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# High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success

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**ABSTRACT** What good is self-control? We incorporated a new measure of individual differences in self-control into two large investigations of a broad spectrum of behaviors. The new scale showed good internal consistency and retest reliability. Higher scores on self-control correlated with a higher grade point average, better adjustment (fewer reports of psychopathology, higher self-esteem), less binge eating and alcohol abuse, better relationships and interpersonal skills, secure attachment, and more optimal emotional responses. Tests for curvilinearity failed to indicate any drawbacks of so-called overcontrol, and the positive effects remained after controlling for social desirability. Low self-control is thus a significant risk factor for a broad range of personal and interpersonal problems.

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The human capacity to exert self-control is arguably one of the most powerful and beneficial adaptations of the human psyche. People are happiest and healthiest when there is an optimal fit between self and environment, and this fit can be substantially improved by altering the self to fit the world (Rothbaum, Weisz, & Snyder, 1982). Indeed, the self's capacity to inhibit its antisocial impulses and conform to the demands of group life has been proposed to be the hallmark of civilized life (Freud, 1930). Even today, the vast majority of social and personal problems seem on theoretical grounds to involve a substantial component of deficient self-control (see Baumeister, Heatherton, & Tice, 1994). These observations provide multiple bases for deriving the broad hypothesis that a high personal capacity for self-control should be powerfully adaptive and should enable individuals to live happier, healthier lives.

Anecdotal impressions and assorted research findings suggest that substantial individual differences exist in people's capacity for self-control. Some people are much better able than others to manage their lives, hold their tempers, keep their diets, fulfill their promises, stop after a couple of drinks, save money, persevere at work, keep secrets, and so forth. These differences seemingly ought to be associated with greater success and well-being in life. One goal of the present investigation was to provide some direct evidence that individual differences in self-control would effectively predict positive outcomes across a variety of life domains.

### Measurement of Self-Control

In order to investigate the possible benefits of self-control, it is necessary to have a good trait measure of this construct. Existing measures are few and old. In fact, the relative dearth of published evidence on the benefits of self-control among adults may indicate that researchers have not been satisfied or successful using the existing scales. Recent advances in self-control theory (see Carver & Scheier, 1981, 1998; also Baumeister et al., 1994; Muraven & Baumeister, 2000) suggest the need for developing new scales as opposed to relying on very old measures. For example, Baumeister et al. (1994) identified four major domains of self-control—controlling thoughts, emotions, impulses, and performance—which would be important to include in an overall index of self-control. Hence, a second aim of the present investigation was

to develop an up-to-date scale for measuring individual differences in self-control.

There have been some efforts to develop ways of measuring individual differences in self-control, but these did not seem suitable for our purposes. We review them briefly here, however, because some investigators may find them useful or appropriate in specific research contexts.

The Self-Control Behavior Inventory (Fagen, Long, & Stevens, 1975) is essentially a checklist for observational ratings of behavior. Behavior observation has several advantages over self-report measures, but it is considerably more difficult to use, inasmuch as it requires trained observers and a substantial, representative sample of behavior to observe.

The Self-Control Questionnaire was put forward by Brandon, Oescher, and Loftin (1990) as a trait scale of self-control. Brandon et al.'s emphasis was on the self-control of health behaviors, and we had some concerns about the breadth of items. Most notably, 25% of the items on the Self-Control Questionnaire refer specifically to eating patterns. This disproportionate emphasis on eating raises the danger of inflating gender differences in trait self-control, because eating is one of the few spheres of self-control where pronounced gender differences exist. It may be an excellent measure for measuring self-control with respect to health, but it was never intended as a broad based measure of self-control.

The Self-Control Schedule, developed by Rosenbaum (1980), is intended specifically for use with clinical samples and focuses on the usage of strategies such as self-distraction and cognitive reframing to solve particular behavioral problems. It has received favorable reports regarding its validity (e.g., Richards, 1985) and has undeniable value for relevant investigations targeted at exploring the uses of such strategies among people with clinical problems. But, again, we concluded that it was not appropriate to use as a trait measure of dispositional self-control across broad spheres of normal behavior.

Some authors have used a self-control subscale from Gough's (1987) California Personality Inventory (CPI). There is reason to question whether this subscale is appropriately named: Although some items on it do seem a priori relevant to self-control, others do not. Some seem quite irrelevant to the concept of self-control construct (e.g., "I would like to wear expensive clothes;" "I would like to be an actor on the stage or in the movies;" "I have had very

peculiar and strange experiences”). Some address interpersonal issues that are not directly indicative of self-control (e.g., “My home life was always happy;” “My way of doing things is apt to be misunderstood by others”). Others seem to focus in particular on a narcissistic style of self-admiration (e.g., “I would like to be the center of attention;” “A person needs to ‘show off’ a little now and then”). Others ask about impulses rather than about control over them (e.g., “Sometimes I feel like smashing things;” “Sometimes I feel as if I must injure either myself or someone else”).

The heterogeneity of items on the CPI Self-Control (Sc) scale may well reflect the complex process by which the scale evolved. Following the development of the CPI So (Socialization) and Re (Responsibility) subscales, Gough, McClosky, and Meehl (1952) concluded that So and Re did not really capture “the kind of joyful, ebullient abandonment of restraint that one sees at certain times such as attendance at a carnival” (CPI Administrator’s Guide, p. 45). Thus, they set about developing a scale to assess “impetuosity, high spirits, caprice, and a taste for devilry” (CPI Administrator’s Guide, p. 45)—clearly one pattern of behavior that may be atypical of self-control in general. The conceptual heterogeneity, along with the seeming lack of face validity of many items, may be one reason that this scale has not been popular among laboratory researchers in recent decades, despite the rapid expansion of research on self-regulation. Certainly self-control is a distinct construct that should be largely independent of high spirits and a taste for devilry. In any case, the CPI antedates most of the modern research on self-control, and so, on an *a priori* basis, it would be desirable to construct a new scale based on recent developments.

In view of the drawbacks with these existing measures, we felt it desirable to develop our own. Central to our concept of self-control was the ability to override or change one’s inner responses, as well as to interrupt undesired behavioral tendencies (such as impulses) and refrain from acting on them. The concept of self-control as overriding responses fits well with Carver and Scheier’s (1981, 1982, 1998) pioneering work on self-regulation. Their theoretical model emphasized the feedback loop (test, operate, test, exit) that guides behavior toward goals and standards. Indeed, their work arose from studies of self-awareness, for which an effective trait measure has long been available (Fenigstein, Scheier, & Buss, 1975). Our interest placed less emphasis on the supervisory feedback loop and instead

emphasized the “operate” phase of the loop, by which the self performs operations that alter itself. Regulating the stream of thought (e.g., forcing oneself to concentrate), altering moods or emotions, restraining undesirable impulses, and achieving optimal performance (e.g., by making oneself persist) all constitute important instances of the self overriding its responses and altering its states or behaviors. More generally, breaking habits, resisting temptation, and keeping good self-discipline all reflect the ability of the self to control itself, and we sought to build our scale around them.

### Benefits of Self-Control

Self-control is widely regarded as a capacity to change and adapt the self so as to produce a better, more optimal fit between self and world (e.g., Rothbaum et al., 1982). Central to our concept of self-control is the ability to override or change one’s inner responses, as well as to interrupt undesired behavioral tendencies and refrain from acting on them. From this perspective, self-control should contribute to producing a broad range of positive outcomes in life. In fact, empirical evidence indicates that people with high dispositional self-control have better outcomes in various spheres. In two independent studies, we sought to replicate and extend these prior findings, taking advantage of two large ongoing investigations in which multiple outcomes were being assessed.

### Achievement and Task Performance

A first domain involves task performance, such as in school or work. Our participants were university students, and so the primary or quintessential measure of overall success is grade point average. People with high self-control should presumably achieve better grades in the long run, because they should be better at getting tasks done on time, preventing leisure activities from interfering with work, using study time effectively, choosing appropriate courses, and keeping emotional distractions from impairing performance.

Prior studies have provided some evidence that self-control facilitates school performance. Feldman, Martinez-Pons, and Shaham (1995) found that children with higher self-regulation (as assessed by the Student Regulated Learning Scale; Zimmerman & Martinez-Pons, 1988) received better grades in a computer course. Flynn (1985) found that improvements in delay of gratification were

correlated to improvements in school achievement among 4-year-old African American migrant boys, although not girls. A pair of studies by Mischel, Shoda, and Peake (1988) and Shoda, Mischel, and Peake (1990) assessed children's capacity to delay gratification at age 4 and then followed up the participants as they completed high school and entered college. They showed that the children who were most successful at delaying gratification went on to become adults with higher SAT scores, indicating better academic performance. Insofar as delay of gratification constitutes a behavioral index of self-control, these results do point toward lasting and long-term benefits of good self-control. Wolfe and Johnson (1995) found that self-control was the only one among 32 personality variables that contributed significantly to prediction of grade point average among university students. They used four different self-control scales, including a Big Five Conscientiousness subscale (John, 1990), an organization subscale from the Jackson Personality Inventory (Jackson, 1976), a control subscale developed by Waller, Lilienfeld, Tellegen, and Lykken (1991), and a new scale of items pertaining self-efficacy. These findings lent support for our prediction that high self-control would predict better academic performance.

### Impulse Control

A second domain involves impulsive behaviors. Many university students suffer from problems in impulse regulation, as has been widely documented (see Baumeister et al., 1994, for review). In particular, problems with regulating eating are prevalent, if not epidemic, among female university students, whereas surveys of male students suggest that many suffer from alcohol abuse problems (e.g., Heatherton, 1993; Heatherton & Baumeister, 1991; Johnston, O'Malley, & Bachman, 1991; Williamson, 1990). Regulating intake of food and drink is one of the most obvious and direct applications of self-control, and so we predicted that people high in self-control should exhibit fewer such problems.

Several studies have linked impulse control problems to deficits in self-control. Storey (1999) concluded that poor self-regulation, as assessed by the Barratt Impulsivity Scale, was an important predictor of heroin addiction. Wills, DuHamel, and Vaccaro (1995) found that self-control, as assessed by a scale they derived from a behavior rating scale by Kendall and Wilcox (1979), was an

important predictor of substance abuse among adolescents and, in fact, seemed to mediate between temperament and substance abuse. Peluso, Ricciardelli, and Williams (1999) found some links of generally poor self-control, as assessed by a scale developed by Rohde, Lewinsohn, Tilson, and Seeley (1990), to problem drinking and problem eating patterns among college students. Cook, Young, Taylor, and Bedford (1998) found that low CPI self-control predicted higher alcohol consumption among adults. Romal and Kaplan (1995) found that people with good self-control, as assessed by Rosenbaum's (1980) scale, were better able to save their money rather than spend it. In Study 1, we sought to extend these findings by examining the links between self-control and young adults' reports of eating disorder symptoms and alcohol use.

### Adjustment

A third domain involves psychological adjustment. Many psychological problems and disorders involve some degree of self-regulation failure. The link between psychological symptoms and self-control could be bidirectional. On one hand, difficulties with self-regulation can set the stage for a range of psychological problems. Indeed, problems with self-control are the hallmark of many disorders detailed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). Conversely, the emotional distress associated with many of these problems can impair self-control by preempting limited resources and by producing stressful outcomes that further burden the individual's regulatory capacity.

Of particular interest is the hypothesis that psychological difficulties can result from either too little or too much control. The pathogenic nature of self-control failure is fairly obvious. The DSM-IV has an entire cluster of diagnoses that fall under the umbrella of "Impulse Control Disorders," and many other disorders are essentially defined by problems in the regulation of thought, affect and/or behavior (e.g., panic and other anxiety disorders, antisocial personality disorder, anger management problems). Psychological problems purported to stem from an excess of self-control are less obvious, but they have been hypothesized to be important too. Most notably, notions of *overcontrol* pervade clinical conceptualizations of both obsessive-compulsive disorder and



certain eating disorders, such as anorexia nervosa. In contrast, other writers have rejected the notion that too much self-control is bad, holding that self-regulatory failures are either underregulation or misregulation (Carver & Scheier, 1981; Baumeister et al., 1994). In this view the putative category of overcontrol is simply a misuse of a desirable capacity rather than an indication that too much self-control is bad.

From these accounts, two sets of competing hypotheses can be made. Based on the concept that overcontrol exists and is maladaptive, one would expect individual differences in self-control to be differentially related to distinct symptom clusters—for example, positively correlated with symptoms of obsessive-compulsive disorder and negatively correlated with problems with anxiety and anger. From this perspective, it would also follow that an index of overall psychological adjustment (or psychopathology) would show (a) a curvilinear relationship, such that both very high and very low self-control are associated with pathology, or (b) no relationship because the two opposing effects cancel each other out. In contrast, the misregulation theories would predict that self-control would have an essentially linear relationship to psychological symptoms, such that the highest scores would be associated with greatest positive psychological adjustment. This should be the case across distinct symptom clusters as well as for an index of general psychological adjustment.

Surprisingly little previous work has examined links between self-control and adjustment. And to our knowledge, no study has systematically evaluated these competing hypotheses regarding “overcontrol.” At most, some findings have indicated that poor self-control is associated with aversive emotions. In a sample of preschool children, Fabes et al. (1999) found that good effortful control reported by parents and teachers (interacting with situational factors) predicted less negative emotional arousal. Several measures pertaining to self-control (including Block’s, 1961 measures of ego-control and ego-resiliency, Barron’s 1953 measure of ego-strength, and several measures of hardiness) were also included in a recent study with an adult sample by Gramzow, Sedikides, Panter, and Insko (2000), and they predicted emotional distress better than measures of the structure of the self (such as complexity or consistency of self-concepts or discrepancies between self-concept and ideal or ought selves).

The present Study 1 sought to extend this work substantially by examining the relationship of self-control to such key psychological symptoms as anxiety, depression, obsessive-compulsive behaviors, and somatic complaints. We also investigated both linear and nonlinear effects, as a way of getting at the question of whether very high levels of self-control are associated with poor adjustment.

### Interpersonal Relationships

A fourth domain concerns interpersonal relationships. High self-control should make people better, more desirable relationship partners and could contribute to relationship success in a variety of ways. Self-control could contribute directly to harmonious interactions, such as when people refrain from saying hurtful things on impulse. It can also contribute indirectly, such as by enabling people to resist temptations to become involved with alternative partners. Poor self-control may lead to angry outbursts and even aggressive behavior, as well as difficulty moving beyond interpersonal slights to forgive others.

There is a good deal of evidence suggesting that children with good self-control get along better with others. A longitudinal study by Eisenberg et al. (1997) confirmed that good self-regulation, reported by parents and teachers, at early ages predicts better social functioning up through age 10. Maszk, Eisenberg, and Guthrie (1999) found that teacher ratings of children's self-control (ages 4-6) predicted subsequent social status such that children who had better self-control went on to become more popular. Fabes et al. (1999) found that good effortful control, reported by parents and teachers, (interacting with situational factors) predicted more socially competent responding among preschool children. Moreover, the longitudinal studies by Mischel et al. (1988) and Shoda et al. (1990), cited above, found that effective capacity to delay gratification at age 4 predicted better interpersonal relationships in early adulthood.

There is also a growing body of research confirming that poor self-control leads to aggression and antisocial behavior. Much of this work was stimulated by a landmark book by Gottfredson and Hirschi (1990), who proposed that low self-control is a major cause of criminal and violent activity. In subsequent empirical tests, this theory has held up well, insofar as criminals and other rule breakers typically exhibit deficits or lapses in self-control assessed with

diverse methods (Avakame, 1998; Cherek, Moeller, Dougherty, & Rhoades, 1997; Cochran, Wood, Sellers, Wilkerson, & Chamlin, 1998; Gibbs, Giever, & Martin, 1998; Longshore, 1998; Longshore & Turner, 1998; McGuire & Broomfield, 1994). A longitudinal study by Tremblay, Boulerice, Arseneault, and Niscale (1995) found that parent- and teacher-rated self-control was associated with higher rates of juvenile delinquency. Similar conclusions were reached with a Finnish sample by Pulkkinen and Haemaelaeninen (1995). Burton, Cullen, Evans, Alarid, and Dunaway (1998) found that the gender gap in crime became nonsignificant when self-control was controlled, which suggests that self-control plays a powerful mediating role. Using a maze performance task as an index of self-control, Latham and Perlow (1996) concluded that people with high self-control, assessed with the Porteus Maze Test (Porteus, 1965), were less aggressive toward other people in the workplace.

Among children, also, aggression and antisocial behavior have been linked to poor self-control. Nigg, Quamma, Greenberg, and Kusche (1999) found that high mental inhibitory control predicted fewer behavioral problems among elementary school children. Murphy and Eisenberg (1997) found that children with lower teacher-reported self regulation reported more angry conflicts with others, and they enacted more unfriendly responses to anger in a role-playing scenario with puppets. Krueger, Caspi, Moffitt, White, and Stouthamer-Loeber (1996) concluded that poor self-control, assessed by the California Child Q-Set (Block, 1961), is a risk factor for aggressive and delinquent behavior among preadolescent and early adolescent boys.

Poor control over anger may be relevant to interpersonal aggression, and there are some findings linking anger problems to overall poor self-control. Kochanska, Murray, and Harlan (2000) found that the capacity for effortful control among young children (33 months), assessed with a comprehensive behavioral battery incorporating multiple tasks, was correlated with the ability to control anger.

In the current studies, we considered three sets of variables relevant to interpersonal relationships—quality of relationships in the family of origin (family conflict and family cohesion), capacity for interpersonal empathy, and quality of attachment. We predicted that high scores on self-control would be correlated with higher relationship quality, enhanced empathy, a willingness to forgive

others for their transgressions, and a secure attachment style. We also sought to replicate the link between self-control and angry, aggressive patterns.

### Moral Emotions

The moral emotions constituted another domain potentially relevant to self-control. Shame and guilt have been linked to a variety of interpersonal and personal outcomes. On balance, guilt appears to be the more adaptive response to sin and failure. People who experience guilt about their bad behaviors tend to be motivated in a constructive, future-oriented direction—confessing, apologizing, or in some way undoing the harm that was done (Tangney, 1991, 1995b; Tangney, Miller, Flicker, & Barlow, 1996). In contrast, research has consistently shown that shame brings with it a panoply of psychological and social hidden costs.

We were unable to find any previous studies linking self-control to shame and guilt. However, given the evidence that shame often provokes irrational anger and other impulsive attempts to defend the self (e.g., externalization of blame, efforts to hide or escape shame-inducing situations), we anticipated a link between poor self-control and proneness to shame. In contrast, we anticipated a positive relationship between proneness to “shame-free” guilt and high self-control.

### Related Personality Features

We also sought to examine the relationship of self-control to two key personality features (conscientiousness and perfectionism) theoretically related to the propensity for self-control. The capacity for self-control is obviously an important component of behaving in a conscientious manner—completing assignments, fulfilling commitments, and otherwise taking care of business require the ability to control and direct behavior strategically. The role of self-control in perfectionism is less clear, but still plausible. Perfectionism is the tendency to adhere rigidly to unrealistically high expectations and standards. People high in perfectionism may sometimes exert considerable self-control in their pursuit of perfection, but they also exhibit problems with self-regulation in at least two ways. First, perfectionistic individuals have difficulty modifying their standards and expectations in response to the nature and demands of a given

situation. One hallmark of perfectionism is the drive for flawless performance in important domains, regardless of what is actually required (e.g., striving for the highest score on a licensing exam when all that is needed is a passing grade). Second, there appears to be an important link between perfectionism and procrastination (Fee & Tangney, 2000), the latter representing an obvious breakdown in self-control.

## METHOD

### Participants

Participants in Study 1 were 351 undergraduate students attending a large East Coast state university who received credit toward an undergraduate psychology course in exchange for their participation. Participants ranged in age from 18 to 55, ( $M = 20.07$ ,  $SD = 4.99$ ); 28% were male and 72% were female. Regarding ethnic/racial background, 49% were White, 20% Asian, 11% African American, 20% Other.

Participants in Study 2 were 255 undergraduate students attending a large East Coast state university who received credit toward an undergraduate psychology course in exchange for their participation. Participants ranged in age from 18 to 49, ( $M = 20.10$ ,  $SD = 4.23$ ); 19% were male and 81% were female. Regarding ethnic/racial background, 58% were White, 13% Asian, 11% African American, 22% Other.

### Development of the Self-Control Scale

Our approach followed directly from an extensive review of published studies on self-control processes and failures (Baumeister et al., 1994). We began by generating a larger pool of 93 items encompassing all the spheres of self-control failure covered in that review (in particular, control over thoughts, emotional control, impulse control, performance regulation, and habit breaking). Items were rated on a 5-point scale, anchored from 1 *not at all like me* to 5 *very much like me*. Using both rational and empirical methods, the scale was reduced to its final form comprising 36 items, based on an analysis of Study 1 data. We deleted, for example, items with low item-total correlations, duplicate or nearly duplicate items, and items likely to vary substantially by gender differences.<sup>1</sup> Based on a review of item-total correlations from both Study 1

1. Exploratory factor analyses were also conducted to investigate the dimensionality of the Self-Control Scale. To this end, these final 36 items were subjected to a principal components analysis with varimax rotation. Both a consideration of Kaiser's "little jiffy" (eigenvalues greater than 1) and a scree test suggested 5 factors. Factor 1 (11 items, 10.2% of the variance) assesses a general capacity for

and Study 2, we also constructed a 13-item Brief Self-Control Scale. The Brief Self-Control Scale correlated .93 and .92 with the Total Self-Control Scale in Studies 1 and 2, respectively. Moreover, the Brief Self-Control Scale taps the same range of content as the Total Self-Control Scale.<sup>2</sup>

*Additional measures and procedures.* The data reported here were collected as part of two larger investigations of the personality correlates of moral emotional styles. Students participated in several sessions of 45 to 60 minutes, conducted on separate days. At the beginning of the study, informed consent forms were distributed describing the general nature of the procedures. The voluntary and confidential nature of the study was emphasized, and students were asked not to write their names on any of the questionnaires. Questionnaires were coded with unique ID numbers in advance. The following measures were among those completed by respondents. (Table 1 presents descriptive statistics and coefficient alpha estimating the reliability of scales.)

The *Marlowe-Crowne Social Desirability Scale* (Crowne & Marlowe, 1960) is a widely used, well-validated measure of social desirability response bias. Participants rate 33 items as True or False (Study 1 and half of Study 2).

The *Balanced Inventory of Desirable Responding* (Paulhus, 1988) is a 40-item measure composed of two 20-item subscales. Self-Deception

Self-Discipline. Factor 2 (10 items, 9.7% of the variance) assesses an inclination toward Deliberate/Nonimpulsive action. Factor 3 (7 items, 7.7% of the variance) assesses a range of Healthy Habits. Factor 4 (5 items, 7.6% of the variance) assesses self regulation in service of a Work Ethic. Finally, Factor 5 (5 items, 7.0% of the variance) assesses Reliability. (We also conducted analyses using principal axis factoring methods. Results based on a principal axis factoring were nearly identical to those based on principal components analysis. We opted for orthogonal varimax rotation, as opposed to an oblique rotation, because our aim was to identify potentially unique components of self-control that would have empirical utility, rather than exploring the underlying structure of self-control, conceptually. As it turns out, varimax and oblique procedures resulted in nearly identical structures. As expected, factors derived from the oblique rotation were substantially correlated-range of  $r$ 's = .26 to .54, mean  $r$  = .42). In subsequent analyses, we observed little systematic variation in the correlates of the 5 factors. Thus, for the remainder of the article, we focus solely on the Total and Brief self control scores. Details of the factor analysis are available from the first author.

2. For example, items were included from each of the factors described in Footnote 1 (5 items from Factor 1, 3 items from Factor 2, 2 items from Factor 3, 2 items from Factor 4, and 1 item from Factor 5).

assesses the degree to which respondents make exaggerated claims of competence and rationality. Impression Management assesses the degree to which respondents systematically—and presumably consciously—overreport desirable behaviors and underreport undesirable behaviors. Items are rated on a 7-point Likert scale and after reversing items, one point is added for each extreme (6 or 7) response. This scoring is designed to identify respondents who give exaggeratedly desirable responses (Study 2).

The *Eating Disorder Inventory* (EDI; Garner, Olmstead, & Polivy, 1983) is a self-rating questionnaire designed to assess a broad range of behavioral and attitudinal characteristics of anorexia nervosa and bulimia nervosa. The measure yields eight subscales: Drive for Thinness, Bulimia, Body Satisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness and Maturity Fears (Study 1).

The *Short Michigan Alcoholism Screening Test* (SMAST; Selzer, Vinokur, & van Rooijen, 1975) is a widely used 13-item self-administered screening measure of alcoholism. Items include “Do you ever feel guilty about your drinking?” and “Have you ever gotten into trouble at work because of drinking?” (Study 1).

The *Symptom Checklist 90* (SCL-90; Derogatis, Lipman, & Covi, 1973) is comprised of 90 symptoms, each rated on a 5-point scale to indicate absence or intensity. The SCL-90 is a widely used clinical rating scale, appropriate for psychiatric outpatients as well as for screening nonclinical populations. The checklist yields nine clinical subscales: Somatization, Obsessive/Compulsive, Interpersonal Sensitivity (assessing feelings of personal inadequacy or inferiority), Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. An extensive body of research supports the reliability and validity of these scales (e.g., Derogatis, Rickels, & Rock, 1976; Derogatis & Cleary, 1977; Derogatis, 1989) (Study 1).

The *Millon Clinical Multiaxial Inventory – III* (MCMI-III; Millon, Davis, & Millon, 1997) is a widely used 175-item measure of psychopathology, yielding 24 clinical scales that tap a broad range of psychological problems. Fourteen scales assess Clinical Personality Patterns (e.g., Schizoid, Avoidant, Antisocial) and Severe Personality Pathology (e.g., Schizotypal, Borderline) reflected on Axis II of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). Ten scales assess Clinical Syndromes (e.g., Anxiety, Dysthymia, PTSD) and Severe Clinical Syndromes (e.g., Thought Disorder, Major Depression) reflected on Axis I of the DSM-IV (Study 2).

The *Rosenberg Self-Esteem Scale* (RSE; Rosenberg, 1965) is a widely used measure of global self-esteem. The 10 items are each answered on a

5-point scale. The RSE has been found to be reliable, internally consistent, and representative of a unidimensional construct (Gray-Little, Williams, & Hancock, 1997; Shevlin, Bunting, & Lewis, 1995; and others). The Stability of Self-Esteem Scale (5 items) measures the degree to which the evaluation of self-concept is constant versus variable (Studies 1 and 2).

The *Mini Marker* (Saucier, 1994) is a brief set of 40 adjective markers taken from Goldberg's (1992) original 100 adjective markers. The markers for Big-Five factor structure include Extraversion (e.g., "bold"), Agreeableness (e.g., "cooperative"), Conscientiousness (e.g., "efficient"), Emotional Stability (e.g., "temperamental" -reversed), and Openness to Experience (e.g., "creative"). Respondents are asked to rate each adjective on a 9-point scale ranging from *extremely inaccurate* to *extremely accurate*. Saucier (1994) provides data supporting the reliability and validity of this measure as a brief marker of the Big Five personality factors (Study 2).

The *Brief Perfectionism Scale* (BPS; Gosselin, Boone, Sinek, & Tangney, 2001) is a 7-item measure of perfectionism. Each item is rated on a 7-point scale. The BPS assesses the maladaptive, dichotomous thinking style of perfectionists, as well as their negative emotional reaction to making mistakes across work and leisure domains (Study 2).

The *Multidimensional Perfectionism Scale* (MPS; Hewitt & Flett, 1991) is a 45-item scale that assesses three dimensions of perfectionism: Self-Oriented perfectionism (e.g., "When I'm working on something, I cannot relax until it is perfect"), Socially Prescribed perfectionism (e.g., "I feel that people are too demanding of me"), and Other-Oriented perfectionism (e.g., "I have high expectations for the people who are important to me"). Items are rated on a 7-point scale. Hewitt and Flett (1991, 1993; Hewitt, Flett, & Turnbull, 1992) provide extensive data supporting the reliability and validity of this widely used perfectionism measure (Studies 1 and 2).

Portions of the *Family Environment Scale* (FES; Moos & Moos, 1981) were used to assess family conflict and cohesion. Each scale is composed of 9 items (Study 1).

The *Close Relationships Questionnaire* (Hazan & Shaver, 1987) translates the three infant attachment types described by Bowlby (1982) and Ainsworth, Blehar, Waters, and Wall (1978) into terms appropriate to adult love relationships. Participants are asked to consider their most important romantic relationships and then rate three general descriptions of their attachment experiences. Participants first rate each description on a 7-point scale; they are then asked to select the single description that best describes their experiences. Hazan and Shaver (1987, 1990) provided considerable evidence for the validity of this brief assessment of attachment (Studies 1 and 2).



The *Interpersonal Reactivity Index* (IRI; Davis, 1983) is a 28-item paper-and-pencil measure which yields two cognitively oriented empathy scales and two emotionally oriented empathy scales. The Perspective Taking Scale assesses the ability to “step outside of the self” and take another’s perspective in real-life situations. The Fantasy Scale assesses perspective taking in the fictional realm (e.g., identifying with the feelings of a character in a book). The Empathic Concern Scale assesses the extent to which respondents experience “other-oriented” feelings of compassion and concern. The Personal Distress Scale assesses the degree to which respondents experience “self-oriented” discomfort or fear when faced with another’s distress. The Personal Distress Scale taps empathic overconcern, and there is also an element of “loss of control” inherent in many of the items. Davis (1980, 1983; Davis & Oathout, 1987) has provided evidence supporting the reliability and validity of his multidimensional assessment of empathy (Studies 1 and 2).

The *Anger Response Inventory* (ARI; Tangney, Wagner, Marschall, & Gramzow, 1991) is a scenario-based self-report measure that presents respondents with a series of common, developmentally appropriate situations that are likely to elicit anger. They are asked to imagine themselves in each situation and then rate on a 5-point scale (1) how angry they would be in such a situation (assessing anger arousal); (2) their intentions—what they would feel like doing, not necessarily what they would actually do (constructive, malicious, fractious intentions are assessed); (3) their likely behavioral and cognitive responses (including a variety of aggressive and non-aggressive behaviors, escapist/diffusing tactics, and cognitive reappraisals); and (4) their assessment of the likely long-term consequences (for self, target, and relationship).

Several independent studies provide support for the reliability and validity of the ARI (Tangney, Barlow et al., 1996, Tangney, Wagner, Barlow, Marschall, & Gramzow, 1996). Together, estimates of internal consistency and test-retest correlations indicate that the ARI scales are quite reliable. Regarding validity, theoretically consistent patterns of correlations were observed with (1) global self-report measures of hostility, aggression, and anger management strategies; (2) self and family members’ reports of respondents’ behaviors in specific anger episodes; and (3) various dimensions of moral emotional style (Studies 1 and 2).

The *Multidimensional Forgiveness Inventory* (MFI; Tangney, Boone, Fee, & Reinsmith, 1999) is a measure of *dispositional* forgiveness (e.g., people’s generalized tendency to forgive across a range of relationships and types of transgressions). Three subscales assess (1) a propensity to forgive others (FO), (2) a propensity to ask for forgiveness from others (AF), and (3) a propensity for self-forgiveness (FS). The MFS consists of a series of situations involving transgressions that could be applicable to

most adults. In all, there are 16 situations described, 8 from the perspective of the victim of the transgression and 8 from the perspective of the perpetrator. Each “victim” situation is followed by questions assessing the likelihood of forgiving the perpetrator (FO). Each “perpetrator” situation is followed by questions assessing the respondent’s likelihood of seeking forgiveness (AF), as well as their propensity to forgive themselves (FS) (Study 2).

The *Test of Self-Conscious Affect* (TOSCA; Tangney, Wagner, & Gramzow, 1989) consists of a series of brief scenarios (10 negative and 5 positive), each followed by several associated responses. Aggregating across the scenarios, the TOSCA yields indices of shame—prone, guilt-prone, externalization, detachment/unconcern, alpha pride (pride in self), and beta pride (pride in a specific behavior). These scenarios were drawn from written accounts of personal shame, guilt, and pride experiences of adults, and therefore represent shame and guilt-inducing situations that adults encounter in day-to-day life. The respondent is asked how likely (on a 5-point scale) they would be to respond in each manner indicated, in connection with a given scenario. In this way, it is possible for a respondent to endorse multiple responses (e.g., he/she can endorse shame, guilt, both or neither) in response to any given scenario.

Convergent and divergent validity for the TOSCA scales have been well documented (see Tangney, 1991; Tangney, 1994; Tangney, Burggraf, & Wagner, 1995; Tangney, et al., 1992). Because shame and guilt both involve negative affect and internal attributions, the subscales overlap considerably ( $r = .45$ ; Tangney, et al., 1992). By partialing out the shared variance, the constructs of shame and guilt have each demonstrated unique variance that is functionally distinct. In order to compare the individual relationships of shame and guilt with other constructs, it is useful to partial out the shared variance (Studies 1 and 2).

## RESULTS

### Properties of Self-Control Scale

As shown in Table 1, internal consistency estimates of reliability were high. Alphas for the Total Self-Control Scale were .89 in both Studies 1 and 2. Similarly, the Brief SCS was highly reliable (alpha = .83 and .85 in Studies 1 and 2, respectively). Thus, the scale appears to have adequate internal reliability.

In addition, to establish test-retest reliability of the new Self-Control Scale, 233 participants in Study 2 completed the scale a second time in Session 3, conducted roughly three weeks later.

Test-retest reliability was .89 for the Total SCS score and .87 for the Brief SCS.

One possible concern is the degree to which the Self-Control Scale correlates with Social Desirability. As shown in Table 2, the correlations between self-control and social desirability (as assessed by the Marlowe-Crowne and BIDR) ranged from .54 to .60. This raises the possibility that any observed effects involving self-control may be due to social desirability biases. Therefore, we repeated all the main analyses with social desirability partialled out.

### Self-Control and Task Performance

The first sphere in which we predicted beneficial consequences of high self-control was performance. For college students, probably the most important and relevant index of performance is grade point average. As Table 2 shows, grade point average was significantly related to both Total and Brief Self-Control Scales in both Study 1 and Study 2. People with higher self-reported self-control had better grades than those reporting low self-control, consistent with the notion that self-control makes a significant contribution to academic success. Further, social desirability was not responsible for the link between self-control and grade point average. Considering the Total Self-Control Scale, the relationship between self-control and GPA remained robust even when controlling for scores on the Marlowe-Crowne Social Desirability Scale (Studies 1 and 2) and the BIDR (Study 2). (Results for the Brief SCS were similarly strong in Study 1 but somewhat weaker in Study 2 when controlling for social desirability.)

### Impulse Control

The second prediction was that self-control would contribute to success at impulse regulation, so that people scoring low on self-control would report a higher rate or incidence of dysfunctional, impulsive behaviors.

The regulation of eating is one important form of impulse control. Participants in Study 1 completed the Eating Disorders Inventory. As Table 2 shows, better self-control was associated with fewer problems regulating eating. Self-control was negatively correlated with most EDI subscales, including drive for thinness, bulimia, body dissatisfaction, ineffectiveness, interpersonal distrust,

**Table 1**  
Descriptive Statistics and Reliabilities of Study Measures

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
<b>Self-Control Scale</b>							
Total Self Control	Study 1	36	36–180	44–168	114.47	18.81	0.89
	Study 2			50–154	102.66	18.19	0.89
Brief Self-Control Scale	Study 1	13	13–65	15–63	39.22	8.58	0.83
	Study 2			17–62	39.85	8.61	0.85
<b>Marlowe Crowne Social Desirability</b>	Study 1	33	33–66	35–63	48.51	4.93	0.74
	Study 2			77–189	127.38	20.09	0.80
<b>BIDR</b>							
Impression Management	Study 2	20	0–20	0–16	5.80	3.56	0.75
<b>Eating Disorder Inventory</b>							
Drive for Thinness	Study 1	7	0–21	7–21	4.67	5.49	0.87
Bulimia	Study 1	7	0–21	0–17	1.73	2.89	0.74
Body Dissatisfaction	Study 1	9	0–27	0–27	9.03	7.52	0.91
Ineffectiveness	Study 1	10	0–30	0–30	3.05	4.31	0.86
Perfectionism	Study 1	6	0–18	0–17	5.93	4.03	0.71
Interpersonal Distrust	Study 1	7	0–21	0–21	3.33	3.55	0.79
Interoceptive Awareness	Study 1	10	0–30	0–25	3.41	4.44	0.81
Maturity Fears	Study 1	8	0–24	0–24	4.53	4.50	0.82
<b>Michigan Alcohol Screening Test—S</b>	Study 1	13	0–13	0–9	0.00	19.74	0.88
<b>Symptom Checklist 90</b>							
Somatization	Study 1	12	12–60	12–53	23.54	8.82	0.89
Obsessive Compulsive	Study 1	10	10–50	10–50	22.58	7.81	0.87
Interpersonal Sensitivity	Study 1	9	9–45	9–42	18.62	7.39	0.88
Depression	Study 1	12	12–60	12–54	25.87	9.89	0.91
Anxiety	Study 1	10	10–50	10–45	18.85	7.43	0.88
Hostility-Anger	Study 1	6	6–30	6–25	11.58	4.49	0.79

(Continued)

Table 1 (cont.)

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
Phobic Anxiety	Study 1	7	7-35	7-25	10.27	4.38	0.82
Paranoid Ideation	Study 1	6	6-30	6-26	12.27	4.75	0.80
Psychoticism	Study 1	10	10-50	10-41	17.75	7.67	0.86
<b>MCMII-III</b>							
<i>Clinical Personality</i>							
<i>Patterns</i>							
Schizoid	Study 2	16	0-23	0-17	4.43	3.75	0.69
Avoidant	Study 2	16	0-24	0-23	4.65	4.86	0.81
Depressive	Study 2	15	0-23	0-22	5.23	5.28	0.85
Dependent	Study 2	16	0-24	0-22	6.93	5.00	0.76
Histrionic	Study 2	17	0-24	3-24	17.09	5.33	0.80
Narcissistic	Study 2	24	0-32	0-27	15.45	4.52	0.67
Antisocial	Study 2	17	0-24	0-18	6.48	4.16	0.69
Sadist (Aggressive)	Study 2	20	0-27	0-21	7.33	5.10	0.77
Compulsive	Study 2	17	0-25	2-25	13.69	4.80	0.67
Negativistic (Passive-Aggressive)	Study 2	16	0-26	0-22	7.63	5.19	0.76
Masochistic (Self-Defeating)	Study 2	15	0-22	0-19	3.27	4.05	0.81
<i>Severe Personality</i>							
<i>Pathology</i>							
Schizotypal	Study 2	16	0-25	0-20	4.38	4.30	0.77
Borderline	Study 2	16	0-25	0-22	6.10	4.99	0.77
Paranoid	Study 2	17	0-26	0-22	5.42	4.80	0.77
<i>Clinical Syndromes</i>							
Anxiety	Study 2	14	0-20	0-17	4.49	3.85	0.74
Somatoform	Study 2	12	0-17	0-12	3.81	3.36	0.72
Bipolar: Manic	Study 2	13	0-18	0-17	7.21	3.59	0.68
Dysthymia	Study 2	14	0-20	0-19	3.73	4.29	0.82
Alcohol Dependence	Study 2	15	0-21	0-16	3.72	2.92	0.66
Drug Dependence	Study 2	14	0-20	0-17	3.59	2.86	0.68
Post-Traumatic Stress Disorder	Study 2	16	0-21	0-18	3.79	4.04	0.82

(Continued)

Table 1 (cont.)

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
<i>Severe Clinical Syndromes</i>							
Thought Disorder	Study 2	17	0–23	0–22	5.20	4.56	0.81
Major Depression	Study 2	17	0–23	0–20	3.93	4.01	0.81
Delusional Disorder	Study 2	13	0–17	0–12	2.13	2.24	0.61
<b>Rosenberg</b>							
<b>Self-Esteem Scale</b>							
Self-Esteem	Study 1	10	10–50	14–50	38.06	6.66	0.88
	Study 2			18–50	39.54	6.86	0.89
Stability of Self-Esteem	Study 1	5	5–25	5–25	14.36	3.65	0.77
	Study 2			6–25	15.71	4.02	0.79
<b>Mini-Marker</b>							
Extra version	Study 2	8		12–56	38.09	9.25	0.86
Agreeableness	Study 2	8		15–56	46.06	6.63	0.84
Conscientiousness	Study 2	8	8–56	19–56	41.00	7.57	0.82
Emotional Stability	Study 2	8		8–56	35.00	8.65	0.81
Openness to Experience	Study 2	8		21–56	42.14	6.77	0.78
<b>Brief Perfectionism Scale</b>	Study 2	7	7–49	8–46	25.74	8.53	0.86
<b>Multidimensional Perfectionism Scale</b>							
Self oriented perfectionism	Study 1	15	7–105	30–99	66.59	15.09	0.86
	Study 2			21–105	68.07	16.09	0.89
Other oriented perfectionism	Study 1	15	7–105	19–85	58.07	11.06	0.71
	Study 2			24–90	56.29	10.89	0.72
Socially oriented perfectionism	Study 1	15	7–105	21–85	53.72	12.97	0.81
	Study 2			19–94	54.26	14.01	0.85
<b>Family Environment Scale</b>							
Family Cohesiveness	Study 1	9	9–36	12–36	27.29	5.07	0.82
Family Conflict	Study 1	9	9–36	9–34	20.26	5.38	0.82

(Continued)

Table 1 (cont.)

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
<b>Close Relationship Questionnaire</b>							
Avoidant	Study 1	1	1-7	1-7	3.37	1.95	-
	Study 2			1-7	2.94	1.98	
Anxious-Ambivalent	Study 1	1	1-7	1-7	3.49	1.9	-
	Study 2			1-7	2.83	1.87	
Secure	Study 1	1	1-7	1-7	4.37	1.84	-
	Study 2			1-7	4.78	1.82	
<b>Empathy- Interpersonal Reactivity Index</b>							
Perspective Taking	Study 1	7	7-35	7-35	24.35	4.77	0.74
	Study 2			9-35	24.36	4.88	0.75
Empathic Concern	Study 1	7	7-35	15-35	28.03	4.15	0.70
	Study 2			11-35	28.62	4.46	0.77
Personal Distress	Study 1	10	10-50	12-47	29.27	6.13	0.76
	Study 2			14-46	29.46	5.62	0.68
<b>Anger Response Inventory</b>							
Total Anger Arousal	Study 1	23	23-115	47-112	89.54	10.94	0.85
	Study 2			40-111	85.47	13.64	0.92
<i>Intentions</i>							
Constructive Intentions	Study 1	23	23-115	34-115	93.82	13.59	0.88
	Study 2			34-115	87.02	17.60	0.93
Malevolent Intentions	Study 1	23	23-115	27-111	69.81	17.64	0.92
	Study 2			23-110	65.04	20.12	0.95
Fractious	Study 1	23	23-115	25-115	75.10	19.84	0.93
	Study 2			25-113	70.75	20.55	0.95
<i>Maladaptive Responses</i>							
Direct Physical Aggression	Study 1	7	7-35	7-28	10.97	3.84	0.70
	Study 2			7-28	11.55	4.59	0.79
Direct Verbal Aggression	Study 1	8	8-40	8-39	18.20	6.15	0.71
	Study 2			8-36	16.70	6.39	0.79

(Continued)

Table 1 (cont.)

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
Direct Symbolic Aggression	Study 1	7	7–35	7–30	13.85	4.84	0.65
	Study 2			7–32	13.90	5.74	0.79
Indirect Harm	Study 1	11	11–55	11–40	21.15	5.98	0.70
	Study 2			11–45	21.60	6.84	0.78
Malediction	Study 1	10	10–50	10–47	24.48	6.55	0.67
	Study 2			10–46	24.02	7.44	0.76
Displaced Physical Aggression	Study 1	7	7–35	7–23	8.83	2.76	0.69
	Study 2			7–25	9.75	4.22	0.85
Displaced Verbal Aggression	Study 1	7	7–35	7–26	11.56	3.98	0.66
	Study 2			7–25	11.34	4.29	0.79
Displaced Aggression-Object	Study 1	8	8–40	8–26	11.68	4.20	0.73
	Study 2			8–40	12.24	5.82	0.88
Self-Directed Aggression	Study 1	9	9–45	9–41	22.45	6.54	0.72
	Study 2			9–40	21.82	6.40	0.73
Anger Held In	Study 1	10	10–50	10–44	25.90	6.74	0.70
	Study 2			10–43	24.22	7.28	0.79
<i>Adaptive Responses</i>							
Communicate with Target	Study 1	11	11–55	20–55	42.92	6.98	0.76
	Study 2			19–55	41.15	7.60	0.80
Constructive Action	Study 1	10	10–50	26–49	38.67	4.41	0.39
	Study 2			22–50	38.06	5.01	0.55
<i>Escapist-Diffusing Behaviors</i>							
Diffusion of Anger	Study 1	7	7–35	10–35	23.02	4.79	0.57
	Study 2			10–35	22.94	4.66	0.57
Minimization	Study 1	8	8–40	8–36	21.55	4.73	0.46
	Study 2			10–36	21.88	4.69	0.75
Removal	Study 1	7	7–35	7–34	19.50	4.47	0.49
	Study 2			9–30	19.52	4.33	0.49
Doing Nothing	Study 1	9	9–45	10–39	24.66	5.12	0.49
	Study 2			11–40	26.11	5.29	0.51

(Continued)



**Table 1** (cont.)

Scale		# of items	Possible Range	Observed Range	Mean	SD	Alpha
<i>Cognitive Reappraisals</i>	Study 1	12	12–60	18–58	38.37	6.81	0.68
	Target's Role						
	Study 2	10	10–50	10–46	28.10	6.59	0.73
	Self's Role						
	Study 2			12–46	27.73	6.52	0.75
<i>Long-Term Consequences</i>							
For Self	Study 1	21	21–105	31–105	74.93	14.49	0.93
	Study 2						
For Target	Study 1	21	21–105	29–105	67.86	12.17	0.88
	Study 2						
For Relationship	Study 1	15	15–75	20–75	46.91	11.02	0.89
	Study 2						
Total	Study 1	29	29–145	41–144	96.68	17.19	0.96
	Study 2						
<b>Multidimensional</b>							
<b>Forgiveness Inventory</b>							
Forgive Others	Study 2	8	8–40	10–40	23.94	5.70	0.78
Ask for Forgiveness	Study 2	8	8–40	8–40	33.27	6.27	0.83
Forgive Self	Study 2	8	8–40	8–38	21.92	5.89	0.79
<b>TOSCA</b>							
Shame–Proneness	Study 1	16	16–80	20–71	44.25	9.42	0.76
	Study 2						
Guilt–Proneness	Study 1	16	16–80	44–80	62.87	6.99	0.70
	Study 2						
Externalization	Study 1	16	16–80	18–61	37.96	7.78	0.66
	Study 2						

Study 1  $n = 200$ –351 except MAST and GPA,  $n = 140$ –157.

Study 2  $n = 200$ –254 except MC,  $n = 105$ .

interoceptive awareness, and maturity fears. Thus, people who are high in self-control report fewer eating disorder symptoms and fewer of the cognitive patterns that have been linked to eating disorders.

Alcohol abuse is another commonly bemoaned manifestation of deficient impulse control among university students. Study 1

**Table 2**  
**Relationship of Self-Control to GPA, Eating Disorders, and Alcoholism**

	Bivariate Correlations		Controlling for Marlowe-Crowne		Controlling for BIDR	
	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure
<b>Marlowe Crowne</b>						
Study 1	.56***	.54***	—	—	—	—
Study 2	.60***	.59***	—	—	—	—
<b>BIDR</b>						
Study 2	.57***	.55***	—	—	—	—
<b>Grade Point Average</b>						
Study 1	.39***	.39***	.32***	.32***	—	—
Study 2	.19**	.15*	.23**	.18	.16*	.11
<b>Eating Disorder Inventory</b>						
Drive for Thinness	—	—	—	—	—	—
Bulimia	-.34***	-.37***	-.31***	-.35***	—	—
Body Dissatisfaction	-.36***	-.35***	-.30***	-.28***	—	—
Ineffectiveness	-.37***	-.40***	-.33***	-.34***	—	—
Perfectionism	-.41***	-.44***	-.35***	-.39***	—	—
Interpersonal Distrust	.06	.08	.01	.04	—	—
Interoceptive Awareness	-.22***	-.25***	-.14**	-.21***	—	—
Maturity Fears	-.48***	-.51***	-.43***	-.47***	—	—
<b>Michigan Alcohol Screening Test</b>	-.13*	-.16*	-.22***	-.23***	—	—
Alcoholism	-.31***	-.32***	-.26**	-.26**	—	—

Study 1  $n = 200-346$ , except for analysis involving MAST and GPA  $n = 140-157$ .

Study 2  $n = 200-255$ , except for analysis involving MC,  $n = 98-105$

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

participants completed the SMAST, which assesses markers commonly associated with alcohol abuse such as alcohol-related arrests, problems at work, concerned friends or relatives, and binge drinking. Scores on the alcohol screening inventory were significantly negatively correlated with both Total and Brief SCS scores. In short, high self-control is linked to a relative absence of problem drinking patterns.

Again, the link between low self-control and both eating problems and problematic drinking patterns held when controlling for social desirability. Thus, these correlations do not simply reflect method variance or response bias.

### Psychological Adjustment and Self-Esteem

We hypothesized that self-control would be associated with positive psychological adjustment. This hypothesis was confirmed. As shown in Table 3, both Total and Brief SCS scores were significantly negatively correlated with all measures of psychological symptoms from the SCL-90, including somatization, obsessive-compulsive patterns, depression, anxiety, hostile, anger, phobic anxiety, paranoid ideation, and psychoticism. Again, these findings were robust with respect to social desirability.

A second set of analyses was conducted to evaluate a competing hypothesis of a curvilinear relationship between self-control and psychological adjustment. Do very high scores on the Self-Control Scale reflect tendencies toward overcontrol, contributing perhaps to a distinctive set of psychopathologies? Based on the present data, the answer is no. In a series of regression analyses, no significant change in  $R^2$  was associated with squared terms entered following each SCL-90 subscale. These would detect any signs of curvilinearity in the data, beyond the basic linear effect we already reported. The failure of these analyses to yield significant improvements in prediction suggests that self-control is beneficial and adaptive in a linear fashion. We found no evidence that any psychological problems are linked to high self-control.

To assess the relationship between self-control and psychological adjustment further, in Study 2 we used the MCMI-III, a more detailed measure of psychopathology, assessing both Axis I and Axis II syndromes described in the DSM-IV. Here, too, both Total and Brief SCS scores were substantially negatively related with the broad range of personality and psychopathology symptom clusters,

**Table 3**  
**Relationship of Self-Control to Psychological Adjustment and Self-Esteem**

		Bivariate Correlations			Controlling for Marlowe-Crowne			Controlling for BIDR		
		Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	
<b>SCL-90</b>										
Somatization	Study 1	-.39***	-.35***	-.31***	-.26***	-	-	-	-	-
Obsessive-Compulsive	Study 1	-.42***	-.41***	-.33***	-.32***	-	-	-	-	-
Interpersonal Sensitivity	Study 1	-.36***	-.33***	-.27**	-.24**	-	-	-	-	-
Depression	Study 1	-.41***	-.38***	-.34***	-.32***	-	-	-	-	-
Anxiety	Study 1	-.36***	-.34***	-.33***	-.30***	-	-	-	-	-
Hostility-Anger	Study 1	-.40***	-.34***	-.27**	-.22**	-	-	-	-	-
Phobic Anxiety	Study 1	-.30***	-.25**	-.25**	-.19*	-	-	-	-	-
Paranoid Ideation	Study 1	-.29***	-.25***	-.22**	-.17*	-	-	-	-	-
Psychoticism	Study 1	-.33***	-.28***	-.25**	-.20*	-	-	-	-	-
<b>MCMII-III</b>										
<i>Clinical Personality Patterns</i>										
Schizoid	Study 2	-.18**	-.16*	-.07	-.10	-.08	-.05	-	-	-
Avoidant	Study 2	-.27***	-.25***	-.17	-.17	-.17	-.15*	-	-	-

(Continued)

**Table 3** (cont.)

	Bivariate Correlations			Controlling for Marlowe-Crowne			Controlling for BIDR		
	Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure	
Depressive	Study 2	-.39***		-.35***	-.29**		-.35***	-.26**	
Dependent	Study 2	-.43***		-.38***	-.35***		-.36***	-.30**	
Histrionic	Study 2	.09		.09	.01		.06	.04	
Narcissistic	Study 2	.01		.01	.06		.06	.05	
Antisocial	Study 2	-.62***		-.58***	-.51***		.50***	-.49***	
Sadist (Aggressive)	Study 2	-.48***		-.43***	-.36***		-.32***	-.33***	
Compulsive	Study 2	.65***		.61***	.53***		.56***	.53***	
Negativistic (Passive-Aggressive)	Study 2	-.57***		-.48***	-.42***		-.46***	-.35***	
Masochistic (Self-Defeat)	Study 2	-.35***		-.32***	-.21*		-.29***	-.19	
<i>Severe Personality Pathology</i>									
Schizotypal	Study 2	-.36***		-.31***	-.25**		-.28***	-.20*	
Borderline	Study 2	-.65***		-.58***	-.57***		-.57***	-.50***	
Paranoid	Study 2	-.31***		-.27***	-.25*		-.20**	-.26**	

Study 1  $n = 339-347$ , except for analysis involving SCL-90,  $n = 151-154$ .

Study 2  $n = 254$ , except for analysis involving MC,  $n = 101$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

with the exception of Histrionic, Narcissistic, and Compulsive Clinical Personality Patterns. This pattern of results is consistent with Millon et al.'s (1997) findings that these three scales tend to be *negatively* correlated with other measures of psychopathology, such as the Beck Depression Inventory, the State-Trait Anxiety Scales, and the SCL-90 scales. The MCMI-III Compulsive Scale, in particular, appears to tap an adaptive trait of conscientiousness, rather than pathological compulsive tendencies. Thus, it is not surprising that the MCMI-III Compulsive Scale correlated positively and substantially with the Total and Brief SCS scores. These findings involving the MCMI-III held when social desirability was partialled out.

Self-esteem is often taken as a measure of adjustment (e.g., Heilbrun, 1981; Kahle, Kulka, & Klingel, 1980; Whitley, 1983), although some authors have questioned this practice, suggesting that excesses of self-esteem can be detrimental. Still, the Rosenberg (1965) self-esteem scale (which we used) seems well designed to capture simple self-acceptance without registering inflated or narcissistic views of self, and so it may be better suited than other self-esteem scales to measure adjustment. In any case, we found a significant positive correlation between self-control and the Rosenberg self-esteem scale. Stability of self-esteem was also correlated with self-control. In each case, the findings replicated across studies, were observed for both Total and Brief SCS scores, and held when controlling for social desirability using the Marlowe-Crowne (Studies 1 and 2) and the BIDR (Study 2). Thus, people with high self-control apparently accept themselves as valuable, worthy individuals and are relatively well able to sustain this favorable view of self across time and circumstances.

### Related Personality Features

We also examined the relationship of self-control to two key personality features theoretically related to the propensity for self-control—conscientiousness (as part of the Big Five personality factors) and perfectionism. As shown in Table 4, self-control was substantially positively correlated with conscientiousness, as predicted. In addition, the capacity for self-control was associated with emotional stability and (to a somewhat lesser degree) agreeableness.

**Table 4**  
**Relationship of Self-Control to the Big Five and Perfectionism**

		Bivariate Correlations			Controlling for Marlowe-Crowne			Controlling for BIDR		
		Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	
<b>Mini Marker</b>										
Extraversion	Study 2	.09	.11	.05	.09	.07	.09	.07	.09	
Agreeableness	Study 2	.29***	.29***	-.05	-.01	.12	.12	.12	.12	
Conscientiousness	Study 2	.54***	.48***	.49***	.43***	.47***	.47***	.47***	.39	
Emotional Stability	Study 2	.50***	.42***	.42***	.29***	.39***	.39***	.39***	.30	
Openness to Experience	Study 2	.04	.05	-.02	.01	-.06	-.06	-.06	-.04	
<b>Brief Perfectionism Scale</b>										
<b>Multidimensional Perfectionism Scale</b>										
Self oriented perfectionism	Study 1	.15	.10	.07	.01	.14	.01	.14	.09	
	Study 2	.15	.15	.18*	.17*	-.01	.17*	-.01	-.01	
Other oriented perfectionism	Study 1	.23***	.20**	.20*	.13	.12	.13	.12	.10	
	Study 2	.13	.18*	.15	.20*	-.01	.20*	-.01	-.01	
Socially oriented perfectionism	Study 1	.12	.12	.15	.14	.17**	.14	.17**	.16*	
	Study 2	-.31***	-.29***	-.21**	-.20*	-.20**	-.20*	-.20**	-.19**	
Study 1 $n = 146$ .										
Study 2 $n = 229-233$ , except for analysis involving MC and Self-Perfectionism, $n = 101-105$ .										
* $p < .05$ . ** $p < .01$ . *** $p < .001$ .										

The links with conscientiousness and emotional stability were independent of social desirability.

In contrast, the SCS was less strongly linked to indices of perfectionism. Although at first glance perfectionism may appear to involve high levels of self-control (working doggedly in pursuit of perfection), one of the problems perfectionists often report is their inability to relax their perfectionistic standards—to take a break—when in reality a perfect product or performance is unnecessary.

### Interpersonal Relations

We hypothesized that self-control would be associated with positive interpersonal relations. Theoretically, the link between self-control and interpersonal adjustment should be bi-directional. For example, in the context of the family, good family relations should improve the capacity for self-regulation (as compared to living in a dysfunctional, conflict-ridden family). Conversely, a strong capacity for self-control should enhance one's ability to get along well with others, leading to better family dynamics and relationships.

As predicted, participants who reported a positive family environment in their family of origin had higher self-control, compared to their peers from more dysfunctional families. Table 5 shows that self-control was positively correlated with family cohesion and negatively correlated with family conflict. We did not have the opportunity to replicate across samples. (The measure of family environment was included in Study 1 only.) But the effects were consistently significant when considering both Total and Brief SCS scores, and when controlling for social desirability.

Attachment style was also related to self-control (see Table 5). In both studies, a secure attachment style was positively correlated with the capacity for self-control (as measured by both Total and Brief SCS scores), consistent with the view that self-control strengthens and is strengthened by good, stable relationships. In contrast, avoidant and anxious-ambivalent attachment styles were negatively correlated with self-control. In Study 2, the findings were robust with respect to social desirability—as assessed by both the Marlowe-Crowne and BIDR. In Study 1, however, the relationship of self-control to avoidant and secure attachment did not hold when controlling for Marlowe-Crowne social desirability scores.



**Table 5**  
**Relationship of Self-Control to Family Cohesion and Conflict, Attachment, and Empathy**

	Bivariate Correlations			Controlling for Martowe-Crowne			Controlling for BIDR		
	Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure	
<b>Family Environment Scale</b>									
Family Cohesion	.38***	.35***		.27**	.24**		–	–	–
Family Conflict	–.37***	–.32***		–.24**	–.18*		–	–	–
<b>Attachment</b>									
Avoidant									
Study 1	–.12*	–.12*		–.04	–.05		–	–	–
Study 2	–.20**	–.22**		–.18	–.26**		–.18**	–.21***	
Anxious- Ambivalent									
Study 1	–.25***	–.23***		–.18**	–.15**		–	–	–
Study 2	–.24***	–.20**		–.18	–.13		–.20***	–.15*	
Secure									
Study 1	.16**	.15**		.06	.07		–	–	–
Study 2	.26***	.25***		.29**	.35***		–.22***	.22***	
<b>Empathy</b>									
Perspective Taking									
Study 1	.16**	.14*		–.02	–.04		–	–	–
Study 2	.27***	.25***		.10	.16		.11	.09	
Empathic Concern									
Study 1	–.03	–.02		–.22***	–.22***		–	–	–
Study 2	.19**	.21***		–.14	–.03		.09	.11	
Personal Distress									
Study 1	–.28***	–.29***		–.32***	–.33***		–	–	–
Study 2	–.18**	–.13*		–.27**	–.21*		–.19**	–.13*	

Study 1  $n = 337-350$ , except for analysis involving FES,  $n = 150-153$ .

Study 2  $n = 248-250$ , except for analysis involving MC,  $n = 99-100$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Empathy—the ability to take another person’s perspective and to vicariously experience another’s emotion—is widely regarded as a fundamental social skill. A vast empirical literature indicates that empathy contributes to warm, close interpersonal relationships and inhibits interpersonal aggression (Eisenberg, 1986). As shown in Table 5, across both studies, Total and Brief SCS scores were positively correlated with perspective taking. Thus, self-control appears to facilitate the ability to step outside one’s own point of view and understand someone else’s concerns. Meanwhile, self-oriented personal distress, which has generally been linked to negative interpersonal outcomes, was consistently inversely correlated with self-control. In other words, people high in self-control do not tend to wallow in their own personal reactions to other people’s problems. No consistent pattern was observed for the empathic concern scale.

There were no effects of controlling for social desirability on the link between self-control and self-oriented personal distress. However, the findings involving perspective taking were less robust with respect to social desirability.

We also considered participants’ characteristic strategies for managing and expressing anger. When left unchanneled and unchecked, anger can be interpersonally harmful and disruptive, leading in some cases to aggression. As shown in Table 6, high levels of self-control were significantly related to a relative absence of anger in Study 1, with an analogous non-significant trend in Study 2. More importantly, self-control was strongly linked to people’s characteristic responses once angered. Specifically, high self-control was negatively correlated with malevolent and fractious intentions (e.g., wanting to vent or let off steam), and with outwardly directed aggression (physical, verbal, symbolic, indirect, and displaced) aggression. People with high self-control likewise showed low scores on anger held in, which indicates that they are relatively disinclined to ruminate about their anger and grow increasingly angry with such inward thoughts. They also reported relatively low tendencies to engage in self-directed aggression as a result of their anger. Rather, people with high self-control emerged from these data as inclined to take a more constructive approach to anger management, especially engaging in rational discussion of the matter with the target of their anger. Not surprisingly, self-control was positively correlated with beneficial (as opposed to harmful) long-term consequences of

**Table 6**  
Relationship of Self-Control to Anger

	Bivariate Correlations			Controlling for Mariowe-Crowne			Controlling for BIDR		
	Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure	
<b>Anger Response Inventory</b>									
Total Anger Arousal	Study 1 Study 2	-.22*** -.12	-.21*** -.09	-.13* -.07	-.14* -.05		-	-	-.02
<i>Intentions</i>									
Constructive Intentions	Study 1 Study 2	-.02 -.08	-.04 -.09	.03 -.05	.00 -.12		-	-	-.06
Malevolent Intentions	Study 1 Study 2	-.29*** -.20**	-.29*** -.19**	-.19*** .03	-.19*** .00		-	-	.01
Fractious	Study 1 Study 2	-.31*** -.24***	-.33*** -.21***	-.23*** -.11	-.26*** -.11		-	-	-.03
<i>Maladaptive Responses</i>									
Direct Physical Aggression	Study 1 Study 2	-.26*** -.18**	.24*** -.15*	-.21*** -.02	-.19*** .06		-	-	.04
Direct Verbal Aggression	Study 1 Study 2	-.32*** -.26***	-.23*** -.23***	-.21*** -.10	-.17*** -.03		-	-	-.04

Direct Symbolic Aggression	Study 1	-.34***	-.29***	-.25***	-.20***	-	-
	Study 2	-.25***	-.24***	-.13	-.14**	-.02	-.02
Indirect Harm	Study 1	-.31***	-.29***	-.25***	-.23***	-	-
	Study 2	-.28***	-.25***	-.10	-.08	-.08	-.06
Malediction	Study 1	-.24***	-.21***	-.16**	-.14*	-	-
	Study 2	-.33***	-.31***	-.07	-.07	-.16*	-.15*
Displaced Physical Aggression	Study 1	-.18**	-.16**	-.16**	-.14**	-	-
	Study 2	-.16*	-.13	-.02	.04	.06	.10
Displaced Verbal Aggression	Study 1	-.19***	-.19***	-.10	-.12*	-	-
	Study 2	-.27***	-.23***	-.13	-.08	-.04	.00
Displaced Aggression (Object)	Study 1	-.25***	-.25***	-.17**	-.17***	-	-
	Study 2	-.13*	-.12	-.03	-.01	.06	.06
Self-Directed Aggression	Study 1	-.17**	-.19***	-.20***	-.23***	-	-
	Study 2	-.17**	-.16*	-.08	-.10	-.02	-.01
Anger Held In	Study 1	-.35***	-.37***	-.25***	-.28***	-	-
	Study 2	-.30***	-.30***	-.13	-.22*	-.13	-.14*
<i>Adaptive Behaviors</i>							
Communicate w/ Target	Study 1	.23***	.22***	.12*	.08	-	-
	Study 2	.13*	.14*	-.10	-.14	.03	.04
Constructive Action	Study 1	-.02	-.03	-.01	-.03	-	-
	Study 2	-.02	-.02	-.06	-.08	-.06	-.06

(Continued)

**Table 6** (cont.)

	Bivariate Correlations			Controlling for Mariove-Crowne			Controlling for BIDR		
	Full Self- Control Measure	Brief Self- Control Measure		Full Self- Control Measure	Brief Self- Control Measure		Full Self- Control Measure	Brief Self- Control Measure	
<i>Escapist-Diffusing Behaviors</i>									
Diffusion of Anger	Study 1	-.09	-.10	-.13*	-.15**		-.05	-.09	
	Study 2	-.02	-.06	-.09	-.18		-.05	-.09	
Minimization	Study 1	.01	-.02	-.08	-.11*		-.05	-.02	
	Study 2	-.03	-.05	.03	-.03		-.05	.02	
Removal	Study 1	-.01	-.04	-.05	-.08		-.08	-.10	
	Study 2	.01	.03	-.01	.00		.08	.10	
Doing Nothing	Study 1	-.06	-.07	-.17***	-.18***		-.00	-.01	
	Study 2	-.01	.00	.01	.04		.00	.01	
<i>Cognitive Reappraisals</i>									
Target's Role	Study 1	.01	.00	-.08	-.09		-.06	-.05	
	Study 2	.11	.11	.05	.03		.06	.05	
Self's Role	Study 1	-.18***	-.17***	-.21	-.20***		-.00	-.02	
	Study 2	-.04	-.03	-.15	-.18		.00	.02	

*Long-Term Consequences*

For Self	Study 1	.17***	.19***	.12*	.14**	–	–
	Study 2	.16*	.15*	–.10	.10	.05	.04
For Target	Study 1	.17***	.20***	.13*	.16**	–	–
	Study 2	.13	.11	–.11	–.13	.01	.00
For Relationship	Study 1	.23***	.24***	.15**	.16**	–	–
	Study 2	.16*	.14*	–.15	–.15	.03	.02
Total	Study 1	.21***	.23***	.14**	.17**	–	–
	Study 2	.16*	.14*	–.12	–.13	.03	.02

Study 1  $n = 342$ –351.

Study 2  $n = 224$ –227, except for analysis involving MC,  $n = 99$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

interpersonal episodes of anger. There was no consistent relationship between self-control and the use of escapist-diffusing strategies, nor cognitive reappraisals of the anger eliciting event.

Insofar as communication seems a constructive way to deal with anger and hence likely to prove beneficial to interpersonal relationships in times of conflict, these findings provide further support for the view that self-control is linked to beneficial interpersonal patterns. The fact that self-control was negatively correlated with holding anger in (and with self-directed aggression) is another indication that the benefits of self-control are linear rather than curvilinear. If overcontrol were a source of problems and pathologies, then people with high self-control would likely suffer from the problematic patterns of holding anger inside themselves. In fact, however, the opposite was found, and so the overcontrol hypothesis did not receive support.

In general, the bivariate correlations with indices of anger management replicated across the two studies. Regarding social desirability, these links between self-control and constructive anger management held in Study 1 when controlling for the Marlowe-Crowne. The Study 2 findings were less robust with respect to social desirability, in many cases dropping below significance when partialing out Marlowe-Crowne or BIDR scores.

Self-control was less clearly linked to people's inclination to forgive others. There was a very modest positive correlation between Total Self-Control scores and participants' propensity to forgive others (Table 7), but this finding dropped below significance when controlling for social desirability.<sup>3</sup>

### Moral Emotions

Last, we considered the implications of self-control for people's reaction to their own transgressions. In the course of daily life, in spite of their best efforts at self-control, people inevitably sin and transgress, at least on occasion. An important component of interpersonal adjustment is the manner in which people manage their failures and transgressions. As shown in Table 8 across both studies and when considering both the Total and Brief SCS scores, people high in self-control exhibited an adaptive moral emotional

3. We also examined parents' and friends' reports of the participants' forgiveness and empathy. No consistent findings emerged.

**Table 7**  
**Relationship of Self-Control to Forgiveness**

	Bivariate Correlations			Controlling for Marlowe-Crowne			Controlling for BIDR		
	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	Full Self-Control Measure	Brief Self-Control Measure	
<b>Multidimensional Forgiveness Inventory</b>									
Forgive Others	.15*	.08	.07	-.01	.09	.01			
Ask for Forgiveness	.08	.05	.05	-.01	.06	.03			
Forgive Self	-.11	-.17**	.04	.03	.00	-.07			

Study 2  $n = 249-252$ , except for analysis involving MC  $n = 96-99$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



**Table 8**  
**Relationship of Self-Control to Shame-Proneness & Guilt Proneness**

		Bivariate Correlations			Controlling for Martowe-Crowne			Controlling for BIDR		
		Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure		Full Self-Control Measure	Brief Self-Control Measure	
<b>TOSCA</b>	Shame-Proneness	Study 1	-.33***	-.35***	-.30***	-.32***	-	-	-	-
		Study 2	-.26***	-.22***	-.01	.01	-.19**	-.14*	-	-
Guilt-Proneness		Study 1	.13*	.13*	-.01	-.01	-	-	-	-
		Study 2	.30***	.27***	.26**	.13	.13*	.09	-	-
Externalization		Study 1	-.13*	-.14**	-.11*	-.13*	-	-	-	-
		Study 2	-.23***	-.23***	-.10	-.13	-.09	-.09	-	-

Study 1  $n = 342$ .

Study 2  $n = 249-252$ , except for analysis involving MC,  $n = 100$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

style, scoring relatively low in shame and high in “shame-free” guilt. In addition, high self-control individuals are inclined to take responsibility for their transgressions (rather than externalizing blame, or minimizing the importance of the transgression). In short, having done wrong, high self-control people are inclined to focus on the effects of their behavior, and, in doing so, are inclined toward making amends. In contrast, low self-control individuals are more apt to experience painful feelings of shame—a moral emotion that often provokes defensiveness and denial, rather than repair and redemption. These findings partially held when social desirability was factored out.

## DISCUSSION

The two goals of this paper were to provide evidence for the psychological benefits and advantages of self-control and, in order to accomplish that, to develop a trait scale to assess individual differences in self-control. The results suggest that our scale performs well as a trait measure and that self-control is indeed linked to a broad range of positive outcomes. We shall discuss these two separately.

### Benefits of Self-Control

A main purpose of this work was to test the hypothesis that self-control would be correlated with a range of positive, desirable outcomes. The present data provide strong and extensive support for this view.

First, people with high self-control had better grades, as compared with people low in self-control. Advocates of self-discipline have long speculated that it will produce better performance. For example, people with poor self-control may procrastinate on tasks, which often leads to poorer performance and lower grades (Tice & Baumeister, 1997). Although the current data are correlational, precluding strong causal conclusions, the results are consistent with the view that high self-control fosters strong academic performance.

Second, people with high self-control showed fewer impulse control problems, including binge eating and alcohol abuse. Third, they showed better psychological adjustment, as assessed by a self-report measure of psychopathological symptoms including somatization, obsessive-compulsive patterns, depression, anxiety, hostile

anger, phobic anxiety, paranoid ideation, and psychoticism. They also had higher self-acceptance or self-esteem, which is often regarded as a vital aspect of mental health and adjustment on theoretical grounds (e.g., Bednar, Wells, & Peterson, 1989; Mruk, 1995; Taylor & Brown, 1988) and indeed often measured as a presumptive index of adjustment (e.g., Heilbrun, 1981; Kahle, Kulka, & Klingel, 1980; Whitley, 1983). High self-control is thus linked to a broad range of positive outcomes for the individual.

Fourth, high self-control was correlated with better interpersonal relationships, as indicated by better family cohesion and less family conflict. People with high self-control also had a more secure attachment style and were less prone to the more problematic attachment styles (such as avoidant or anxious/ambivalent). Their empathy scores appeared optimal for interpersonal functioning: High self-control predicted better perspective-taking and less proneness to wallow in personal distress, both of which patterns have been associated with better interpersonal outcomes (see Davis & Oathout, 1987; Leith & Baumeister, 1998). In addition, people with high self-control reported less anger and better management of anger when they do get angry.

Last, people with high self-control reported more guilt and less shame than other people. Recent research has repeatedly established the individually and interpersonally beneficial aspects of guilt as well as the destructive, divisive effects of shame (Tangney, 1991, 1995a; Tangney, Miller, et al., 1996; Tangney et al., 1992; also Baumeister, Stillwell, & Heatherton, 1994; Leith & Baumeister, 1998). Thus, self-control is associated with emotional patterns that seem beneficial both to the individual and to other people associated with the individual.

During the past several years that we have spent on this project, we began to make our scale available to other researchers, and they have also found that high self-control predicts positive outcomes. People who score high on our self-control scale show better interpersonal accommodation, better dyadic adjustment, and more satisfying relationships (Finkel & Campbell, 2000), lower juvenile delinquency and less adolescent alcohol abuse (Engels, Finkenauer, & Den Exter Blokland, 2000), and better ability to make themselves perform an aversive task in the laboratory as well as resistance to ego depletion (Twenge, Tice, & Baumeister, 2000). Rohde (2000) found that high self-control was linked to adaptive traits and

behavior patterns but was not related to intelligence, which is especially important because it helps rule out that intelligence contributed to the present study's finding that grade point average was correlated with self-control. Last, Cox (2000) found that supervisors with high self-control were more trusted by their subordinates and received higher ratings on fairness. Smith (2001) replicated our finding that high self-control predicted better grades among university students, using official grade reports obtained from the university registrar rather than self-report.

Smith's (2001) use of objective measures is relevant to the main limitation of the present research, namely its reliance on self-report. In principle, our results might reflect a response bias or self-deception pattern that causes people to report high self-control along with positive outcomes on adjustment, performance, and other variables. This concern is somewhat diminished by our findings that controlling for social desirability biases scarcely affected most of the links between self-control and other outcomes. Still, objective measures of personal outcomes are desirable ways of ensuring that the ostensible benefits of self-control are not entirely a product of distorted self-perceptions. Smith, in fact, found that the correlation of self-control with grade point average was higher for objective grade reports than for self-reported grades, which is thus doubly reassuring. By the same token, Cox's (2000) finding that subordinates gave more favorable ratings to leaders with high self-control helps offset any concern that the superior leadership of those people is confined to their own self-appraisals. In sum, the present studies relied on self-reports, but encouraging findings from other investigations (as well as our social desirability biases) suggest that the benefits of self-control are indeed objectively valid.

### Costs of Self-Control

Not all theoretical views about self-control have emphasized positive outcomes. In particular, theories about overcontrol have held that high levels of self-control contribute to pathologies such as obsession and compulsion.

The present results offer no support for the view that high levels of self-control are bad. All our findings suggest linear effects such that more self-control is better. Analyses designed to test for curvilinearity failed consistently to find any evidence that scores at both extremes

are problematic. Even on measures such as eating disorder symptoms and obsessive/compulsive tendencies, where overcontrol should be most apparent, our findings suggested a linear pattern such that higher self-control was associated with fewer symptoms.

In short, there was no evidence of problems at both ends of the continuum of self-control. In fact, self-control might be better conceptualized as self-regulation—the ability to regulate the self strategically in response to goals, priorities, and environmental demands. From this perspective, rigid “overcontrolled” individuals (e.g., those with obsessive-compulsive disorder, anorexia) suffer from problems regulating and directing their capacity for self-control. Such overcontrolled individuals may be said to lack the ability to control their self-control. In contrast, individuals genuinely high in self-control have the ability to exert self-control when it is required (e.g., forgoing a party to study for an exam, passing on dessert) and to suspend self-control when it is not (e.g., during spring break, at one’s own birthday party)—similar to Block & Kremen’s (1996) description of the ego resilient individual. Consistent with this notion, SCS scores were substantially positively correlated with conscientiousness but much less clearly linked to perfectionism.

### Measurement of Self-Control

Given that self-control has such broad implications for adjustment, it is surprising that there are not many theoretically informed, reliable, and valid measures of self-control. Apart from their substantive implications, results from the current study provide strong support for the reliability and validity of the Self-Control Scale—a relatively brief, easily administered paper-and-pencil measure. Its internal consistency was good, especially for the full scale but also for the subscales. Retest reliability over a one-to-three-week period was also satisfactorily high. Moreover, the brief, 13-item version of the SCS performed nearly as well as the full-length version.

### Self-Control and Social Desirability

Scores on social desirability correlated substantially with scores on the Self-Control Scale. This substantial amount of shared variance could be interpreted in two ways. One interpretation is that self-reports on self-control are colored by social desirability bias, as when people falsely claim to have good self-control because they

want to look good and conform to socially approved norms. The other interpretation is that people who do have high self-control are more likely actually to do things that are socially desirable, because social desirability consists essentially of overriding selfish interests in order to do what is best for the entire community.

The strong and significant links between self-control and measures of performance, impulse control, and psychological adjustment held even when we controlled for social desirability. (The findings from the interpersonal cluster were somewhat less robust with respect to social desirability.) In contrast, social desirability lost most of its predictive power when we controlled for self-control scores. Thus, the effects of self-control were more robust than those of social desirability, and indeed self-control has arguably the prior claim on much of the variance it shares with social desirability.

Our results should be quite encouraging to those who believe that self-control produces positive benefits. Our results are correlational and therefore do not establish that self-control produces positive effects, but we think that that is the most plausible interpretation of our findings. In any case, the array of positive correlations between self-control and positive outcomes suggests that the benefits of self-control are worth serious consideration. We found that people with high self-control got better grades, were better adjusted, had better interpersonal skills and better interpersonal relationships, and had more optimal emotional lives than other people. Put another way, people low on self-control reported a remarkable range of unhappy and undesirable outcomes in schoolwork, social life, personal adjustment, and emotional patterns.

Thus, the main conclusion is that self-control as measured by our scale is linked to beneficial, positive outcomes across remarkably diverse domains. Evidence of causal influence will have to wait for experimental and longitudinal research designs, but it seems safe to regard high self-control as a marker of good adjustment. Indeed, given the breadth of positive outcomes it predicts, self-control may well be at the core of psychological adjustment.

## REFERENCES

- Ainsworth, M. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Lawrence Erlbaum.

- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC: American Psychiatric Association.
- Avakame, E. F. (1998). Intergenerational transmission of violence, self-control, and conjugal violence: A comparative analysis of physical violence and psychological aggression. *Violence & Victims, 13*, 301–316.
- Barron, F. (1953). An ego-strength scale which predicts response to psychotherapy. *Journal of Consulting Psychology, 5*, 327–333.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994). *Losing control: How and why people fail at self-regulation*. San Diego: Academic Press, Inc.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin, 115*, 243–267.
- Bednar, R. L., Wells, M. G., & Peterson, S. R. (1989). *Self-esteem: Paradoxes and innovations in clinical theory and practice*. Washington, DC: American Psychological Association.
- Block, J. (1961). *The Q-sort method in personality assessment and psychiatric research*. Palo Alto, CA: Consulting Psychologists Press.
- Block, J., & Kremen, A. M. (1996). IQ and Ego-Resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology, 70*, 349–361.
- Bowlby, J. (1982). *Attachment and loss, Vol. I: Attachment* (2nd ed.). New York: Basic Books.
- Brandon, J. E., Oescher, J., & Loftin, J. M. (1990). The self-control questionnaire: An assessment. *Health Values, 14*, 3–9.
- Burton, V. S., Cullen, F. T., Evans, T. D., Alarid, L. F., & Dunaway, R. G. (1998). Gender, self-control, and crime. *Journal of Research in Crime & Delinquency, 35*, 123–147.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control theory approach to human behavior*. New York: Springer-Verlag.
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality-social, clinical and health psychology. *Psychological Bulletin, 92*, 111–135.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Cherek, D. R., Moeller, F. G., Dougherty, D. M., & Rhoades, H. (1997). Studies of violent and nonviolent male parolees: II. Laboratory and psychometric measurements of impulsivity. *Biological Psychiatry, 41*, 523–529.
- Cochran, J. K., Wood, P. B., Sellers, C. S., Wilkerson, W., & Chamlin, M. B. (1998). Academic dishonesty and low self-control: An empirical test of a general theory of crime. *Deviant Behavior, 19*, 227–255.
- Cook, M., Young, A., Taylor, D., & Bedford, A. P. (1998). Personality correlates of alcohol consumption. *Personality & Individual Differences, 4*, 641–647.
- Cox, S. P. (2000). *Leader character: A model of personality and moral development*. Doctoral dissertation, University of Tulsa.
- Crowne, D., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting and Clinical Psychology, 24*, 349–354.

- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, **10**, 85.
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, **44**, 113–126.
- Davis, M. H., & Oathout, H. A. (1987). Maintenance of satisfaction in romantic relationships: Empathy and relational competence. *Journal of Personality and Social*, **53**, 397–410.
- Derogatis, L. R. (1989). *Description and bibliography for the SCL-90-R and other instruments of the psychopathology rating scale series*. Riderwood, MD: Clinical Psychometric Research, Inc.
- Derogatis, L. R., & Cleary, P. A. (1977). Confirmation of the dimensional structure of the SCL-90: A study in construct validation. *Journal of Clinical Psychology*, **33**, 981–989.
- Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). The SCL-90: An outpatient psychiatric rating scale. *Psychopharmacology Bulletin*, **9**, 13–28.
- Derogatis, L. R., Rickels, K., & Rock, A. (1976). The SCL-90 and the MMPI: A step in the validation of a new self-report scale. *British Journal of Psychiatry*, **128**, 280–289.
- Eisenberg, N. (1986). *Altruistic cognition, emotion, and behavior*. Hillsdale, NJ: Erlbaum.
- Eisenberg, N., Fabes, R. A., Shepard, S. A., Murphy, B. C., Guthrie, I. K., Jones, S., Friedman, J., Poulin, R., & Maszk, P. (1997). Contemporaneous and longitudinal prediction of children's social functioning from regulation and emotionality. *Child Development*, **68**, 642–664.
- Engels, R., Finkenauer, C., & Den Exter, Blokland (2000). *Parental influences on self-control and juvenile delinquency*. Manuscript in preparation, Utrecht University, Netherlands.
- Fabes, R. A., Eisenberg, N., Jones, S., Smith, M., Guthrie, I., Poulin, R., Shepard, S., & Friedman, J. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. *Child Development*, **70**, 432–442.
- Fagen, S. A., Long, N. J., & Stevens, D. J. (1975). *Teaching children self-control: Preventing emotional and learning problems in the elementary school*. Columbus, OH: Charles E. Merrill.
- Fee, R., & Tangney, J. P. (2000). Procrastination: A means of avoiding shame and guilt? *Journal of Social Behavior and Personality*, **15**, 167–184.
- Feldman, S. C., Martinez-Pons, M., & Shaham, D. (1995). The relationship of self-efficacy, self-regulation, and collaborative verbal behavior with grades: Preliminary findings. *Psychological Reports*, **77**, 971–978.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, **43**, 522–527.
- Finkel, E., & Campbell, W. K. (2000, February). *Ego depletion and accommodation in romantic relationships*. Poster presented at the Society for Personality and Social Psychology, Nashville, TN.



- Flynn, T. M. (1985). Development of self-concept, delay of gratification and self-control and disadvantaged preschool children's achievement gain. *Early Child Development & Care*, **22**, 65–72.
- Freud, S. (1930). *Civilization and its discontents*. London: Hogarth.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, **2**, 15–34.
- Gibbs, J. J., Giever, D., & Martin, J. S. (1998). Parental management and self-control: An empirical test of Gottfredson and Hirschi's general theory. *Journal of Research in Crime & Delinquency*, **35**, 40–70.
- Goldberg, L. R. (1992). The development of markers for the Big Five factor structure. *Psychological Assessment*, **4**, 26–42.
- Gosselin, J. T., Boone, A. L., Sinek, D., & Tangney, J. P. (2001). *The Brief Perfectionism Scale*. George Mason University, Fairfax, VA.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Gough, H. G. (1987). *California Psychological Inventory- Administrator's Guide*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G., McClosky, H., & Meehl, P. E. (1952). A personality scale for social responsibility. *Journal of Abnormal and Social Psychology*, **47**, 73–80.
- Gramzow, R. H., Sedikides, C., Panter, A. T., & Insko, C. A. (2000). Aspects of self-regulation and self-structure as predictors of perceived emotional distress. *Personality & Social Psychology Bulletin*, **26**, 188–205.
- Gray-Little, B., Williams, V. S. L., & Hancock, T. D. (1997). An item response theory analysis of the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin*, **23**, 443–451.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, **52**, 511–524.
- Hazan, C., & Shaver, P. (1990). Love and work: An attachment-theoretical perspective. *Journal of Personality and Social Psychology*, **59**, 270–280.
- Heatherton, T. F. (1993). Body dissatisfaction, self-focus, and dieting status among women. *Psychology of Addictive Behaviors*, **7**, 225–231.
- Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, **110**, 86–108.
- Heilbrun, A. B. (1981). Gender differences in the functional linkage between androgyny, social cognition, and competence. *Journal of Personality & Social Psychology*, **41**, 1106–1118.
- Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social context: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, **60**, 456–470.
- Hewitt, P. L., & Flett, G. L. (1993). Dimensions of perfectionism, daily stress, and depression: A test of specific vulnerability hypothesis. *Journal of Abnormal Psychology*, **102**, 58–65.
- Hewitt, P. L., Flett, G. L., & Turnbull, W. (1992). Perfectionism and multiphasic personality inventory (MMPI) indices of personality disorder. *Journal of Psychopathology & Behavioral Assessment*, **14**, 323–335.

- Jackson, D. N. (1976). *Jackson Personality Inventory test manual*. Goshen, NY: Research Psychologists Press.
- John, O. P. (1990). The “Big Five” factor taxonomy: Dimensions of personality in the natural language and questionnaires. In L. A. Pervin (Ed.), *Handbook of personality theory and research* (pp. 66–100). New York: Guilford.
- Johnston, L. D., O’Malley, P. M., & Bachman, J. G. (1991). *Drug use among American high school seniors, college students, and young adults, 1975–1990*. Vol. 1: High school seniors. Washington, DC: Department of Health and Human Services.
- Kahle, L. R., Kulka, R. A., & Klingel, D. M. (1980). Low adolescent self-esteem leads to multiple interpersonal problems: A test of social-adaptation theory. *Journal of Personality & Social Psychology*, **39**, 496–502.
- Kendall, P. C., & Wilcox, L. E. (1979). Self-control in children: Development of a rating scale. *Journal of Consulting and Clinical Psychology*, **47**, 1020–1029.
- Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control in early childhood: Continuity and change, antecedents, and implications for social development. *Developmental Psychology*, **36**, 220–232.
- Krueger, R. F., Caspi, A., Moffitt, T. E., White, J., & Stouthamer-Loeber, M. (1996). Delay of gratification, psychopathology, and personality: Is low self-control specific to externalizing problems? *Journal of Personality*, **64**, 107–129.
- Latham, L. L., & Perlow, R. (1996). The relationship of client-directed aggressive and nonclient-directed aggressive work behavior with self-control. *Journal of Applied Social Psychology*, **26**, 1027–1041.
- Leith, K. P., & Baumeister, R. F. (1998). Empathy, shame, guilt, and narratives of interpersonal conflicts: Guilt-prone people are better at perspective taking. *Journal of Personality*, **66**, 1–37.
- Longshore, D. (1998). Self-control and criminal opportunity: A prospective test of the general theory of crime. *Social Problems*, **45**, 102–113.
- Longshore, D., & Turner, S. (1998). Self-control and criminal opportunity: Cross-sectional test of the general theory of crime. *Criminal Justice & Behavior*, **25**, 81–98.
- Maszk, P., Eisenberg, N. G., & Guthrie, I. K. (1999). Relations of children’s social status to their emotionality and regulation: A short-term longitudinal study. *Merrill-Palmer Quarterly*, **45**, 468–492.
- McGuire, J., & Broomfield, D. (1994). Violent offenses and capacity for self-control. *Psychology Crime & Law*, **2**, 117–123.
- Millon, T., Davis, R., & Millon, C. (1997). *The MCMI-III Manual, Second Edition*. National Computer Systems, Inc.: Minneapolis, MN.
- Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology*, **54**, 687–696.
- Moos, S. R., & Moos, B. (1981). *Family Environment Scale Manual*. Palo Alto, CA: Consulting Psychologists Press.
- Mruk, C. J. (1995). *Self-esteem: Research, theory, and practice*. New York, NY: Springer Publishing Co, Inc.

- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, *126*, 247–259.
- Murphy, B. C., & Eisenberg, N. (1997). Young children's emotionality, regulation and social functioning and their responses when they are a target of a peer's anger. *Social Development*, *6*, 18–36.
- Nigg, J. T., Quamma, J. P., Greenberg, M. T., & Kusche, C. A. (1999). A two-year longitudinal study of neuropsychological and cognitive performance in relation to behavioral problems and competencies in elementary school children. *Journal of Abnormal Child Psychology*, *27*, 51–63.
- Paulhus, D. L. (1988). Assessing self-deception and impression management in self-reports: The Balanced Inventory of Desirable Responding. Unpublished manual, University of British Columbia, Vancouver Canada.
- Peluso, T., Ricciardelli, L. A., & Williams, R. J. (1999). Self-control in relation to problem drinking and symptoms of disordered eating. *Addictive Behaviors*, *24*, 439–442.
- Porteus, S. D. (1965). *Porteus Maze Test: Fifty years Application*. New York: Psychological Corporation.
- Pulkkinen, L., & Haemaalainen, M. (1995). Low self-control as a precursor to crime and accidents in a Finnish longitudinal study. *Criminal Behaviour & Mental Health*, *5*, 424–438.
- Richards, P. S. (1985). Construct validation of the self-control schedule. *Journal of Research in Personality*, *19*, 208–218.
- Rohde, P., Lewinsohn, P. M., Tilson, M., & Seeley, J. R. (1990). Dimensionality of coping and its relation to depression. *Journal of Personality and Social Psychology*, *58*, 499–511.
- Rohde, T. (2000). *Cross-validation of measures of self-control and behavioral inhibition in young adults*. Unpublished thesis.
- Romal, J. B., & Kaplan, B. J. (1995). Difference in self-control among spenders and savers. *Psychology—A Quarterly Journal of Human Behavior*, *32*, 8–17.
- Rosenbaum, M. (1980). A schedule for assessing self-control behaviors: Preliminary findings. *Behavior Therapy*, *11*, 109–121.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, *42*, 5–37.
- Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of Personality Assessment*, *63*, 506–516.
- Selzer, M., Vinokur, A., & van Rooijen, L. (1975). A self-administered Short Michigan Alcoholism Screening Test (SMAST). *Journal of Studies on Alcohol*, *36*, 117–126.
- Shevlin, M. E., Bunting, B. P., & Lewis, C. A. (1995). Confirmatory factor analysis of the Rosenberg self-esteem scale. *Psychological Reports*, *76*, 707–710.
- Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions. *Developmental Psychology*, *26*, 978–986.

- Smith, S. M. (2001: February). *Self-control and academic performance*. Presented at the Society for Personality and Social Psychology, San Antonio, TX.
- Storey, F. S. (1999). Childhood abuse and self-regulation: Risk factors for heroin addiction. *Dissertation Abstracts International: Section B: the Sciences & Engineering*, **59**, 3717.
- Tangney, J. P. (1991). Moral affect: The good, the bad, and the ugly. *Journal of Personality and Social Psychology*, **61**, 598–607.
- Tangney, J. P. (1994). The mixed legacy of the super-ego: Adaptive and maladaptive aspects of shame and guilt. In J. M. Masling & R. F. Bornstein (Eds.), *Empirical perspectives on object relations theory* (pp. 1–28). Washington, DC: American Psychological Association.
- Tangney, J. P. (1995a). Recent advances in the empirical study of shame and guilt. *American Behavioral Scientist*, **38**, 1132–1145.
- Tangney, J. P. (1995b). Shame and guilt in interpersonal relationships. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: Shame, guilt, embarrassment, and pride* (pp. 114–139). New York: Guilford Press.
- Tangney, J. P., Barlow, D. H., Wagner, P. E., Marschall, D. E., Borenstein, J. K., Sanftner, J., Mohr, T., & Gramzow, R. (1996). Assessing individual differences in constructive vs. destructive responses to anger across the lifespan. *Journal of Personality and Social Psychology*, **70**, 780–796.
- Tangney, J. P., Boone, A. L., Fee, R., & Reinsmith, C. (1999). *Multidimensional Forgiveness Scale*. Fairfax, VA: George Mason University.
- Tangney, J. P., Burggraf, S. A., & Wagner, P. E. (1995). Shame-proneness, guilt-proneness, and psychological symptoms. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: Shame, guilt, embarrassment, and pride* (pp. 343–367). New York: Guilford.
- Tangney, J. P., Miller, R. S., Flicker, L., & Barlow, D. H. (1996). Are shame, guilt and embarrassment distinct emotions? *Journal of Personality and Social Psychology*, **70**, 1256–1269.
- Tangney, J. P., Wagner, P. E., Barlow, D. H., Marschall, D. E., & Gramzow, R. (1996). The relation of shame and guilt to constructive vs. destructive responses to anger across the lifespan. *Journal of Personality and Social Psychology*, **70**, 797–809.
- Tangney, J. P., Wagner, P., & Gramzow, R. (1989). *The Test of Self-Conscious Affect* (TOSCA). Fairfax, VA: George Mason University.
- Tangney, J. P., Wagner, P. E., & Gramzow, R. (1992). Proneness to shame, proneness to guilt, and psychopathology. *Journal of Abnormal Psychology*, **103**, 469–478.
- Tangney, J. P., Wagner, P. E., Marschall, D., & Gramzow, R. (1991). *The Anger Response Inventory* (ARI). Fairfax, VA: George Mason University.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, **103**, 193–210.
- Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science*, **8**, 454–458.
- Tremblay, R. E., Boulerice, B., Arseneault, L., & Niscale, M. J. (1995). Does low self-control during childhood explain the association between delinquency

- and accidents in early adolescence? *Criminal Behaviour & Mental Health*, **5**, 439–451.
- Twenge, J. M., Tice, D. M., & Baumeister, R. F. (2000). *Decision fatigue: Making multiple personal decisions depletes the self's resources*. Manuscript submitted for publication.
- Waller, N. G., Lilienfeld, S. O., Tellegen, A., & Lykken, D. T. (1991). The Tridimensional Personality Questionnaire: Structural validity and comparison with the Multidimensional Personality Questionnaire. *Multivariate Behavioral Research*, **26**, 1–23.
- Whitley, Bernard E. (1983). Sex role orientation and self-esteem: A critical meta-analytic review. *Journal of Personality & Social Psychology*, **44**, 765–778.
- Williamson, D. (1990). Drinking: A sobering look at an enduring Princeton pastime. *Princeton Alumni Weekly*, **90**, 14–19.
- Wills, T. A., DuHamel, K., & Vaccaro, D. (1995). Activity and mood temperament as predictors of adolescent substance use: Test of a self-regulation mediational model. *Journal of Personality & Social Psychology*, **68**, 901–916.
- Wolfe, R. N., & Johnson, S. D. (1995). Personality as a predictor of college performance. *Educational & Psychological Measurement*, **55**, 177–185.
- Zimmerman, B. J., & Martinez-Pons, M. Construct validation of a strategy model of student self-regulated learning. *Journal of Educational Psychology*, **80**, 284–290.

## Self-Control Scale

Using the scale provided, please indicate how much each of the following statements reflects how you typically are.

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

- (R) \* 21. I don't keep secrets very well. 1—2—3—4—5
- (R) \* 22. People would say that I have iron self- discipline. 1—2—3—4—5
- (R) \* 23. I have worked or studied all night at the last minute. 1—2—3—4—5
- (R) \* 24. I'm not easily discouraged. 1—2—3—4—5
- (R) \* 25. I'd be better off if I stopped to think before acting. 1—2—3—4—5
- (R) \* 26. I engage in healthy practices. 1—2—3—4—5
- (R) \* 27. I eat healthy foods. 1—2—3—4—5
- (R) \* 28. Pleasure and fun sometimes keep me from getting work done. 1—2—3—4—5
- (R) \* 29. I have trouble concentrating. 1—2—3—4—5
- (R) \* 30. I am able to work effectively toward long-term goals. 1—2—3—4—5
- (R) \* 31. Sometimes I can't stop myself from doing something, even if I know it is wrong. 1—2—3—4—5
- (R) \* 32. I often act without thinking through all the alternatives. 1—2—3—4—5
- (R) \* 33. I lose my temper too easily. 1—2—3—4—5
- (R) \* 34. I often interrupt people. 1—2—3—4—5
- (R) \* 35. I sometimes drink or use drugs to excess. 1—2—3—4—5
- (R) \* 36. I am always on time. 1—2—3—4—5

\* Items included in the Brief Self Control measure

(R) Reversed Items