correlations between the individual regulatory focus items revealed that the prevention and promotion items were highly correlated with one another. The items did not appear to form distinct constructs as had been predicted. An examination of the correlations

between individual regulatory focus items and the other predictor variables revealed no difference in the direction of the correlations between the prevention and the promotion items, all items correlated in the direction expected of the prevention framed items.

The intrinsic and social comparison items however, correlated in opposite directions with one another. Further the intrinsic and social comparison items correlated in the anticipated directions with all other predictor variables. These correlations of can be found in Appendix K, Table 1. (Note: intrinsic items have been reversed as the table depicts all variables in the direction of a greater defensive orientation).

Several composite measures of prevention and promotion were created using various combinations of the individual items. The three prevention items were retained as one subscale throughout this process. Different subscale combinations of the seven promotion items were examined, removing items based upon their level of correlation with other variables and with the other predictors. Regardless of the combination of variables considered, the prevention and promotion subscales correlated in the same direction with the other predictor variables.

Further consideration of the prevention and promotion regulatory focus items revealed a strong relationship between the two appearance related items with one another as well as similar relationships between these appearance related items and the other predictors. Items related to health/well-being also appeared to relate similarly to one another and to the other predictors.

In light of these relationships, separate prevention and promotion measures were examined depending upon whether the items were related to appearance or health/well-being. Regardless of the combination of items considered, the prevention and promotion subscales correlated in the same direction with the other predictor variables. Correlations of all predictor variables and the individual appearance items, the prevention framed health/well-being subscale,

and a two-item promotion framed heath/well-being subscale (items = *I want to be/stay healthy*

and *I want to improve my level of physical fitness*) can be found in Appendix K, Table 1. (Note:

All variables are presented in this table to reflect a greater defensive orientation.)

The failure of the prevention and promotion regulatory focus items to related differently

to the other predictor variables resulted in a decision not to include these constructs in the further

consideration of an overall defensive orientation. As the intrinsic and social comparison

constructs did perform in the expected direction, they were retained for inclusion in the

consideration of an overall defensive orientation.

Global self-esteem level. Global self-esteem was measured during Phase 1 using

Rosenberg's Self -Esteem Scale (1965), which has been well validated (Blascovich & Tomaka,

1991). The measure requires participants to respond to ten items on a 5-point scale ranging from

1 = *strongly disagree* to 5 = *strongly agree*. Items include*; I feel that I am a person of worth, at*

least on an equal plane with others and *I feel as if I am able to do things as well as most other*

people. An @ of .90 was obtained with this sample. A copy of this measure appears in

Appendix E.

During phases three and four, a 1-item measure of global self-esteem was be used. This

measure was developed and cross-validated with the Rosenberg Self-Esteem Scale by Robins

(2001). Participants rated their agreement with the item *I have high self-esteem today* along a 5-

point scale (1 = *not very true of me* to 5 = *very true of me*).   The word today was added to the

original measure in order to fit the needs of the current investigation. This measure appears in

the daily diary question series; Appendix J, question 6.

Stability of Self-Esteem. Using the method developed by Kernis and his colleagues

(1992), participants completed a modified version of Rosenberg's self -esteem measure twice a

day for five consecutive days. The modification pertains to the instructions in that participants

are directed to respond in accordance to how they feel *at the particular moment.* Also, rather

than responding along a 5-point scale, participants indicated their agreement by circling one of

ten dots listed along this continuum.   Self-esteem stability scores are calculated by taking the

standard deviation of a participant's total scores so that higher scores reflect less stable self-

esteem.

Based upon information obtained at Phase 5 debriefing, responses from seven

participants were omitted from inclusion. All analyses using this measure were conducted with

the omission of participants whose scores fell over three standard deviations above the mean

(N=2).

Contingent self-esteem. Contingent self-esteem was measured using The Contingent

Self-Esteem Scale (Paradise & Kernis, 1999). The scale is internally consistent (@ = .86) and

Paradise and Kernis found strong test-retest reliability, measured over a four-week period (r =

.77). The scale consists of fifteen items rated on a 5-point scale ranging from 1 = *not at all like

me* to 5 = *very much like me*. Sample items include: *An important measure of my worth is how

well I perform up to the standards that other people have set for me.* And *If I get along well with

someone, I feel better about myself overall.* This measure appears in Appendix F.

Domain specific contingent self-esteem was measured using the Contingencies of Self-

Worth Scale (Crocker & Wolfe, 2001). Internal consistency ratings for each of the nine

subscales are as follows; appearance (@ = .83), others' approval (@ = .86), competition (@ =

.86), academic competence (@ = .83), family support (@ = .84), virtue (@ = .83) and god's love

(@ = .95). Crocker and Wolfe also report the total scale score (@ = .95). The measure requires

participants to respond to seventy-four items on a 7-point scale ranging from 1 = *strongly*

disagree to 7 = *strongly agree*. Sample items include: *My self-esteem is not based on love from my family* And *When I look attractive, I feel good about myself.* The current investigation focuses solely on the appearance subscale. A copy of this measure appears in Appendix G.

Subjective well-being. In accordance with the method employed by Diener (1984), subjective well-being was measured using individuals' reports of life satisfaction and positive and negative affect.

Life satisfaction was measured using the Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985). The satisfaction with life scale was designed as a global measure of life satisfaction. The scale is internally consistent (@ = .88) and Diener and his colleagues found high levels of reliability over time (@ = .82, over two months). Participants respond to five items along a 7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*. Items include the following: *In most ways my life is close to my ideal. The conditions of my life are excellent. I am satisfied with my life. So far I have gotten the important things I want in life.* And *If I could live my life over, I would change almost nothing*. The mean of item responses is taken to produce an overall life satisfaction score. A copy of this measure appears in Appendix H. Participants also completed one-item version of this measure, amended to reflect participants' feelings on that particular day along a 5-point scale; *I am satisfied with my life today*, as a part of the daily diary question series at phases three and four. A copy of this version is included in the daily diary question series; Appendix J, question 7.

Relative amounts of positive and negative affect were measured using the scale developed by Diener, Smith, and Fujita (1995). The measure includes 24 single word items representing emotions. Words represent six discrete emotion scale-categories: joy (*joy, happiness, contentment,* and *pride*; @ = .69), love (*love, affection, caring* and *fondness*; @ =

.80), fear (*fear, worry, anxiety,* and *nervousness*; @ = .72), sadness (*sadness, unhappiness, depression,* and *loneliness*; @ = .82), shame-guilt (*shame, guilt, regret, and embarrassment*; @ = .73), and anger (*anger, irritation, disgust,* and *rage*; @ = .73). Correlations for the summed positive affect scales (joy and love) and negative affect scales (fear, sadness, shame-guilt, and anger): with positive affect (joy = .89) and (love =.91), with negative affect (fear = .80), (sadness = .84), (shame-guilt = .74) and (anger = .70). All correlations are at the *p* < .001 level.

Participants were instructed to respond in accordance with how often they had experienced an emotion each day. Depending upon the phase of the experiment, participants were instructed to base their responses on the time interval of the past month (phase 1) or the past 24 hours (phases 3 and 4). At phases 3 and 4 participants responded only to the joy, fear, sadness, and shame-guilt subscales. Amount of emotion experienced was indicated along a 5-point scale with 1 = *never*, 5 = *always*, and 3 = *about half of the time*. A copy of this measure appears in Appendix I and as a part of the daily diary question series; Appendix J, question 8.

Composite subjective well-being scores were created based upon standardized values of life satisfaction, positive affect, and negative affect. Both an overall and an average daily subjective well-being score were calculated for each participant. Standardized scores of life satisfaction, positive affect, and negative affect were used to calculate subjective well-being as follows; life satisfaction + (positive affect – negative affect).

Defensive versus growth orientation. An aggregate measure of motivational orientation was created to reflect a greater defensive orientation. This measure was created by standardizing and summing the following measures; contingent self-esteem, self-esteem stability, contingent self-worth appearance subscale, self-regulatory styles, social comparison regulatory focus, and intrinsic regulatory focus. Responses from the 96 participants who had completed each of the

measures were used in the calculation. Correlations between the individual predictors and a

defensive orientation can be found in Appendix K, Table 1. Correlations between a defensive

orientation and the Phase 1 dependent measures can be found in Table 2. Correlations between a

defensive orientation, and the Phase 3 and 4 daily measures can be found in Tables 3 and

Appendix L, Table 32.

Procedure

The study took place over the course of three months and consisted of five separate

phases.

Phase 1. This phase consisted of a one-hour group information and questionnaire

session. Participants convened in groups as large as twenty-five people. At this time the

experimenters provided detailed information and instructions regarding the project. Upon receipt

of participants' written consent, initial questionnaires were completed. These questionnaires

assessed demographic information, engagement in physical activity, regulatory focus toward

physical activity, self-esteem level, and subjective well-being (see Appendixes A – I for copies

of these measures). Before leaving, participants were given a schedule and a detailed calendar

depicting the remaining parts of the study. Participants were also provided with the

experimenter's phone and e-mail contact information.

Phase 2. Phase 2 involved the assessment of self-esteem stability. Using procedures

described by Kernis and his colleagues (1992), participants completed a modified version of

Rosenberg's self-esteem measure once or twice a day for five consecutive days. Participants

reported to pick up and/or drop off materials for this phase of the study on Monday, Wednesday,

and Friday and they received both phone and e-mail reminders to pick up and/or drop off

materials. Participants were instructed to complete the forms as close to 10am and 10pm as they are able to each day, beginning on Monday night and concluding on Friday morning.

Phase 3. Phase 3 marked the beginning of the daily diary portion of the study. This phase lasted for a period of two weeks. During this portion of the study, participants reported on Wednesdays and Fridays to pick up forms containing a series of questions to be completed on a daily basis for a period of Monday through Thursday each week. The questions tapped global self-esteem, regulatory focus toward engaging in physical activity on that day, emotions felt while engaging in physical activity, and daily subjective well-being. The subjective well-being measures followed the physical activity measures. (See Appendix J for the complete question series.)

Having the participants report to lab twice a week allowed for accurate tracking of the dates when participants provided their responses, helping to ensure that questionnaires were filled out on a regular basis as intended. Participants were instructed to complete the measures each day, Monday through Thursday prior to going to bed or going out for the evening. At any given time, participants possessed only two days worth of measures. All measures were printed on brightly colored paper with a different color used for each day of the week. The color associated with a particular day was kept consistent across each week.

Phase 4. Phase 4 was conducted in the same manner as Phase 3 was conducted in. This phase began exactly three weeks after the conclusion of Phase 3. The break period included spring break as well as the weeks preceding and following the break. I felt that it was important to schedule the study this way because individuals' motivations for engaging in physical activity may change in relation to spring break. Further, separating the phases in this manner will allow the tracking of participants over the extended time period of seven weeks.

Phase 5. Phase 5 was a debriefing session. At this time participants responded to printed questions asking about the truthfulness of their responses to the measures during Phases 2 through 4 of the study. Participants were asked whether they had ever filled out more than one form at the same time or if they had completed forms at times other than when they should have been completed. Participants were assured that they would receive the full course credit for their participation regardless of their responses to these questions. Following this, all participants were thoroughly debriefed as to the hypotheses and potential implications of the research, thanked and dismissed.

Based upon information obtained in the debriefing sessions, individual measures completely inaccurately were not used. If three or more measures during a phase were not completed correctly, all measures for that phase were omitted from subsequent analyses. In the event that participants were unable to recall the specific days on which they inaccurately completed a measure, the following decision rules were used; if one or two measures were not completed correctly all measures were included. If three or more measures were not completed correctly, all measures were omitted.

CHAPTER 3

RESULTS

Overview

The data exist within a multi-level structure in which the lower-level units of days (level 1) are structured within the higher-level units of persons (level 2). Measurements made at the day-level considered daily variability in individuals' physical activity, self-esteem, and subjective well-being. Traits measured at the person-level include an overall motivational orientation reflecting higher levels of defensiveness (rather than growth), self-esteem, and subjective well-being. The first set of analyses examined relationships within and between day-level and person-level variables using simple correlation analyses. The next set of analyses involved a series of basic regressions. For both these sets of analyses, day-level data were collapsed within individuals and across days. Particular emphasis is placed on the correlation and regression analyses of the component measures of a defensive orientation at the person level and on those analyses considering day-level measurements provided only on the days when individuals engaged in physical activity.

In the final set of analyses, hierarchical linear modeling techniques (HLM; Bryk & Raudenbush, 1992) were employed for a detailed examination of the multilevel design of this data set. HLM allowed for the simultaneous consideration of relationships between day-level measurements within individuals while also examining the effects of variations at the person-level.

While daily measures were reported for two separate time periods, with the exception of the regression analyses, all analyses are reported for the first diary time period alone. This decision was made because the interactions that emerged between engaging in physical activity, a defensive orientation, and personality variables in the HLM analyses were difficult to interpret for the second diary phase. The results of correlation and HLM analyses, as well as descriptive statistics, for the second diary phase can be found in appendixes L – N, Tables 32 - 55.

The initial regression analyses were conducted to ensure that trait-level variable such as gender or being a member of a university sports team did not affect the investigated relationships. These analyses were conducted prior to the decision to exclude the data from the second diary period and as such were completed on the diary measures collapsed across both diary series. As no major effects emerged, even with the greater power provided by the additional data points, these analyses were not repeated for the first diary series alone. Regression analyses conducted on daily measures provided only when individuals engaged in physical activities were conducted in line with all other analyses; for the first diary series alone.

Descriptive statistics for all measures can be found in Table 1.

Zero-Order Correlations

A defensive orientation was negatively related to trait level self-esteem $r(96) = -46, p < .001$. Correlations of the component measures of a defensive orientation; contingent self-esteem, less stable self-esteem, self-worth contingent on appearance, less self-determination, more intrinsic regulatory focus and less self-determined regulatory focus, with one another and with the overall measure can be found in Appendix K, Table 31. Table 2 provides correlations between a defensive orientation and the dependent measure of subjective well-being as well as the component measures of subjective well-being. Table 3 provides correlations between a

Table 1

Means and Standard Deviations of Investigated Measures Scored to Reflect More Defensiveness

Measure	Mean	SD	Daily Measure	Mean	SD
Regulatory Style	-12.70	9.25	Engage in PA	1.31	.27
Social Comparison RF	5.85	2.80	Vary	1.48	.35
Intrinsic RF	3.10	1.24	Pressure/Tenseness	1.97	.66
Self-Esteem	39.80	6.33	Enjoyment/Interest	3.82	.77
Unstable Self-Esteem	4.82	3.05	Guilt	1.32	.47
Contingent Self-Esteem	50.41	8.94	Regulatory Style	-4.60	3.82
Appearance CSW	4.94	.97	Self-Esteem	3.78	.66
Subjective Well-Being	.00	2.38	Subjective Well-Being	.00	2.25
Life Satisfaction	24.32	5.87	Life Satisfaction	3.78	.66
Positive Affect	14.16	2.95	Positive Affect	13.27	2.64
Negative Affect	8.75	2.62	Negative Affect	5.96	1.55
Joy	13.36	3.19	Joy	13.27	2.64
Love	14.97	3.33	Fear	6.98	2.37
Fear	11.31	3.56	Sadness	5.77	2.03
Sadness	8.60	3.70	Shame/Guilt	5.73	1.74
Shame/Guilt	7.18	3.12			
Anger	7.90	3.21			

Note: SD = Standard Deviation. RF = Regulatory Focus. CSW = Conditional Self-Worth. Engage = Engage in

Physical Activity (PA); 1 = yes, 2 = no. Vary = Vary PA; 1 = yes, 2 = no.

Table 2

Correlation Matrix of a Defensive versus Growth Orientation (DVGO) and Dependent Measures

Measure	1	2	3	4	5	6	7	8	9	10
1. DVGO										
2. SWB	-28									
3. Life Satisfaction	-20	82								
4. Positive Affect	*-12*	78	50							
5. Negative Affect	36	-77	-48	-37						
6. Joy	*-17*	76	51	90	-39					
7. Love	*05*	65	39	91	-26	63				
8. Fear	47	-59	-33	-30	80	-37	*-17*			
9. Sadness	26	-75	-48	-48	84	-51	-36	62		
10. Shame-Guilt	29	-54	-43	*-12*	74	*-17*	*-06*	48	46	
11. Anger	*09*	-46	-23	-19	68	*-13*	-21	32	46	38

Note: DVGO = Defensive versus growth orientation. SWB = Subjective Well-Being. Decimals have been omitted.

rs > 19, *p* < .05, rs > 26, *p* < .01, rs > 29, *p* < .001. Relationships in italics are non-significant.

Table 3

Correlation Matrix of DVGO and Daily Measures

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.DVGO														
2.Engage	*01*													
3.Vary	*-20*	*-09*												
4.Press/Tense	*13*	*-13*	*-02*											
5.Enjoy/Interest	-46	-22	26	*-06*										
6.Guilt	21	*00*	*02*	31	*03*									
7.Less SD	58	*03*	-25	40	-70	25								
8.SE	-26	-28	*02*	*-13*	40	-33	-27							
9.SWB	-23	-38	*05*	15	44	-32	-38	78						
10.LS	-24	-31	*03*	*-17*	38	-33	-35	87	88					
11.+Affect	*-01*	-33	*05*	*07*	46	*-14*	-27	58	82	63				
12.–Affect	28	31	*-04*	32	*-18*	55	29	-50	-67	-59	-34			
13.Fear	35	31	*-02*	34	*-17*	46	31	-42	-61	-47	-29	91		
14.Sadness	*11*	28	*-08*	22	*-18*	38	21	-52	-66	-57	-43	88	69	
15.Shame/Guilt	31	23	*-05*	29	*-11*	67	26	-44	-56	-45	*-16*	87	70	69

Note: DVGO = Defensive versus Growth Orientation. Engage = Engage in Physical Activity (PA). Vary = Vary PA. Press/Tense = Pressure/Tenseness. SD = Self-Determination. LS = Life Satisfaction. Measures 3 – 7 were completed only on days when PA was engaged in. Measures 4 – 6 reflect emotion experienced while engaging in PA.   rs > 22, *p* < .05, rs > 26, *p* < .01, rs > 35, *p* < .001. Relationships in Italics are non-significant. The data from one participant who completed only Phases 3 – 5 are included in these analyses, but not included in the HLM analyses.

defensive orientation and the daily measures. Of particular interest are the relationships between

a defensive orientation and measures reported only on the days when participants engaged in

physical activity. A higher defensive orientation correlated with lower enjoyment and interest

while engaging in physical activity $r(91) = -.46, p < .0001$, but with greater guilt while engaging

in physical activity $r(91) = .21, p < .05$.

Standardized scores of contingent self-esteem, less stable self-esteem, and self-worth

contingent upon appearance were summed to create a fragility of self-esteem score. Fragility of

self esteem was significantly related to; a defensive orientation $r(96) = 88, p < .001$, less self-

determination $r(96) = .37, p < .001$, less intrinsic regulatory focus $r(96) = .32, p < .001$, and more

social comparison regulatory focus $r(96) = .42, p < .001$.

Regression Analyses

Defensive orientation and demographic characteristics. Preliminary regression analyses

were performed to determine whether significant relationships exist between a defensive

orientation and participants' demographic characteristics when predicting variance in measures

of overall subjective well-being, daily self-esteem collapsed across both 2-week diary series, and

daily subjective well-being collapsed across both 2-week diary series. A 2-step analysis was

conducted on each dependent measure, for each demographic characteristic considered.

Demographic characteristics considered included: gender, university sports team membership,

whether or not a participant was regularly physically active at the onset of the investigation, and

the length of time that participants had been regularly physically active at the onset of the

investigation. In the first step of these analyses, a defensive orientation and the considered

demographic characteristic were entered simultaneously as predictors. *F*-tests conducted on the

partial regression coefficients revealed significant main effects for a defensive orientation with:

less subjective well-being, less life satisfaction, more negative affect, less joy, more fear, more sadness, more shame-guilt, less varied daily activity, more daily pressure/tenseness experienced while active, less daily enjoyment/interest experienced while active, less daily self-determination, less daily self-esteem, less daily subjective well-being, less daily negative affect, and less daily shame-guilt with gender. When examined with university sports team membership and separately with whether or not individuals were active at the onset of the investigation, analyses revealed the aforementioned significant main effects for a defensive orientation with the exception of daily levels of joy and the addition of not engaging in daily physical activity, less daily life satisfaction, and more daily fear. Further analyses again revealed these main effects for a defensive orientation when considered with how long individuals had been regularly active at the onset of the investigation with the exception of varied activity and pressure/tenseness experienced while engaging in physical activity. Keeping in line with the other experimental analyses, daily measures from the first diary series only were considered.

Significant main effects were also found for gender (coded 1 for male, 0 for female) on subjective well-being; $\beta = 1.08786$, $t = 2.17$, $p < .03$. Positive affect; $\beta = 1.41378$, $t = 2.20$, $p < .03$. Love: $\beta = 1.65954$, $t = 2.26$, $p < .03$. Anger; $\beta = -1.42925$, $t = -2.06$, $p < .04$. Significant main effects were found for university sports team membership (coded 1 for yes, 0 for no) on life satisfaction; $\beta = -4.24661$, $t = 1.79$, $p < .02$ and daily sadness; $\beta = 1.20092$, $t = 2.03$, $p < .05$. A significant main effect was found for whether or not individuals were active at the onset of the investigation (coded 1 for yes, 0 for no) for engaging in daily activity; $\beta = .21889$, $t = 3.10$, $p < .002$ and for daily enjoyment/interest experienced while active; $\beta = -.39596$, $t = -2.11$, $p < .04$.

In the second step of each analysis, a defensive orientation, the considered demographic characteristic, and a product term created by multiplying the previous two measures were entered simultaneously as predictors. *F*-tests conducted on the partial regression coefficients of the product terms were significant for a defensive orientation x university sports team membership on daily enjoyment/interest experienced while engaging in physical activity; $\beta = -.18585$, $t = -2.11$, $p < .04$. Defensive orientation x whether or not one was regularly active at the onset of the investigation on sadness; $\beta = -.61456$, $t = -2.10$, $p < .04$.

Defensive orientation, trait-level self-esteem and daily measures on active days only. A second series of regression analyses was carried out to determine whether significant relationships exist between a defensive orientation and trait level self-esteem when predicting variance in daily measures collected only on the days when individuals engaged in physical activity. Daily measures considered were reported as experienced while individuals were engaging in physical activity and include: pressure and tenseness, enjoyment and interest, and guilt. Whether or not an individual varied their physical activity from day to day was also considered. Keeping in line with the other experimental analyses, daily measures from the first diary series only were considered.

A 2-step analysis was again conducted on each dependent measure, for each daily measure considered. In the first step of these analyses, a defensive orientation and trait level self-esteem were entered simultaneously as predictors. *F*-tests conducted on the partial regression coefficients revealed significant main effects for a defensive orientation on enjoyment and interest; $\beta = -.08456$, $t = -4.10$, $p < .0001$ and varied physical activity; $\beta = -.02285$, $t = -2.23$, $p < .05$.

In the second step of each analysis, a defensive orientation, trait level self-esteem, and a product term created by multiplying the previous two measures were entered simultaneously as predictors. F-tests conducted on the partial regression coefficients of the product terms revealed significant interactions between a defensive orientation and trait level self-esteem on enjoyment and interest; $\beta = .00624$, $t = 2.19$, $p < .05$.

Trait-level self-esteem, self-esteem component measures, and daily measures on active days only. A final series of regression analyses was carried out to determine whether significant relationships exist between trait level self-esteem and self-esteem stability, self-esteem contingency, appearance contingent self-worth, and fragile self-esteem when predicting variance in daily measures collected only on the days when individuals engaged in physical activity.

In the first step of the 2-step analyses conducted for each daily measure, trait level self-esteem and the considered self-esteem characteristic were entered simultaneously as predictors. F-tests conducted on the partial regression coefficients revealed significant main effects for trait level self-esteem on guilt; $\beta = -.02075$, $t = -2.37$, $p < .05$ when considered with self-esteem stability. Additional significant main effects were found on enjoyment and interest for fragile self-esteem; $\beta = -.07889$, $t = -2.14$, $p < .05$, contingent self-esteem; $\beta = -.02389$, $t = -2.53$, $p < .01$, and appearance contingent self-worth; $\beta = -.18336$, $t = -2.20$, $p < .05$.

In the second step of each analysis, trait level self-esteem, the considered self-esteem characteristic, and a product term created by multiplying the previous two measures were entered simultaneously as predictors. F-tests conducted on the partial regression coefficients of the product terms revealed significant interactions between trait level self-esteem and self-esteem stability on pressure and tension; $\beta = .00603$, $t = 2.01$, $p < .05$ and guilt; $\beta = .00418$, $t = 2.01$, $p < .05$.

Hierarchical Linear Modeling Analyses

Hierarchical Linear Modeling Analyses were conducted using the HLM program (version 5) (Bryk, Raudenbush, & Congdon, 2000). The analyses involved the estimation of a series of two-level models representing days nestled within persons. HLM models random error at all levels of a model simultaneously, estimating person-level trait effects are statistically independent of one another and of effects at the day level.   Models were specified so that HLM calculated day-level coefficients reflecting the average within-person slope predicting specific emotional experiences, self-esteem, and subjective well-being as a function of whether the person engaged in physical activity. Person-level coefficients were also calculated, reflecting averages of daily emotional experiences, self-esteem, and subjective well-being based upon the trait-level difference measure of a defensive (versus growth) orientation. Additional person-level coefficients were calculated reflecting the aforementioned outcome measures based upon the interaction of whether the person engaged in physical activity at the day level and a defensive orientation at the person level.

An additional model was specified so that HLM calculated day-level coefficients reflecting the average within-person slope predicting whether or not daily physical activity was engaged in from the time period in which the report was made. Person-level coefficients were calculated for this model predicting the average number of days in which physical activity engaged in as a function of the trait-level difference measure of a defensive orientation. While HLM is able to account for varying numbers of measures across participants, it is not able to deal with missing values within a measure. In accordance with the recommendations of Bryk and colleagues (2000), HLM was instructed to perform list-wise deletions to deal with missing

values. A complete series of parallel analyses were conducted with pair-wise deletions, revealing the same pattern of results with slightly stronger effect.

Forty-nine separate models were specified. Models 1 – 8 are identical to one another in all respects other than the dependent measure. Each of these models estimates the dependent measure as a function of whether or not physical activity was engaged (Level-1) and a defensive orientation (Level-2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (1); Subjective Well-Being (2); Life Satisfaction (3); Positive Affect (4); Negative Affect (5); Shame-Guilt (6); Fear (7); Sadness (8). In the section that follows, I will explain this general structure in detail. Following this, I will present the statistical outcomes for each dependent measure.

Models 1 – 8 estimate one daily measure as a function of whether or not physical activity was engaged in on that day and individual's degree of defensive orientation. All daily measures are estimated at Level-1 with the following equation:

$$\text{DAILY MEASURE}_{ij} = \beta_{0j} + \beta_1(\text{ENGAGE})_{ij} + r_{ij}$$

in which DAILY MEASURE$_{ij}$ reflects the measured construct in question on each day (i) for each of j participants; β_{0j} is the random coefficient reflecting the intercept; β_1 reflects the population slope estimating the daily measure from whether or not physical activity was engaged in; ENGAGE$_{ij}$ reflects whether or not each participant (j) engaged in physical activity on a particular day (i); and r$_{ij}$ reflects error associated with each daily measurement. The variance of r$_{ij}$ is the error variance at the day-level.

HLM provides several options for centering variables at the day-level that can be helpful in the interpretation of analyses. However, in accordance with Nezlek (2001), due to the dichotomous nature and coding scheme of the variable representing whether or not physical activity was engaged in, no centering options were used with this predictor. When data are not centered, the intercept (β_{0j}) represents the expected score on a dependent measure when the predictor is equal to zero. Whether or not physical activity was engaged in was coded 0 to represent no engagement and 1 to represent engagement. Thus, the intercept (β_{0j}) can be thought of as the expected score on a daily measure for each participant (j) when they did not engage in physical activity and the slope (β_1) can be thought of the expected change on a daily measure when physical activity is engaged in versus when physical activity was not engaged in.

An advantage of HLM over other within person designs is that separate maximum likelihood estimates of β_1 are calculated for each participant (j) and these estimates are pooled to yield an estimate of the total population slope (β_1). Treatment of effects at the day-level as random rather than fixed, with the estimation of r_{ij}, enables HLM to account for the fact that within-person slopes are likely to differ between individuals.

Effects are estimated at the person level with the following equations:

$$\beta_{0j} = \Upsilon_{00} + \Upsilon_{01}(DEFORIENT)_j + u_{0j}$$

$$\beta_{1j} = \Upsilon_{10} + \Upsilon_{11}(DEFORIENT)_j$$

The first equation estimates the contribution of a defensive orientation on the value of β_{0j}. Υ_{00} is the intercept representing the grand mean of the person level estimations (β_{0j}) from the day-level equation; Υ_{01} is the maximum likelihood estimate of the population slope estimating the daily

measure across all of the days as a function of a defensive orientation while controlling for the effect of the day-level variable; and u_{0j} represents deviations from the grand mean at the person level.

The second equation estimates the cross-level effects between the Level-1 and Level-2 predictors. Υ_{10} reflects the maximum likelihood estimate of the population slope estimating the daily measure across all days from whether or not physical activity was engaged in; Υ_{11} reflects the slope of the cross-level effect of a defensive orientation and whether or not physical activity was engaged in.

HLM again provides centering options at the person level; either grand-mean centering or no centering. Due to the continuous nature of the predictor variable representing a defensive orientation, the data were centered on the grand mean at level-2. When interpreting the analyses, Υ_{00} can be thought of as the overall mean of the daily measure when physical activity was not engaged in. Υ_{01} can be thought of as the average between-persons slope, predicting change on a daily measure from a defensive orientation score that falls one unit above the mean. Υ_{10} can be thought of as the average within-person slope predicting the change in a daily measure on the days when physical activity was engaged in, pooled across participants. Υ_{11} can be thought of as the moderating influence of a defensive orientation on the relationship between engaging in physical activity and the daily measure.

The two equations are combined such that the full model at the person-level is as follows:

$$\text{DAILY MEASURE}_{ij} = \Upsilon_{00} + \Upsilon_{01}(\text{DEFORIENT})_j + \Upsilon_{10}(\text{ENGAGE})_{ij}$$
$$+ \Upsilon_{11}(\text{DEFORIENT})_j (\text{ENGAGE})_{ij} + r_{ij} + u_{0j}$$

To determine whether relationships exist between the predictors of Physical Activity and Defensive Orientation and each of the daily measures, HLM conducted significance tests of each of the coefficients to determine whether it differed from 0. Tables 4 and 6 provide a listing of all estimated coefficients, their associated t-ratio, and significance level, organized by daily measure.

To assist in the interpretation of significant interactions, predicted values were generated for the relevant daily measures. Given that analyses were conducted using the centering option for defensive orientation, predicted values were generated using values one standard deviation above (high defensive) and below zero (low defensive or growth orientation).

Self-Esteem. Results of the HLM analyses estimating daily self-esteem as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 4. A significant relationship was found between a defensive orientation and self-esteem; $\Upsilon = -0.069907$, $t = -3.355$, $p < .001$, indicating that a more of a defensive orientation is associated with lower daily self-esteem. A significant relationship was also found between whether or not physical activity was engaged in and self-esteem; $\Upsilon = .316408$, $t = 5.373$, $p < .000$, indicating that engaging in physical activity is associated with higher daily self-esteem.

Subjective Well-Being. Results of the HLM analyses estimating daily subjective well-being as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 4. A significant relationship was found between a defensive orientation and subjective well-being; $\Upsilon = -.227188$, $t = -4.118$, $p < .000$, indicating that a more defensive orientation is associated with lower daily subjective well-being. A significant relationship was also found between whether or not physical activity was engaged in and subjective well-being; $\Upsilon = 1.009083$, $t = 6.266$, $p < .000$, indicating that engaging in

Table 4

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a

Function of Defensive Versus Growth Orientation (DVGO) and Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 1, Self-Esteem	Intercept (Υ_{00})	3.550462	42.911	.000
	DVGO (Υ_{01})	-.069907	-3.355	.001
	Engage (Υ_{10})	.316408	5.373	.000
	Engage x DVGO. (Υ_{11})	.018155	1.226	.220
Model 2, Subjective Well-Being	Intercept (Υ_{00})	-.705652	-3.219	.002
	DVGO (Υ_{01})	-.227188	-4.118	.000
	Engage (Υ_{10})	1.009083	6.266	.000
	Engage x DVGO (Υ_{11})	.100894	2.492	.013

Note: DVGO = Defensive Versus Growth Orientation. Engage = Engagement in Physical Activity.

physical activity is associated with higher daily subjective well-being. In addition, a defensive orientation was found to significantly moderate the relationship between engagement in physical activity and subjective well-being; $\Upsilon = 0.100894$, $t = 2.492$, $p < .013$. Predicted values indicate that individuals with more defensive orientation experienced a stronger relationship between daily engagement in physical activity and their daily subjective well-being than individuals with a less defensive (growth) orientation. These values are presented in Table 5.

Life Satisfaction. Results of the HLM analyses estimating daily life satisfaction as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and daily life satisfaction; $\Upsilon = -.075702$, $t = -3.796$, $p < .000$, indicating that a more defensive orientation is associated with less daily life satisfaction. A significant relationship was also found between whether or not physical activity was engaged in and life satisfaction; $\Upsilon = .306721$, $t = 5.452$, $p < .000$, indicating that engaging in physical activity is associated with higher daily life satisfaction.

Positive Affect. Results of the HLM analyses estimating daily positive affect as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and positive affect; $\Upsilon = -.038198$, $t = -1.939$, $p < .052$, indicating that a more defensive versus growth oriented motivational orientation is associated with less daily positive affect. A significant relationship was also found between whether or not physical activity was engaged in and positive affect; $\Upsilon = .311735$, $t = 9.264$, $p < .000$, indicating that engaging in physical activity is associated with more daily positive affect.

Table 5

Predicted Values For Daily Subjective Well-Being as a Function of DVGO and Engagement in

Physical Activity

	Low Defensive (Growth) Orientation	High Defensive Orientation
Engage In Physical Activity?		
YES	.80	-.20
NO	.19	-1.60

Note: DVGO = Defensive versus Growth Orientation. Mean of SWB for these HLM analyses = .00 with a standard deviation of 2.25

Table 6

Summary of HLM Analyses Modeling Components of Daily Subjective Well-Being as a Function

of DVGO and Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 3, Life Satisfaction	Intercept (Υ_{00})	3.646769	46.055	.000
	DVGO (Υ_{01})	-.075702	-3.796	.000
	Engage (Υ_{10})	.306721	5.452	.000
	Engage x DVGO (Υ_{11})	.023831	1.685	.092
Model 4, Positive Affect	Intercept (Υ_{00})	3.128265	39.937	.000
	DVGO (Υ_{01})	-.038198	-1.939	.052
	Engage (Υ_{10})	.311735	9.264	.000
	Engage x DVGO (Υ_{11})	.021413	1.438	.150
Model 5, Negative Affect	Intercept (Υ_{00})	1.676469	31.638	.000
	DVGO (Υ_{01})	.054731	4.113	.000
	Engage (Υ_{10})	-.175965	-4.182	.000
	Engage x DVGO (Υ_{11})	-.027681	-2.618	.009
Model 6, Shame-Guilt	Intercept (Υ_{00})	1.599893	30.149	.000
	DVGO (Υ_{01})	.068770	5.172	.000
	Engage (Υ_{10})	-.215761	-4.751	.000
	Engage x DVGO (Υ_{11})	-.044855	-3.930	.000
Model 7, Fear	Intercept (Υ_{00})	1.826193	25.456	.000
	DVGO (Υ_{01})	.047990	2.671	.008
	Engage (Υ_{10})	-.114048	-1.838	.066
	Engage x DVGO (Υ_{11})	-.004101	-.263	.793
Model 8, Sadness	Intercept (Υ_{00})	1.616340	25.002	.000
	DVGO (Υ_{01})	.047371	2.924	.004
	Engage (Υ_{10})	-.215486	-3.919	.000
	Engage x DVGO (Υ_{11})	-.033976	-2.458	.014

Note: DVGO = Defensive Versus Growth Orientation. Engage = Engagement in Physical Activity.

Negative Affect. Results of the HLM analyses estimating daily negative affect as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and negative affect; $\Upsilon = .054731$, $t = 4.113$, $p < .000$, indicating that a more defensive orientation is associated with higher daily negative affect. A significant relationship was also found between whether or not physical activity was engaged in and negative affect; $\Upsilon = -.175965$, $t = -4.182$, $p < .000$, indicating that engaging in physical activity is associated with lower daily negative affect. In addition, a defensive orientation was found to significantly moderate the relationship between engaging in physical activity and negative affect; $\Upsilon = -.027681$, $t = -2.618$, $p < .009$. Predicted values indicate that individuals with a more defensive orientation experienced a stronger relationship between daily engagement in physical activity and daily negative affect than individuals with a less defensive (growth) orientation. Predicted values illustrating this relationship can be found in Table 7.

Shame-Guilt. Results of the HLM analyses estimating daily shame-guilt as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and shame-guilt; $\Upsilon = .068770$, $t = 5.172$, $p < .000$, indicating that a more defensive orientation is associated with more daily shame-guilt. A significant relationship was also found between whether or not physical activity was engaged in and shame-guilt; $\Upsilon = -.215761$, $t = -4.751$, $p < .000$, indicating that engaging in physical activity is associated with less daily shame-guilt. In addition, a defensive orientation was found to significantly moderate the relationship between engaging in physical activity and shame-guilt; $\Upsilon = -.044855$, $t = -3.930$, $p < .000$. Predicted values indicate that individuals with a more defensive orientation experience a stronger

Table 7

Predicted Values For Daily Negative Affect as a Function of DVGO and Engagement in Physical Activity

	Low Defensive (Growth) Orientation	High Defensive Orientation
Engage In Physical Activity?		
YES	1.39	1.61
NO	1.46	1.89

Note: DVGO = Defensive versus Growth Orientation. Mean of negative affect for the relevant HLM analyses = 1.56 with a standard deviation of .59.

relationship between daily engagement in physical activity and daily shame-guilt than individuals with a less defensive (growth) orientation. These values are presented in Table 8.

Fear. Results of the HLM analyses estimating daily fear as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and fear; $\Upsilon =$ .047990, $t = 2.671$, $p < .008$, indicating that a more defensive orientation is associated with more daily fear. A significant relationship was also found between whether or not physical activity was engaged in and fear; $\Upsilon = -.114048$, $t = -1.838$, $p < .066$, indicating that engaging in physical activity is associated with less daily fear.

Sadness. Results of the HLM analyses estimating daily sadness as a function of whether or not physical activity was engaged in on a particular day and a defensive orientation are presented in Table 6. A significant relationship was found between a defensive orientation and sadness; $\Upsilon = .047371$, $t = 2.924$, $p < .004$, indicating that a more defensive orientation is associated with more daily fear. A significant relationship was also found between whether or not physical activity was engaged in and sadness; $\Upsilon = -.215486$, $t = -3.919$, $p < .000$, indicating that engaging in physical activity is associated with less daily sadness. In addition, a defensive orientation was found to significantly moderate the relationship between engaging in physical activity and sadness; $\Upsilon = -.033976$, $t = -2.458$, $p < .014$. Predicted values indicate that individuals with a more defensive orientation experienced a stronger relationship between daily engagement in physical activity and daily sadness than individuals with a less defensive (growth) orientation. Predicted values illustrating this relationship can be found in Table 9.

Table 8

Predicted Values For Daily Shame-Guilt as a Function of DVGO and Engagement in Physical Activity

	Low Defensive (Growth) Orientation	High Defensive Orientation
Engage In Physical Activity?		
YES	1.29	1.48
NO	1.33	1.87

Note: DVGO = Defensive vesus Growth Orientation. Mean of Shame-Guilt for the relevant HLM analyses = 1.45 with a standard deviation of .61.

Maintenance of Physical Activity. In accordance with Bryk & Raudenbusch (1992), a non-linear, Bernoulli model (Model 9) was specified to estimate the effects of a defensive orientation on the maintenance of physical activity over time. The optional specification of a non-linear model was utilized to account for the dichotomous nature (valued at 0 or 1) of the outcome variable of whether or not physical activity was engaged in on a particular day.

At level-1, whether or not physical activity was engaged in on a particular day (i) was modeled as a function of the time period during which the observation was provided, for each participant (j) using the following equation:

$$ENGAGE_{ij} = \beta_{0j} + \beta_1(SERIES)_{ij} + r_{ij}$$

$ENGAGE_{ij}$ refers to whether or not a participant (j) engaged in physical activity on a particular day (i); β_{0j} is the random coefficient representing the intercept; β_1 is the population slope estimating engagement in physical activity from the series when the measure was provided; $SERIES_{ij}$ reflects when a measure was provided, coded 0 for the second two-week diary series and 1 for the first two-week diary series; and r_{ij} is the error associated with each daily measurement. The variance of r_{ij} is the error variance at the day-level.

As in the previous analyses, the variable representing when a measure was provided was left un-centered. To review, as the data are not centered, the intercept (β_{0j}) represents the expected score on the dependent measure when the predictor is equal to zero. The intercept (β_{0j}) can be thought of as the expected value ENGAGE for each participant (j) during the second two-week diary series and the slope (β_1) can be thought of the expected change on ENGAGE when measures are provided during the two-week diary series.

Table 9

Predicted Values For Daily Sadness as a Function of DVGO and Engagement in Physical Activity

	Low Defensive (Growth) Orientation	High Defensive Orientation
Engage In Physical Activity?		
YES	1.35	1.45
NO	1.43	1.80

Note: DVGO = Defensive versus Growth Orientation. Mean of Sadness for the relevant HLM analyses = 1.47 with a standard deviation of .72.

As in the previous models, HLM calculated separate maximum likelihood estimates of β_1 for each participant and pooled these estimates to provide and overall estimate of the population slope β_1. Effects at the person level were estimated to consider the independent and joint effects of a defensive orientation (DEFORIENT) and whether or not the participant was regularly physically active at the onset of the investigation (ACTIVE) using the following equations:

$$\beta_{0j} = \Upsilon_{00} + \Upsilon_{01}(\text{DEFORIENT})_j + \Upsilon_{02}(\text{ACTIVE})_j + u_{0j}$$

$$\beta_{1j} = \Upsilon_{10} + \Upsilon_{11}(\text{DEFORIENT})_j + \Upsilon_{12}(\text{ACTIVE})_j$$

In keeping with previous analyses, a defensive orientation was centered on the grand mean. Whether or not a participant was active at the onset of the investigation is a dichotomous variable, coded 0 for not active and 1 for active, and was not centered.

The first equation estimates the contributions of a defensive orientation and activity level at the onset of the investigation on the value of β_{0j}. Υ_{00} is the intercept representing probability of engaging in physical activity for a participant a zero value for the level-1 predictor (SERIES); Υ_{01} is the maximum likelihood estimate of the population slope estimating engagement in physical activity across all days (i), based upon a defensive orientation while controlling for the effect of the series when the data was provided; Υ_{02} reflects the maximum likelihood estimate of the population slope estimating engagement in physical activity across all days (i), based upon whether or not a participant was regularly active at the onset of the investigation while controlling for the effect of the series when the data was provided; and u_{0j} represents deviations from the grand mean at the person level.

The second equation estimates the cross-level effects between the level-1 and level-2 predictors (SERIES, DEFORIENT, and ACTIVE). Υ_{10} is the maximum likelihood estimate of the population slope estimating engagement in physical activity across all days based upon the series during which observations were provided; Υ_{11} is the maximum likelihood estimate of the slope of the cross-level effect of a defensive orientation and the series during which the observation was provided; Υ_{12} is the maximum likelihood estimate of the slope of the cross-level effect of a whether or not participants were active at the onset of the investigation and the series during which the observation was provided.

Analyses of the Bernoulli model are comparable to those previously discussed except in the case of the intercept; Υ_{00} is literally the expected log-odds of engaging in physical activity during the second two-week diary series. Υ_{01} can be thought of as the average between-persons slope, predicting the change in daily physical activity from a defensive orientation score falling one unit above the mean. Υ_{02} can be thought of as the average between-persons slope, predicting the change in daily physical activity from the difference between an individual who was regularly active at the onset of the investigation versus an individual who was not regularly physically active at the onset of the investigation. Υ_{10} can be thought of as the average within-person slope predicting daily engagement in physical activity during the first versus the second two-week diary series when the observation was provided, pooled across participants. Υ_{11} and Υ_{12} respectively, can be viewed as the moderating influence of a defensive orientation and whether or not a participant was active at the onset of the investigation on the relationship between the series when the observation was provided and whether or not physical activity was engaged in.

The two equations are combined such that the full model at the person-level is as follows:

$$\text{ENGAGE}_{ij} = \Upsilon_{00} + \Upsilon_{01}(\text{DEFORIENT})_j + \Upsilon_{02}(\text{ACTIVE})_j +$$

$$\Upsilon_{10}(\text{SERIES})_{ij} + \Upsilon_{11}(\text{DEFORIENT})_j(\text{SERIES})_{ij} + \Upsilon_{12}(\text{ACTIVE})_j(\text{SERIES})_{ij} + r_{ij} + u_{0j}$$

HLM conducted significance tests of each of the coefficients to determine whether the slopes or intercept are different from 0, demonstrating a relationship between whether or not physical activity was engaged in and the predictors of a defensive orientation, whether an individual was active at the onset of the investigation, and the phase of the investigation. Table 10 provides a listing of all estimated coefficients, their associated t-ratio, and significance level.

A significant relationship was found between whether or not physical a participant was active at the onset of the investigation and daily engagement in physical activity; $\Upsilon = 1.561854$, $t = 3.364$, $p < .001$, indicating that those who were regularly physical active at the onset of the investigation were more likely to engage in physical activity than those who were not regularly physically active at the onset of the investigation. A significant relationship was also found between the series when an observation was provided and daily engagement in physical activity; $\Upsilon = .845410$, $t = 2.295$, $p < .022$, indicating that participants were more likely to engage in physical activity during the first two-week diary series than during the second two-week diary series.

Trait-Level Self-Esteem. Models 10 – 17 are identical to one another in all respects other than the dependent measure. Each of these models estimates the dependent measure as a

Table 10

Summary of HLM Analyses Modeling Daily Engagement in Physical Activity as a Function of DVGO, Whether or Not a Participant Was Active at the Onset of the Investigation and Time Period When the Observation Was Provided (Model 9)

Predictor	Coefficient	t-ratio	p-value
Intercept (Υ_{00})	-.828957	-1.887	.059
DVGO (Υ_{01})	.004127	.113	.911
Active (Υ_{02})	1.561854	3.364	.001
Series (Υ_{10})	.845410	2.295	.022
Series x DVGO (Υ_{11})	-.025443	-.781	.435
Series x Active (Υ_{21})	-.490869	-1.252	.211

Note: DVGO = Defensive Versus Growth Orientation. Active = Regularly Active Versus Not Regularly Active at the Onset of the Investigation. Series = 2-Week Diary Series When Observation Was Provided (First 2-Weeks versus Second 2-Weeks).

function of whether or not physical activity was engaged in (Level 1) and trait level self-esteem, a defensive orientation, and the trait-level self-esteem x defensive orientation (Level-2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (10); Subjective Well-Being (11); Life Satisfaction (12); Positive Affect (13); Negative Affect (14); Shame-Guilt (15); Fear (16); Sadness (17). In the section that follows, this general structure is explained in detail. The statistical outcomes for each dependent measure will then be discussed in turn. Models 10 – 17 estimate one daily measure as a function of whether or not physical activity was engaged in on that day, individual's trait-level self-esteem and individual's degree of defensive orientation. As in the analyses previously discussed, all daily measures are estimated at Level-1 with the following equation:

$$\text{DAILY MEASURE}_{ij} = \beta_{0j} + \beta_1(\text{ENGAGE})_{ij} + r_{ij}$$

in which DAILY MEASURE$_{ij}$ reflects the measured construct in question on each day (i) for each of j participants; β_{0j} is the random coefficient representing the intercept; β_1 reflects the population slope estimating the daily measure from whether or not physical activity was engaged in; ENGAGE$_{ij}$ reflects whether or not each participant (j) engaged in physical activity on a particular day (i); and r$_{ij}$ reflects error associated with each daily measurement. The variance of r$_{ij}$ is the error variance at the day-level.

Again, in accordance with Nezlek (2001), due to the dichotomous nature and coding scheme of the variable representing whether or not physical activity was engaged in, no centering options were used with this predictor. To review, when data are not centered the intercept (β_{0j}) represents the expected score on a dependent measure when the predictor is equal

to zero. Whether or not physical activity was engaged in was coded 0 to represent no engagement and 1 to represent engagement. Thus, the intercept (β_{0j}) can be thought of as the expected score on a daily measure for each participant (j) when they did not engage in physical activity and the slope (β_1) can be thought of the expected change on a daily measure when physical activity is engaged in versus when physical activity was not engaged in.

Effects are estimated at the person level with the following equations:

$$\beta_{0j} = \Upsilon_{00} + \Upsilon_{01}(SE)_j + \Upsilon_{02}(DEFORIENT)_j + \Upsilon_{03}(SE \times DEFORIENT)_j \, u_{0j}$$

$$\beta_{1j} = \Upsilon_{10} + \Upsilon_{11}(SE)_j + \Upsilon_{02}(DEFORIENT)_j + \Upsilon_{03}(SE \times DEFORIENT)_j$$

The first equation estimates the contribution of trait-level self-esteem, a defensive orientation, and the trait-level self-esteem x defensive orientation interaction on the value of β_{0j}. Υ_{00} is the intercept representing the grand mean of the person level estimations (β_{0j}) from the day-level equation; Υ_{01} is the maximum likelihood estimate of the population slope estimating the daily measure across all of the days as a function of trait-level self-esteem while controlling for the effect of the day-level variable; Υ_{02} is the maximum likelihood estimate of the population slope estimating the daily measure across all of the days as a function of degree of defensive orientation while controlling for the effect of the day-level variable; Υ_{03} is the maximum likelihood estimate of the population slope estimating the daily measure across all of the days as a function of trait-level self-esteem x defensive orientation interaction while controlling for the effect of the day-level variable; and u_{0j} represents deviations from the grand mean at the person level.

The second equation estimates the cross-level effects between the Level-1 and Level-2 predictors. Υ_{10} reflects the maximum likelihood estimate of the population slope estimating the daily measure across all days from whether or not physical activity was engaged in; Υ_{11} reflects the slope of the cross-level effect of trait-level self-esteem and whether or not physical activity was engaged in; Υ_{12} reflects the slope of the cross-level effect of a defensive orientation and whether or not physical activity was engaged in; Υ_{13} reflects the slope of the cross-level effect of the trait-level self-esteem x defensive orientation interaction and whether or not physical activity was engaged in.

HLM again provides centering options at the person level; either grand-mean centering or no centering. Due to the continuous nature of all level-2 predictors, the data for trait-level self-esteem, defensive orientation, and the trait-level self-esteem x defensive orientation interaction were centered on the grand mean at level-2.

The two equations are combined such that the full model at the person-level is as follows:

$$\text{DAILY MEASURE}_{ij} = \Upsilon_{00} + \Upsilon_{01}(\text{SE})_j + \Upsilon_{02}(\text{DEFORIENT})_j + \Upsilon_{03}(\text{SE x DEFORIENT})_j +$$

$$\Upsilon_{10}(\text{ENGAGE})_{ij} + \Upsilon_{11}(\text{SE})_j(\text{ENGAGE})_{ij} + \Upsilon_{02}(\text{DEFORIENT})_j(\text{ENGAGE})_{ij} +$$

$$\Upsilon_{03}(\text{SE x DEFORIENT})_j(\text{ENGAGE})_{ij} + r_{ij} + u_{0j}$$

To determine whether relationships exist between the predictors of Physical Activity, Trait-Level Self-Esteem, Defensive Orientation, and the Trait-Level Self-Esteem x Defensive Orientation Interaction and each of the daily measures, HLM conducted significance tests of each coefficient to determine whether it differed from 0. Tables 11 – 13 list all estimated coefficients, their associated t-ratio, and significance level, organized by daily measure.

Table 11

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, DVGO, and the Self-Esteem x DVGO Interaction as Well as

Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
	Intercept (Υ_{00})	3.559835	45.632	.000
	Self-Esteem (Υ_{01})	.060278	4.55	.000
Model 10,	DVGO (Υ_{02})	.091027	.727	.467
Self-	SE x DVGO (Υ_{03})	-.002878	-.938	.348
Esteem	Engage (Υ_{10})	.305756	5.208	.000
	Engage x Self-Esteem (Υ_{11})	-.022401	-2.385	.017
	Engage x DVGO (Υ_{12})	-.055133	-.608	.543
	Engage x SE x DVGO (Υ_{13})	.001400	.627	.530
	Intercept (Υ_{00})	-.688332	-3.241	.002
	Self-Esteem (Υ_{01})	.131080	3.641	.000
Model 11,	DVGO (Υ_{02})	.057448	.169	.866
Subjective	SE x DVGO (Υ_{03})	-.004633	-.555	.578
Well-Being	Engage (Υ_{10})	.986948	6.134	.000
	Engage x Self-Esteem (Υ_{11})	-.053624	-2.083	.037
	Engage x DVGO (Υ_{12})	-.170433	-.685	.493
	Engage x SE x DVGO (Υ_{13})	.005719	.935	.350

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation

Table 12

Summary of HLM Analyses Modeling Components of Subjective Well-Being as a Function of Trait-Level Self-Esteem, DVGO, and the Self-Esteem x DVGO Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 12, Positive Affect	Intercept (Υ_{00})	3.128450	39.815	.000
	Self-Esteem (Υ_{01})	.022047	1.655	.098
	DVGO (Υ_{02})	.118573	.941	.347
	SE x DVGO (Υ_{03})	-.003492	-1.131	.259
	Engage (Υ_{10})	.307942	5.194	.000
	Engage x Self-Esteem (Υ_{11})	-.010416	-1.098	.273
	Engage x DVGO (Υ_{12})	-.148783	-1.624	.104
	Engage x SE x DVGO (Υ_{13})	.004047	1.795	.072
Model 13, Negative Affect	Intercept (Υ_{00})	1.668271	31.834	.000
	Self-Esteem (Υ_{01})	-.026374	-2.984	.003
	DVGO (Υ_{02})	.051743	.618	.536
	SE x DVGO (Υ_{03})	-.000427	-.208	.835
	Engage (Υ_{10})	-.168009	-3.992	.000
	Engage x Self-Esteem (Υ_{11})	.0155597	2.311	.021
	Engage x DVGO (Υ_{12})	-.030290	-.465	.642
	Engage x SE x DVGO (Υ_{13})	.000365	.227	.820
Model 14, Life Satisfaction	Intercept (Υ_{00})	3.651172	48.637	.000
	Self-Esteem (Υ_{01})	.051917	4.076	.000
	DVGO (Υ_{02})	.013700	.114	.910
	SE x DVGO (Υ_{03})	-.001266	-.429	.668
	Engage (Υ_{10})	.300567	5.344	.000
	Engage x Self-Esteem (Υ_{11})	-.012605	-1.401	.161
	Engage x DVGO (Υ_{12})	-.050625	-.583	.560
	Engage x SE x DVGO (Υ_{13})	.001599	.748	.454

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation.

Table 13

Summary of HLM Analyses Modeling Negative Affect Measures as a Function of Trait-Level

Self-Esteem, DVGO, the Self-Esteem x DVGO Interaction as Well as Daily Engagement in

Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
	Intercept (Υ_{00})	1.808872	25.419	.000
	Self-Esteem (Υ_{01})	-.035425	-2.974	.003
Model 15,	DVGO (Υ_{02})	.163333	1.445	.148
Fear	SE x DVGO (Υ_{03})	-.003551	-1.281	.200
	Engage (Υ_{10})	-.098705	-1.593	.111
	Engage x Self-Esteem (Υ_{11})	.025103	2.516	.012
	Engage x DVGO (Υ_{12})	-.109434	-1.136	.257
	Engage x SE x DVGO (Υ_{13})	.003109	1.311	.190
	Intercept (Υ_{00})	1.607584	25.177	.000
	Self-Esteem (Υ_{01})	-.034813	-3.253	.002
	DVGO (Υ_{02})	-.025112	-.247	.805
Model 16,	SE x DVGO (Υ_{03})	.001140	.458	.647
Sadness	Engage (Υ_{10})	-.205204	-3.738	.000
	Engage x Self-Esteem (Υ_{11})	.022541	2.552	.011
	Engage x DVGO (Υ_{12})	.050614	.593	.553
	Engage x SE x DVGO (Υ_{13})	-.001675	-.798	.425
	Intercept (Υ_{00})	1.600106	30.050	.000
	Self-Esteem (Υ_{01})	-.009626	-1.078	.281
Model 17,	DVGO (Υ_{02})	.013806	.163	.871
Shame -	SE x DVGO (Υ_{03})	.001186	.571	.568
Guilt	Engage (Υ_{10})	-.215641	-4.724	.000
	Engage x Self-Esteem (Υ_{11})	.000024	.003	.997
	Engage x DVGO (Υ_{12})	-.024345	.343	.731
	Engage x SE x DVGO (Υ_{13})	-.000498	-.286	.775

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation.

Self-Esteem Component Measures. Models 18 – 49 each estimate one daily measure as a function of whether or not physical activity was engaged in on that day and trait-level self-esteem (SE), a self-esteem component measure; self-esteem stability (STAB), fragile self-esteem (FRAG), contingent self-esteem (CSE), or appearance contingent self-worth (ACSW), and the trait-level self-esteem x self-esteem component measure interaction (SE x STAB, SE x FRAG, SE x CSE, or SE x ACSW). Models 18 – 25 estimate each daily measure as a function of whether or not physical activity was engaged in (Level 1) and self-esteem stability, trait level self-esteem, and self-esteem stability x trait-level self-esteem (Level 2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (18); Subjective Well-Being (19); Life Satisfaction (20); Positive Affect (21); Negative Affect (22); Shame-Guilt (23); Fear (24); Sadness (25).

Models 26-33 estimate each daily measure as a function of whether or not physical activity was engaged in (Level 1) and fragile self-esteem, trait level self-esteem, and fragile self-esteem x trait-level self-esteem (Level 2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (26); Subjective Well-Being (27); Life Satisfaction (28); Positive Affect (29); Negative Affect (30); Shame-Guilt (31); Fear (32); Sadness (33).

Models 34-41 estimate each daily measure as a function of whether or not physical activity was engaged in (Level 1) and contingent self-esteem, trait level self-esteem, and contingent self-esteem x trait-level self-esteem (Level 2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (34); Subjective Well-Being (35); Life Satisfaction (36); Positive Affect (37); Negative Affect (38); Shame-Guilt (39); Fear (40); Sadness (41).

Models 42-49 estimate each daily measure as a function of whether or not physical activity was engaged in (Level 1) and appearance contingent self-worth, trait level self-esteem,

and appearance contingent self-worth x trait-level self-esteem (Level 2). Dependent measures, assessed at the daily level, are as follow: Self-Esteem (42); Subjective Well-Being (43); Life Satisfaction (44); Positive Affect (45); Negative Affect (46); Shame-Guilt (47); Fear (48); Sadness (49).

The following section presents the general structure of these models. Models are presented in terms of self-esteem stability (STAB). Fragile self-esteem, contingent self-esteem, and appearance contingent self-worth can be substituted in place of self-esteem stability in each of the equations. All models are structured as previously described (see pages 65 – 69).

All daily measures are estimated at level-1 with the following equation:

$$\text{DAILY MEASURE}_{ij} = \beta_{0j} + \beta_1(\text{ENGAGE})_{ij} + r_{ij}$$

Effects are estimated at the person level with the following equations:

$$\beta_{0j} = \Upsilon_{00} + \Upsilon_{01}(\text{SE})_j + \Upsilon_{02}(\text{STAB})_j + \Upsilon_{03}(\text{SE X STAB})_j + u_{0j}$$

$$\beta_{1j} = \Upsilon_{10} + \Upsilon_{11}(\text{SE})_j + \Upsilon_{12}(\text{STAB})_j + \Upsilon_{13}(\text{SE X STAB})_j$$

The two equations are combined such that the full model at the person-level is as follows:

$$\text{DAILY MEASURE}_{ij} = \Upsilon_{00} + \Upsilon_{01}(\text{SE})_j + \Upsilon_{02}(\text{STAB})_j \Upsilon_{03}(\text{SE X STAB})_j + \Upsilon_{10}(\text{ENGAGE})_{ij} +$$

$$\Upsilon_{11}(\text{SE})_j(\text{ENGAGE})_{ij} + \Upsilon_{21}(\text{STAB})_j(\text{ENGAGE})_{ij} + \Upsilon_{31}(\text{SE X STAB})_j(\text{ENGAGE})_{ij}$$

$$+ r_{ij} + u_{0j}$$

To determine whether relationships exist between the predictors of Physical Activity, each Self-Esteem Component Measure, Trait-Level Self-Esteem x Self-Esteem Component Measure Interaction and each of the daily measures, HLM conducted significance tests of each coefficient to determine whether it differed from 0. All estimated coefficients, their associated t-ratio, and significance level, organized by daily measure are presented for the self-esteem stability analyses in tables 14, 15, and 17; for the fragile self-esteem analyses in tables 18 – 20, for the contingent self-esteem analyses in tables 21 – 23, and for the appearance contingent self-worth analyses in tables 25, 28, and 30.

To assist in the interpretation of significant interactions, predicted values were generated for the relevant daily measures. Predictions were made for each measure based upon values falling one standard deviation above and below the mean for trait level self-esteem and each of the self-esteem component measures. Table 16 presents predicted values for daily reports of life satisfaction as a function of trait-level self-esteem, self-esteem stability, and daily physical activity. Table 24 presents predicted values for daily reports of sadness as a function of trait-level self-esteem, contingent self-esteem, and daily physical activity. Tables 26, 27, and 29 present predicted values for daily reported sadness, subjective well-being, and positive affect, respectively, as a function of trait-level self-esteem, appearance contingent self-worth, and daily physical activity.

CHAPTER 4

DISCUSSION

The present findings provide initial support for the view that self-esteem and self-regulatory

processes relate to one another and that together they comprise relatively broad motivational

orientations. These motivational orientations differ in the extent to which they reflect defensive

or growth oriented processes. Specifically, the more unstable and contingent individuals' self-

esteem, the more likely they were to endorse non-self-determined regulatory styles. Further, the

more unstable and contingent individuals' self-esteem and the less self-determined their

regulatory styles, the more likely they were to reference social comparisons rather than pleasure

and fun as a motivating factor for engaging in regular physical activity.

Among the findings that emerged, I found that individuals' motivational orientations

were related to their daily affective experiences both generally and in relation to their daily

engagement in physical activity. Specifically, the greater individuals' defensive orientations, the

more they reported experiencing pressure, tenseness, anxiety, and guilt on a day-to-day basis and

the less they reported experiencing pleasure and enjoyment while engaging in physical activity.

In addition, defensive-orientated individuals reported lower trait-level self-esteem and subjective

well-being than did individuals who were more growth-oriented. Furthermore, as compared with

growth-oriented individuals, the subjective well-being of defensive-oriented individuals was

more closely tied to their daily engagement in physical activity. Other findings indicated that

defensive-oriented individuals prefer consistency rather than variety in their daily physical

activities, but that individual differences in motivational orientation did not clearly relate to

individuals' persistence in obtaining physical activity over time.

Table 14

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Self-Esteem Stability, and the Self-Esteem x Self-Esteem

Stability Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 18, Self-Esteem	Intercept (Υ_{00})	3.565320	46.870	.000
	Self-Esteem (Υ_{01})	.100982	5.109	.000
	Stability (Υ_{02})	.243824	2.072	.038
	SE x Stability (Υ_{03})	-.005608	-1.869	.061
	Engage (Υ_{10})	.301444	5.146	.000
	Engage x Self-Esteem (Υ_{11})	-.011294	-.761	.447
	Engage x Stability (Υ_{12})	.077885	.918	.359
	Engage x SE x Stability (Υ_{13})	-.001545	-.706	.480
Model 19, Subjective Well-Being	Intercept (Υ_{00})	-.665353	-3.137	.002
	Self-Esteem (Υ_{01})	.216549	3.922	.000
	Stability (Υ_{02})	.397312	1.208	.227
	SE x Stability (Υ_{03})	-.010734	-1.281	.200
	Engage (Υ_{10})	.972757	6.054	.000
	Engage x Self-Esteem (Υ_{11})	-.018539	-.456	.648
	Engage x Stability (Υ_{12})	.322837	1.388	.165
	Engage x SE x Stability (Υ_{13})	-.005869	-.978	.328

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem.

Table 15

Summary of HLM Analyses Modeling Components of Subjective Well-Being as a Function of

Trait-Level Self-Esteem, Self-Esteem Stability, and the Self-Esteem x Self-Esteem Stability

Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 20, Positive Affect	Intercept (Υ_{00})	3.136680	40.009	.000
	Self-Esteem (Υ_{01})	.037439	1.835	.066
	Stability (Υ_{02})	.070902	.583	.559
	SE x Stability (Υ_{03})	-.001965	-.634	.525
	Engage (Υ_{10})	.303666	5.106	.000
	Engage x Self-Esteem (Υ_{11})	-.009874	-.655	.512
	Engage x Stability (Υ_{12})	.021715	.252	.801
	Engage x SE x Stability (Υ_{13})	.000064	.029	.977
Model 21, Negative Affect	Intercept (Υ_{00})	1.667973	31.754	.000
	Self-Esteem (Υ_{01})	-.051566	-3.798	.000
	Stability (Υ_{02})	-.121742	-1.508	.132
	SE x Stability (Υ_{03})	.003178	1.541	.123
	Engage (Υ_{10})	-.168552	-4.001	.000
	Engage x Self-Esteem (Υ_{11})	.014285	1.338	.181
	Engage x Stability (Υ_{12})	-.032129	-.525	.599
	Engage x SE x Stability (Υ_{13})	.000460	.292	.770
Model 22, Life Satisfaction	Intercept (Υ_{00})	3.662148	49.008	.000
	Self-Esteem (Υ_{01})	.072624	3.727	.000
	Stability (Υ_{02})	.090392	.779	.436
	SE x Stability (Υ_{03})	-.002535	-.857	.392
	Engage (Υ_{10})	.292150	5.228	.000
	Engage x Self-Esteem (Υ_{11})	.014922	1.055	.292
	Engage x Stability (Υ_{12})	.207082	2.561	.011
	Engage x SE x Stability (Υ_{13})	-.004420	-2.119	.034

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem

Table 16

Predicted Values for Life Satisfaction as a Function of Trait-Level Self-Esteem, Self-Esteem Stability, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Unstable Self-Esteem	Stable Self-Esteem	Unstable Self-Esteem	Stable Self-Esteem
Engage In Physical Activity?				
YES	4.43	2.37	5.28	3.75
NO	3.52	2.89	4.35	3.90

Note: Mean of Life Satisfaction for the relevant HLM analyses = 3.86 with a standard deviation of .87.

Table 17

Summary of HLM Analyses Modeling Negative Affect Measures as a Function of Trait-Level

Self-Esteem, Self-Esteem Stability, the Self-Esteem x Self-Esteem Stability Interaction as Well as

Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 23, Fear	Intercept (Υ_{00})	1.808560	25.140	.000
	Self-Esteem (Υ_{01})	-.045159	-2.455	.014
	Stability (Υ_{02})	-.035340	-.323	.746
	SE x Stability (Υ_{03})	.000618	.221	.826
	Engage (Υ_{10})	-.095641	-1.543	.123
	Engage x Self-Esteem (Υ_{11})	-.002079	-.132	.895
	Engage x Stability (Υ_{12})	-.165026	-1.825	.068
	Engage x SE x Stability (Υ_{13})	.004242	1.820	.068
Model 24, Sadness	Intercept (Υ_{00})	1.603943	25.256	.000
	Self-Esteem (Υ_{01})	-.056835	-3.500	.001
	Stability (Υ_{02})	-.125324	-1.300	.194
	SE x Stability (Υ_{03})	.003364	1.361	1.74
	Engage (Υ_{10})	-.204181	-3.722	.000
	Engage x Self-Esteem (Υ_{11})	.024649	1.770	.076
	Engage x Stability (Υ_{12})	-.006324	-.079	.937
	Engage x SE x Stability (Υ_{13})	-.000531	-.257	.797
Model 25, Shame - Guilt	Intercept (Υ_{00})	1.604142	29.916	.000
	Self-Esteem (Υ_{01})	-.054452	-3.969	.000
	Stability (Υ_{02})	-.211812	-2.599	.010
	SE x Stability (Υ_{03})	.005651	2.706	.007
	Engage (Υ_{10})	-.222464	-4.828	.000
	Engage x Self-Esteem (Υ_{11})	.022933	1.961	.049
	Engage x Stability (Υ_{12})	.086805	1.292	.197
	Engage x SE x Stability (Υ_{13})	-.002516	-1.453	.146

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem.

Table 18

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a Function of Trait-Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
	Intercept (Υ_{00})	3.558354	46.235	.000
	Self-Esteem (Υ_{01})	.062951	4.795	.000
Model 26,	Fragile SE (Υ_{02})	.351366	2.015	.044
Self-	SE x Fragile (Υ_{03})	-.009446	-2.163	.030
Esteem	Engage (Υ_{10})	.308361	5.259	.000
	Engage x Self-Esteem (Υ_{11})	-.021951	-2.298	.022
	Engage x Fragile SE (Υ_{12})	-.058323	-.472	.636
	Engage x SE x Fragile (Υ_{13})	.001596	.507	.611
	Intercept (Υ_{00})	-.694978	-3.281	.001
	Self-Esteem (Υ_{01})	.141464	3.915	.000
Model 27,	Fragile SE (Υ_{02})	.754185	1.571	.116
Subjective	SE x Fragile (Υ_{03})	-.022503	-1.872	.061
Well-Being	Engage (Υ_{10})	.998792	6.210	.000
	Engage x Self-Esteem (Υ_{11})	-.051316	-1.959	.050
	Engage x Fragile SE (Υ_{12})	-.175266	-.513	.608
	Engage x SE x Fragile (Υ_{13})	.007011	.813	.416

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 19

Summary of HLM Analyses Modeling Components of Subjective-Well Being as a Function of Trait-Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	t-ratio	p-value
	Intercept (Υ_{00})	3.127387	39.911	.000
	Self-Esteem (Υ_{01})	.025838	1.933	.053
Model 28,	Fragile SE (Υ_{02})	.237766	1.339	.181
Positive	SE x Fragile (Υ_{03})	-.006324	-1.422	.155
Affect	Engage (Υ_{10})	.310665	5.238	.000
	Engage x Self-Esteem (Υ_{11})	-.010703	-1.108	.268
	Engage x Fragile SE (Υ_{12})	-.190084	-1.508	.131
	Engage x SE x Fragile (Υ_{13})	.005334	1.678	.093
	Intercept (Υ_{00})	1.672036	31.832	.000
	Self-Esteem (Υ_{01})	-.029945	-3.356	.001
Model 29,	Fragile SE (Υ_{02})	-.163934	-1.386	.166
Negative	SE x Fragile (Υ_{03})	.004923	1.660	.097
Affect	Engage (Υ_{10})	-.172241	-4.092	.000
	Engage x Self-Esteem (Υ_{11})	.015964	2.325	.020
	Engage x Fragile (Υ_{12})	.026286	.293	.769
	Engage x SE x Fragile (Υ_{13})	-.001172	-.518	.604
	Intercept (Υ_{00})	3.652131	49.007	.000
	Self-Esteem (Υ_{01})	.051765	4.070	.000
Model 30,	Fragile (Υ_{02})	.172378	1.020	.308
Life	SE x Fragile (Υ_{03})	-.005825	-1.376	.169
Satisfaction	Engage (Υ_{10})	.301976	5.378	.000
	Engage x Self-Esteem (Υ_{11})	-.009833	-1.085	.283
	Engage x Fragile (Υ_{12})	.070564	.592	.554
	Engage x SE x Fragile (Υ_{13})	-.000869	-.289	.773

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 20

Summary of HLM Analyses Modeling Negative Affect Measures as a Function of a Trait Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 31, Fear	Intercept (Υ_{00})	1.809158	25.106	.000
	Self-Esteem (Υ_{01})	-.038477	-3.164	.002
	Fragile (Υ_{02})	.006013	.037	.970
	SE x Stability (Υ_{03})	.000164	.041	.968
	Engage (Υ_{10})	-.098154	-1.581	.114
	Engage x Self-Esteem (Υ_{11})	.022768	2.242	.025
	Engage x Fragile (Υ_{12})	-.137705	-1.036	.300
	Engage x SE x Fragile (Υ_{13})	.003775	1.126	.260
Model 32, Sadness	Intercept (Υ_{00})	1.612544	25.468	.000
	Self-Esteem (Υ_{01})	-.038205	-3.577	.001
	Fragile (Υ_{02})	-.273591	-1.939	.052
	SE x Fragile (Υ_{03})	.007160	2.020	.043
	Engage (Υ_{10})	-.212056	-3.868	.000
	Engage x Self-Esteem (Υ_{11})	.024524	2.7635	.007
	Engage x Fragile (Υ_{12})	.158716	1.352	.176
	Engage x SE x Fragile (Υ_{13})	-.004330	-1.463	.144
Model 33, Shame - Guilt	Intercept (Υ_{00})	1.606713	30.093	.000
	Self-Esteem (Υ_{01})	-.031988	-1.552	.121
	Fragile (Υ_{02})	-.234521	-1.969	.049
	SE x Fragile (Υ_{03})	.007642	2.554	.011
	Engage (Υ_{10})	-.223338	-4.879	.000
	Engage x Self-Esteem (Υ_{11})	.001702	.227	.820
	Engage x Fragile (Υ_{12})	.075842	.774	.439
	Engage x SE x Fragile (Υ_{13})	-.003319	-1.343	.179

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 21

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent Self-Esteem Interaction with Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 34, Self-Esteem	Intercept (Υ_{00})	3.559549	46.195	.000
	Self-Esteem (Υ_{01})	.175336	2.744	.007
	CSE (Υ_{02})	.079362	1.587	.112
	SE x CSE (Υ_{03})	-.002262	-1.813	.069
	Engage (Υ_{10})	.308839	5.271	.000
	Engage x Self-Esteem (Υ_{11})	-.050952	-1.119	.264
	Engage x CSE (Υ_{12})	-.023042	-.651	.515
	Engage x SE x CSE (Υ_{13})	.000541	.607	.544
Model 35, Subjective Well-Being	Intercept (Υ_{00})	-.700393	-3.292	.001
	Self-Esteem (Υ_{01})	.391370	2.217	.027
	CSE (Υ_{02})	.159683	1.156	.248
	SE x CSE (Υ_{03})	-.004846	-1.406	.160
	Engage (Υ_{10})	1.006280	6.252	.000
	Engage x Self-Esteem (Υ_{11})	-.190172	-1.521	.128
	Engage x CSE (Υ_{12})	-.086612	-.891	.373
	Engage x SE x CSE (Υ_{13})	.002599	1.062	.289

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 22

Summary of HLM Analyses Modeling Components of Subjective Well-Being as a Function of

Tr2ait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent Self-Esteem

Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 36, Positive Affect	Intercept (Υ_{00})	3.126824	39.919	.000
	Self-Esteem (Υ_{01})	.124581	1.917	.055
	CSE (Υ_{02})	.076193	1.498	.134
	SE x CSE (Υ_{03})	-.001904	-1.500	.133
	Engage (Υ_{10})	.312281	5.268	.000
	Engage x Self-Esteem (Υ_{11})	-.094618	-2.054	.040
	Engage x CSE (Υ_{12})	-.062762	-1.753	.079
	Engage x SE x CSE (Υ_{13})	.001611	1.787	.073
Model 37, Negative Affect	Intercept (Υ_{00})	1.671979	31.607	.000
	Self-Esteem (Υ_{01})	-.060243	-1.379	.168
	CSE (Υ_{02})	-.014870	-.435	.663
	SE x CSE (Υ_{03})	.000586	.686	.492
	Engage (Υ_{10})	-.172243	-4.090	.000
	Engage x Self-Esteem (Υ_{11})	.024943	.760	.447
	Engage x CSE (Υ_{12})	.001646	.065	.949
	Engage x SE x CSE (Υ_{13})	-.000164	-.255	.799
Model 38, Life Satisfaction	Intercept (Υ_{00})	3.648102	48.961	.000
	Self-Esteem (Υ_{01})	.125132	2.024	.043
	CSE (Υ_{02})	.040956	.846	.398
	SE x CSE (Υ_{03})	-.001438	-1.191	.234
	Engage (Υ_{10})	.306562	5.454	.000
	Engage x Self-Esteem (Υ_{11})	-.034353	-.787	.431
	Engage x CSE (Υ_{12})	-.011304	-.333	.739
	Engage x SE x CSE (Υ_{13})	.000427	.500	.617

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 23

Summary of HLM Analyses Modeling Negative Affect Measures as a Function of a Trait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 39, Fear	Intercept (Υ_{00})	1.807187	25.139	.000
	Self-Esteem (Υ_{01})	.035122	.596	.551
	CSE (Υ_{02})	.064401	1.398	.162
	SE x CSE (Υ_{03})	-.001410	-1.223	.222
	Engage (Υ_{10})	-.095079	-1.534	.125
	Engage x Self-Esteem (Υ_{11})	-.052245	-1.076	.282
	Engage x CSE (Υ_{12})	-.057905	-1.534	.125
	Engage x SE x CSE (Υ_{13})	.001453	1.529	.126
Model 40, Sadness	Intercept (Υ_{00})	1.613248	25.396	.000
	Self-Esteem (Υ_{01})	-.141535	-2.719	.007
	CSE (Υ_{02})	-.078951	-1.939	.052
	SE x CSE (Υ_{03})	.002025	1.988	.046
	Engage (Υ_{10})	-.212510	-3.882	.000
	Engage x Self-Esteem (Υ_{11})	.112153	2.617	.009
	Engage x CSE (Υ_{12})	.066823	2.005	.045
	Engage x SE x CSE (Υ_{13})	-.001704	-2.030	.042
Model 41, Shame - Guilt	Intercept (Υ_{00})	1.607014	29.672	.000
	Self-Esteem (Υ_{01})	-.075161	-1.691	.090
	CSE (Υ_{02})	-.030367	-.873	.383
	SE x CSE (Υ_{03})	.001146	.317	.188
	Engage (Υ_{10})	-.224807	-4.896	.000
	Engage x Self-Esteem (Υ_{11})	.017305	.482	.629
	Engage x CSE (Υ_{12})	-.002389	-.086	.932
	Engage x SE x CSE (Υ_{13})	-.000271	-.386	.699

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 24

Predicted Values for Sadness as a Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Contingent Self-Esteem	High Contingent Self-Esteem	Low Contingent Self-Esteem	High Contingent Self-Esteem
Engage In Physical Activity?				
YES	1.72	1.46	1.31	1.12
NO	3.35	1.70	1.31	.11

Note: Mean of Sadness for the relevant HLM analyses = 1.47 with a standard deviation of .72.

Table 25

Summary of HLM Analyses Modeling Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x

Appearance Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
	Intercept (Υ_{00})	1.608722	30.239	.000
	Self-Esteem (Υ_{01})	-.087805	-2.358	.018
Model 42,	ACSW (Υ_{02})	-.376044	-1.222	.222
Self-	SE x ACSW (Υ_{03})	.015153	1.941	.052
Esteem	Engage (Υ_{10})	-.223528	-4.901	.000
	Engage x Self-Esteem (Υ_{11})	.046650	1.495	.135
	Engage x ACSW (Υ_{12})	.186092	.729	.466
	Engage x SE x ACSW (Υ_{13})	-.009023	-4.901	.000
	Intercept (Υ_{00})	-.704399	-3.322	.001
	Self-Esteem (Υ_{01})	.441164	2.932	.004
Model 43,	ACSW (Υ_{02})	2.070541	1.667	.095
Subjective	SE x ACSW (Υ_{03})	-.062487	-1.988	.046
Well-Being	Engage (Υ_{10})	1.001939	6.253	.000
	Engage x Self-Esteem (Υ_{11})	-.320695	-2.938	.004
	Engage x ACSW (Υ_{12})	-2.005216	-2.247	.025
	Engage x SE x ACSW (Υ_{13})	.055071	2.416	.016

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

Table 26

Predicted Values for Self-Esteem as a Function of Trait-Level Self-Esteem, Appearance

Contingent Self-Worth, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth
Engage In Physical Activity?				
YES	1.87	1.42	1.27	.97
NO	2.63	1.70	1.33	.77

Note: Mean of Self-Esteem for the relevant HLM analyses = 3.77 with a standard deviation of .90.

Table 27

Predicted Values for Subjective Well-Being as a Function of Trait Level Self-Esteem,

Appearance Contingent Self-Worth, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth
Engage In Physical Activity?				
YES	-.58	-.36	1.05	1.08
NO	-5.95	-1.07	.45	3.76

Note: Mean of Subjective Well-Being for the relevant HLM analyses = -.02 with a standard deviation of 2.45.

Table 28

Summary of HLM Analyses Modeling Components of Subjective-Well Being as a Function of

Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x Appearance

Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
	Intercept (Υ_{00})	3.126792	39.836	.000
	Self-Esteem (Υ_{01})	.108176	1.941	.052
Model 44,	ACSW (Υ_{02})	.637413	1.386	.166
Positive	SE x ACSW (Υ_{03})	-.017721	-1.523	.128
Affect	Engage (Υ_{10})	.309156	5.234	.000
	Engage x Self-Esteem (Υ_{11})	-.117221	-2.914	.004
	Engage x ACSW (Υ_{12})	-.834417	-2.536	.011
	Engage x SE x ACSW (Υ_{13})	.022285	2.653	.008
	Intercept (Υ_{00})	1.743027	43.067	.000
	Self-Esteem (Υ_{01})	-.108009	-3.949	.000
Model 45,	ACSW (Υ_{02})	-.531986	-2.327	.020
Negative	SE x ACSW (Υ_{03})	.015591	2.654	.008
Affect	Engage (Υ_{10})	-.266629	-5.572	.000
	Engage x Self-Esteem (Υ_{11})	.082363	2.402	.016
	Engage x ACSW (Υ_{12})	.492133	1.735	.082
	Engage x SE x ACSW (Υ_{13})	-.012919	-1.790	.073
	Intercept (Υ_{00})	3.647280	48.762	.000
	Self-Esteem (Υ_{01})	.131111	2.468	.014
Model 46,	ACSW (Υ_{02})	.489539	1.117	.265
Life	SE x ACSW (Υ_{03})	-.016092	-1.451	.147
Satisfaction	Engage (Υ_{10})	.304697	5.432	.000
	Engage x Self-Esteem (Υ_{11})	-.071496	-1.872	.061
	Engage x ACSW (Υ_{12})	-.431390	-1.381	.167
	Engage x SE x ACSW (Υ_{13})	.012242	1.535	.125

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

Table 29

Predicted Values for Positive Affect as a Function of Trait-Level Self-Esteem, Appearance

Contingent Self-Worth, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth
Engage In Physical Activity?				
YES	3.72	3.27	3.54	3.21
NO	1.70	3.18	3.30	4.33

Note: Mean of Positive Affect for the relevant HLM analyses = 3.34 with a standard deviation of .85.

Table 30

Summary of HLM Analyses Modeling Negative Affect Measures as a Function of Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x Appearance Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 47, Fear	Intercept (Υ_{00})	1.814383	25.286	.000
	Self-Esteem (Υ_{01})	-.089777	-1.790	.073
	ACSW (Υ_{02})	-.403923	-.974	.330
	SE x ACSW (Υ_{03})	.010728	1.019	.308
	Engage (Υ_{10})	-.102477	-1.652	.098
	Engage x Self-Esteem (Υ_{11})	.054483	1.284	.199
	Engage x ACSW (Υ_{12})	.327750	.943	.346
	Engage x SE x ACSW (Υ_{13})	-.006638	-.748	.454
Model 48, Sadness	Intercept (Υ_{00})	1.610941	25.369	.000
	Self-Esteem (Υ_{01})	-.110506	-2.489	.013
	ACSW (Υ_{02})	-.576575	-1.571	.116
	SE x ACSW (Υ_{03})	.015248	1.637	.101
	Engage (Υ_{10})	-.210883	-3.849	.000
	Engage x Self-Esteem (Υ_{11})	.083615	2.230	.026
	Engage x ACSW (Υ_{12})	.486787	1.586	.113
	Engage x SE x ACSW (Υ_{13})	-.012070	-1.540	.123
Model 49, Shame - Guilt	Intercept (Υ_{00})	1.608722	30.239	.000
	Self-Esteem (Υ_{01})	-.087805	-2.358	.018
	ACSW (Υ_{02})	-.376044	-1.222	.222
	SE x ACSW (Υ_{03})	.015153	1.941	.052
	Engage (Υ_{10})	-.223528	-4.901	.000
	Engage x Self-Esteem (Υ_{11})	.046650	1.495	.135
	Engage x ACSW (Υ_{12})	.186092	.729	.466
	Engage x SE x ACSW (Υ_{13})	-.009023	-1.384	.166

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

In the following sections, I discuss the major findings that emerged. Next, I review additional data that support of the validity of a defensive versus growth motivational orientation as a construct distinct from self-esteem. Finally, implications of the findings are considered, limitations of the investigation addressed, and suggestions for future research are made.

Evidence for a defensive versus growth motivational orientation. For the most part, individuals' self-esteem and self-regulatory characteristics related to one another as predicted, forming a defensive versus growth motivational orientation. As hypothesized, the more unstable and contingent individuals' self-esteem, the less likely they were to endorse identified and intrinsic self-regulatory styles (page 44). These findings replicate and extend those reported by Kernis et al. (2000) who reported that unstable self-esteem related to less self-determined self-regulatory styles. In addition, unstable self-esteem, contingent self-esteem, and non-self-determined regulatory styles each correlated positively with endorsing social comparisons with others as a motivating factor in engaging in regular physical activity and negatively with finding pleasure and fun (i.e., intrinsic motivation) in engaging in physical activity (page 44). However, the extent to which individuals endorsed a prevention or promotion focus toward obtaining regular physical activity did not correspond as predicted to their overall defensive versus growth motivational orientation. Additional research is necessary to discern whether the failure of this relationship to emerge as predicted reflects an actual failure of prevention and promotion regulatory focus to relate to an overall motivational orientation as conceptualized here or simply a problem with the way prevention and promotion were measured.

Defensive versus growth orientations and affective experience. Individuals' motivational orientations were related to their emotional experiences both generally and with regard to whether or not they engaged in physical activity on a particular day. I hypothesized that, the

more defensive individuals' motivational orientations, the more they would report feeling pressure, tenseness, and anxiety (and the less they would report feeling enjoyment) in general and while engaging in physical activity, and the more they would report feeling guilt on days when physical activity was not engaged in.

Individuals' motivational orientation and overall affective experiences related to one another in accordance with these predictions with respect to negative, but not positive affect. Specifically, the more defensive individuals' motivational orientation, the greater their feelings of pressure, tenseness, and anxiety in general (page 43, Table 3). However, no relationship emerged between individuals' motivational orientation and their overall experience of enjoyment (or positive affect in general). Finally, individuals with a defensive orientation reported higher levels of guilt in general, not just on days that they did not exercise, compared with individuals with a growth orientation (page 42, Table 2). A possible explanation for these findings is that defensively oriented individuals experience more transient affective states than those with a growth orientation. This would explain why a defensive orientation is associated with higher reported levels of overall daily affect (positive and negative combined). It is probable that defensive individuals' motivational orientation leaves them prone to feelings of have pressure, tenseness, anxiety, and guilt in self-relevant situations yet does not affect their ability to experience pleasure in other areas. Regardless of the explanation, it is clear that defensively oriented individuals experience more daily negative affect than those with a growth orientation.

In contrast, individuals' motivational orientation and affective experiences while engaging in physical activity related to one another as predicted with respect to positive, but not negative, affect. Specifically, no relationship emerged between individuals' motivational orientation and their reported experiences of pressure, tenseness, and anxiety while engaging in

physical activity. However, relationships did emerge between individuals' motivational orientation and their experience of enjoyment and interest while engaging in physical activity (page 43, Table 3). That is, the more defensive individuals' orientation, the less enjoyment and interest they reported while engaged in physical activity. These findings replicate and extend those reported by Deci and Ryan (1985) who cited evidence for more self-determined regulation being associated with higher levels of positive affect. It is conceivable that defensively oriented individuals remain focused on the non-self-determined impetus for, as well as the self-relevance of, their physical activities while engaged in them and also actively reference social comparison information. While the act of engaging in physical activity may relieve the pressure, tenseness, and anxiety commonly associated with the aforementioned defensive mechanisms, it is unlikely to be mentally consuming enough to allow individuals to escape from their defensive thinking and experience positive affect. It is also possible that defensive individuals do not experience positive affect in association with their daily physical activities because of their tendency to engage in the same activities each day. I will discuss this tendency in greater detail shortly.

I also predicted that the more defensive individuals' motivational orientation, the more they would feel guilty on days when they did not engage in physical activity. However, the findings indicated that, compared with individuals with a growth orientation, individuals with a defensive orientation reported higher levels of guilt even on days when they *did* engage in physical activity (page 42, Table 2). Why this pattern emerged is unclear. Perhaps guilt served as their motivation to engage in physical activity and was not relieved upon becoming active. Perhaps actually engaging in physical activity made more salient the fact that they were not engaging in activity often enough to satisfy their goals. It is also possible that individuals focused on guilt regarding other aspects of their lives while engaging in physical activity. I will

discuss the relationships between individuals' daily affective experiences, motivational orientation, and engagement in physical activity in greater detail when I focus on individuals' subjective well-being.

    Motivational orientation, self-esteem, and subjective well-being. As predicted, individual's motivational orientations related to level of self -esteem and subjective well-being generally and to subjective well-being in relation to whether or not they engaged in physical activity on a particular day. The more defensive individuals' orientations, the lower their self - esteem level and subjective well-being (page 42, Table 2) and the more closely linked was their daily subjective well-being to their efforts to engage in physical activity (page 53, Table 4). The data indicated that, overall, individuals reported lower levels of subjective well-being on days when they did not engage in physical activity. Importantly, a defensive orientation moderated the relationship between subjective well-being and engaging in physical activity at the daily level such that defensively oriented individuals reported a greater discrepancy in their subjective well-being between active and non active days. No relationships emerged however, between motivational orientations and daily reports of self-esteem. Taken together, these findings indicate that defensively oriented individuals experience their well-being in close association with whether or not they engage in physical activity, however they do not allow these fluctuations to affect their feelings of self-worth. Perhaps defensive individuals responded to daily reports of self-esteem using a self-protective scheme in which they reminded themselves that they are worthy regardless of their efforts to be physically active. Presumably, defensive individuals view the possession of self-esteem to be desirable, making this reasoning consistent with defensive individuals' desires to avoid negative implications for the self and to avoid what they feel to be failure. This explanation is consistent with earlier findings that showed

individuals with unstable and contingent self-esteem to actively avoid failure and negative self-implications (Waschull & Kernis, 1996; Wolfe & Crocker, 2002).

Given that the construct of subjective well-being is comprised of several component measures, it is important to consider the findings with regard to subjective well-being in greater detail. Recall that subjective well-being is comprised of individuals' reported life satisfaction and affect (positive and negative). A closer examination of the current data reveals that the relationship between motivational orientation, daily engagement in physical activity, and subjective well-being is driven by negative affective experiences, particularly reported levels of shame/guilt and sadness. In general, individuals reported higher levels of negative affect, particularly shame/guilt and sadness, on days when they were not physically active (page 56, table 6). However, as with overall subjective well-being, this relationship was significantly stronger for individuals with a defensive as opposed to growth motivational orientation (page 56, table 6). No relationship emerged between individuals' motivational orientation, daily engagement in physical activity, and their reported life satisfaction or positive affect. These findings fall in line with those previously discussed concerning specific affective experiences. To review, it is conceivable that defensively oriented individuals remain focused on the non-self-determined impetus for, as well as the self-relevance of, their physical activities while also referencing social comparison information. However, the act of engaging in physical activity may relieve negative feelings of shame, guilt, and sadness. More likely though, is that high level of ego-involvement that defensively oriented individuals feel with regard to their goal to be regularly active leaves them prone to feelings of shame, guilt, and sadness on days when they are not working toward their goal. Moreover, these findings are consistent with those related to daily self-esteem in the fact that they demonstrate defensively oriented individuals to experience

negative affect in close association with their efforts to be physically active but do not allow those feelings to hinder their self worth or their positive affective experiences and feelings of life satisfaction.

Motivational orientations and variety of physical activity. As predicted, the evidence indicates that defensively oriented individuals prefer a greater amount of consistency in their daily physical activities than did growth-oriented individuals (page 53, Table 3). When considering the effects of varied physical activities, it is of additional interest to note that regardless of motivational orientation, individuals' emotional experiences while engaging in physical activity (but not overall daily emotional experience) were related to whether or not their activity was different from the previous day (page 53, Table 3). Specifically, individuals reported experiencing more pressure and tenseness while engaging in physical activity when their activity was the same as the previous day than when it was different from the last time they were active. On the other hand, individuals reported higher levels of enjoyment and interest while engaging in physical activity when the activity was different than the last time they'd been active. It is likely that individuals with a defensive orientation prefer consistency in their physical activities because of the high level of self-investment that they feel in relation to their activities. Presumably, defensively oriented individuals engage in their physical activities using the mantra of practice makes perfect, as being perfect in their activities is likely to be one of their goals. Unfortunately, the data show varied activities to be associated with enjoyment and interest while consistent activities are associated with pressure and tenseness. The tendency to engage in the same activity from day to day limits the potential for defensive individuals to experience the enjoyment and interest that are associated with varied activities.

The final hypothesis was that defensively oriented individuals would be less persistent in their efforts to obtain regular physical activity. The present data however, failed to demonstrate a relationship between individuals' motivational orientation and their persistence in engaging in physical activity over time. In general, individuals were found to engage in physical activity more in the earliest stages of the investigation (page 66, Table 10). The only predictor of amount of engagement in physical activity over the course of the investigation was whether or not an individual was active at the onset of the investigation (page 66, Table 10). Recall that individuals were consistent in completing the daily measures during later stages of the investigation than during the earlier stages. Any conclusions with regard to the relationship between motivational orientation and persistence engaging in physical activity are speculative as they are based upon differences in individuals' self-reported engagement in the early versus later phases of the investigation. Further, it may be necessary to follow individuals for a longer time period to make any significant conclusions about maintenance behaviors.

Validity of a defensive versus growth motivational orientation. Prior to considering the implications of the present findings, the data were repeatedly reviewed to ensure the validity of a defensive versus growth motivational orientation as a construct distinct from self-esteem. Specifically, the findings are considered with respect to trait-level self-esteem and each of the self-esteem component measures considered in this investigation: self-esteem stability, contingent self-esteem, appearance contingent self-worth, and fragile self-esteem, a composite measure of the three. Trait-level self-esteem did not interact with a defensive orientation to affect individuals' daily self-esteem or subjective well-being (page 66, Table 14). Trait-level self-esteem did, however interact with appearance contingent self-worth to affect individuals' daily self-esteem and subjective well-being (page 87, Table 25).

When trait-level self-esteem was considered in conjunction with a defensive orientation, only the former construct was seen to have an effect on individuals' daily reports of self-esteem and subjective well-being (page 70, Table 11). Additionally, trait-level self-esteem was found to moderate the relationship between engaging in physical activity and daily self-esteem and daily subjective well-being. Further, as with a defensive orientation, the moderating effect of trait-level self-esteem on daily reports of subjective well-being was driven by reports of negative affect, specifically fear and sadness (page 71, Table 12). Trait-level self-esteem also interacted with a defensive orientation on enjoyment and interest experienced while engaged in physical activity (page 47). This evidence suggests that trait-level self-esteem rather than a defensive versus growth motivational orientation may be driving force behind the relationships observed between daily physical activity, self-esteem, and subjective well-being. However, an in-depth look at all considered self-esteem constructs in relation to daily self-esteem and subjective well-being paints a slightly different picture.

Trait-level self-esteem moderates the relationship between fragile self-esteem and engagement in physical activity on daily reports of self-esteem and subjective well-being (page 80, Table 18). However, trait-level self-esteem did not interact with self-esteem stability or contingency to predict any of the daily affect or well-being measures. When considering the isolated measure of appearance contingent self-worth, more complicated relationships emerged.

Trait level self-esteem interacted with appearance contingent self-worth to predict individuals' reports of daily self-esteem and subjective well-being (page 87, Table 25). Additionally, trait-level self-esteem, appearance contingent self-worth, and the interaction of the two constructs were each found to moderate the relationship between engaging in physical activity and reported daily self-esteem and subjective well-being (page 87, Table 25). A more

detailed consideration of the variation in daily subjective well-being with respect to appearance contingent self-worth shows that trait level self-esteem effects the relationship between engaging in physical activity and both positive and negative affect. However, the interaction between trait-level self-esteem and appearance contingent self-worth specifically moderated only the relationship between engaging in physical activity and reported daily positive affect (page 90, Table 28).

So, consideration of the individual component self-esteem measures contained within a defensive versus growth motivational orientation (and fragile self-esteem) in relation to trait-level self-esteem and daily physical activity, self-esteem and subjective well-being supports the validity of said orientation as a construct distinct from trait-level self-esteem. When two of the three individual self-esteem measures (self-esteem stability and contingent self-esteem) were considered, trait-level self-esteem had little effect on the relationships between daily physical activity, self-esteem and subjective well-being (pages 79, 84–85, Tables 17, 22-23). When the final component measure of appearance contingent self-worth was considered, trait-level self-esteem affect daily experiences of subjective well-being in relation to physical activity and this relationship was driven by differences in positive affect. While a defensive versus growth motivational orientation is associated with the relationship between daily physical activity and subjective well-being, this relationship is driven by differences in negative affect.

Taken together, a detailed examination of the data indicates that trait-level self-esteem influences the relationships observed between daily physical activity, self-esteem and subjective well-being. However, while trait-level self-esteem affected self-esteem and subjective well-being beyond to a greater extent than a defensive orientation, the influence of self-esteem at the trait level is not the same as the influence of the individual component self-esteem measures

contained in a defensive motivational orientation. This suggests that while trait-level self-esteem is an influential construct in the relationships presently considered, there is reason to further consider the construct of an overall motivational orientation. To clarify, the findings support the existence of a general defensive versus growth motivational orientation that encompasses several self-esteem constructs as components and is not reducible to any one of the individual components.

Having attended to the validity of a defensive versus growth motivational orientation, it is appropriate to consider the implications as well as limitations of the findings relating such an orientation to individuals' experiences. The fact that individuals' self -esteem and self-regulatory traits relate to one another in the formation of distinct motivational orientations provides a new and useful tool for investigators.

Conclusions and directions for future research. For the most part, the individual components of defensive versus growth motivational orientation related to individuals' activities and experiences in line with research cited at the onset of this investigation. It is not surprising that when considering the self-esteem component measures in conjunction with trait-level self-esteem and daily engagement in physical activity, appearance contingent self-worth showed the most consistent relationships with daily self-esteem and subjective well-being. Rather than refuting the validity of an overall motivational orientation, the findings related to appearance contingent self-worth suggest the importance of including a relevant domain of self-esteem contingency in the composite measure of a motivational orientation. For example, future investigations considering motivation in academic endeavors might include academic contingent self-worth rather than appearance contingent self-worth as a component measure.

It is however, somewhat surprising that whether an individual's regulatory focus was prevention or promotion oriented did not relate to the other constructs examined in the formation of a motivational orientation. Before the relevance of prevention versus promotion regulatory focus to an overall motivational orientation as considered here is discounted altogether however, the possibility of a problem in the present measurement method must be considered. The current investigation measured prevention and promotion regulatory focus by requesting participants to respond to statements provided by the experimenter using a Likert-type scale. However, in his research Higgins tends to endorse a free response method for determining individuals' regulatory focus (for example, Higgins et al., 1994; 1997). These methods were not employed here as their validity has been called into question (Key, et al., 2000). That being said, it would be interesting to see whether free response methods would yield a relationship between prevention versus promotion regulatory focus and overall motivational orientation as discussed here. With the current data, one can only speculate as to whether it was the actual construct or the manner in which it was measured that resulted in the failure of prevention and promotion regulatory foci to related to a defensive versus growth motivational orientation as they were predicted to. Further research is necessary to determine definitively whether prevention versus promotion regulatory focus relate to a motivational orientation as currently discussed. In light of the present findings however, we are left to consider a defensive versus growth motivational orientation that does not include a measure of prevention versus promotion regulatory focus.

The current findings illustrate individuals' experiences with daily engagement in physical activity to be distinctly different depending upon their motivational orientation. Individuals with a defensive motivational orientation experience higher levels of pressure, tension, and anxiety in their daily lives than those with a growth orientation. While engaging in

physical activity, defensively oriented individuals experience levels of pressure and tension that are comparable to individuals with a growth orientation. However, defensively oriented individuals experience more guilt and less enjoyment and interest than those with a growth orientation while engaging in physical activity. Additionally, those with a defensive orientation experience their subjective well-being in close association with their efforts to engage in regular physical activity. Specifically, defensively oriented individuals experience more shame, guilt, and sadness on days when they are not physically active than on the days when they do engage in physical activity.

These findings are interesting in light of conventional wisdom that suggests the experiencing of positive affect to be associated with engagement in physical activity. Here we see that defensively oriented individuals experience differences in their negative affective experiences related to daily engagement in physical activity. Further, it appears that individuals with a defensive orientation may engage in physical activities due to a sense of guilt. However, defensive individuals report higher levels of guilt than those with a growth orientation on days when they are not physically *and* while engaging in physical activity. It would be interesting to learn the specific object of individuals' guilt. Perhaps it is guilt that motivates individuals to engage in physical activity and guilt about other aspects of one's life that is felt on the days when individuals with a defensive orientation are not active. On the other hand, perhaps defensive individuals feel guilt about not engaging in physical activity when they are inactive and guilt about other matters while they engage in physical activity. It is possible that directing defensively oriented individuals to actively focus on alternative sources of motivation may lead them to experience fewer negative emotions in relation to their goal-directed activities and subjective well-being that is more consistent and less closely tied to said efforts. Further

research, perhaps considering the direct object of individual's guilt, is necessary to specifically determine the role of guilt within a defensive motivational orientation.

Defensive individuals also expressed a preference for consistency in their daily physical activities, which is associated with the unpleasant experience of pressure and tenseness while engaging in physical activity. On the other hand, varying one's activities is associated with experiencing more enjoyment and interest while being active. It stands to reason that encouraging defensive individuals to incorporate more variety in their physical activities would improve their experience. While more extensive investigations are necessary to determine whether motivational orientation plays a role in the maintenance of physical activity over time, it stands to reason that when individuals enjoy their experiences they will be more likely to continue engaging in them. As was established at the onset of this investigation, engaging in regular physical activity is an important goal that often goes unrealized. Future research into the relationships between motivational orientation and individuals' persistence in their efforts to be regularly active is merited as it may provide insight as to how to help more people realize this goal. Additionally, research into the relationships between other goals and motivational orientation will inform us with regard to generalizability of these findings.

At present, we have evidence for a defensive versus growth motivational orientation that plays a role in individuals' affective experiences both generally and in relation to the goal of obtaining regular physical activity. We understand a defensive orientation to be associated with heightened levels of negative affect on a day-to-day basis, especially guilt. Further, a defensive orientation is associated with experiencing less positive affect in relation to physical activity and subjective well-being that is closely tied to daily physical activity.

While there are limitations to the present findings, research into the individual self-esteem and self-regulatory constructs considered here has evolved to a point where consideration of the inter-relationships between these constructs is merited. Considering an overall motivational orientation paints a picture of individuals' experiences that is more directly related to actual day-to-day life than the consideration of isolated orientation components. Future research is necessary however, to distinguish the effects of a defensive versus growth motivational orientation from those of self-esteem. Researchers may also consider using on-line survey methods to provide greater assurance that daily measures are completed in a timely manner. Investigations conducted with on-line methods may be able to keep even better track of research participants, therefore extending the findings presented here. All in all, the construct of an overall motivational orientation provides a useful tool for researchers and suggests that the simultaneous consideration of distinct but related constructs is a worthwhile endeavor.

REFERENCES

Arkin, R. M. & Baumgardner, A. H. (1985). Self-handicapping. In J. H. Harvey & G. Weary (Eds.), *Basic issues in attribution theory and research*. New York: Academic Press.

Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality, 57,* 547-580.

Berger, B. G. & McInman, A. (1993). Exercise and the quality of life. In R.N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 729 – 760). New York: Macmillan Publishing Company.

Blaskovich, J. & Tomaka, J. (1991). Measures of self-esteem. In J. R. Robinson, R. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (Vol. 1). New York: Academic Press.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Newbury Park, CA: Sage.

Bryk, A. S., Raudenbush, S. W., & Congdon, R. T. (2000). *HLM5*. Chicago: Scientific Software International.

Butler, A. C., Hokanson, J. E., & Flynn, H. A. (1994). A comparison of self-esteem ability and low self-esteem as vulnerability factors for depression. *Journal of Personality and Social Psychology, 66,* 166-177.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior.* New York: Cambridge University Press.

Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *Elementary School Journal, 85,* 5-20.

Crocker, J. (2002). The costs of seeking self-esteem. *Journal of Social Issues, 58,* 597-615.

Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, S. (in press). Contingencies of self-worth in college students: Theory and measurement. *Journal of Personality and Social Psychology.*

Crocker, J. & Park, L. E. (2003). Seeking self-esteem: Construction, maintenance, and protection of self-worth. In M. R. Leary & J. Tangney (Eds.), *Handbook of self and identity.* (pp. 291-313). New York: Guilford.

Crocker, J., Sommers, S. R., & Luhtanen, R. K. (2002). Hopes dashed and dreams fulfilled: Contingencies of self-esteem and admissions to graduate school. *Personality and Social Psychology Bulletin, 28,* 1275-1286.

Crocker, J. & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review, 108,* 593- 623.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper Collins.

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination perspective. *Journal of Personality, 62*, 119-141.

Deci, E. L. & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (1995). Human agency: the basis for true self-esteem. In M. Kernis (Ed.), *Efficacy, Agency, and Self-Esteem* (pp. 31-50). New York: Plenum.

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

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

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49,* 71-75.

Diener, E. & Lucas, R. E. (1999). Personality and subjective well-being. In Kahneman, D., Diener, E., & Schwarz, N. (Eds.), *Well Being: The foundations of hedonic psychology* (pp. 213-229). New York: Russell Sage Foundation.

Diener, E., Smith, H., & Fujita, F. (1995). The Personality Structure of Affect. *Journal of Personality and Social Psychology, 69,* 130-141.

Elliot, A. J. & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72,* 218-232.

Elliot, A. J., Faler, J., McGregor, H. A., Campbell, W. K., Sedikes, C., & Harackiewicz, J. M. (2000). Competence valuation as a strategic intrinsic motivation process. *Personality and Social Psychology Bulletin, 26,* 780-794.

Elliot, A. J., Sheldon, K. M., & Church, M. A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychology Bulletin, 23*, 915-927.

Emmons, R. A., Shepherd, N. R., and Kaiser, H. A. (1994). Approach and avoidance strivings and psychological and physical well-being. Poster presented at the 102nd Annual Convention of the American Psychological Association, Los Angeles (August).

Folkins, C. H. & Sime, W. E. (1981). Physical fitness training and metal health. *American Psychologist*, *36,* 373-389.

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

Fox, K. R. & Corbin, C. B. (1989). The Physical Self-Perception Profile: Development and preliminary validation. *Journal of Sport & Exercise Psychology, 11,* 408-430.

Gauvin, L., Spence, J. C., & Anderson, S. (1999). Exercise and psychological well-being in the adult population: Reality of wishful thinking? In J. M. Rippe (Ed.), *Textboook of medicine, exercise, nutrition and health* (pp. 957-966). Malden, MA: Blackwell.

Greenberg, J., Solomon, S., & Pyszcynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61-139). Orlando, FL: Academic.

Greenier, K. G., Kernis, M. H., & Waschull, S. B. (1995). Not all high (or low) self-esteem people are the same: Theory and research on stability of self-esteem. In M. H. Kernis (Ed.), *Efficacy, Agency, and Self-Esteem* (pp. 51-71). New York: Plenum.

Greenier, K. D., Kernis, M. H. McNamara, C. W., Waschull, S. B., Berry, A. J., Herlocker, C. E., & Abend, T. A. (1999). Individual differences in reactivity to daily events: Examining the roles of stability and level of self-esteem. *Journal of Personality, 67,* 185-208.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social Psychology: Handbook of Basic Principles* (pp. 133 – 168). New York: Guilford Press.

Higgins, E. T. (1997). Beyond Pleasure and Pain. *American Psychologist, 52,* 1280-1300.

Higgins, E. T., Roney, C., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology, 66,* 276-286.

Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology, 72,* 515 – 525.

Hughes, J. R. (1984). Psychological effects of habitual aerobic exercise: A critical review. *Preventive Medicine*, *13,* 66-78.

Kernis, M. H. (2003). Toward A Conceptualization of Optimal Self-Esteem. *Psychological Inquiry, 14,* 1 - 26.

Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A.J., & Harlow, T. (1993). There's more to self -esteem than whether it is high or low: the importance of stability of self-esteem. *Journal of Personality and social Psychology, 65,* 1190-1204.

Kernis, M. H. & Goldman, B. M. (2002). Stability and variability in self-concept and self-esteem. In M. Leary & J. Tangney (Eds.), *Handbook of self and identity* (pp. 106-127). New York: Guilford Press.

Kernis, M. H., Grannemann, B. D., & Barclay, L. C. (1992). Stability of self-esteem: Assessment, correlates, and excuse-making. *Journal of Personality and Social Psychology, 56,* 1013 – 1023.

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

Kernis, M. H., & Waschull, S. B. (1995). The interactive roles of stability and level of self-esteem: Research and theory. In M. R. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 27, pp. 93-141). Hillsdale, NJ: Erlbaum.

Kernis, M. H., Whisenhunt, C. R., Waschull, S. B., Greenier, K. D., Berry, A. J., Herlocker, C. E., & Anderson, C. A. (1998). Multiple facets of self-esteem and their relations to depressive symptoms. *Personality and social Psychology Bulletin, 24*, 657-668.

Key, D. E., Mannella, M., McCombs Thomas, A., & Gilroy, F. D. (2000). An evaluation of Higgins' self -discrepancy theory and an instrument to test its postulates. *Journal of Social Behavior and Personality, 15,* 303-320.

King, L. A., Richards, J. H., & Stemmerich, E. (1998). Daily goals, life goals and worst fears: Means, ends, and subjective well-being. *Journal of Personality, 66*, 713-745.

Liberman, N., Molden, D. C., Idson, L. C., & Higgins, E. T. (2001). Promotion and prevention focus on alternative hypotheses: Implications for attributional functions. *Journal of Personality and Social Psychology, 80,* pp. 5-18.

Liberman, N. Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology,77,* pp. 1135-1145.

Lyubomirsky, S. & Ross, L. (1997). Hedonic Consequences of Social Comparison: A contrast of happy and unhappy people. *Journal of Personality and Social Psychology, 73,* 511-535.

Martin, J. E. & Dubbert, P. M. (1982). Exercise applications and promotion in behavioral medicine: Current status and future directions. *Journal of Consulting and Clinical Psychology, 50,* 1004-1017.

Maslow, A. (1954). *Motivation and personality*. New York: Van Nostrand.

McAuley, E., Blissmer, B., Katula, J., Duncan, T. E., & Mihaldo, S. L. (2000). Physical activity, self-esteem, and self-efficacy relationships in older adults: A randomized controlled trial. *Annals of Behavioral Medicine, 22,* 131-139.

McAuley, E., Mihalko, S. L., & Bane, S. M. (1997). Exercise and Self-esteem in middle-aged adults: Multidimentional relationships and physical-fitness and self-efficacy influences. *Journal of Behavioral Medicine, 20,* 67-83.

Morgan, W.P. (1985). Affective beneficence of vigorous physical activity. *Medicine and Science in Sports and Exercise, 17,* 94-101.

Neighbors, C., Larimer, M. E., Geisner, I. M., & Knee, C. R. (in press). Self-determination, contingent self-esteem, and drinking motives among college students. *Self and Identity.*

Nezlek, J. B. (2001). Multilevel random coefficient analyses of event- and interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin*, 27, 771-785.

National Institute of Health (1996). Consensus Development Panel on Physical Activity and Cardiovascular Health. *Journal of The American Medical Association, 276,* 241-246.

Norem, J. K. & Cantor, N. (1986). Defensive pessimism: Harnessing anxiety as motivation. *Journal of Personality and Social Psychology, 51,* 1208-1217.

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., Buchner, D., Ettinger, W., Heath, G. W., King, A. C., Krista, A., Leon, A. S., Marcus, B. H., Morris, J., Paffenbarger, R. S., Patrick, K., Pollock, M. L., Rippe, J. M., Sallis, J., & Wilmore, J. H. (1995). Physical activity and public health: A recommendation from The Centers for Disease Control and Prevention and The American College of Sports Medicine. *Journal of The American Medical Association, 273,* 402-407.

Paradise, A. W. (2001). *Fragile High Self-Esteem and Alcohol Use*. Unpublished Doctoral Dissertation, The University of Georgia.

Paradise, A. W. & Kernis, M. H. (1999). *Development of the Contingent Self-Esteem Scale.* Unpublished data, University of Georgia.

Paradise, A., & Kernis, M. H. (2002). Fragile self-esteem and its implications for psychological well-being. *Journal of Social and Clinical Psychology, 12*, 345-361.

Roberts, J. E. & Monroe, S. M. (1992). Vulnerable self-esteem and depressive symptoms: Prospective findings comparing three alternative conceptualizations. *Journal of Personality and Social Psychology, 62,* 804-812.

Roberts, B. W., & Robins, R. W. (2000). Broad dispositions, broad aspirations: The intersection of personality traits and major life goals. *Personality and Social Psychology Bulletin, 26,* 10, 1284-1296.

Robins, R. W. & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology, 80*, 340-352.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single item measure and the Rosenberg Self-Esteem scale. *Personality and Social Psychology Bulletin, 27,* 151-161.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Roth, D. L. (1989). Acute emotional and psychophysiological effects of aerobic exercise. *Psychophysiology, 26,* 593-602.

Roth, D. L. & Holmes, D. S. (1987). Influence of aerobic exercise training and relaxation training on physical and psychological health following stressful life events. *Psychosomatic Medicine, 49,* 355-365.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, *43*, 450-461.

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

Ryan, R. M. & La Guardia, J. (2000). What is being optimized?: Self-determination theory and basic psychological needs. In S. H. Qualls & N. Abeles (Eds.) *Psychology and the Aging Revolution: How we Adapt to Longer Life.* (pp. 145-172). Washington, DC: American Psychological Association.

Ryan, R. M., Rigby, S., & King, K. (1993). Two types of religious orientation and relations to religious orientations and mental health. *Journal of Personality and Social Psychology, 65*, 586-596.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well being. *American Psychologist, 55*, 68-78.

Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology, 68*, 531-543.

Sommers, S., & Crocker, J. (2000). *The real world: How contingencies of self-esteem affect reactions to daily life*. Paper presented at the 1st annual meeting of the Society for Personality and Social Psychology, Nashville, TN.

Sonstroem, R. J., Harlow, L. L., Gemma, L. M., & Osborne, S. (1991). Test of structural relationships within a proposed exercise and self-esteem model. *Journal of Personality Assessment, 56,* 348-364.

Sonstroem, R. J., & Morgan, W. P. (1989). Exercise and self-esteem: Rationale and model. *Medicine and Science in sports and Exercise, 21,* 329-337.

Tice, D. M. (1991). Esteem protection or enhancement? Self-handicapping motives and attributions differ by trait self-esteem. *Journal of Personality and Social Psychology, 60*, 711-725.

United States Department of Health and Human Services (1996). *Physical activity and health: A report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

Waschull, S. B. & Kernis, M. H. (1995). The interactive roles of stability and level of self-esteem: Research and theory. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology, 27,* (pp. 93-141). San Diego, CA: Academic Press.

Wicklund, R. A. & Gollwitzer, P. M. (1982). *Symbolic Self Completion.* Hillsdale, NJ: Erlbaum.

Wolfe, C. & Crocker, J. (2002). What does the self want? Contingencies of self-worth and goals. In S. Spencer & Z. Kunda (Eds.), *The Ontario Symposium: Goals and motivated cognition*. (pp. 147-170). Hillsdale, NJ: Erlbaum

APPENDIX A

Last 4 Digits of SS#: _____

Demographic Questionnaire

1. What is your age (please fill in)? _____ years

2. What is your gender (please check one)?

    ___ Male   ___ Female

3. What is your ethnic identity (please check one)?

    ___ Caucasian   ___ African-American   ___ Asian

    ___ Hispanic   ___ Native American   ___ Other, Specify _____

4. What type of community were you raised in (please check one)?

    ___ Urban   ___ Suburban   ___ Rural

5. What year of college are you currently in (please check one)?

    ___ Freshman   ___ Sophomore   ___ Junior   ___ Senior

6. What major have you declared or do you intend to declare (please write "undecided" if you have not yet decided)? _____

7. Are you a member of a UGA sports team?

    ____ Yes   ____ No

APPENDIX B

Physical Activity Questionnaire

Guidelines set forth by The Centers for Disease Control and The American College of Sports Medicine define REGULAR physical activity as accumulating at least 30 minutes of MODERATE physical activity each day on most, if not all, days of the week. MODERATE physical activity is anything that could be considered equivalent to walking at the pace of three to four miles per hour, basically walking at a brisk pace.

According to these guidelines, do you get regular physical activity?

_____ YES   _____ NO

If you answered yes to the previous question, please answer the following.
If you answered no, please skip this item and continue to the next question.

For how long have you been getting REGULAR physical activity consistently?
(Refer to the definition of regular physical activity provided above.)

_____ Less than one month   _____ Six to nine months

_____ Between one and three months   _____ Nine months to one year

_____ Three to six months   _____ Over one year

Do you intend to get REGULAR physical activity over the course of this semester?

_____ YES   _____ NO

Specifically, how many days per week do you intend to engage in physical activity?

_____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7

Some people vary their physical activity from day to day, while others prefer to engage in the same activity regularly.

Please indicate whether you prefer to vary your activities or to generally engage in the same activity from day to day.

_____ I prefer to vary my physical activity from day to day.

_____ I prefer to engage in the same physical activity from day to day.

APPENDIX C

Regulatory Styles Measure

Please rate the importance of the following reasons **in relation to obtaining regular physical activity?** Use the following scale.

0	1	2	3	4	5	6
Is Not At All a reason						**Is an Extremely Important Reason**

Reason	**Rating**
1. I force myself to do it to avoid feeling guilty or anxious.	_____
2. I do it because I feel that doing it will help me grow or develop in a way that is personally important to me.	_____
3. I do it because something about my external situation forces me to do it.	_____
4. I do it because of the pleasure and fun of doing it.	_____
5. I do it because it ties into my personal values and beliefs.	_____
6. I do it because I know I should do it.	_____
7. I do it because of the interest and enjoyment of doing it.	_____
8. I do it because somebody else wants me to or because I will get something from somebody if I do.	_____

APPENDIX D

Last 4 Digits of ID#: _____

Regulatory Focus Toward Physical Activity

We all have things that we try to obtain or achieve and things that we try to avoid or prevent through the pursuit of our goals. Listen below you will find some of the most common reasons students at The University of Georgia have given for engaging in physical activity.

Please take a moment to consider each statement and then indicate how much this statement fits with why you engage in physical activity.

1.......................2.......................3.......................4.......................5

Not at all Why   **Sometimes why I**   **Really Explains**
I Engage In   **Engage in Physical**   **Why I Engage In**
Physical Activity   **Activity**   **Physical Activity**

I don't want to gain weight or get fat. _____

I want to feel good/better about myself. _____

I don't want to be lazy. _____

I want to be/stay healthy. _____

I don't want to get sick or have health problems. _____

I want to get in/stay in shape. _____

I want to look good/better. _____

I want to improve my level of physical fitness. _____

I want to improve my general well-being. _____

RFPA, page 2

Please indicate your level of agreement with the following statements.

1........................2..........................3..........................4.........................5
No   **Some**   **Very Much**
Agreement   **Agreement**   **Agreement**

I am motivated in my physical activities by making comparisons between myself and others.   _____

I enjoy physical activity.   _____

I feel good when I am active.   _____

APPENDIX E

RSE

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement and consider the extent to which you **<u>TYPICALLY OR GENERALLY</u>** agree or disagree with it.

Please be sure to respond to each statement by circling one number on the scale below each statement. All responses will be kept confidential, so please answer as honestly as possible. Remember, base your responses on the extent to which you **<u>TYPICALLY OR GENERALLY</u>** agree or disagree with each statement.

1. I feel that I am a person of worth, at least on an equal plane with others.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

2. I feel like a person who has a number of good qualities.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

3. All in all, I am inclined to feel like a failure.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

4. I feel as if I am able to do things as well as most other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

5. I feel as if I do not have much to be proud of.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

RSE, p. 2

6. I take a positive attitude toward myself.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

7. On the whole, I am satisfied with myself.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

8. I wish that I could have more respect for myself.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

9. I certainly feel useless at times.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

10. At times I think that I am no good at all.

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

APPENDIX F

CSES

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Select one number on the scale below each statement that best reflects your answer. There are not right or wrong answers, so please answer as honestly as you can. Thank You.

1........................2........................3........................4........................5
 Not at all   **Neutral**   **Very Much**
  like me   **like me**

_____ 1. An important measure of my worth is how competently I perform.

_____ 2. Even in the face of failure, my feelings of self-worth remain unaffected.

_____ 3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.

_____ 4. My overall feelings about myself are heavily influenced by how much other people like and accept me.

_____ 5. If I get along well with someone, I feel better about myself overall.

_____ 6. An important measure of my worth is how physically attractive I am.

_____ 7. My overall feelings about myself are heavily influenced by what I believe other people are saying or thinking about me.

_____ 8. If I am told I look good, I feel better about myself in general.

_____ 9. My feelings of self-worth are basically unaffected when other people treat me badly.

_____10. An important measure of my worth is how well I perform up to the standards that other people have set for me.

_____ 11. If I know that someone likes me, I do not let it affect how I feel about myself.

_____ 12. When my actions do not live up to my expectations, it makes me feel dissatisfied with myself.

_____ 13. Even on a day when I don=t look my best, my feelings of self-worth remain unaffected.

_____ 14. My overall feelings about myself are heavily influenced by how good I look.

_____ 15. Even in the face of rejection, my feelings of self-worth remain unaffected.

APPENDIX G

CSW

INSTRUCTIONS: Please respond to each of the following statements by circling your answer using the scale from "1 = Strongly disagree" to "7 = Strongly agree." If you haven't experienced the situation described in a particular statement, please answer how you think you would feel if that situation occurred.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Strongly agree

____ 1. When I think I look attractive, I feel good about myself.

____ 2. My self-worth is based on God's love.

____ 3. I feel worthwhile when I perform better than others on a task or skill.

____ 4. My self-esteem is unrelated to how I feel about the way my body looks.

____ 5. Doing something I know is wrong makes me lose my self-respect.

____ 6. I don't care if other people have a negative opinion about me .

____ 7. Knowing that my family members love me makes me feel good about myself.

____ 8. I feel worthwhile when I have God's love.

____ 9. I can't respect myself if others don't respect me.

____ 10. My self-worth is not influenced by the quality of my relationships with my

family members.

____ 11. Whenever I follow my moral principles, my sense of self-respect gets a boost.

____ 12. Knowing that I am better than others on a task raises my self-esteem.

____ 13. My opinion about myself isn't tied to how well I do in school.

____ 14. I couldn't respect myself if I didn't live up to a moral code.

CSW, p. 2

_____ 15. I don't care what other people think of me.

_____ 16. When my family members are proud of me, my sense of self-worth increases.

_____ 17. My self-esteem is influenced by how attractive I think my face or facial features are.

_____ 18. My self-esteem would suffer if I didn't have God's love.

_____ 19. Doing well in school gives me a sense of self-respect.

_____ 20. Doing better than others gives me a sense of self-respect.

_____ 21. My sense of self-worth suffers whenever I think I don't look good.

_____ 22. I feel better about myself when I know I'm doing well academically.

_____ 23. What others think of me has no effect on what I think about myself.

_____ 24. When I don't feel loved by my family, my self-esteem goes down.

_____ 25. My self-worth is affected by how well I do when I am competing with others.

_____ 26. My self-esteem goes up when I feel that God loves me.

_____ 27. My self-esteem is influenced by my academic performance.

_____ 28. My self-esteem would suffer if I did something unethical.

_____ 29. It is important to my self-respect that I have a family that cares about me.

_____ 30. My self-esteem does not depend on whether or not I feel attractive.

_____ 31. When I think that I'm disobeying God, I feel bad about myself.

_____ 32. My self-worth is influenced by how well I do on competitive tasks.

_____ 33. I feel bad about myself whenever my academic performance is lacking.

_____ 34. My self-esteem depends on whether or not I follow my moral/ethical principles.

_____ 35. My self-esteem depends on the opinions others hold of me.

APPENDIX H

SWLS

Please indicate how well each statement describes how you have felt about your life During the PAST FEW DAYS.

1	2	3	4	5
No Agreement		Some Agreement		Very Much Agreement

1. _____ In most ways, my life is close to my ideal.

2. _____ The conditions of my life are excellent.

3. _____ I am satisfied with my life.

4. _____ If I could live my life over, I would change almost nothing.

5. _____ So far, I have gotten the important things I want in life.

6. _____ At present, I am completely satisfied with my life.

7. _____ In the near future, a lot of things will have to change before I feel satisfied with my life.

APPENDIX I

ABS

This scale consists of words that describe different feelings and emotions. Read each item and them mark the appropriate answer in the space next to the word. Indicate to what extent you have felt this way <u>during the PAST FEW DAYS</u>. Use the following scale to record your answers.

1	2	3	4	5
Very slightly	**a little**	**moderately or not at all**	**quite a bit**	**extremely**

1. _____ affection   11. _____ joy

2. _____ fear   12. _____ anger

3. _____ shame   13. _____ sadness

4. _____ love   14. _____ happiness

5. _____ worry   15. _____ irritation

6. _____ guilt   16. _____ loneliness

7. _____ unhappiness   17. _____ regret

8. _____ disgust   18. _____ anxiety

9. _____ contentment   19. _____ caring

10. _____ fondness   20. _____ pride

21. _____ depression   22. _____ nervous

23. _____ rage   24. _____ embarrassment

APPENDIX J
Daily Diary Question Series

Day of the Week (ex. WEDNESDAY)
Please complete at bedtime on Wednesday and return along with Thursday's form to
Room #423 anytime between 9-11 am or 2-3 pm on Friday.

1. Did you engage in physical activity today? (circle the appropriate response)   YES   NO

*If you answered **yes** to question 1*, please answer questions 2 – 4.
*If you answered **no** to question 1*, go directly to question 5.

2. Please indicate how much you felt each of the following emotions while
engaging in physical activity today. Use the scale below to record your responses.

1	2	3	4	5
Did not Feel at All		Felt Slightly		Felt Very Much

a. Pressure _____   **b. Tenseness** _____   **c. Enjoyment** _____

d. Interest _____   **e. Guilt** _____

3. Was the activity that you engaged in today the same or different
from the last time that you engaged in physical activity? (circle the appropriate response)

THE SAME ACTIVITY   A DIFFERENT ACTIVITY

4. Please rate the importance of the following reasons **in relation to
being physically active today.** Use the following scale.

0	1	2	3	4	5
Is Not At All a reason					Is an Extremely Important Reason

a. I forced myself to do it to avoid feeling guilty or anxious.   _____

b. I did it because of the pleasure and fun of doing it.   _____

c. I did it because it ties into my personal values and beliefs.   _____

d. I did it because somebody else wants me to or because I
will get something from somebody if I do.   _____

Daily Diary Question Series, p. 2

5. We all have things that we try to obtain or achieve and things that we try to avoid or prevent through the pursuit of our goals. Listen below you will find some of the most common reasons students at The University of Georgia have given for engaging in physical activity.

Please take a moment to consider each statement and then indicate how much this statement fits with why you engaged in physical activity today.

1........................2........................3........................4........................5

Not at all Why	**Partially Explains**		**Really Explains**
I Engaged In	**Why I Engaged in**		**Why I Engaged In**
Physical Activity	**Physical Activity**		**Physical Activity**
Today	**Today**		**Today**

I don't want gain weight or get fat. _____

I want to feel good/better about myself. _____

I don't want to be lazy. _____

I want to be/stay healthy. _____

I don't want to get sick or have health problems. _____

I want to get in/stay in shape. _____

I want to look good/better. _____

6. Please indicate your level of agreement with the following statement using the scale provided.

I have high self-esteem today.

1	**2**	**3**	**4**	**5**
Not Very		Somewhat		Very True
True of Me		True of Me		Of Me

7. Please indicate how well the following statement describes how you have felt about your life today using the scale provided.

I am satisfied with my life today.

1	**2**	**3**	**4**	**5**
Not Very		Somewhat		Very True
True of Me		True of Me		Of Me

Daily Diary Question Series, p. 3

8. This scale consists of words that describe different feelings and emotions. Read each item and them mark the appropriate answer in the space next to the word. Indicate to what extent you have felt this way today. Use the following scale to record your responses.

1	2	3	4	5
Very slightly or not at all	**a little**	**moderately**	**quite a bit**	**extremely**

a. _____ affection

b. _____ joy

c. _____ fear

d. _____ anger

e. _____ shame

f. _____ sadness

g. _____ love

h. _____ happiness

i. _____ worry

j. _____ irritation

k. _____ guilt

l. _____ lonliness

m. _____ unhappiness

n. _____ regret

o. _____ disgust

p. _____ anxiety

q. _____ contentment

r. _____ caring

s. _____ fondness

t. _____ pride

u. _____ depression

v. _____ nervous

w. _____ rage

x. _____ embarrassment

APPENDIX K

Table 31

Correlation Matrix of Predictor Variables and Prevention/Promotion Framed Regulatory Focus

Measures Depending on Appearance/Health & Well-Being Item Content

Measure	1	2	3	4	5	6	7	8	9	10
1. Contingent Self-Esteem										
2. Less Stable Self-Esteem	32									
3. Appearance CW	78	34								
4. Less Self-Determination	49	*12*	37							
5. Appearance Prevention RF	42	29	47	37						
6. Appearance Promotion RF	45	*11*	56	16	59					
7. Health/W-B Prevention RF	*08*	*03*	*05*	*08*	*13*	*15*				
8. Health/W-B Promotion RF	*04*	*03*	*06*	24	*08*	23	52			
9. Social Comparison RF	47	*10*	43	25	27	39	*13*	*17*		
10. Less Intrinsic RF	35	*14*	30	57	34	20	*-17*	-36	*-02*	
11. Defensive Orientation	82	51	81	67	--	--	--	--	58	56

Note: CSW = Contingent Self-Worth. RF = Regulatory Focus. W-B = Well-Being. Decimal points have been

omitted. rs > .16, *p* < .01, rs > .30, *p* < .001. Relationships in italics are non-significant.

APPENDIX L

PHASE 4 DESCRIPTIVE STATISTICS

Table 32

Means and Standard Deviations of Phase 4 Daily Measures Reflecting More Defensiveness

Daily Measure	Mean	SD
Engage in PA	1.31	.27
Vary	1.48	.35
Pressure/Tenseness	1.97	.66
Enjoyment/Interest	3.82	.77
Guilt	1.32	.47
Regulatory Style	-4.60	3.82
Self-Esteem	3.78	.66
Subjective Well-Being	.00	2.25
Life Satisfaction	3.78	.66
Positive Affect	13.27	2.64
Negative Affect	5.96	1.55
Joy	13.27	2.64
Fear	6.98	2.37
Sadness	5.77	2.03
Shame/Guilt	5.73	1.74

Note: SD = Standard Deviation. Engage = Engage in Physical Activity (PA); 1 = yes, 2 = no. Vary = Vary PA; 1 = yes, 2 = no.

APPENDIX M

PHASE 4 CORRELATIONS

Table 33

Correlation Matrix of DVGO and Series 2 Daily Measures

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.DVGO														
2.Engage	*01*													
3.Vary	*-12*	*-07*												
4.Press/Tense	*18*	*-03*	-30											
5.Enjoy/Interest	-28	*-09*	22	*-11*										
6.Guilt	30	*-03*	*-18*	56	*02*									
7.Less SD	45	*12*	25	41	-62	24								
8.SE	-35	*-10*	*13*	*-19*	48	*-26*	-37							
9.SWB	-32	-20	*17*	-32	57	-33	-51	78						
10.LS	-34	-20	*17*	*-19*	53	-21	-41	88	88					
11.+Affect	*-17*	*-16*	*13*	*-10*	64	*-09*	-47	61	85	72				
12.–Affect	29	*15*	*-12*	52	-26	52	41	-46	-76	-49	-41			
13.Fear	33	*17*	*-08*	48	*-18*	49	38	-30	-62	-49	-21	91		
14.Sadness	*19*	*13*	*-14*	32	-41	*19*	39	-48	-75	-58	-41	90	70	
15.Shame/Guilt	22	*05*	*-08*	53	*-03*	70	-24	-37	-52	-52	-23	90	72	76

Note: DVGO = Defensive versus Growth Orientation. Engage = Engage in Physical Activity (PA). Vary = Vary PA. Press/Tense = Pressure/Tenseness. SD = Self-Determination. LS = Life Satisfaction. Measures 3 – 7 were completed only when PA was engaged in. Measures 4 – 6 reflect emotion experienced while engaging in PA. rs > 20 p< .05, . rs > 29, p < .01, rs > 34, p < .001. Relationships in Italics are non-significant. Responses from one participant who completed only Phases 3 – 5 are included in these relationships, but not in the HLM analyses.

APPENDIX N

PHASE 4 HLM ANALYSES

Table 34

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a Function of a DV GO and Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 1, Self-Esteem	Intercept (Υ_{00})	3.592272	48.055	.000
	DVGO (Υ_{01})	-.055480	-2.920	.004
	Engage (Υ_{10})	.337474	5.780	.000
	Engage x DVGO. (Υ_{11})	.009436	.630	.528
Model 2, Subjective Well-Being	Intercept (Υ_{00})	-.348226	-1.601	.109
	DVGO. (Υ_{01})	-.171035	-3.093	.002
	Engage (Υ_{10})	.824659	4.847	.000
	Engage x DVGO (Υ_{11})	.026040	.597	.550

Note: DVGO = Defensive Versus Growth Orientation. Engage = Engagement in Physical Activity.

Table 35

Summary of HLM Analyses Modeling Components of Series 2 Daily Subjective Well-Being as a

Function of a DVGO and Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	t-ratio	p-value
Model 3, Life Satisfaction	Intercept (Υ_{00})	3.747904	50.078	.000
	DVGO (Υ_{01})	-.069090	-3.635	.001
	Engage (Υ_{10})	.241425	3.963	.000
	Engage x DVGO (Υ_{11})	.021752	1.392	.164
Model 4, Positive Affect	Intercept (Υ_{00})	3.161676	39.414	.000
	DVGO (Υ_{01})	-.029429	-1.443	.149
	Engage (Υ_{10})	.286251	4.584	.000
	Engage x DVGO (Υ_{11})	.001599	.100	.921
Model 5, Negative Affect	Intercept (Υ_{00})	1.558451	31.143	.000
	DVGO (Υ_{01})	.032650	2.567	.011
	Engage (Υ_{10})	-.126365	-3.226	.002
	Engage x DVGO (Υ_{11})	.000820	.082	.935
Model 6, Shame-Guilt	Intercept (Υ_{00})	1.474349	28.485	.000
	DVGO (Υ_{01})	.025772	1.962	.049
	Engage (Υ_{10})	-.143480	-3.323	.001
	Engage x DVGO (Υ_{11})	-.005658	-.511	.609
Model 7, Fear	Intercept (Υ_{00})	1.744013	26.810	.000
	DVGO (Υ_{01})	.048868	2.961	.004
	Engage (Υ_{10})	-.155356	-2.836	.005
	Engage x DVGO (Υ_{11})	.008057	.574	.566
Model 8, Sadness	Intercept (Υ_{00})	1.458520	23.633	.000
	DVGO (Υ_{01})	.021080	1.344	.179
	Engage (Υ_{10})	-.083832	-1.717	.086
	Engage x DVGO (Υ_{11})	.002737	.218	.827

Note: DVGO = Defensive Versus Growth Orientation. Engage = Engagement in Physical Activity

Table 36

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a Function of Trait-Level Self-Esteem, DVGO, and the Self-Esteem x DVGO Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 10, Self-Esteem	Intercept (Υ_{00})	3.604521	50.340	.000
	Self-Esteem (Υ_{01})	.046142	3.786	.000
	DVGO (Υ_{02})	.077902	.707	.479
	SE x DVGO (Υ_{03})	-.002556	-.937	.349
	Engage (Υ_{10})	.324658	5.568	.000
	Engage x Self-Esteem (Υ_{11})	-.018285	-1.941	.052
	Engage x DVGO (Υ_{12})	.008559	.100	.921
	Engage x SE x DVGO (Υ_{13})	-.000301	-.142	.888
Model 11, Subjective Well-Being	Intercept (Υ_{00})	-.326204	-1.581	.114
	Self-Esteem (Υ_{01})	.131313	3.741	.000
	DVGO (Υ_{02})	.424420	1.340	.180
	SE x DVGO (Υ_{03})	-.012681	-1.615	.106
	Engage (Υ_{10})	.800621	4.710	.000
	Engage x Self-Esteem (Υ_{11})	-.042700	-1.554	.120
	Engage x DVGO (Υ_{12})	-.157008	-.630	.529
	Engage x SE x DVGO (Υ_{13})	.003804	.615	.538

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation.

Table 37

Summary of HLM Analyses Modeling Series 2 Components of Subjective Well-Being as a

Function of Trait-Level Self-Esteem, DVGO, and the Self-Esteem x DVGO Interaction as Well as

Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 12, Positive Affect	Intercept (Υ_{00})	3.166829	40.749	.000
	Self-Esteem (Υ_{01})	.036064	2.726	.007
	DVGO (Υ_{02})	.200186	1.672	.094
	SE x DVGO (Υ_{03})	-.005152	-1.737	.082
	Engage (Υ_{10})	.280625	4.486	.000
	Engage x Self-Esteem (Υ_{11})	-.010144	-1.004	.316
	Engage x DVGO (Υ_{12})	-.049120	-.536	.592
	Engage x SE x DVGO (Υ_{13})	.001098	.483	.629
Model 13, Negative Affect	Intercept (Υ_{00})	1.551774	31.528	.000
	Self-Esteem (Υ_{01})	-.024320	-2.902	.004
	DVGO (Υ_{02})	-.067971	-.895	.371
	SE x DVGO (Υ_{03})	.002125	1.129	.259
	Engage (Υ_{10})	-.118292	-3.022	.003
	Engage x Self-Esteem (Υ_{11})	.014930	2.364	.018
	Engage x DVGO (Υ_{12})	.076818	1.340	.180
	Engage x SE x DVGO (Υ_{13})	-.001671	-1.175	.240
Model 14, Life Satisfaction	Intercept (Υ_{00})	3.752649	52.884	.000
	Self-Esteem (Υ_{01})	.041159	3.412	.001
	DVGO (Υ_{02})	.065514	.605	.545
	SE x DVGO (Υ_{03})	-.002661	-.991	.322
	Engage (Υ_{10})	.236686	3.888	.000
	Engage x Self-Esteem (Υ_{11})	-.0040503	-.411	.681
	Engage x DVGO (Υ_{12})	.033267	.372	.710
	Engage x SE x DVGO (Υ_{13})	-.000397	-.179	.858

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation.

Table 38

Summary of HLM Analyses Modeling Series 2 Negative Affect Measures as a Function of Trait-Level Self-Esteem, DVGO, the Self-Esteem x DVGO Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 15, Fear	Intercept (Υ_{00})	1.732865	26.840	.000
	Self-Esteem (Υ_{01})	-.031364	-2.857	.005
	DVGO (Υ_{02})	-.040781	-.413	.679
	SE x DVGO (Υ_{03})	.001725	.705	.481
	Engage (Υ_{10})	-.143050	-2.615	.009
	Engage x Self-Esteem (Υ_{11})	.023589	2.664	.008
	Engage x DVGO (Υ_{12})	.069953	.870	.384
	Engage x SE x DVGO (Υ_{13})	.001172	-.588	.556
Model 16, Sadness	Intercept (Υ_{00})	1.451785	23.984	.000
	Self-Esteem (Υ_{01})	-.028869	-2.801	.006
	DVGO (Υ_{02})	-.071494	-.767	.443
	SE x DVGO (Υ_{03})	.001856	.803	.422
	Engage (Υ_{10})	-.074221	-1.521	.128
	Engage x Self-Esteem (Υ_{11})	.015629	1.983	.047
	Engage x DVGO (Υ_{12})	.136508	1.908	.056
	Engage x SE x DVGO (Υ_{13})	-.003110	-1.753	.079
Model 17, Shame - Guilt	Intercept (Υ_{00})	1.471847	28.514	.000
	Self-Esteem (Υ_{01})	-.012965	-1.477	.140
	DVGO (Υ_{02})	-.093067	-1.178	.239
	SE x DVGO (Υ_{03})	.002773	1.416	.157
	Engage (Υ_{10})	-.140850	-3.249	.002
	Engage x Self-Esteem (Υ_{11})	.006001	.856	.392
	Engage x DVGO (Υ_{12})	.028326	.445	.656
	Engage x SE x DVGO (Υ_{13})	-.000766	-.485	.627

Note: Engage = Engagement in Physical Activity. DVGO = Defensive vs. Growth Orientation.

Table 39

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Self-Esteem Stability, and the Self-Esteem x Self-Esteem

Stability Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 18, Self-Esteem	Intercept (Υ_{00})	3.604338	50.775	.000
	Self-Esteem (Υ_{01})	.075153	3.897	.000
	Stability (Υ_{02})	.155212	1.360	.174
	SE x Stability (Υ_{03})	-.002975	-1.015	.310
	Engage (Υ_{10})	.324260	5.564	.000
	Engage x Self-Esteem (Υ_{11})	-.014187	-.929	.353
	Engage x Stability (Υ_{12})	.027859	.315	.753
	Engage x SE x Stability (Υ_{13})	-.000643	-.278	.781
Model 19, Subjective Well-Being	Intercept (Υ_{00})	-.330302	-1.593	.111
	Self-Esteem (Υ_{01})	.223554	3.969	.000
	Stability (Υ_{02})	.492501	1.477	.140
	SE x Stability (Υ_{03})	-.010008	-1.170	.243
	Engage (Υ_{10})	.803064	4.716	.000
	Engage x Self-Esteem (Υ_{11})	-.063555	-1.424	.154
	Engage x Stability (Υ_{12})	-.142376	-.550	.582
	Engage x SE x Stability (Υ_{13})	.003051	.452	.651

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem.

Table 40

Summary of HLM Analyses Modeling Series 2 Components of Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Self-Esteem Stability, and the Self-Esteem x Self-Esteem

Stability Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 20, Positive Affect	Intercept (Υ_{00})	3.163748	40.772	.000
	Self-Esteem (Υ_{01})	.061905	2.935	.004
	Stability (Υ_{02})	.165441	1.325	.185
	SE x Stability (Υ_{03})	-.003118	-.973	.331
	Engage (Υ_{10})	.283268	4.528	.000
	Engage x Self-Esteem (Υ_{11})	-.021427	-1.308	.191
	Engage x Stability (Υ_{12})	-.084848	-.893	.372
	Engage x SE x Stability (Υ_{13})	.001998	.806	.420
Model 21, Negative Affect	Intercept (Υ_{00})	1.553961	30.977	.000
	Self-Esteem (Υ_{01})	-.041333	-3.027	.003
	Stability (Υ_{02})	-.088127	-1.090	.276
	SE x Stability (Υ_{03})	.001927	.930	.353
	Engage (Υ_{10})	-.119511	-3.048	.003
	Engage x Self-Esteem (Υ_{11})	.021966	2.140	.032
	Engage x Stability (Υ_{12})	.061163	1.029	.304
	Engage x SE x Stability (Υ_{13})	-.00163	-.750	.453
Model 22, Life Satisfaction	Intercept (Υ_{00})	3.755489	53.142	.000
	Self-Esteem (Υ_{01})	.069937	3.652	.000
	Stability (Υ_{02})	.129133	1.139	.255
	SE x Stability (Υ_{03})	-.002666	-.915	.360
	Engage (Υ_{10})	.234175	3.841	.000
	Engage x Self-Esteem (Υ_{11})	-.000347	-.022	.983
	Engage x Stability (Υ_{12})	.055654	.599	.549
	Engage x SE x Stability (Υ_{13})	-.001133	-.468	.639

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem.

Table 41

Summary of HLM Analyses Modeling Series 2 Negative Affect Measures as a Function of a Trait-Level Self-Esteem, Self-Esteem Stability, the Self-Esteem x Self-Esteem Stability Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 23, Fear	Intercept (Υ_{00})	1.732814	25.824	.000
	Self-Esteem (Υ_{01})	-.041302	-2.266	.023
	Stability (Υ_{02})	-.013863	-.128	.898
	SE x Stability (Υ_{03})	.000049	.018	.986
	Engage (Υ_{10})	-.139062	-2.532	.012
	Engage x Self-Esteem (Υ_{11})	.013850	.962	.336
	Engage x Stability (Υ_{12})	-.044464	-.533	.594
	Engage x SE x Stability (Υ_{13})	.001819	.836	.404
Model 24, Sadness	Intercept (Υ_{00})	1.457616	23.994	.000
	Self-Esteem (Υ_{01})	-.051448	-3.114	.002
	Stability (Υ_{02})	-.152326	-1.558	.119
	SE x Stability (Υ_{03})	.003401	1.356	.175
	Engage (Υ_{10})	-.080678	-1.657	.097
	Engage x Self-Esteem (Υ_{11})	.039623	3.108	.002
	Engage x Stability (Υ_{12})	.187159	2.533	.012
	Engage x SE x Stability (Υ_{13})	-.004304	-2.233	.025
Model 25, Shame - Guilt	Intercept (Υ_{00})	1.472230	28.266	.000
	Self-Esteem (Υ_{01})	-.031225	-2.208	.027
	Stability (Υ_{02})	-.099121	-1.184	.237
	SE x Stability (Υ_{03})	.002325	1.082	.280
	Engage (Υ_{10})	-.140776	-3.242	.002
	Engage x Self-Esteem (Υ_{11})	.012853	1.129	.259
	Engage x Stability (Υ_{12})	.043602	.660	.509
	Engage x SE x Stability (Υ_{13})	-.001032	-.599	.549

Note: Engage = Engagement in Physical Activity. Stability = Less Stable Self-Esteem.

Table 42

Predicted Values for Series 2 Sadness as a Function of Trait-Level Self-Esteem, Self-Esteem Stability, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Unstable Self-Esteem	Stable Self-Esteem	Unstable Self-Esteem	Stable Self-Esteem
Engage In Physical Activity?				
YES	1.74	1.49	1.55	1.37
NO	1.25	2.32	.73	1.53

Note: Mean of Sadness for the relevant HLM analyses = 1.39 with a standard deviation of .65.

Table 43

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a Function of Trait-Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	t-ratio	p-value
Model 26, Self-Esteem	Intercept (Υ_{00})	30.603757	50.143	.000
	Self-Esteem (Υ_{01})	.052596	4.300	.000
	Fragile SE (Υ_{02})	.223724	1.398	.162
	SE x Fragile (Υ_{03})	-.005735	-1.402	.161
	Engage (Υ_{10})	.326150	5.594	.000
	Engage x Self-Esteem (Υ_{11})	-.021597	-2.289	.022
	Engage x Fragile SE (Υ_{12})	-.057465	-.473	.636
	Engage x SE x Fragile (Υ_{13})	.00818	.260	.795
Model 27, Subjective Well-Being	Intercept (Υ_{00})	-.328120	-1.597	.110
	Self-Esteem (Υ_{01})	.148601	4.252	.000
	Fragile SE (Υ_{02})	1.023508	2.243	.025
	SE x Fragile (Υ_{03})	-.026949	-2.310	.021
	Engage (Υ_{10})	.806848	4.750	.000
	Engage x Self-Esteem (Υ_{11})	-.051902	-1.887	.059
	Engage x Fragile SE (Υ_{12})	-.408361	-1.152	.250
	Engage x SE x Fragile (Υ_{13})	.008787	.958	.338

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 44

Summary of HLM Analyses Modeling Series 2 Components of Subjective-Well Being as a

Function of Trait-Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and

Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile

Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 28, Positive Affect	Intercept (Υ_{00})	3.165117	41.022	.000
	Self-Esteem (Υ_{01})	.041466	3.158	.002
	Fragile SE (Υ_{02})	.398712	2.319	.020
	SE x Fragile (Υ_{03})	-.009619	-2.190	.028
	Engage (Υ_{10})	.283025	4.532	.000
	Engage x Self-Esteem (Υ_{11})	-.012994	-1.286	.199
	Engage x Fragile SE (Υ_{12})	-.149374	-1.148	.251
	Engage x SE x Fragile (Υ_{13})	.003186	.946	.345
Model 29, Negative Affect	Intercept (Υ_{00})	1.553324	31.551	.000
	Self-Esteem (Υ_{01})	-.027451	-3.274	.001
	Fragile SE (Υ_{02})	-.166796	-1.516	.129
	SE x Fragile (Υ_{03})	.004500	1.601	.109
	Engage (Υ_{10})	-.121216	-3.105	.002
	Engage x Self-Esteem (Υ_{11})	.017310	2.743	.007
	Engage x Fragile (Υ_{12})	.147301	1.813	.069
	Engage x SE x Fragile (Υ_{13})	-.002980	-1.416	.157
Model 30, Life Satisfaction	Intercept (Υ_{00})	3.755112	53.014	.000
	Self-Esteem (Υ_{01})	.046097	3.831	.000
	Fragile (Υ_{02})	.239825	1.536	.124
	SE x Fragile (Υ_{03})	-.007051	-1.763	.077
	Engage (Υ_{10})	.235084	3.857	.000
	Engage x Self-Esteem (Υ_{11})	-.005633	-.570	.569
	Engage x Fragile (Υ_{12})	.021788	.171	.865
	Engage x SE x Fragile (Υ_{13})	-.000121	-.037	.971

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of

less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 45

Summary of HLM Analyses Modeling Series 2 Negative Affect Measures as a Function of Trait-Level Self-Esteem, Fragile Self-Esteem (Composite Measure of Unstable and Contingent Self-Esteem with Appearance Contingent Self Worth), and the Self-Esteem x Fragile Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 31, Fear	Intercept (Υ_{00})	1.734162	26.674	.000
	Self-Esteem (Υ_{01})	-.035123	-3.178	.002
	Fragile (Υ_{02})	-.107446	-.746	.455
	SE x Stability (Υ_{03})	.003357	.912	.362
	Engage (Υ_{10})	-.146702	-2.686	.008
	Engage x Self-Esteem (Υ_{11})	.026592	3.005	.003
	Engage x Fragile (Υ_{12})	.101200	.887	.375
	Engage x SE x Fragile (Υ_{13})	-.001151	-.390	.696
Model 32, Sadness	Intercept (Υ_{00})	1.454837	24.170	.000
	Self-Esteem (Υ_{01})	-.032456	-3.168	.002
	Fragile (Υ_{02})	-.214393	-1.598	.110
	SE x Fragile (Υ_{03})	.005062	1.477	.140
	Engage (Υ_{10})	-.078836	-1.620	.105
	Engage x Self-Esteem (Υ_{11})	.018321	2.327	.020
	Engage x Fragile (Υ_{12})	.246442	2.431	.015
	Engage x SE x Fragile (Υ_{13})	-.005393	-2.055	.040
Model 33, Shame - Guilt	Intercept (Υ_{00})	1.471856	28.473	.000
	Self-Esteem (Υ_{01})	-.014966	-1.703	.088
	Fragile (Υ_{02})	-.176926	-1.540	.122
	SE x Fragile (Υ_{03})	.004959	1.693	.090
	Engage (Υ_{10})	-.141092	-3.255	.002
	Engage x Self-Esteem (Υ_{11})	.007360	1.048	.295
	Engage x Fragile (Υ_{12})	.095197	1.052	.293
	Engage x SE x Fragile (Υ_{13})	-.002323	-.992	.332

Note: Engage = Engagement in Physical Activity. Fragile = Fragile Self-Esteem (summary measure composed of less stable self-esteem, contingent self-esteem, and appearance contingent self-worth).

Table 46

Predicted Values for Series 2 Sadness as a Function of Trait-Level Self-Esteem, Self-Esteem

Fragility (Composite Measure of Unstable and Contingent Self-Esteem with Appearance

Contingent Self Worth), and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Fragile Self-Esteem	High Fragile Self-Esteem	Low Fragile Self-Esteem	High Fragile Self-Esteem
Engage In Physical Activity?				
YES	1.38	1.55	1.21	1.36
NO	2.26	1.06	1.69	.81

Note: Mean of Sadness for the relevant HLM analyses = 1.39 with a standard deviation of .65.

Table 47

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent

Self-Esteem Interaction with Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 34, Self-Esteem	Intercept (Υ_{00})	3.605773	50.512	.000
	Self-Esteem (Υ_{01})	.123687	2.130	.033
	CSE (Υ_{02})	.051941	1.166	.244
	SE x CSE (Υ_{03})	-.001484	-1.316	.189
	Engage (Υ_{10})	.327579	5.622	.000
	Engage x Self-Esteem (Υ_{11})	-.040069	-.878	.380
	Engage x CSE (Υ_{12})	-.022838	-.661	.509
	Engage x SE x CSE (Υ_{13})	.000363	.410	.681
Model 35, Subjective Well-Being	Intercept (Υ_{00})	-.324465	-1.581	.114
	Self-Esteem (Υ_{01})	.49842	2.997	.003
	CSE (Υ_{02})	.257158	2.014	.044
	SE x CSE (Υ_{03})	-.007132	-2.205	.027
	Engage (Υ_{10})	.811276	4.774	.000
	Engage x Self-Esteem (Υ_{11})	-.140284	-1.053	.293
	Engage x CSE (Υ_{12})	-.086468	-.857	.392
	Engage x SE x CSE (Υ_{13})	.001834	.710	.478

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 48

Summary of HLM Analyses Modeling Series 2 Components of Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent

Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 36, Positive Affect	Intercept (Υ_{00})	3.168078	41.171	.000
	Self-Esteem (Υ_{01})	.177076	2.827	.005
	CSE (Υ_{02})	.108751	2.263	.024
	SE x CSE (Υ_{03})	-.002767	-2.274	.023
	Engage (Υ_{10})	.283191	4.530	.000
	Engage x Self-Esteem (Υ_{11})	-.032114	-.656	.512
	Engage x CSE (Υ_{12})	-.021908	-.591	.554
	Engage x SE x CSE (Υ_{13})	.000411	.433	.665
Model 37, Negative Affect	Intercept (Υ_{00})	1.550813	31.328	.000
	Self-Esteem (Υ_{01})	-.080852	-1.997	.045
	CSE (Υ_{02})	-.038454	-1.237	.216
	SE x CSE (Υ_{03})	.001083	1.377	.168
	Engage (Υ_{10})	-.120429	-3.079	.003
	Engage x Self-Esteem (Υ_{11})	.052094	1.702	.088
	Engage x CSE (Υ_{12})	.034951	1.509	.131
	Engage x SE x CSE (Υ_{13})	-.000718	-1.210	.227
Model 38, Life Satisfaction	Intercept (Υ_{00})	3.751397	53.114	.000
	Self-Esteem (Υ_{01})	.135306	2.380	.017
	CSE (Υ_{02})	.057174	1.312	.190
	SE x CSE (Υ_{03})	-.001815	-1.642	.100
	Engage (Υ_{10})	.239803	3.933	.000
	Engage x Self-Esteem (Υ_{11})	-.009967	-.208	.835
	Engage x CSE (Υ_{12})	.000756	.021	.984
	Engage x SE x CSE (Υ_{13})	.000082	.088	.930

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 49

Summary of HLM Analyses Modeling Series 2 Negative Affect Measures as a Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and the Self-Esteem x Contingent Self-Esteem Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	t-ratio	p-value
Model 39, Fear	Intercept (Υ_{00})	1.731275	26.616	.000
	Self-Esteem (Υ_{01})	-.064057	-1.217	.224
	CSE (Υ_{02})	-.014253	-.353	.724
	SE x CSE (Υ_{03})	.000619	.606	.544
	Engage (Υ_{10})	-.147723	-2.700	.007
	Engage x Self-Esteem (Υ_{11})	.042783	.997	.319
	Engage x CSE (Υ_{12})	.026893	.827	.408
	Engage x SE x CSE (Υ_{13})	-.000363	-.436	.662
Model 40, Sadness	Intercept (Υ_{00})	1.450647	23.922	.000
	Self-Esteem (Υ_{01})	-.098594	-1.994	.046
	CSE (Υ_{02})	-.056120	-1.479	.139
	SE x CSE (Υ_{03})	.001330	1.385	.046
	Engage (Υ_{10})	-.075308	-1.543	.123
	Engage x Self-Esteem (Υ_{11})	.079679	2.085	.037
	Engage x CSE (Υ_{12})	.056325	1.947	.051
	Engage x SE x CSE (Υ_{13})	-.001260	-1.700	.089
Model 41, Shame - Guilt	Intercept (Υ_{00})	1.471618	28.481	.000
	Self-Esteem (Υ_{01})	-.077481	-1.853	.063
	CSE (Υ_{02})	-.043758	-1.365	.172
	SE x CSE (Υ_{03})	.001251	1.540	.123
	Engage (Υ_{10})	-.142210	-3.278	.001
	Engage x Self-Esteem (Υ_{11})	.031588	.928	.354
	Engage x CSE (Υ_{12})	.020638	.800	.424
	Engage x SE x CSE (Υ_{13})	-.000483	-.732	.464

Note: Engage = Engagement in Physical Activity. CSE = Contingent Self-Esteem.

Table 50

Predicted Values for Series 2 Sadness as a Function of Trait-Level Self-Esteem, Contingent Self-Esteem, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Contingent Self-Esteem	High Contingent Self-Esteem	Low Contingent Self-Esteem	High Contingent Self-Esteem
Engage In Physical Activity?				
YES	1.50	1.49	1.25	1.26
NO	2.66	1.50	1.25	.40

Note: Mean of Sadness for the relevant HLM analyses = 1.47 with a standard deviation of .72.

Table 51

Summary of HLM Analyses Modeling Series 2 Daily Self-Esteem and Subjective Well-Being as a

Function of Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x

Appearance Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 42, Self-Esteem	Intercept (Υ_{00})	3.603941	50.525	.000
	Self-Esteem (Υ_{01})	.100333	1.874	.060
	ACSW (Υ_{02})	.347725	.827	.409
	SE x ACSW (Υ_{03})	-.010375	-.952	.342
	Engage (Υ_{10})	.325528	5.590	.000
	Engage x Self-Esteem (Υ_{11})	-.051820	-1.263	.207
	Engage x ACSW (Υ_{12})	-.343001	-1.074	.283
	Engage x SE x ACSW (Υ_{13})	.006526	.782	.435
Model 43, Subjective Well-Being	Intercept (Υ_{00})	-.323003	-1.591	.111
	Self-Esteem (Υ_{01})	.489155	3.215	.002
	ACSW (Υ_{02})	2.538520	2.125	.033
	SE x ACSW (Υ_{03})	-.071838	-2.319	.020
	Engage (Υ_{10})	.801946	4.728	.000
	Engage x Self-Esteem (Υ_{11})	-.209255	-1.749	.080
	Engage x ACSW (Υ_{12})	-1.491384	-1.601	.109
	Engage x SE x ACSW (Υ_{13})	.033542	1.377	.169

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

Table 52

Summary of HLM Analyses Modeling Series 2 Components of Subjective-Well Being as a

Function of Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x

Appearance Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 44, Positive Affect	Intercept (Υ_{00})	3.166452	41.155	.000
	Self-Esteem (Υ_{01})	.161197	2.791	.006
	ACSW (Υ_{02})	1.005051	2.214	.027
	SE x ACSW (Υ_{03})	-.025703	-2.185	.029
	Engage (Υ_{10})	.282190	4.518	.000
	Engage x Self-Esteem (Υ_{11})	-.061783	-1.405	.160
	Engage x ACSW (Υ_{12})	-.486969	-1.423	.155
	Engage x SE x ACSW (Υ_{13})	.010453	1.167	.243
Model 45, Negative Affect	Intercept (Υ_{00})	1.552434	31.780	.000
	Self-Esteem (Υ_{01})	-.088517	-2.411	.016
	ACSW (Υ_{02})	-.453715	-1.572	.116
	SE x ACSW (Υ_{03})	.012765	1.707	.087
	Engage (Υ_{10})	-.120457	-3.087	.002
	Engage x Self-Esteem (Υ_{11})	.057101	2.080	.037
	Engage x ACSW (Υ_{12})	.417606	1.955	.050
	Engage x SE x ACSW (Υ_{13})	-.120457	-3.087	.002
Model 46, Life Satisfaction	Intercept (Υ_{00})	3.756983	53.494	.000
	Self-Esteem (Υ_{01})	.130854	2.493	.013
	ACSW (Υ_{02})	.518039	1.259	.208
	SE x ACSW (Υ_{03})	-.017607	-1.647	.099
	Engage (Υ_{10})	.232543	3.819	.000
	Engage x Self-Esteem (Υ_{11})	-.033033	-.767	.443
	Engage x ACSW (Υ_{12})	-.168442	-.502	.615
	Engage x SE x ACSW (Υ_{13})	.005291	.603	.546

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

Table 53

Predicted Values for Series 2 Negative Affect as a Function of Trait-Level Self-Esteem,

Appearance Contingent Self-Worth, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth
Engage In Physical Activity?				
YES	1.01	2.26	1.93	.54
NO	2.63	1.60	1.35	.63

Note: Mean of Negative Affect the relevant HLM analyses = 1.46 with a standard deviation of .54.

Table 54

Summary of HLM Analyses Modeling Series 2 Negative Affect Measures as a Function of Trait-Level Self-Esteem, Appearance Contingent Self-Worth, and the Self-Esteem x Appearance Contingent Self-Worth Interaction as Well as Daily Engagement in Physical Activity

Daily Measure	Predictor	Coefficient	*t*-ratio	*p*-value
Model 47, Fear	Intercept (Υ_{00})	1.734987	26.857	.000
	Self-Esteem (Υ_{01})	-.115257	-2.382	.017
	ACSW (Υ_{02})	-.572390	-1.507	.132
	SE x ACSW (Υ_{03})	.016354	1.660	.097
	Engage (Υ_{10})	-.146479	-2.691	.008
	Engage x Self-Esteem (Υ_{11})	.080633	2.099	.036
	Engage x ACSW (Υ_{12})	.608442	2.035	.042
	Engage x SE x ACSW (Υ_{13})	-.012030	-1.538	.124
Model 48, Sadness	Intercept (Υ_{00})	1.453029	24.183	.000
	Self-Esteem (Υ_{01})	-.075511	-1.674	.094
	ACSW (Υ_{02})	-.387794	-1.094	.274
	SE x ACSW (Υ_{03})	.009499	1.034	.302
	Engage (Υ_{10})	-.078875	-1.615	.106
	Engage x Self-Esteem (Υ_{11})	.047031	1.367	.172
	Engage x ACSW (Υ_{12})	.354324	1.324	.186
	Engage x SE x ACSW (Υ_{13})	-.006658	-.951	.342
Model 49, Shame - Guilt	Intercept (Υ_{00})	1.469951	28.502	.000
	Self-Esteem (Υ_{01})	-.074285	-1.923	.054
	ACSW (Υ_{02})	-.403327	-1.330	.184
	SE x ACSW (Υ_{03})	.012334	1.568	.117
	Engage (Υ_{10})	-.138605	-3.198	.002
	Engage x Self-Esteem (Υ_{11})	.043839	1.433	.152
	Engage x ACSW (Υ_{12})	.297240	1.248	.212
	Engage x SE x ACSW (Υ_{13})	-.0077740	-1.243	.214

Note: Engage = Engagement in Physical Activity. ACSW = Appearance Contingent Self-Worth.

Table 55

Predicted Values for Series 2 Fear as a Function of Trait-Level Self-Esteem, Appearance

Contingent Self-Worth, and Engagement in Physical Activity

	Low Self-Esteem		High Self-Esteem	
	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth	Low Appearance Contingent Self-Worth	High Appearance Contingent Self-Worth
Engage In Physical Activity?				
YES	1.80	1.82	1.31	1.43
NO	3.12	1.82	1.45	.55

Note: Mean of Fear for the relevant HLM analyses = 1.62 with a standard deviation of .74.