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# The Psychology of Gifted Adolescents as Measured by the MMPI-A

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**Abstract:** The focus of this study is an examination of gifted students' responses on the Minnesota Multiphasic Personality Inventory–Adolescent (MMPI-A) in relation to the adolescent norming sample. The comparisons on clinical, content, and Harris–Lingoes scales provide evidence that gifted adolescent boys' and girls' responses do not differ from one another significantly. Furthermore, the data reveal that the assumption held by many that gifted adolescents are more prone to experience heightened rates of neuroticism or personality difficulties is unsupported by the empirical data. Analyses of MMPI-A scores reveal that gifted students' scores are equivalent to or lower than the general population in all areas. The results are discussed as continued empirical evidence that gifted adolescents do not demonstrate abnormal levels of psychological or personality deviance because of their elevated cognitive abilities.

**Putting the Research to Work:** Educators often subscribe to the notion that gifted adolescents are prone to more neurotic behavior or are more often diagnosed with personality disorders than their age mates. The results of this research indicate that notion is false, particularly for adolescents in a residential academy. Educators should be cognizant of the characteristics and needs of gifted adolescents and use that knowledge in planning services and identification plans for these students.

**Keywords:** *gifted adolescents; personality; MMPI-A*

The Minnesota Multiphasic Personality Inventory–Adolescent (MMPI-A) was developed to provide a focused and developmentally relevant self-report personality inventory to address several clinical and pragmatic problems presented with administering the MMPI to adolescents (Butcher & Williams, 1992). Since the release of the MMPI-A in 1992, it has become a primary assessment measure used with adolescents (Rowe, 2003). However, there has been little work conducted on explicit comparisons of MMPI-A responses offered by gifted adolescents and the general population of adolescents. There are several common claims regarding gifted adolescents' personality profiles, often casting high-ability youth as having elevated levels of depression, anxiety, neuroses, and social isolation (for discussion, see Coleman & Cross, 2001; Neihart, 1999), usually based on a logical argument in the absence of empirical support. This investigation was conducted to

provide an explicit comparison of a large sample of gifted adolescents with the published normative sample data, directly examining the viability of these assertions.

## Personality in Gifted Adolescents

Historically, a variety of perspectives on the personality characteristics of high-ability youth have been offered. Early work by Terman (1925) concluded that gifted individuals were typically better off in nearly all domains. Although there have been valid critiques of the methodological and sampling conditions present

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in that classic longitudinal study (e.g., Clark, 2002), more recent empirical work has generally supported that gifted adolescents demonstrate similar or more healthy psychological characteristics than their nongifted peers (Howard-Hamilton & Franks, 1995; Nail & Evans, 1997).

A review of the literature, including both empirically based and logically based assertions provided over time, Neihart (1999) demonstrated several failures in building theory on gifted adolescents' personalities based on researchers' reliance on syllogistic reasoning rather than validated research procedures. One example of a commonly reported effect based on syllogistic reasoning offered by Neihart was,

Gifted children experience more stress as a result of being different, and high levels of stress are known to contribute to a wide variety of health problems, therefore gifted children must be prone to problems (Altman, 1981; Chen, 1980; Ferguson, 1981; Silverman, 1993; Webb, Meckstroth, & Tolan, 1982). (p. 16)

Although theory building from logical assertions is a relevant first step, research on gifted adolescent emotional development and personality characteristics has provided resounding evidence that these broad-based statements of psychological distress befalling high-ability youth are largely unwarranted. In another example, Dirkes (1983) suggested that high-ability adolescents faced stress at younger ages than their peers and were often faced with higher levels of stress because they had a "keener sense of the possibilities open to them" (p. 70). Similar lines of reasoning are offered in warning messages to parents that gifted adolescents are at higher risk of traumatic experiences because of the difficulty they face in attempting to be accepted in their peer group despite the differences caused by their intellectual advantages (Schuler, 2000). Although we agree that parents of adolescents (gifted or not) need to be attentive to warning signs of depression, anxiety, or suicidal ideation, the assertion that gifted teens are more likely to encounter these negative outcomes due to endogenous characteristics is unsupported in the empirical literature (Baker, 1995; Cross, Cassady, & Miller, 2006; Neihart, 1999).

Neihart (1999) asserted that "all empirical studies examining depression among gifted children have found gifted students to exhibit levels of depression similar to, or lower than their nongifted peers" (p. 12). Support for this statement came from studies

of high-ability youth in selective summer programs (Berndt, Kaiser, & van Aalst, 1982) as well as school-based populations (Baker, 1995). The Baker (1995) analysis also revealed no variance in suicidal ideation based on gifted identification status.

Suicidal tendencies were another domain of personality and psychological deviance proposed to be elevated in gifted youth (see Lajoie & Shore, 1981). In an argument similar to Dirkes's (1983) propositions for heightened stress, DeLisle (1990) proposed that the hypothesized higher rate of suicidal tendency in gifted adolescents was the consequence of gifted students' difficulties in psychological functioning due to perfectionism, fear of failure, fear of success, or social isolation. However, empirical exploration of gifted youth again revealed that although gifted adolescents commit suicide, they have no reliable patterns suggesting higher rates of suicide attempts or suicidal ideation than their peers (Cross, 1996; Cross et al., 2006).

Regarding anxiety, the most exhaustive study on record (Scholwinski & Reynolds, 1985) reviewed more than 5,000 gifted and average ability children's scores on the Revised Children's Manifest Anxiety Scale. The results demonstrated that gifted children actually had lower levels of anxiety across the developmental span in the study (ages 6-19).

Although it is clear that gifted adolescents differ from their peers in a variety of ways, the data repeatedly demonstrate across multiple specific investigations that gifted individuals do not have heightened rates of psychopathology, deviance, or personality and mood disorders. Although these specific investigations psychological and personality traits continue to converge on the notion that gifted adolescents are generally well-adjusted individuals, confirmation from one of the preeminent personality inventories for adolescents would provide strong unified validation for these distributed effects.

### **Exploration of Adolescent Personalities With the MMPI-A**

Although the measurement of personality and psychopathology with MMPI and MMPI-A is primarily designed to provide clinicians with information regarding an individual's likelihood to manifest a variety of mood or personality disorders (Rowe, 2003), these tools have also been widely used to track historical and group differences in personality. For instance, Newsom, Archer, Trumbetta, and Gottesman (2003) provided a direct examination of

adolescent response patterns over four decades by comparing the 1992 normative sample data for the MMPI-A with published adolescent data gathered on the MMPI circa 1950 and 1985. The reported effect sizes generated in comparisons among these three samples revealed several patterns of elevation on clinical scales and direct-item comparisons for the 1992 adolescent sample as compared to the 1950s students, with the 1985 sample generally falling midway between the two extreme groups. Direct comparisons of these samples do need to be viewed with some measure of caution as the 1950 and 1985 samples completed the MMPI, which is known to present some assessment problems with adolescents.

The research base includes studies contrasting MMPI-A performance profiles of nonclinical adolescents with juvenile delinquents (Acher, Bolinsky, Morton, & Farris, 2002), psychiatric referrals (Kopper, Osman, Osman, & Hoffman, 1998), suicidal youth (Archer & Slesinger, 1999), and a variety of clinical populations (Archer, Handel, & Lynch, 2001). However, minimal evidence has been provided regarding the patterns of personality reports for gifted adolescents on the MMPI-A or the adult form (MMPI). A review of all known reports comparing gifted students with a sample of the general population is offered to demonstrate the paucity of research available.

In a dissertation study designed to explore the same questions we approach in the current investigation, Magdsick (1996) explored the viability of the published norming sample data on interpreting gifted students' response patterns on the MMPI-A. She found no meaningful differences based on gifted identification on the clinical scales. The results confirm the variety of data demonstrating broad consistency in personality and psychological functioning for gifted adolescents, but the sample size of that exploratory study ( $n = 21$ ) precluded any meaningful theory development.

Welsh (1969) found no consistent patterns of deviance as compared to the general population of adolescents on the MMPI when testing gifted boys ( $n = 529$ ) or girls ( $n = 622$ ) attending a selective residential high school. Only the boys' Masculinity-Femininity scores demonstrated group elevation ( $T = 65$ ), which has often been associated with heightened intelligence (Archer, 1997). Conversely, female averages on Masculinity-Femininity were in the low range ( $T = 43$ ), supporting beliefs of heightened assertiveness or masculinity in the female gifted students. Welsh's analyses were merely presentations of MMPI summary charts, with no descriptive analysis, providing no further insight into the noted patterns.

Kennedy (1962) reported MMPI profiles of 100 participants in a selective summer math institute. Based on the  $T$ -score values of the gifted sample, he concluded that "the profile of the gifted adolescent is within normal limits and that when one finds a superior person whose score deviates from the normal it is a clue to factors other than his high intelligence" (p. 149). However, it should be noted in the published values of Kennedy's sample, although the mean values were within the normal range, the scores were consistently in the  $T = 55$ -60 range.

In examining a limited sample of high-performing college students (summa cum laude) contrasted with a matched sample of average-achieving college students, Kodman (1984) provided contradictory information. His results demonstrated that the "achievers" had higher means on 6 of the 10 MMPI clinical scales than the average performance group, and females had higher scores on 5 of those. Group differences were apparent on Hysteria, Psychopathic Deviate, Masculinity/Femininity, Psychasthenia, and Schizophrenia for both males and females and Social Inversion for the males alone. Kodman proposed these effects contrasted with Terman's (1925) findings because there was a halo effect operating with Terman's classic longitudinal sample. When describing the high-ability students, Kodman stated,

The gifted student is described as compulsive, perfectionistic, insecure, immature, obsessional, inadequate, seclusive, and stubborn. There is also a hypochondriacal and non-conforming element present. On the more positive side, these students are described as frank, kind, aesthetic, clear thinking, idealistic, and sentimental; however as a group there are some disturbing features. (pp. 137-138)

Kodman's (1984) results provide clear, empirical evidence of differences between the high-achieving and average-achieving college students. However, some limitations to the study may influence the conclusions regarding gifted students and MMPI profiles. First, the classification of the students as gifted came from only their GPA accomplishment, with the assumption that the summa cum laude students were gifted. Such a limited view of giftedness may misrepresent the gifted population—including students who would not reach conventional definitions for giftedness but simply achieved academic excellence through extraordinary amounts of work and diligence—which would likely lead to high ratings of obsessiveness, isolation, compulsion, and perfectionism. Furthermore, the results present group mean differences on raw

scores for the 10 clinical scales, not standardized scores. That is, even though there are statistical differences in the number of endorsed items within each of the 10 scales, there is no evidence provided that the scores provided by the high achievers actually reach levels of deviance.

In a longitudinal investigation of MMPI-A self-reported personality profiles, gifted adolescents were shown to be within normal limits on the MMPI-A content scales (Cross, Adams, Dixon, & Holland, 2004). Furthermore, over 2 academic years during which the students attended a selective residential high school program (Grades 11 and 12), Cross et al. (2004) found minimal change in reported personalities, with the majority of students with elevated MMPI-A indicators at school entry showing normalized patterns at the time of exiting the school. The results from that study of 139 students provided clear indication that being gifted in adolescence does not indicate the presence of personality difficulties and that enrollment in a selective academically challenging program was not associated with subsequently elevated anxiety, stress, or isolation as proposed in Dirkes's (1983) discussion.

## Present Investigation

The purpose of this investigation was to examine a large sample of gifted adolescents as compared to the published norming sample (general sample) on the MMPI-A. The utility of this study to the field is to offer a unified investigation of gifted adolescents' personality and psychological characteristics using the predominant self-report inventory for adolescents (Archer & Newsom, 2000). The results are intended to provide descriptive comparisons between the gifted students in this sample and the general population, adding to the body of research exploring group differences over time and across populations existing for the MMPI and MMPI-A.

## Method

### Participants

The participants for this study were students enrolled in a public residential school serving academically gifted 11th- and 12th-grade students in a Midwestern state. The "Academy" is located on the campus of and is administered by a public state university. Data were collected from entering 11th-grade students in 4 consecutive years of enrollment (fall

1997 through fall 2000), producing a full sample of 567 individuals (320 females, 247 males). All participants were identified as 16 or 17 years old at time of testing. In response to prompts for race, 45.3% declared they were Caucasian, 7.1% Asian or Pacific Islander, 4.8% Black or African American, 1.2% Hispanic, 1.4% Other, and 40.2% did not specify their racial identity. Full data from the school records reveal that the population of students from which the data were drawn included 76.6% Caucasian, 9.7% Asian or Pacific Islander, 8.8% African-American, 1.9% Hispanic, and 3% Other.

### Instrument

The MMPI-A was developed as a personality and psychological well-being measure designed specifically for adolescents, overcoming the problems inherent in using the MMPI with adolescents (Butcher et al., 1992). The MMPI-A consists of 478 dichotomous (true-false) items, which have been factored into several structures. The standard structures used in research and clinical practices are 10 clinical scales, 5 validity scales, and 15 content scales that target specific adolescent personality and psychological orientations (see the tables for lists of scales). In addition, the Harris-Lingoes scales (Harris & Lingoes, 1955) were developed for 6 of the clinical scales (Depression, Conversion Hysteria, Psychopathic Deviate, Paranoia, Schizophrenia, and Hypomania). The Harris-Lingoes scales provide more direct information on the meaning underlying elevated scores on the clinical scales. An additional set of items was developed to supplement the Harris-Lingoes scales by providing similar descriptive information for the Social Introversion clinical scale (for simplicity, these subscales will hereafter be included in discussions involving the Harris-Lingoes subscales). The MMPI-A has been validated and demonstrated in repeated studies to hold high internal and test-retest reliability in general and clinical samples. However, there are no published analyses that provide normative comparisons for gifted adolescents.

Adolescents' scores on the MMPI-A are transformed to *T* scores for comparative analyses, using normative transformation based on a sample of 1,620 boys and girls aged 14-18 (Butcher & Williams, 1992). Norm comparisons are established separately for males and females and are appropriate to the age range in the current sample. Interpretations for the MMPI-A vary somewhat based on differing definitions for *elevation* on clinical scales and *codetypes*, which are personality profiles identified on the

MMPI-A by elevations on two or more clinical scales. In our descriptions of these data, we have adopted the most liberal orientations, referring to a *T* score greater than 60 as moderately elevated and establishing that a 2-point codetype can be discussed in the absence of “definition,” which is a 5-point difference between the two *T* scores.

### *Procedure*

Adolescents entering the residential program for academically gifted 11th- and 12th-grade students completed the MMPI-A in a single administration period at the beginning of their 11th-grade year. The MMPI-A was typically administered in small group settings by a trained proctor. Participants were informed that participation was voluntary and they were free to withdraw from the testing at their discretion.

*T* score values for the clinical Scales, Harris–Lingoes subscales, and MMPI-A content scales were computed using the standard procedures outlined for the MMPI-A (Butcher et al., 1992). Using the *T*-score values, validity scales were checked for suspect data, comparisons between the published norming group and this group of gifted adolescents sample were made, and 2-point codetypes were determined. Given the large sample sizes, all interpretations of group effects are based on Cohen’s *d* effect size values rather than statistical significance based on *p* values. All determinations of strength of effect were made using Cohen’s (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ).

## **Results**

### **Validity Scale Confirmation**

The first set of analyses examined the Lie and Defensiveness scales for response irregularities by the gifted sample. Using Cohen’s *d* effect size calculations to detect statistically significant differences on the Lie and Defensiveness scales revealed that the gifted sample did not have a meaningfully different score on the Lie scale ( $d = -.19$ ), but the gifted sample did score higher than the norming sample on the Defensiveness scale ( $d = .47$ ). Elevation on the Defensiveness scale is not determined to be consistently associated with any unique psychopathic disposition, but individuals with elevated scores ( $T > 65$ ) are potentially at risk for providing defensive responses to the MMPI-A (Butcher et al., 1992). Interpretations of individuals with such extreme elevations are directed toward guarded language regarding the potential for misrepresentation of

effects based on the elevated defensiveness finding (Butcher & Williams, 2000). To protect against the potential misrepresentation of those with high defensiveness, we compared those with elevated values ( $n = 74$ ) with the remaining gifted sample ( $n = 493$ ). The comparisons revealed no significant differences in the values for the clinical or content scales (effect sizes range from 0.006 to 0.149). Therefore, values for the entire sample are reported in subsequent analyses.

### **Gifted Gender Differences**

The next set of analyses were conducted to provide comparative data for males and females. Tables 1-3 provide the *T*-score means for girls and boys on the MMPI-A clinical and content scales and on the Harris–Lingoes subscales. As shown in the tables, there were no significant differences noted between the genders on the clinical or content scales. Given the equivalence of boys’ and girls’ values on the clinical and content scales, we have adopted the simplified standard convention of reporting the scores of boys and girls together when comparing the gifted and normal samples.

### **Gifted Versus General Sample**

The primary comparison for this investigation was a direct analysis of the differences between the gifted and general sample used to norm the MMPI-A. Similar to Newsom et al. (2003), we rely on effect size as the determination of relevant differences. The comparison of the gifted sample to the general sample reported by Newsom et al. on the MMPI-A Clinical Scales is provided in Table 4.

Effect size comparisons for the 10 clinical scales revealed small to moderate differences between the gifted and general sample on the following scales: Hypochondriasis, Psychopathic Deviate, Paranoia, Psychasthenia, Schizophrenia, and Social Introversion, with all differences lower for the gifted sample scores on these scales.

Continuation of the comparisons between the gifted and general sample was available by examining the Harris–Lingoes scales, which were constructed to provide more rationally contrived descriptors of the clinical scales. There are Harris–Lingoes subscales available for Clinical Scales 2, 3, 4, 6, 8, and 9. In addition, a similar set of subscales developed since the Harris–Lingoes work is available for the Social Introversion scale (0). Interpretation of the clinical scales is assisted by examining the related subscales, which were constructed in an attempt to gain diagnostic

**Table 1**  
**Gifted Sample Gender Comparisons on MMPI-A Clinical Scales**

Clinical Scale	Gifted Females		Gifted Males		Effect Size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>d</i>
Hypochondriasis (1)	46.42	10.30	46.48	8.94	0.006
Depression (2)	48.42	10.55	49.19	9.91	0.075
Conversion Hysteria (3)	49.88	9.25	51.18	8.39	0.147
Psychopathic Deviate (4)	45.97	8.14	47.42	8.89	0.170
Masculinity–Femininity (5)	51.87	8.86	51.24	10.62	–0.064
Paranoia (6)	46.84	8.47	47.45	8.57	0.072
Psychasthenia (7)	44.82	10.10	45.41	10.17	0.058
Schizophrenia (8)	45.24	9.31	45.79	9.40	0.059
Hypomania (9)	47.81	10.02	48.65	9.85	0.085
Social Introversion (0)	45.59	12.13	45.63	12.51	0.003

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ). MMPI-A = Minnesota Multiphasic Personality Inventory–Adolescent.

**Table 2**  
**Gifted Sample Gender Comparisons on Harris–Lingoes (1955) Subscales**

Harris–Lingoes Scale	Gifted Females		Gifted Males		Effect Size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
D <sub>1</sub> (Subjective Depression)	47.67	10.85	48.94	11.34	0.114
D <sub>2</sub> (Psychomotor Retardation)	52.63	11.03	51.41	9.85	–0.117
D <sub>3</sub> (Physical Malfunctioning)	48.38	9.13	49.63	8.81	0.139
D <sub>4</sub> (Mental Dullness)	47.22	10.31	47.88	11.92	0.059
D <sub>5</sub> (Brooding)	45.63	10.47	46.39	10.39	0.073
Hy <sub>1</sub> (Denial of Social Anxiety)	53.58	10.58	53.14	11.09	–0.041
Hy <sub>2</sub> (Need for Affection)	54.35	100.07	54.47	10.78	0.002
Hy <sub>3</sub> (Lassitude-Malaise)	47.07	9.96	48.07	11.06	0.095
Hy <sub>4</sub> (Somatic Complaints)	47.24	10.31	46.64	9.28	–0.061
Hy <sub>5</sub> (Inhibition of Agression)	49.85	9.69	51.76	9.27	0.201
Pd <sub>1</sub> (Familial Discord)	46.74	9.80	47.59	10.08	0.086
Pd <sub>2</sub> (Authority Problems)	48.43	7.53	48.58	8.39	0.019
Pd <sub>3</sub> (Social Imperturbability)	53.89	9.92	52.88	11.05	–0.096
Pd <sub>4</sub> (Social Alienation)	46.34	9.27	48.72	9.79	0.250
Pd <sub>5</sub> (Self-Alienation)	46.33	8.66	47.53	9.38	0.133
Pa <sub>1</sub> (Persecutory Ideas)	44.88	7.89	46.11	8.96	0.146
Pa <sub>2</sub> (Poignancy)	46.75	9.80	47.25	10.95	0.048
Pa <sub>3</sub> (Naivety)	45.81	10.53	54.15	11.18	0.768**
Sc <sub>1</sub> (Social Alienation)	46.63	9.72	46.99	10.35	0.036
Sc <sub>2</sub> (Emotional Alienation)	44.54	7.73	45.82	7.84	0.164
Sc <sub>3</sub> (Lack of Ego Mastery-Cognitive)	48.13	10.17	49.30	9.91	0.117
Sc <sub>4</sub> (Lack of Ego Mastery-Conative)	44.89	9.31	46.86	10.24	0.201*
Sc <sub>5</sub> (Lack of Ego Mastery-Defective Inhibition)	45.20	9.04	44.74	8.82	–0.052
Sc <sub>6</sub> (Bizarre Sensory Experiences)	45.75	9.01	45.89	8.57	0.016
Ma <sub>1</sub> (Amorality)	50.72	8.97	50.38	10.13	–0.036
Ma <sub>2</sub> (Psychomotor Acceleration)	46.70	10.14	48.55	9.27	0.191
Ma <sub>3</sub> (Imperturbability)	52.43	10.10	52.22	10.77	–0.020
Ma <sub>4</sub> (Ego Inflation)	46.82	9.44	47.29	9.20	0.050
Si <sub>1</sub> (Shyness) <sup>a</sup>	46.71	12.01	46.31	12.49	–0.033
Si <sub>2</sub> (Social Avoidance) <sup>a</sup>	52.93	13.23	51.81	12.88	–0.086
Si <sub>3</sub> (Self-Other Alienation) <sup>a</sup>	44.83	10.05	44.54	10.66	–0.028

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ).

a. Subscale is not an original Harris–Lingoes subscale, but it was created in similar fashion.

\*Small effect. \*\*Moderate effect.

**Table 3**  
**Gifted Sample Gender Comparisons on Minnesota Multiphasic Personality**  
**Inventory–Adolescent Content Scales**

Content Scale	Gifted Females		Gifted Males		Effect Size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>d</i>
A-Anxiety	46.14	10.92	45.36	11.44	−0.070
A-Obsessiveness	45.01	9.37	45.95	9.34	0.100
A-Depression	44.61	9.93	45.60	10.81	0.095
A-Health Concerns	46.21	9.81	45.81	7.84	−0.045
A-Alienation	44.91	8.62	45.40	9.44	0.054
A-Bizarre Mentation	46.73	8.58	47.90	7.84	0.142
A-Anger	42.23	8.81	43.68	8.74	0.165
A-Cynicism	46.08	8.52	47.39	9.56	0.145
A-Conduct Problems	43.37	8.73	44.00	9.11	0.071
A-Low Self-Esteem	45.23	10.75	45.69	10.81	0.043
A-Low Aspirations	43.96	8.95	43.36	7.85	−0.071
A-Social Discomfort	49.74	13.82	48.97	13.77	−0.056
A-Family Problems	44.90	9.72	45.24	9.46	0.035
A-School Problems	44.07	7.97	44.11	7.62	0.005
A-Neg. Treatment Indicators	44.08	9.65	43.68	9.95	−0.041

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ). A = adolescent.

**Table 4**  
**Gifted and General Sample T-Score Values: Clinical Scales**

Clinical Scale	Gifted		General <sup>a</sup>		Effect Size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Hypochondriasis (1)	46.44	9.72	50.08	9.90	.37*
Depression (2)	48.76	10.28	49.87	9.99	.11
Conversion Hysteria (3)	50.44	8.90	49.94	10.04	−.05
Psychopathic Deviate (4)	46.60	8.50	49.87	9.95	.35*
Masculinity–Femininity (5)	51.59	9.66	50.24	9.88	−.14
Paranoia (6)	47.11	8.51	50.06	10.17	.31*
Psychasthenia (7)	45.08	10.12	50.09	9.94	.50**
Schizophrenia (8)	45.48	9.36	50.20	10.12	.48**
Hypomania (9)	48.18	9.94	50.32	10.29	.21*
Social Introversion (0)	45.61	12.29	50.37	9.83	.43**

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ) effect.

a. General population values taken from Newsom, Archer, Trumbetta, and Gottesman (2003),  $n = 1,235$ .

\*Small effect. \*\*Moderate effect.

information for the broad clinical scales. Generally, interpretation of the MMPI-A through the Harris–Lingoes subscales is only recommended when the associated clinical scale shows signs of elevation for the participant. Following Newsom et al. (2003), we present the Harris–Lingoes (and affiliated Scale 0 subscales) for comparison, recognizing that clinical interpretation would not be appropriate for participants scoring less than 65 on the clinical scale (Table 5).

From a comparative viewpoint, clinical scales where differences between the gifted and general sample were documented are highlighted for specific variations across the two groups.

The final set of comparisons offered in this examination of gifted and general sample of adolescents' personality profiles explores group differences on the MMPI-A content scales. The 15 content scales were created and examined with the adolescent population

**Table 5**  
**Gifted and General Sample *T*-Score Values: Harris–Lingoes (1955) Scales**

Harris–Lingoes Scale	Gifted		General		Effect Size
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
D <sub>1</sub> (Subjective Depression)	48.22	11.07	50.20	9.99	0.188
D <sub>2</sub> (Psychomotor Retardation)	52.10	10.54	50.03	10.07	–0.201*
D <sub>3</sub> (Physical Malfunctioning)	48.92	9.01	50.09	9.65	0.125
D <sub>4</sub> (Mental Dullness)	47.50	11.04	50.16	10.08	0.252*
D <sub>5</sub> (Brooding)	45.95	10.43	49.88	10.24	0.380*
Hy <sub>1</sub> (Denial of Social Anxiety)	53.39	10.80	49.91	9.90	–0.336*
Hy <sub>2</sub> (Need for Affection)	54.40	10.38	49.82	9.96	–0.450**
Hy <sub>3</sub> (Lassitude-Malaise)	47.51	10.45	50.10	10.07	0.252*
Hy <sub>4</sub> (Somatic Complaints)	46.98	9.87	50.03	10.03	0.307*
Hy <sub>5</sub> (Inhibition of Aggression)	50.68	9.55	50.16	10.00	–0.053
Pd <sub>1</sub> (Familial Discord) <sup>a</sup>	47.11	9.92	49.86	10.04	0.276*
Pd <sub>2</sub> (Authority Problems) <sup>a</sup>	48.50	7.91	49.76	10.07	0.139
Pd <sub>3</sub> (Social Imperturbability) <sup>a</sup>	53.45	10.43	50.15	9.88	–0.325*
Pd <sub>4</sub> (Social Alienation) <sup>a</sup>	47.37	9.56	50.12	9.94	0.282*
Pd <sub>5</sub> (Self-Alienation) <sup>a</sup>	46.85	9.00	49.90	10.07	0.319*
Pa <sub>1</sub> (Persecutory Ideas) <sup>a</sup>	45.42	8.39	50.36	10.16	0.530**
Pa <sub>2</sub> (Poignancy) <sup>a</sup>	46.67	10.31	49.88	10.01	0.316*
Pa <sub>3</sub> (Naivety) <sup>a</sup>	54.52	10.81	49.65	10.09	–0.466**
Sc <sub>1</sub> (Social Alienation) <sup>a</sup>	46.79	9.99	51.98	9.62	0.529**
Sc <sub>2</sub> (Emotional Alienation) <sup>a</sup>	45.10	7.80	50.18	9.93	0.569**
Sc <sub>3</sub> (Lack of Ego Mastery-Cognitive) <sup>a</sup>	48.64	10.07	50.02	9.84	0.139
Sc <sub>4</sub> (Lack of Ego Mastery-Conative) <sup>a</sup>	45.75	9.77	51.60	9.99	0.592**
Sc <sub>5</sub> (Lack of Ego Mastery-Defective Inhibition) <sup>a</sup>	45.00	8.94	50.28	10.02	0.556**
Sc <sub>6</sub> (Bizarre Sensory Experiences) <sup>a</sup>	45.81	8.82	50.50	10.07	0.495**
Ma <sub>1</sub> (Amorality)	50.57	9.49	50.21	10.18	–0.037
Ma <sub>2</sub> (Psychomotor Acceleration)	47.50	9.80	50.02	9.73	0.258*
Ma <sub>3</sub> (Imperturbability)	52.34	10.39	50.08	10.17	–0.220*
Ma <sub>4</sub> (Ego Inflation)	47.02	9.33	50.13	9.94	0.323*
Si <sub>1</sub> (Shyness) <sup>a,b</sup>	46.53	12.21	50.00	10.00	0.311*
Si <sub>2</sub> (Social Avoidance) <sup>a,b</sup>	52.44	13.08	50.00	10.00	–0.210*
Si <sub>3</sub> (Self-Other Alienation) <sup>a,b</sup>	44.71	10.31	50.00	10.00	0.521**

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ).

a. Noted differences between general and gifted groups on associated clinical scale.

b. Not originally presented as one of the Harris–Lingoes subscales.

\*Small effect. \*\*Moderate effect.

in mind, prompting consideration that the content scales, much like the Harris–Lingoes subscales, are effective descriptive variables that provide more detail than is afforded through only the clinical scales. Table 6 displays the group means and standard deviations, as well as effect size differences from the anticipated norm-referenced *T* values ( $M = 50$ ,  $SD = 10$ ). For all but 1 of the 15 content scales (Adolescent Social Discomfort), the gifted sample reported significantly lower values than the general sample's values.

### Scale and Codetype Elevations

Finally, rates of elevation among individual students in the gifted sample were explored to identify common

personality profiles for gifted students in residential academies. Rates of boys and girls reporting elevations in single clinical scales (values > 65) as well as those reporting a 2-point codetype without the 5-point definition restriction (one scale > 65, second at least > 60) were also examined for descriptive purposes. For the boys, 86 of the 247 (34.8%) participants demonstrated an elevation on one or more scales. The most common elevations were Scales 9 (Hypomania,  $n = 14$ ) and 5 (Masculinity–Femininity,  $n = 8$ ) and 2-point codetypes 2/0-0/2 ( $n = 12$ ) and 7/0-0/7 ( $n = 5$ ). For the girls, 106 of the 320 participants (33.1%) reported an elevation on a single scale or 2-point codetype. The most common elevations for the females were scales 5

**Table 6**  
**Gifted Students' Mean Scores on Content Scales**

Content Scale	<i>M</i>	<i>SD</i>	<i>d</i>
A-Anxiety	45.80	11.14	.40**
A-Obsessiveness	45.42	9.36	.47**
A-Depression	45.03	10.32	.49**
A-Health Concerns	46.03	9.00	.42**
A-Alienation	45.12	8.98	.51**
A-Bizarre Mentation	47.10	8.27	.32*
A-Anger	42.86	8.80	.76**
A-Cynicism	46.65	9.00	.35*
A-Conduct Problems	43.64	8.91	.67**
A-Low Self-Esteem	45.43	10.76	.44**
A-Low Aspirations	43.70	8.49	.68**
A-Social Discomfort	49.41	13.79	.05
A-Family Problems	45.05	9.60	.50**
A-School Problems	44.09	7.81	.66**
A-Negative Treatment Indicators	43.90	9.78	.62**

Note: All determinations of strength of effect were made using Cohen's (1988) classifications for weak ( $d = .20-.49$ ), moderate ( $d = .50-.79$ ), or strong ( $d = .80+$ ). A = adolescent.

\*Small effect. \*\*Moderate effect.

(Masculinity–Femininity,  $n = 24$ ), 9 (Hypomania,  $n = 9$ ), and 0 (Social Introversion,  $n = 8$ ) and 2-point codetypes 1/3-3/1 ( $n = 4$ ) and 2/0-0/2 ( $n = 6$ ).

## Discussion

The primary effects noted in this examination of gifted boys' and girls' responses to the MMPI-A can be summarized simply. First, regarding gender effects, the data clearly demonstrate similarity in boys' and girls' responses to the MMPI-A. Second, group differences observed between the gifted adolescents and the general sample repeatedly indicated either no differences between the two groups or a tendency for the gifted sample to score at the low end of the normal range on the various scales.

### Gender Differences

There were no meaningful differences noted between the genders on the clinical, content, or Harris–Lingoes subscales with the exception of the Naivety subscale. The difference revealed higher levels of naivety reported by gifted boys than gifted girls at the same age. These patterns suggest the boys in the sample were more likely to deny negative feelings or thoughts about others, deny that others choose to lie or be honest largely due to concerns of being

caught, deny oppositional behaviors, and occasionally engage in thoughts that are too bad to discuss (Butcher & Williams, 2000). Although the difference was meaningful ( $d = .77$ ), caution in extending this difference is warranted.

First, interpretation of the Harris–Lingoes subscales is considered appropriate in conditions where there was elevation in the related clinical scale, which in this case is Scale 6 (Paranoia). No such elevation was present in the group, and no pervasive presence of elevated Scale 6 responses was noted in the sample. Second, although the difference is significant and strong, it represents a gender differentiation where both groups are still within normal limits on the subscale. Third, the Naivety subscale is composed of only nine items, making it more subject to illusory differences between groups than the longer content or clinical scales. Finally, given the number of comparisons made in this examination, Type I error is a natural concern.

### Gifted Versus General Sample

Although a large number of statistically significant and meaningful differences were observed in comparisons between the gifted and general samples on the clinical scales and the Harris–Lingoes subscales, our focus for interpreting differences and similarities among the adolescents in the two groups is focused on the MMPI-A content scales. Preference for the content scales is given in this study because (a) the interpretation of clinical issues across group comparisons loses diagnostic and ecological validity; (b) the content scales were specifically designed for the MMPI-A, with a primary focus on adolescent issues whereas the clinical scales are adapted from the original adult-focused MMPI; and (c) the content embedded within the content scales focuses on more concrete and observable personality characteristics that assist in building conceptualizations of differences between gifted and general populations.

Small ( $d = .20-.49$ ) to moderate ( $d = .50-.79$ ) effect sizes were observed for 14 of the 15 content scales. The only scale without difference was the Social Discomfort scale, which focuses on the adolescent's tolerance for being around others, making friends, or offering opinions in front of a group. The gifted sample scored as a group at the predicted average, demonstrating no elevation in this characteristic. The descriptive information provided for all scales was drawn from Archer (1997) and Butcher and Williams (2000).

*Adolescent-Anxiety.* Adolescent–Anxiety focuses on the adolescent’s tendency toward worry, nervousness, difficulties sleeping, and other behavioral consequences associated with generalized anxiety problems. The gifted students in this sample confirmed earlier studies that concluded the gifted population had similar or lower levels of anxiety or stress when compared to their peers (Niehart, 1999). Consequently, the syllogistic proposition that being gifted leads to more stressful situations, which in turn leads to greater anxiety is not supported with this sample.

*Adolescent-Obsessiveness).* Adolescent–Obsessiveness also focuses on the worries of the adolescent, particularly focused on inconsequential matters. Individuals with elevations on the Obsessiveness scale tend to lose sleep, perseverate on earlier mistakes or wrongdoings, and may engage in obsessive behaviors such as counting unimportant items. DeLisle (1990) proposed obsessive behaviors and perfectionism as precursors in gifted students that may contribute to eventual heightened suicidal ideation. The data presented here do not support the notion that gifted teens are at risk for elevated obsessive behaviors, and in previous work we have demonstrated that no higher rates of suicidal ideation are evident in the gifted population (Cross, Cassidy, & Miller, 2006).

*Adolescent–Depression.* Despite the common belief that gifted adolescents are more likely than their peers to be depressed, empirical work has demonstrated repeatedly that gifted students are no more likely (or less likely) to be in states of depression (e.g., Baker, 1995). This scale naturally draws attention to suicidal tendencies as well. Our data support previous investigations on depressive tendencies with gifted students, revealing that the gifted students were in the normal range and reported values significantly lower than the general sample on items focused on depression.

*Adolescent–Health Concerns.* This scale identifies participants with high reported rates of physical ailments or problems, with complaints arising from various areas of the body. There is an indication that the personal problems faced by individuals with elevated levels of Adolescent–Health Concerns would be allayed if the physical ailments were absent. As with the other scales, the gifted sample scored below the average while maintaining a presence in the normal range. On average, a wide variety of medical conditions are represented at the Academy from which this sample was drawn. Thus, we suggest that the low health concern scores are not simply a function of restricted population due to parents’ withdrawal of children prone to physical ailments.

*Adolescent–Alienation.* Participants with elevation on the Adolescent–Alienation scale report being emotionally distant from their peers or significant others. These students have difficulty connecting with their peers and feeling that nobody else understands them. Again, the notion of social alienation in the experience of gifted students is an oft-proposed characteristic. In this examination, no evidence of alienation among students as a group was noted. It is important to elucidate that the students in our sample were at the beginning of their program with the Academy. As such, the strong social support groups that are promoted and desired in such residential settings were not in place as yet, given that the students had not been in consistent contact with one another to this point. Therefore, the reported absence of alienation reflects their typical experiences in standard home environments, a positive indication that gifted teens do not generally view themselves as outside their peer group.

*Adolescent–Bizarre Mentation.* This scale identifies individuals who entertain strange thoughts, including hallucinations, paranoia, and delusions of grandeur. Specific to concerns of “intellectual property,” individuals with elevations on this scale report others trying to steal their ideas or control their minds. No evidence of group elevation was noted in this sample, and compared with the general sample, the gifted participants demonstrated below-average levels of endorsing warning signs in this scale category.

*Adolescent–Anger.* Anger management or control over hostility are common problems for individuals with high scores on the Adolescent–Anger scale. The gifted sample did not demonstrate elevations on this scale either, once again scoring below the average, but within normal limits.

*Adolescent–Cynicism.* The Adolescent–Cynicism scale identifies individuals who distrust others’ intentions, believe seemingly altruistic actions have hidden intentions, feel misunderstood, and view others as jealous. High scores on this scale are often received by those who believe that others cannot be trusted. The gifted sample again scored lower than the standard normal average for this scale, but within normal limits.

*Adolescent–Conduct Problems.* A variety of delinquent behaviors are indicated in this scale including stealing, shoplifting, destruction of property, disrespectfulness, oppositionality, and lying. There are greater incidence levels of drug and alcohol use, incarceration, and acceptance of victimization of others (Butcher & Williams, 2000). Dirkes (1983)

stated that rejection of adults' values and norms was likely in gifted adolescents as a response to overwhelming levels of stress brought on by pressures to perform. Our data do not demonstrate any indication of these conduct problem indicators in this sample.

*Adolescent–Low Aspirations.* This scale identifies adolescents without interest in succeeding, who do not have academic goals, or who hold low expectations for success. Most do not want to go to college; they are often described as lazy and often report that their lack of success is due to others' blocking their progress. The gifted sample in this study did not show signs of this set of characteristics. In this scale, it is important to highlight potential sampling bias; all participants in the study were attending an advanced residential academic facility—not a school where individuals with low aspirations would likely apply to attend.

*Adolescent–Social Discomfort.* As mentioned before, this was the only content scale where no differences were noted between the gifted and general sample. For the gifted population, this content scale had the highest group average. Although social discomfort is a noted trend in the clinical scale and codetype elevations outlined later, it should be noted that the gifted population did not demonstrate elevated levels on this scale. Rather, they scored at the normal level. Interestingly, despite many widespread anecdotal statements suggesting that gifted adolescents display poor social skills as a group, this is the area of personality where differences among the gifted and general populations were least evident.

*Adolescent–Family Problems.* Family trouble with parents, siblings, or extended family members are documented with Adolescent–Family Problems. There tends to be heightened family discord, jealousy, perceived lack of love and understanding, and low levels of communication. Parents of adolescents with elevated scores on this scale report behavior problems as well as emotional reactions including withdrawal, fear, worry, and classic insecure attachment behaviors. No evidence of elevation was noted in this sample, and the scores were lower than the standard normal average. The lack of elevation is important in this scale in particular, demonstrating that family discord does not function as a driving force behind enrollment in a residential school.

*Adolescent–School Problems.* Negative affect toward schools is documented in this scale. Adolescents with high Adolescent–School Problems scores report dissatisfaction with grades, school-based punishments, workload, and interactions with teachers; report being bored and sleepy in the

schools; and are often characterized as lazy. Once again, there was a significant effect demonstrating low scores on this indicator of personality disorder. Clearly, school problems of this nature are not expected from a group of gifted adolescents recently enrolled in a selective residential academy. It is instructive to note once again that this sample of students were at the beginning of their enrollment in the Academy when completing the scale. As such, their responses were related to their experiences in their home schools. The absence of significant school problems suggests that enrollment in the Academy was not prompted primarily by a motivation to escape undesirable school experiences.

*Adolescent–Negative Treatment Indicators.* The negative treatment reference in this scale refers to negative attitude toward health and mental health treatment agents. These students are considered to be resistant to support from professionals and often report keeping many personal secrets to themselves. The gifted sample scored in the low to average range on this scale as well, suggesting there is no pervasive tendency to avoid health professionals in the gifted population.

## **Individuals' Codetype and Clinical Scale Elevations**

The following descriptions of the most commonly reported elevated scales and codetypes are offered to illuminate the presence of borderline clinical cases in this sample. However, it should be emphasized that the majority of students in the sample did not load on any scale or codetype elevation. Therefore, our data did not provide evidence that gifted adolescents are prone to the following clinical tendencies. Rather, our data indicate that of the scales and codetypes that are reported by gifted adolescents, these are the most common.

*Gifted boys' elevations.* The boys showed elevations most often in the Hypomania (Scale 9) and Masculinity–Femininity (Scale 5) clinical scales and the 2-point codetypes 2/0–0/2 and 7/0–0/7. Elevation on Scale 9 is generally considered to indicate little in isolation, facilitating manifestation in other areas. Characteristics associated with elevation in this scale include restlessness, tendency toward action, talkativeness, impulsivity, and grandiose self-perceptions (Archer, 1997). It is more common for nonclinical adolescents to generate elevated Scale 9 scores than nonclinical adults (Pancoast & Archer, 1988), and in clinical populations, elevation on Scale 9 is associated with increased rates of temper tantrums (Lachar & Wrobel, 1990). Scale 5 elevations in adolescent

boys have been associated with one or more of the following: higher intelligence, academic achievement, passivity in social interactions, emotional isolation, and insecurity or conflict with sexual identity (Archer, 1997).

A 2/0-0/2 codetype elevation has been reported to occur in 1.8% of a sample of more than 1,700 psychiatric treatment recipients reported by Archer (1997). General characteristics of individuals with elevations on this scale include depression, anxiety, social introversion, withdrawal, social ineptitude, and poor social skills (Archer, 1997). The other codetype reported by boys in our sample (7/0-0/7) is also uncommon in the general population (Marks, Seeman, & Haller, 1974) and occurs in only 1.3% of males in the Archer et al. (2001) clinical sample. Individuals with elevations on this codetype generally present with symptoms similar to the 2/0-0/2 codetype; exhibiting shyness, sensitivity, social introversion and anxiety (Archer, 1997).

*Gifted girls' elevations.* The most common elevations for the girls in our gifted sample were on the Masculinity–Femininity, Hypomania, and Social Introversion (Scale 0) clinical scales with few 2-point codetypes arising repeatedly (1/3-3/1 and 2/0-0/2). The characteristics of elevation on the Hypomania clinical scale and 2/0-0/2 codetype are the same as outlined previously for adolescent boys. Elevation on the Masculinity–Femininity scale for girls is associated with assertiveness, competitive impulses, higher levels of behavior problems, and more “masculine” interests in academics or sports (Archer, 1997). High scores on the Social Introversion scale indicate social introversion, being uncomfortable in social situations, or possessing low social skills; being reserved, timid or submissive; and being reliable, dependable, or cautious (Archer, 1997).

The 1/3-3/1 codetype reported by 6 of the girls in our sample is generally associated with physical illness in clinical populations or neuroticism in the general population (Archer, 1997). Interest in maintaining socially acceptable behaviors is common and fear in receiving poor grades is also reported (Marks et al., 1974).

## Limitations and Extensions

Limitations to this study are worth mentioning. First, the available gifted population from which these normative comparisons were made was a select group. The students in this sample do not necessarily accurately reflect the gifted population as a whole, given that these are academically gifted

adolescents with a willingness to leave their home community during the last 2 years of high school to attend the Academy. The more common elevations on codetypes and clinical scales suggesting the presence of social isolation in some of the students may be a reflection of this group of students. Students who place a high premium on their peer group status and involvement are unlikely to leave their friends and social conditions at a time when social interactions become pervasive and rewarding. Furthermore, the sample has a low percentage of minority students represented. Additional work with identifying the personality and psychological characteristics of gifted youth from all ethnic, racial, and economic backgrounds is an area that merits additional attention.

A second potential limitation to this type of research design involves the inherent risk of Type I error arising when making so many comparisons. To control for this concern, we have only reported effect sizes, holding fast to established criteria for meaningful effects.

Finally, there is a limited concern that the norms that we use to make comparisons to the current gifted sample are outdated. As Newsom et al. (2003) demonstrated, history effects exist in the adolescent population. However, the norms were established merely 5 years ahead of the first administration in our sample; therefore, such effects are unlikely to cause misleading effects.

Our findings repeatedly demonstrated that the gifted adolescents reported lower values on established scales of the MMPI-A. Adding to this work would solidify the research base; in particular adding additional gifted youth who are not from selective programs would overcome the sampling limitation. This is a common problem in psychological research with the gifted given the difficulty in ascertaining a reliable sample of gifted youth in nonselective programs. Exploration in a sample of gifted students referred for clinical psychiatric or psychological interventions would also advance the validation of our initial findings.

A second extension we envision is to reexamine the factor structures offered for the clinical and content scales. In addition to identifying differences in gifted adolescents' factorial representations within the MMPI-A, there may be value in using the MMPI-A items in a differential diagnostic process. That is, the MMPI-A may help identify gifted youth or those gifted youth most likely to be successful or in need of targeted support. Extending the view of how we

define giftedness in our schools and society to incorporate psychometrically sound materials that supplement measures of academic achievement or cognitive processing potential would meet the frequent call of gifted researchers to reach common ground in a classification scheme.

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