

## A Comprehensive Assessment of Human Strivings: Test–Retest Reliability and Validity of the Reiss Profile

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Sensitivity theory provides an analysis of personality based on what people say motivates their behavior. After Reiss and Havercamp (1998) confirmed a 15-factor solution to self-reported human strivings, the Reiss Profile of Fundamental Goals and Motivation Sensitivities (Reiss & Havercamp, 1998) psychometric instrument was standardized. In 3 studies, the Reiss Profile was shown to possess good test–retest and internal reliability and concurrent and criterion validity. Ten independent samples of adults ( $n = 764$ ) and a comparison group ( $n = 737$ ) participated in these studies. Pearson product–moment correlations between the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1960) and the Reiss Profile ranged in absolute value from .01 to .39 ( $M = .16$ ). How people self-reported their trait motives correlated with how they behaved in the “real world.” The Reiss Profile can be used to study motivational traits.

Many influential analyses of human motivation were based on theoretical reasoning, observations of patients, or on personal experiences but not on what people say motivates their behavior. Plato’s idea that social justice and knowledge are ultimate goals<sup>1</sup> was based on his personal, introspective experiences. Aristotle’s argument that friendship is an ultimate goal was based on a philosophical analysis of self-interest. Darwin’s (1859) theory that survival and reproduction are the prime directives was based on the study of animals. Freud’s (1916/1963) thesis that all human psychodynamics are motivated by sexual energy was based on his interpretations of what patients said in his office.

We do not know of any researcher who asked people about their strivings to develop a theory of personality; no influential personality theory has been based on what large numbers of people reported to be the driving forces in their lives. James (1890/1950), McDougall (1926), Allport (Vernon & Allport, 1931), Murray (1938), and Maslow (1943, 1970) were among the most influential motivational personality theorists of the last century. None of them conducted large scale surveys of what people said were their life goals or most important strivings.

Recently, Reiss and Havercamp (1998) asked thousands of people from diverse stations in life to rate lists of hundreds of possible ultimate goals. How people answered these questions—the interrelatedness among self-reported goals—dif-

fered significantly from what might have been expected based on rational analysis. Consider, for example, the idea that humanitarians care about people. Rational analysis suggests that people who care about others, treat others kindly, and are sensitive to the needs of others are likely to be concerned about social justice, helping the needy, and promoting world peace. When Havercamp (1998) asked people about their goals, however, self-reported caring about people had only a .23 correlation with self-reported motivation to promote social justice. Apparently, some humanitarians care deeply about justice or society as abstract entities but do not care very much about the people they actually know. Although these individuals may devote themselves to causes that help “the downtrodden,” they may treat badly the people they actually meet, including the poor people they meet. This example shows how difficult it is to guess which trait motives are largely unrelated to each other and represent distinct sources of motivation. If a clinician evaluates a client who is concerned about both society and personal friends, two largely unrelated motives are shown (caring about social justice and caring about people), not one motive (caring beyond self). To learn the number and nature of the motivational sources expressed by examples of various behaviors, researchers need to ask large number of people about their motives and empirically determine interrelatedness of goals through mathematical techniques such as factor analysis.

Reiss and Havercamp (1998) submitted self-reported motivation data to a series of four factor studies (three explor-

<sup>1</sup>Ultimate goals are desired for their own sake.

**TABLE 1**  
**Motives, Animal Behavior, and Intrinsic Feeling**

<i>Motive Name</i>	<i>Motive</i>	<i>Animal Behavior</i>	<i>Intrinsic Feeling</i>
Power	Desire to influence (including leadership, dominance)	Dominant animal eats more food	Efficacy
Curiosity	Desire for knowledge	Knowledgeable animal finds food more efficiently and learns to avoid prey	Wonder
Independence	Desire to be self-reliant	Motivates animal to leave nest, searching for food over larger area	Freedom
Status	Desire for social standing (including desire for attention, wealth)	Attention in nest leads to better feedings	Self-importance
Social contact	Desire for peer companionship (including desire to play, party)	Safety in numbers for animals in wild	Fun
Vengeance	Desire to get even (including desire to compete, to win)	Animal fights when threatened	Vindication
Honor	Desire to obey a traditional moral code	Animal runs back to herd when stared at by prey	Loyalty
Idealism	Desire to improve society (including altruism, desire for justice)	? Altruism in animals	Compassion
Physical exercise	Desire to exercise muscles	Strong animals eat more and are less vulnerable to prey	Vitality
Romance	Desire for sex (including courting)	Reproduction essential for species survival	Lust
Family	Desire to raise own children	Protection of young facilitates survival	Love
Order	Desire to organize (including desire for ritual)	Cleanliness rituals promotes health	Stability
Eating	Desire to eat	Essential for survival	Satiation (avoidance of hunger)
Acceptance	Desire for approval	? Self-concept in animals debatable	Self-confidence
Tranquility	Desire to avoid anxiety, fear, and pain	Animal runs away from danger	Relaxation

*Note.* ? = indicates doubt—some authorities question if animals show true altruism.

atory studies and one confirmatory study), each with a different sample of participants. The combined total of 2,554 people included people of diverse ages (12 to 76 years) and stations in life (e.g., high school students, college students, military people, fast food workers, seminary students, human service providers, nursing home residents). The results of the confirmatory factor study supported a 15-factor solution. These factors, along with Reiss's (2000b) interpretations, are shown in Table 1. Each of the 15 factors is considered a measure of a basic human striving or desire. The factors are categories of correlated ultimate goals.<sup>2</sup>

Theoretically, the 15 strivings are regarded as genetically distinct sources of motivation. These desires seem to motivate all people, occur automatically, and motivate certain animal behaviors. As shown in Table 1, these strivings have different survival implications, suggesting the possibility of different evolutionary histories. Although we believe that the 15 basic desires are at least partially genetically determined, we also believe that the manner people choose to satisfy these motives is learned through culture and experience. For example, parents instinctively love their children, but how they express that love and rear their offspring depends significantly on their culture and learned habits.

The satisfaction of each human striving is associated with a unique joy (also called *intrinsically valued feeling*), as shown in Table 1. For example, people experience wonderment when they gain knowledge, fun when they socialize, and freedom when they satisfy their desire for independence. Loosely speaking, our theory of trait motivation, called *sensitivity theory*, holds that people behave as if they are trying to maximize their experiences of 15 intrinsically valued joys.

Each basic desire motivates everybody but not to the same extent. How strongly or weakly an individual usually experiences each of the 15 strivings determines the individual's priorities. A *desire profile* (or *individual hierarchy*) is a person's unique prioritization of the 15 strivings. Generally, the most important strivings for explaining a person's behavior are those that are unusually strong (high) or unusually weak (low) compared to appropriate norms.

Sensitivity theory holds that people go through life seeking to satisfy the 15 trait motives, concentrating on those that are strongest and valued most highly (which depends on individuality). For example, curious people devote much of their time to satiating their desire for knowledge; power-hungry people seek dominant roles; and vindictive people are consumed by a need for revenge. The satisfaction of a fundamental desire is always partial and temporary; within hours of satisfaction, the desire reasserts itself and needs to be satisfied anew. Hours after we eat, for example, hunger reemerges. After we socialize, the desire for social contact reasserts itself within a day or less.

<sup>2</sup>Table 1 does not include the desire to survive because this motive is not considered to be an ultimate goal. These issues are discussed elsewhere (Reiss, 2000b).

The Reiss Profile of Fundamental Goals and Motivation Sensitivities (Reiss & Havercamp, 1998) is a 120-item, self-report instrument that assesses the 15 basic strivings. Each item was designed to measure the strength of an individual's intrinsic attraction or intrinsic aversion to a specific life goal. The item stems consist of the phrases "I like," "I enjoy," "I am happiest when," "I love," "I try," "I must have," "I hate," "I am proud of," "I want," and "is important to me." Examples of items include "I love to eat"; "Sex is very important to me"; and "I am happiest when I am physically active."

As was noted, the 15 strivings were identified based on factor studies (e.g., Reiss & Havercamp, 1998) of self-reported life goals. The results of these studies have shown that the Reiss Profile has factorial validity. The investigation we report here was designed to evaluate the 4-week, test-retest reliability, internal reliability, concurrent validity, and criterion validity of the Reiss Profile. Do people consistently report the same life goals when asked after a period of 4 weeks? To what extent do people tend to self-report the life goals they think other people value rather than the ones they believe actually motivates them? Does self-reported motivation correlate with real-world behavior?

STUDY 1

Previously, evaluation of the test-retest reliability of the Reiss Profile was limited to a small sample of 31 undergraduates who were retested after an interval of 2 weeks (Reiss & Havercamp, 1998). The *r* values for the 15 motivational scales ranged from .72 to .96 (*M* = .83). The purpose of Study 1 was to evaluate test-retest reliability over a 4-week interval with a larger sample of participants.

Method

**Participants.** The participants were 123 undergraduate students, 44 men and 79 women aged 17 to 31 (*M* = 19) who volunteered for the study as one of many ways to fulfill a course requirement. No person who participated in Study 1 had participated in any previous study we conducted.

**Procedure.** The participants completed the Reiss Profile twice over a 4-week interval. Participation was anonymous except that participants supplied the last four digits of their social security number so that the Time 1 and Time 2 profiles could be paired.

Results and Discussion

As shown in Table 2, Pearson product-moment correlations ranged from .69 to .88 (*M* = .80). These results can be compared to those reported for other personality tests. For example, Hjelle and Bernard (1994) reported 3-week test-retest reliabilities ranging from .32 to .78 (*M* = .60) across

TABLE 2  
Reiss Profile Test-Retest Reliability, Social Desirability, and Cronbach's Alpha

Reiss Profile Scale	4-Week Test-Retest <sup>a,b</sup>	MCSDS <sup>c</sup>	<sup>d</sup>
Social Contact	.81**	.04	.86**
Curiosity	.84**	.24**	.85**
Honor	.77**	.39**	.79**
Family	.79**	.19*	.87**
Independence	.72**	-.08	.89**
Idealism	.69**	.31**	.86**
Eating	.82**	-.16*	.87**
Power	.84**	-.07	.88**
Order	.81**	.09	.89**
Status	.88**	-.08	.90**
Vengeance	.86**	-.35**	.94**
Romance	.87**	-.26**	.93**
Exercise	.82**	.01	.89**
Acceptance	.80**	-.18*	.87**
Tranquility	.74**	-.02	.92**

Note. MCSDS = Marlowe-Crowne Social Desirability Scale.

<sup>a</sup>Pearson product-moment correlation coefficients (*r* values). <sup>b</sup>*n* = 123. <sup>c</sup>*n* = 171. <sup>d</sup>*n* = 311.

\**p* < .05. \*\**p* < .01.

subscales of the Jackson (1984) Personality Research Form (PRF). Test-retest reliability coefficients over the course of a 1-week interval were reported for the Minnesota Multiphasic Personality Inventory-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) scales as ranging from .58 to .92 with an average of .79.

STUDY 2

In this study, we evaluated the internal reliability of the Reiss Profile; the social desirability of the Reiss Profile; and the convergent validity of the three Reiss Profile scales for Power, Order, and Tranquility. The Reiss Profile Power and Order scales should correlate moderately with the PRF scales for Dominance and Order, respectively because the scales tap similar constructs and item domains. They may correlate only modestly, however, because all items on the Reiss Profile refer to motives, whereas some items on the PRF refer to motives ("I would enjoy ..."); others refer to nonmotivational traits ("When I am with someone else, I do most of the ..."); and still others to abilities ("I am quite good at ..."). The Reiss Profile scale for tranquility should correlate with the Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992) because they both measure similar constructs. The Reiss Profile Tranquility scale assesses sensitivity to anxiety and pain, whereas the ASI assesses only sensitivity to anxiety.

Methods

**Participants.** The participants were 171 undergraduate students, 86 men and 84 women (1 missing gender data) between the ages of 18 to 34 (*M* = 20) who volunteered for the

study as one of many ways to fulfill a course requirement. No person who had participated in Study 1 participated in Study 2.

**Measures.** Participants completed the Reiss Profile, the Marlowe–Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), the PRF scales for Dominance and Order, and the ASI. The MCSDS measures a tendency to endorse items that are culturally sanctioned and approved (Crowne & Marlowe, 1960). The PRF scale for Dominance predicts social behavior (Jaccard, 1974) and student activism (Pierce & Schwartz, 1971). Both the Dominance and Order scales have been shown to correlate with other personality measures and with the Strong Vocational Interest Blank. The ASI has been shown to be a valid predictor of panic and fear (McNally, 1999, 2002).

**Procedure.** The measures were administered to small groups of participants in randomized order. Participation was anonymous and participants were kept blind to the purpose and hypotheses of the study.

## Results and Discussion

Data from Studies 1 and 2 were combined to compute internal reliability for each of the Reiss Profile scales. As shown in Table 2, Cronbach's alpha coefficients ranged from .79 to .94, with an average of .88. These coefficients were similar to those previously reported (Reiss & Havercamp, 1998) and demonstrated good internal reliability.

As shown in Table 2, Pearson product–moment correlations computed between the MCSDS and the Reiss Profile ranged in absolute value from .01 to .39 ( $M = .16$ ). For sake of comparison, Jackson (1984) reported correlations between his desirability scale and his content scales as ranging from .01 to .44 ( $M = .22$ ).

Although the Reiss Profile scales were minimally affected by social desirability, social desirability was positively correlated with the Reiss Profile scales for Honor and Idealism, and negatively correlated with the scale for Vengeance. These findings suggest that the desire to respond in a culturally sanctioned manner is associated with certain other motives. Social desirability may reflect a motive, such as the desire for social approval, which is itself an interesting personality trait (Anastasi, 1988; Nunnally, 1978). The role of social desirability, whether a response set or itself a motive, warrants further investigation. With respect to the Reiss Profile, evidence suggests that the role is minimal.

The Reiss Profile Power and Order scales correlated .55 and .60, respectively, with the Dominance and Order scales of the PRF. The Reiss Profile Tranquility scale correlated .58 with the ASI. In contrast, the Reiss Profile Power, Order, and Tranquility scales were largely unrelated to each other (the  $r$ s ranged from .13 to .25), arguably providing some evidence for discriminant validity. These findings provided evidence for the convergent validity of the three Reiss Profile scales.

## STUDY 3

In this study, we assessed the criterion validity of nine Reiss Profile scales. The hypothesis was that strivings influence free-choice participation in various groups and clubs. A person for whom social contact is a particularly strong striving, for example, should be motivated to join social groups such as sororities and fraternities (called "Greek" clubs). If we test Greeks, therefore, we should see above-average strivings for social contact. Under sensitivity theory, a person who is strongly striving for honor is motivated to experience loyalty to traditional values (see Table 1); such a person should be motivated to join groups that give emphasis to honor codes such as military officer training groups (Reserve Officer's Training Corps [ROTC]). If we test ROTC students, we should see above-average scores for honor.

## Method

**Participants.** As shown in Table 3, the participants were 470 members of one of eight criterion groups and 737 members of a comparison group. No person who had participated in Study 1 or 2 participated in Study 3. The participants in the criterion groups were recruited based on their affiliation with our university with the following exceptions. Some participants in the volunteer group were recruited through Habitat for Humanity organizational meetings and through the Peace Corp electronic mail listserv. Nutritionists at two community weight loss centers recruited the participants for the dieters group. The participants in the comparison group consisted of the combined samples of scale development Studies 3 and 4 previously published by Reiss and Havercamp (1998). In total, the comparison participants represented 20 samples from six Midwestern states plus Canada. They were recruited from high schools, colleges, church groups, human service employee groups, secretaries working at law firms, nursing homes, and other diverse sources reported by Reiss and Havercamp (1998). As shown in Table 3, the demographics for the criterion and comparison groups were similar, with the exception of gender imbalances and some age variances discussed following.

**Procedure.** The participants completed the Reiss Profile anonymously.

**Data analysis.** To minimize gender effects arising from unequal gender distributions across some of the criterion groups, we computed average scores for male and female participants separately and then computed the mean of these two scores. The result are called *gender-balanced means*. To give readers an idea of the significance of the means, we "standardized" the gender-balanced means of the criterion groups using the corresponding gender-balanced means and standard deviations from the full comparison group ( $N = 737$ ). The standard-

**TABLE 3**  
Demographic Data on Research Participants

Variables	Samples								
	Greeks	Philosophers	ROTC	Volunteers	Dieters	Athletes	Seminary	Culinary	Comparison <sup>a</sup>
<i>N</i>	65	52	65	66	44	71	49	58	737
Male (%)	32	56	83	30	20	46	53	59	35
Age range	18 to 23	18 to 41	18 to 30	18 to 76	18 to 71	18 to 24	19 to 53	18 to 47	12 to 75
Average age	20	24	21	30	31	20	29	25	29
African American (%)	0	0	3	8	20	9	2	7	7
Asian American (%)	2	2	2	6	0	0	2	0	1
White (%)	95	92	94	86	78	83	90	86	80
Hispanic (%)	2	0	0	0	0	4	0	0	5
Lower class (%)	0	2	5	2	9	1	4	10	NA
Middle class (%)	92	96	94	94	84	95	94	88	NA
Upper class (%)	8	2	2	3	4	4	2	0	NA

Note. *N* = 1,207. ROTC = Reserve Officer's Training Corps; NA = not available.

<sup>a</sup>Although we did not collect socioeconomic data for this group, the group was overwhelming middle class.

ized, gender-balanced mean for the full comparison group is 0 and the standard deviation is 1.

Planned comparisons were made between each criterion group and the comparison group of 737 participants. Cohen's *d* was used to estimate effect size. Table 4 reports these Cohen's *d* scores. After we computed these statistics, which we report herein, we compared each of the four college student criterion groups—Greeks, philosophers, ROTC, and athletes—to an age-selected subgroup, namely, participants in the comparison group under the age of 30 (*N* = 287), and we gender balanced (used average of male and female means.) The *t* values and effect sizes (*d*) for these planned comparisons are reported herein directly after those based on the full comparison group to provide information on how age might have influenced effect sizes.

We conducted a multivariate analysis of variance (MANOVA) that compared the criterion groups to each other; this analysis did not include the comparison group. We computed univariate ANOVAs across groups. These results provided additional evidence that age was not an alternative explanation of our results: Where a criterion group had been predicted to score high (or low) for a particular motivational scale, the group scored significantly higher (or significantly lower) than all or nearly all other criterion groups, including those with equivalently aged participants, and the higher (or lower) scores were statistically significant. These statistics are not included in this report but are available on request.<sup>3</sup> In conclusion, we would like readers to know that age and gender differences do not explain the significant effects we report.

## Results and Discussion

Table 4 shows the Cohen's *d* scores for the eight criterion groups on the nine Reiss Profile scales on which at least one prediction was made.

**Greeks.** The promise of fellowship is a common "selling point" used to recruit people to join fraternities and sororities, and Greeks are known for their weekend parties. Because both fellowship and parties fall under the Reiss Profile motive of social contact, we predicted that Greeks would score high on this motive. In other words, the greater the importance a person attaches to his or her social life, the greater the person's motivation to join clubs designed to facilitate socializing and the more likely it is that the person will become a member of such clubs. As shown in Table 4, the Greeks had the highest effect size for social contact as compared with the seven other criterion groups in this study. The mean score for the Greeks for social contact was .54 *SDs* above the norm (i.e., *d* = .54). This mean was higher than that for the full comparison group,  $t(800) = 4.18, p < .001$ , and higher than that for the similar age comparison subgroup,  $t(350) = 2.95, p < .001, d = .41$ .

Because Greek clubs aim to recruit popular people (see Fitzgerald, 1962; Robson, 1970), on average their members should show a high motivation for status. The rationale for this prediction was as follows. The human psyche reasons we as people are important when others pay attention to us and we are unimportant when ignored. In America, social popularity and wealth command attention, elevate status, and make people feel self-important. Because status-oriented people are theoretically considered to have a higher than average motivation to feel self-important (see Table 1), these people should find Greek clubs appealing, and therefore, Greeks should score above average for status on the Reiss Profile. The mean standard score for Greeks for status was .92 *SDs* above the norm. This mean was higher than for the

<sup>3</sup>Copies of the MANOVA and ANOVAs can be obtained from Susan M. Havercamp.

**TABLE 4**  
**Gender Controlled Cohen's *d* Scores for Criterion Groups Relative to the Control Sample**

Reiss Profile Scale	Criterion Groups							
	Greeks	Philosophers	ROTC	Athletes	Dieters	Volunteers	Culinary	Seminary
Social	.54H	-.47	.29	.50	.18	.09	-.01	-.06
Curiosity	.22	1.03H	.42	.18	.56	.52	.31	.50
Honor	-.14	-.41	.14H	-.22	-.16	-.35	-.55	-.20H
Idealism	-.08	-.13	-.06	-.11	-.28	.43H	-.36	.77
Eating	.40	-.24	.30	.50	.71H	.24	.47H	-.13
Exercise	.50	-.10	.81H	1.21H	-.21L	-.12	-.17	-.38
Independence	.27	.14	.15	-.10	-.48	-.50	.13	-.70L
Power	.78H	-.07	.90H	.69	-.01	-.02	.26	.18
Status	.92H	-.46	.39	.64	.13	-.72L	.21	-.68

Note. ROTC = Reserve Officer's Training Corps; H = predicted to be high (above zero); L = predicted to be low (below zero).

full comparison group,  $t(800) = 7.11, p < .001$ , and higher than that for the similar age comparison subgroup,  $t(350) = 3.43, p < .001, d = .47$ .

Recruitment manuals suggest that Greek clubs should seek campus leaders (see Fitzgerald, 1962; Robson, 1970). On the Reiss Profile, leadership falls under the desire for power. To the extent that Greek clubs are successful in attracting campus leaders, Greeks should score high for power on the Reiss Profile. Cohen's  $d$  for power was .78 for the Greeks. The mean was higher than for the full comparison group,  $t(350) = 6.01, p < .001$ , and higher than that for the similar age comparison subgroup,  $t(350) = 3.23, p < .001, d = .44$ . People who say on the Reiss Profile that leadership and influence are important to them are more likely than average to join Greek clubs.

The motivational profile for Greeks was consistent with expectations based on what we know about how these organizations recruit prospective members. They advertised improved social life, enhanced status on campus, and leadership, and they attracted disproportionate numbers of people who have elevated Reiss Profile trait motivational scores for social contact, status, and power. The results provided evidence for the criterion validity of these three scales.

**Philosophers.** Because many philosophers have reported being motivated by a driving curiosity (Russell, 1945/1972), we predicted that graduate and undergraduate majors in philosophy should score high on the Reiss Profile Curiosity scale. On this scale, the philosophers scored 1.03  $SDs$  above the norm. This mean was higher than for the full comparison group,  $t(787) = 7.20, p < .001$ , and higher than that for the similar age comparison subgroup,  $t(337) = 7.04, p < .001, d = 1.06$ . The results provided evidence for the criterion validity of the curiosity scale.

**ROTC.** Based on the high value military officers place on honor codes, we predicted that ROTC members (college students who were training to be military officers) would score high on the Reiss Profile scale for honor. The ROTC students scored .14  $SDs$  above the norm. This small difference was not statistically significant compared with the total

comparison group,  $t(800) = 1.09, ns$ , but it was statistically significant compared with the similar age comparison subgroup,  $t(350) = 4.91, p < .001, d = .68$ . The ROTC group was 83% male; when the ROTC male participants were compared to male participants in the full comparison group, the results were statistically significant,  $t(306) = 2.66, p < .01, d = .40$ , and the same was true when male participants only comparisons were made for the similar age comparison subgroup,  $t(161) = 5.42, p < .001, d = .91$ . These results supported the criterion validity of the honor scale for male participants but not for female participants.

Because university students must be fit to qualify for ROTC, they should value strenuous physical activity or experience it as enjoyable, which implies a high score on the Reiss Profile scale for Intrinsic Enjoyment of Physical Exercise. Cohen's  $d$  for physical exercise was .81 for the ROTC group. This result was statistically significant when compared to the full comparison group,  $t(800) = 6.26, p < .001$ , and when compared to the similar age comparison subgroup,  $t(350) = 3.15, p < .001, d = .43$ .

ROTC recruits students interested in military leadership. The more enthusiasm a person shows in endorsing statements that he or she is motivated to lead, the greater should be the student's attraction to becoming a military officer, all other significant factors being equal. Because leadership falls under the Reiss Profile motive of power, the ROTC students should score high on this scale. They scored .90  $SDs$  above the norm on the Power scale. This result was statistically significant when compared to the full comparison group,  $t(800) = 6.92, p < .001$ , and when compared to the similar age comparison subgroup,  $t(350) = 4.10, p < .001, d = .56$ .

The ROTC profile pattern has face validity based on what is emphasized (honor, fitness or physical prowess, and leadership) when the military recruits students for ROTC. The profile provided evidence for the criterion validity of Physical Exercise and Power scales, but the evidence was mixed concerning the Honor scale.

**Athletes.** Because the intrinsic joy of physical exercise is an apparent motive for playing sports, we predicted that

varsity athletes would score high for the motive of physical exercise. Cohen's  $d$  for the Reiss Profile Physical Exercise scale was 1.21 for varsity athletes. This result was statistically significant when compared to the full comparison group,  $t(806) = 9.71, p < .001$ , or to the similar age comparison subgroup,  $t(356) = 6.39, p < .001, d = .85$ .

The athletes also scored above average for status, which suggests that being a varsity athlete at this university may convey status on the student. Under the sensitivity theory of sports (Reiss, 2000b), this result may be sport specific. The high score for social contact may mean that young people join teams in part as a means of socializing or making friends; again, this issue is regarded as sport specific (Reiss, 2000b).

**Dieters.** Many obese people have strong appetites and are physically inactive. As shown in Table 4, the dieters scored higher for the motive of eating than did any other group (indicating that dieters report above-average appetites), and they had one of the lower scores for physical exercise (suggesting that dieters report below-average intrinsic enjoyment of workouts). Cohen's  $d$  for eating was .71 for the dieters,  $t(779) = 4.55, p < .001$ . Cohen's  $d$  for physical exercise was  $-.21$  for the dieters,  $t(779) = -1.32, ns$ . The results provided evidence for the criterion validity of the eating scale but not for the physical exercise scale.

**Volunteers.** The Peace Corp and Habitat for Humanity are two volunteer service organizations that have as their central purpose helping people in need. Because humanitarian efforts fall under the motive of idealism, we predicted that the volunteer group would score high on this motive. The mean score for the volunteers was .43  $SDs$  above the norm for idealism,  $t(801) = 3.31, p < .001$ . The more enthusiastic a person was in endorsing Reiss Profile statements of concern for society's welfare, the more likely was the person to be a volunteer.

People who are motivated by status should be oriented to serve or affiliate with the wealthy. Volunteers serve the needy, not the wealthy, and often they do so for little or no pay. According to how sensitivity theory defines the concept of a fundamental human striving or motive, volunteers should score below average for status.<sup>4</sup> The mean score for

the volunteers for status was .72  $SDs$  below the norm,  $t(784) = -5.58, p < .001$ . The results provided evidence for the criterion validity of the Reiss Profile Idealism and Status scales.

**Culinary students.** People with stronger than average appetites may be more likely than average to develop an interest in becoming a professional cook. Culinary students scored .47  $SDs$  above average for eating,  $t(795) = 3.43, p < .001$ . This finding provided evidence for the criterion validity of the Eating scale.

**Seminary students.** Based on conversations with campus ministers who told us that Protestant seminary schools attract many young people interested in the social gospel, we predicted that a group of students from Protestant seminary schools would score high on the motive of idealism. As shown in Table 4, the seminary students had the highest effect size for this motive of the eight criterion groups. Cohen's  $d$  for idealism was .77 for the seminary group,  $t(784) = 5.18, p < .001$ .

Although seminary students may no longer take vows of poverty, the desire to become wealthy is not a common motive for joining the clergy. Because the desire for wealth falls under the Reiss Profile motive of status, we predicted low scores for status. The seminary students' mean score for status was .68  $SDs$  below the norm,  $t(784) = -4.63, p < .001$ .

The religious literature worldwide is unusual in the extent to which it describes the need for psychological support as an intrinsic joy (Armstrong, 1993). Reiss (2000b) suggested that God images are especially well suited to satisfy the desire for psychological support: All a believer need do to experience psychological support is to believe that God is on his or her side. In the system of 15 fundamental strivings, the desire for psychological support is expressed as a below-average desire for independence. (Sensitivity theory, which has been used to generate a comprehensive theory of spirituality, stipulates that being in need of others or a greater reality is the psychological opposite of wanting to be on one's own—see Reiss, 2000b, 2000c). Based on this reasoning, as well as some previous findings (Evans, 1960), the seminary students were expected to score low for the desire for independence. They scored .70  $SDs$  below the norm for independence,  $t(784) = -4.72, p < .001$ .

We expected seminary students to show an above-average interest in traditional morality, which falls under the Reiss Profile motive of honor. Cohen's  $d$  for honor for the seminary students was  $-.20$ ,  $t(784) = -1.38, ns$ . These future clergy people reported only normative interest in morality.

<sup>4</sup>Under Reiss's (2000b) sensitivity theory, fundamental human strivings organize perceptions, values, cognitions, emotions, and behavior into coherent acts. A person with below-average motivation for order, for example, tends not to notice when dirty dishes are left in the sink; values flexibility; often thinks that rules and being organized are not as important as most people assume; feels uncomfortable when rules are rigidly applied; and introduces ambiguity into arguments, not because this makes the argument more persuasive, but rather because he or she likes moderate degrees of ambiguity. A person with below-average status motivation tends not to notice titles and marks of social class, places less value on gaining wealth than does the average person, may think that social class is a superficial characteristic of a person, may be easily embarrassed when per-

sonally associated with expensive or prestige things, and tends to ignore what high society thinks. Volunteer work can appeal to people with low status motivation because it conveys no mark of distinction that impresses most upper class people and is unlikely to embarrass the individual by creating an appearance of prestige or wealth orientation.

This result was inconsistent with the expectation of greater than average moral motivation.

People join Protestant seminaries because they hope religion can make the world a better place for the needy and because they experience God in the image of a supportive deity. Money is not part of the attraction for these idealistic young men and women. The results provided evidence for the criterion validity of the Reiss Profile Idealism, Status, and Independence scales. For this group, the Honor (morality) scale did not perform as initially expected.

### GENERAL DISCUSSION

Sensitivity theory is a novel approach to the study of personality because it is based on what people say motivates their behavior. Although a number of insightful motivational personality theories were proposed in the past, none were based on what large numbers of people from diverse stations in life said were their ultimate goals. The Reiss Profile was constructed to assess underlying psychological factors derived from self-reported motivational traits. In this study, we explored the reliability and validity of self-reported motives: Do people consistently self-report the same fundamental strivings? Do they actually behave in ways consistent with self-reported motivation? The results of the studies reported here provided affirmative evidence in response to these questions. With the addition of these results, test development research on the Reiss Profile now encompasses four factor studies (three exploratory and one confirmatory), two test–retest reliability studies, two assessments of internal reliability, an assessment of the concurrent validity of three Reiss Profile scales, and an assessment of criterion validity of nine Reiss Profile scales. Nearly all of the evidence is consistent with the hypothesis that self-reported trait motives, at least as assessed by the Reiss Profile, have significant validity. The results lend support to the general conclusions reached by Jackson (1984) and his associates, namely, that people can validly self-report trait motives. This does not mean that every self-reported motive is valid or that distortion and bias processes do not occur; rather, the evidence shows that when self-reported motives are assessed using carefully constructed instruments, such as the Reiss Profile, bias is within acceptable psychometric limits and significant validity is obtained. When used by trained professionals who understand the limitations of self-report instruments, the Reiss Profile assessment of motivation may be a significant supplement to traditional personality assessments.

The Reiss Profile is suited to study motivational traits. Because the 15 basic strivings have broad relevance, the instrument potentially can be applied to study a wide range of phenomena. As shown by these results, the instrument is relevant to studying participation in interest groups such as choice of college major, membership in social clubs, and interest in volunteer work. Other studies have shown the rele-

vance of the instrument or underlying theory for studying psychopathology (Lecavalier & Tassé, 2002; Reiss & Havercamp, 1996), romantic love (Engel, Olson, & Patrick, 2002), spirituality and god images (Reiss, 2000c), sport participation (Reiss, Wiltz, & Sherman, 2001), mindfulness (Reiss, 2000a), and mental retardation (Dykens & Rosner, 1999; Wiltz & Reiss, 2003).

Reiss and Havercamp (1996) put forth the hypothesis that extreme or unusual patterns of trait motives longitudinally predict psychopathology. For example, adults who are strongly motivated by order may tend to show obsessive–compulsive behavior because rituals are orderly (see Table 1).<sup>5</sup> Evidence from both children and young adults shows that an extreme desire for tranquility (as indicated by high anxiety sensitivity) longitudinally predicts panic symptoms (McNally, 2002; Schmidt, Lerew, & Jackson, 1997; Weems, Haywood, Killerf, & Taylor, 2002). Lecavalier and Tassé (2002) showed that high scores for eight Reiss Profile motives were associated with psychopathology for a sample of adults with “dual diagnosis” (both mental retardation and psychopathology.)

The Reiss Profile is well suited to supplement the results of traditional personality tests in clinical cases. A school psychologist, for example, tested two boys who threatened mass violence in their schools. On the Reiss Profile, both scored very high for vengeance, very low for honor, very low for idealism, and high for status. These results suggested that the adolescents were motivated to get even for perceived offenses and to obtain celebrity status. Morality did not inhibit their violent proclivities because they did not care about honor, and justice did not inhibit them because they did not care about the welfare of the community or society. They were disconnected emotionally from ancestors (low honor), parents (low honor), community (low idealism), and school (low idealism). They cared about their peers (average desire for social contact). How dangerous is a boy who is out for revenge and attention and undeterred by conscience? To some extent, the level of danger may depend on the motivational strength for tranquility. The boy who scored high for tranquility was a coward whose fear of being personally injured may have been greater than his anger; he may fantasize about killing people but be too afraid for his personal safety to act out his fantasy. The boy who scored very low for tranquility was fearless. He once got so mad he drove his car with passengers into a tree. This boy—angry, seeking attention, un-

<sup>5</sup>Theoretically, the sensitivity point of temporary satiation beyond which continued performance of rituals becomes aversive is experienced much sooner for people with low versus high order so that people with low order could not tolerate the amount of ritualistic behavior in a typical case of obsessive–compulsive disorder, but people with extremely high order do not satiate easily and thus continue to experience ritual after ritual as pleasant, a predisposing condition that may longitudinally predict symptoms. Similar logic led to the successful identification of anxiety sensitivity as a significant risk factor for panic disorder (McNally, 2002).

deterred by conscience, and fearless—may well have been capable of planned or random murder if the police had not first caught him.

A particularly important area of research is depression. Is depression indicated by low scores on all trait motives or by a pattern in which certain “positive” motives are weak, such as social contact and romance, and certain “negative” motives are strong, such as anxiety sensitivity (which falls under the basic motive of tranquility) and need for approval (which falls under the basic motive of acceptance.) Whereas the previously developed assessment instruments, such as the Reynolds Adolescent Depression Scale (Reynolds & Mazza, 1998), show the level of depression, the Reiss Profile may supplement this information by showing the extent to which specific motives are abnormally high or low in clinical cases of depression.

The Profile also can be used to study motivational traits longitudinally. Because researchers have shown that aggression is stable over time (Eron & Huesmann, 1990), it would be interesting to evaluate how weak desires for honor and idealism are related to trait aggressiveness.

To meet the need for mental retardation personality assessments (Spirrison, 1992), we developed a mental retardation version of the Reiss Profile (Reiss & Haverkamp, 1998, 2001). The Mental Retardation/Developmental Disabilities version has been used to show links between motivational profiles and genetic developmental disorders (Dykens & Rosner, 1999) and between extreme motivational traits and mental health symptoms (Lecavalier & Tassé, 2002).

A limitation of this research is that the participants were self-selected. They each volunteered to participate in a study of motivation. It is possible that the motivational profiles of persons who volunteer for research studies are somewhat different from profiles shown by the general population. One might predict them to be more motivated by curiosity or perhaps by a desire to help others (idealism).

The participants in these studies completed the Reiss Profile anonymously. How well these results apply to situations in which participants identify themselves may depend on the reasons for testing and the age and sophistication of the test taker. Many research applications do not require the participants to identify themselves. In many school and some clinical applications, the person being tested is motivated to reveal himself or herself. Overall, the Reiss Profile test items do not seem to elicit much defensiveness—this is a test of what people most want, and the only way an individual can produce the profile the individual most values is to answer straightforwardly. If a person were suspicious about being tested at the workplace, however, the individual may consciously decide to provide the answers he or she thinks authorities want to see. Readers who are interested in issues pertaining to anonymity and self-report data may find some novel ideas on the subject in Reiss’s (2000b) theory of how the 16 basic desires affect human relationships. Reiss’s

(2000b) concept of self-hugging, for example, predicts circumstances when people assume that their deepest values reflect human nature (rather than individuality). Under self-hugging, people are motivated to reveal their true motives because they expect others to be impressed or value them favorably.

In conclusion, measures of trait motivation have the potential to stimulate research studies on a broad range of issues and to supplement traditional personality test results in clinical cases.

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