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Personality Traits Are Differentially Linked to Mental Disorders: A Multitrait–Multidiagnosis Study of an Adolescent Birth Cohort

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The authors assessed the relation between personality and mental disorder in a representative birth cohort of 897 men and women. Personality was assessed at age 18 with the Multidimensional Personality Questionnaire (MPQ; A. Tellegen, 1982), and 4 types of mental disorder (affective, anxiety, substance dependence, and conduct disorder) were assessed at ages 15, 18, and 21, using age-appropriate standardized diagnostic interviews. All disorder groups had MPQ profiles that were very different from those of controls. When comorbid cases were excluded, fewer significant differences between diagnosed cases and controls remained. Relations between personality and mental disorder were not affected by the measurement of disorder as continuous versus discrete, gender, or the age at which disorder was diagnosed. Relations between personality and mental disorders appear to be robust, and individual personality differences may be particularly relevant to understanding the most severe (comorbid) expressions of psychopathology.

Much effort has been expended in evaluating the scientific utility of personality traits (Pervin, 1990). In recent years, such research has fostered a growing consensus that traits are essential members of the pantheon of personality constructs (Kenrick & Funder, 1988; Tellegen, 1991). Considerable enthusiasm has been expressed regarding the possibility that personality traits may help us to understand mental disorder, as evidenced by the publication of a recent special issue of the *Journal of Abnormal Psychology* (February, 1994) devoted to exploring this idea and its implications.

While personality psychologists established traits as real and consequential, psychopathology researchers independently constructed a reliable system for psychiatric diagnosis, an effort that culminated in the publication of the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; *DSM–III*; American Psychiatric Association, 1980) and its subsequent revisions (American Psychiatric Association, 1987, 1994). Advances in personality trait conceptualization and measurement, when paired with advances in the reliable assessment of mental disorder, allow research that investigates multiple traits and multiple disorders simultaneously in the same sample—a multitrait–multidiagnosis approach to understanding links between personality and psychopathology. In this article, we use a multitrait–multidiagnosis approach to examine the relation between personality and mental disorder in a large representative sample of young men and women emerging from adolescence and entering early adulthood.

Personality Traits and Mental Disorders

Research examining multiple traits and multiple disorders simultaneously has just begun to be conducted. To our knowledge, the first study to employ a comprehensive assessment of personality and a comprehensive assessment of mental disorders was conducted by Trull and Sher (1994).

Trull and Sher (1994) studied 468 college students, approximately half of whom were at high risk for alcoholism (defined as having a father who received a diagnosis of alcoholism). Participants were assessed with the NEO Five Factor Inventory (Costa & McCrae, 1989), a measure of the "Big Five" personality traits of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience, and with the lifetime version of the Diagnostic Interview Schedule III–R (Robins, Helzer, Cottler, & Goldring, 1989), a structured interview assessing mental disorders according to criteria listed in the revised edition of the *DSM–III* (*DSM–III–R*; American Psychiatric Association, 1987). Trull and Sher found numerous links between lifetime diagnoses of substance abuse disorders, anxiety disorders, major depression, and the Big Five traits.

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Moreover, Big Five trait scores were found to be capable of differentiating among the disorders examined by Trull and Sher. For example, Neuroticism and Extraversion scores were more closely linked to a diagnosis of social phobia than were scores on Agreeableness.

Extending Links Between Personality and Mental Disorder

The purpose of the present study is to extend the groundbreaking work of Trull and Sher (1994) in a number of directions. Specifically, we extend their work in terms of time of measurement, comorbidity, gender, discrete versus continuous conceptualizations of mental disorder, comparison groups, and levels of the personality trait hierarchy.

Time of Measurement

In Trull and Sher's (1994) study, personality and mental disorder were assessed at the same point in time. This is a potential confound because mental health patients differ in their responses to personality inventories depending on their current diagnostic status. For example, patients who experienced anxious and depressive disorders were found to respond differently to personality inventories during their experience of a disorder, as opposed to after the remission of their symptoms (Hirschfeld et al., 1983; Reich, Noyes, Coryell, & O'Gorman, 1986). In the current study, we examine the contribution of time of measurement to the relation between personality and psychopathology by using measures of psychopathology that were taken 3 years prior to our sample members' completion of our personality measure, at the same time as their completion of our personality measure, and 3 years after their completion of our personality measure.

Comorbidity

Comorbidity among mental disorders is commonly observed (Maser & Cloninger, 1990). In Trull and Sher's (1994) study, the issue of comorbidity was addressed by using analyses (logistic regression and canonical correlation) that statistically controlled for the presence of comorbidity. These analyses succeeded in revealing specific relationships between personality and diagnostic group membership (e.g., a specific relationship between low agreeableness and substance use disorders). In the current study, we investigated comorbidity in a different but complementary manner. Specifically, we isolated and examined the personality profiles of both (a) sample members who met the criteria for a given type of diagnosis and (b) sample members who met the criteria for only that type of diagnosis. Our purpose in taking this approach was to determine the extent to which comorbidity, generally conceived, matters in understanding the personological correlates of psychopathology; our isolation of pure cases was not intended to identify the "true" personality correlates of a given disorder. Indeed, "pure" cases of psychopathology are less common than comorbid cases and may therefore be unrepresentative of the full population of persons meeting the criteria for a given disorder (Caron & Rutter, 1991; Clark, Watson, & Reynolds, 1995).

The focus of the current study is on interclass comorbidity (comorbidity among four broad disorder groups) as opposed to intraclass comorbidity (comorbidity within a specific broad disorder group). We chose to examine comorbidity at this higher level of the nosological hierarchy in order to emphasize the sheer magnitude and relevance of the comorbidity phenomenon; high rates of diagnostic co-occurrence have been observed not only within specific disorder classes but also among classes of disorders (Clark et al., 1995). We did not examine the specific personological correlates of specific patterns of comorbidity because, even in our large sample of 897 individuals, many combinations of disorders were quite rare (Feehan, McGee, Nada Raja, & Williams, 1994). A comprehensive examination of every conceivable pattern of comorbidity in our sample would thus involve a serious compromise of statistical power and is not the focus of the present article.

Gender

On average, men and women differ in their personalities (Feingold, 1994) and in their probabilities of experiencing different varieties of psychopathology (Hyde, 1991). Thus, spurious correlations between personality and psychopathology may arise simply because of the uneven distributions of personality traits and mental disorders across the two genders. In Trull and Sher's (1994) study, gender was controlled for in all analyses presented. Because numerous and specific relations between personality and psychopathology still emerged, one can be confident that relations found in their study cannot be completely explained by gender. In the current study, we attempted to replicate this important finding. However, we present our analyses first with gender not controlled and then determine whether controlling for gender might eliminate personality–psychopathology correlations. By so doing, we could assess directly the magnitude of the effect size relating personality to psychopathology, before control factors (the inclusion of which may not be necessary) were taken into account.

Discrete Versus Continuous Conceptualizations of Mental Disorder

Mental disorders are usually regarded as discrete entities—one either has the diagnosis, or one does not. Such categorical distinctions are warranted when there is a clear distinction between the state of having the disorder and the state of being free from the disorder (Grove & Andreasen, 1989). However, it is unclear whether all mental disorders are most profitably characterized in this fashion; in at least some instances, a continuous conceptualization of mental disorder may be more profitable. For example, Widiger (1992) summarized 16 studies in which Axis II (personality) disorders were measured both discretely (in terms of diagnostic criteria) and continuously (in terms of the number of symptoms present). In 15 of the 16 studies reviewed, the continuous approach achieved better reliability and/or validity than the discrete approach.

In Trull and Sher's (1994) multitrait–multidiagnosis study, data analytic methods (e.g., logistic regression) were chosen to examine mental disorders characterized as categorical entities. In the current article, we examine both discrete mental disorder

diagnoses and continuous symptom checklists in relation to personality so that we can determine whether both approaches demonstrate validity for personality traits in the prediction of mental disorder.

Psychopathology Groups and Comparison Groups

Trull and Sher (1994) examined the personality profiles associated with three types of lifetime disorders (substance abuse, anxiety, and depression, occurring at any time in the proband's life prior to the interview) in comparison to the personality profiles of the remainder of their high-risk college-student sample. We extend the work of Trull and Sher by examining four classes of disorder (substance dependence, anxiety, affective, and conduct disorder), occurring during the 1-year period prior to our diagnostic interview, in an epidemiological sample of 897 18-year-old men and women. An epidemiological sampling frame allowed us to study the full range of adjustment and maladjustment, as well as the full range of personality scale scores, present in the population. Hence, instead of comparing our disordered participants to the remainder of a sample in which half of the participants were known to be at risk for psychopathology, we were able to compare them to a group of controls—persons in our sample who were screened for mental disorder but who were found not to meet the requisite criteria.

Levels of the Personality Trait Hierarchy

Personality traits can be conceptualized in a hierarchical fashion (Costa & McCrae, 1988; Guilford, 1975; Hampson, John, & Goldberg, 1986). At the highest level of the trait hierarchy stand dimensions such as the Big Five (Goldberg, 1993; John, 1990). These higher order dimensions are summaries of specific lower order traits. For example, the higher order trait of Neuroticism can be thought of as subsuming propensities toward anger, guilt, self-criticism, and other specific negativistic biases (Watson, Clark, & Harkness, 1994).

In Trull and Sher's (1994) multitrait–multidiagnosis study, a high level of the personality trait hierarchy (i.e., the Big Five) was examined. However, it is possible that a lower level of the trait hierarchy may also be useful in summarizing the personological features of mental disorders. Different levels of the trait hierarchy represent different levels of breadth or abstraction in personality description (McCrae & John, 1992), and a lower level of the hierarchy may offer additional useful information for describing the factors of personality associated with mental disorder.

In the present study, we used an instrument well suited to examining a lower level of the trait hierarchy in relation to mental disorder: Tellegen's (1982) Multidimensional Personality Questionnaire (MPQ). Tellegen's instrument was designed to promote low correlations among its primary scales, thereby allowing for excellent resolution ("fidelity") in examining a lower level of the trait hierarchy (Tellegen & Waller, in press). Nonetheless, Tellegen's instrument also shows good "bandwidth"—it manifests a higher order structure that has been found to be particularly helpful in summarizing and classifying lower order personality traits (Watson et al., 1994). Hence, Tellegen's MPQ allows us to reliably examine both lower and higher levels of the trait hierarchy in relation to mental disorder.

Method

Sample Members

Sample members belonged to an unselected birth cohort that has been studied extensively since birth as part of the Dunedin Multidisciplinary Health and Development Study. The sample and the history of the study have been described in detail by Silva (1990). Briefly, the study is a longitudinal investigation of the health, development, and behavior of a complete cohort of individuals born between April 1, 1972 and March 31, 1973, in Dunedin, New Zealand, a city of 120,000. Perinatal data were obtained at delivery, and when the children were later traced for follow-up at age three, 1,037 (52% boys and 48% girls, 91% of the eligible births) participated in the assessment, forming the base sample for the longitudinal study. Since age three, 17 sample members have died. With regard to social origins, the children's fathers were representative of the social class distribution in the general population of similar age in New Zealand. With regard to racial distribution, the sample members are of predominantly European ancestry. Fewer than 7% identify themselves as Maori or Polynesian, which matches the ethnic distribution of New Zealand's South Island.

Data collection procedure. The Dunedin sample has been reassessed with a diverse battery of psychological, medical, and sociological measures at ages 3, 5, 7, 9, 11, 13, 15, 18 and most recently at age 21. The basic research procedure involves bringing each sample member into the research unit within 60 days of his or her birthday for a full day of individual data collection. The various research topics are presented in different private interview rooms as standardized modules by different trained examiners in counterbalanced order throughout the day (e.g., physical examination, mental health interview, dental examination, delinquency interview, personality assessment, sexuality assessment, injury risk assessment). Although age 18 was the first follow-up at which the sample members were asked about their personalities, since age 11 they have repeatedly reported to us regarding sensitive topics such as their sexual behavior, illegal behavior, substance dependence, and symptoms of mental disorders. Because there has never been a violation of confidentiality, this sample is by now unusually willing to provide frank reports. Printed brochures about how to get help for mental disorders were made available in the waiting area, and referral was available for sample members reporting suicidal intent.

Attrition. In 1990–91, 1,008 of the living members of the cohort agreed to participate in at least some portions of the age 18 follow-up study. Mental health interviews were completed for 930 of the 18-year-old study members. MPQ personality data were gathered for 937 study members; 862 study members completed these at the research unit during the age 18 assessment, and 75 additional study members returned a mailed version of the MPQ subsequent to the age 18 assessment. We examined whether study members who completed both the MPQ and the mental health interview at age 18 (n = 897) differed from study members who did not complete either the MPQ or the mental health interview (n = 140) in terms of socioeconomic status (SES), gender, and race. Study members who completed the MPQ and the mental health interview did not differ significantly from nonrespondents in SES, $t(939) = 1.63$, *ns*; gender, $\chi^2(1, N = 1{,}037) = 1.46$, *ns*; or race, $\chi^2(1, N = 1{,}028) = 5.79$, *ns*.

Measurement of Personality

As part of the age 18 assessment, study members completed a modified version (Form NZ) of the MPQ (Tellegen, 1982). The MPQ is a

Table 1
Multidimensional Personality Questionnaire (MPQ) Scale Descriptions and Internal Consistency Coefficients

MPQ scale	α	Description of a high scorer
Traditionalism (22 items)	.63	Desires a conservative social environment; endorses high moral standards
Harm Avoidance (21 items)	.71	Avoids excitement and danger; prefers safe activities even if they are tedious
Control (20 items)	.79	Is reflective, cautious, careful, rational, planful
Aggression (18 items)	.78	Hurts others for own advantage; will frighten and cause discomfort for others
Alienation (17 items)	.76	Feels mistreated, victimized, betrayed, and the target of false rumors
Stress Reaction (14 items)	.80	Is nervous, vulnerable, sensitive, prone to worry
Achievement (17 items)	.69	Works hard; enjoys demanding projects and working long hours
Social Potency (18 items)	.76	Is forceful and decisive; fond of influencing others; fond of leadership roles
Well Being (11 items)	.67	Has a happy, cheerful disposition; feels good about self and sees a bright future
Social Closeness (19 items)	.75	Is sociable, likes people, and turns to others for comfort

self-report personality instrument designed to assess a broad range of individual differences in affective and behavioral style.

We used a modified version of the MPQ for the following reasons. First, limited time was allocated for the administration of the MPQ during each study member's full day of data collection; pilot testing revealed that study members could not complete the 300 items that comprise the original MPQ in the 30 min available. Second, because the sample consisted of an entire birth cohort, there were wide individual differences between our study members in reading ability. This necessitated simplifying or removing items that involved particularly difficult words and concepts. Third, the MPQ was designed to be administered to citizens of the United States. Although the culture of New Zealand is not very different from that of the United States, certain items on the original MPQ express notions with which the average New Zealander is likely to be unfamiliar.

With these considerations in mind, and with Tellegen's approval, we administered a 177-item version of the MPQ (Form NZ) that yields 10 different scales (Tellegen, 1982, pp. 7–8; Tellegen's Absorption scale was not included in MPQ Form NZ). Scale names, descriptions of high scorers for each scale, and internal consistency coefficients (alphas) are presented in Table 1. The alphas ranged from .63 to .80 and had an average value of .73. The scale intercorrelations for male study members ranged from −.30 to .50, with a mean absolute value of .16. The scale intercorrelations for female study members ranged from −.38 to .41, with a mean absolute value of .17. The low magnitudes of these intercorrelations are similar to those obtained with the original instrument and illustrate the relative independence of the 10 MPQ scales (cf. Tellegen et al., 1988).

The 10 scales constituting the MPQ can be viewed at the higher order level as defining four superfactors: Constraint, Negative Emotionality, Communion, and Agency (Tellegen & Waller, in press). The Constraint factor is associated with the Traditionalism, Harm Avoidance, and Control scales. Individuals high on this factor tend to endorse social norms, act in a cautious and restrained manner, and avoid thrills. The Negative Emotionality factor is associated with the Aggression, Alienation, and Stress Reaction scales. Individuals high on this dimension have a low general threshold for the experience of negative emotions such as fear, anxiety, and anger and tend to break down under stress (Tellegen et al., 1988). The Agency factor is associated with the Well Being, Social Potency, and Achievement scales and summarizes a mastery orientation in an individual: a general tendency to seek pleasurable experiences by engaging the environment and conquering the challenges it may present. Communion is associated with the Well Being, Social Potency, and Social Closeness scales and summarizes an interpersonal orientation in an individual: a general tendency to seek pleasurable experiences by integrating into relationships with others. We scored these factors in the manner recommended by A. Tellegen (personal communication, July 31, 1992). Specifically, Constraint was scored as Control + Harm Avoidance + Traditionalism, Negative Emotionality was scored as Stress Reaction + Alienation + Aggression, Agency was scored as Well Being + Social Potency + 2(Achievement), and Communion was scored as Well Being + Social Potency + 2(Social Closeness). For further information about these factors and their relations to other theorists' superfactors, see Tellegen (1985) and Tellegen and Waller (in press).

Measurement of Psychopathology

Disorders and symptom scales at age 18. At age 18, the Diagnostic Interview Schedule (DIS; Version III-R; Robins et al., 1989) was used to obtain diagnoses of mental disorder in the last 12 months. The DIS was developed by the National Institute of Mental Health for the Epidemiologic Catchment Area program (Regier et al., 1984). We modified the DIS to use only those items that were criteria for *DSM–III–R* (American Psychiatric Association, 1987) classifications, to omit lifetime prevalence questions, and to score items as 0 = *no*, 1 = *sometimes*, and 2 = *yes, definitely.* In identifying disorder, only scores of 2 were used to indicate a positive response (commensurate with a 5 in the original DIS). An extensive report on the mental health of the Dunedin sample at age 18 may be found in Feehan et al. (1994).

Forty-four percent of the sample met the requisite *DSM–III–R* (American Psychiatric Association, 1987) criteria for a 12-month disorder at age 18. Although this estimate may seem high, it is consistent with prevalence data for this age group from the National Institute of Mental Health Epidemiologic Catchment Area studies (Robins & Regier, 1991) and from the National Comorbidity Survey (Kessler et al., 1994). For the current study, we created four groups of disordered study members: an affective disorder group, comprising study members meeting the criteria for Major Depressive Episode, Dysthymia, or both; an anxiety disorder group, comprising study members meeting the criteria for Generalized Anxiety Disorder, Panic Disorder, Agoraphobia, Social Phobia, Simple Phobia, Obsessive–Compulsive Disorder, or any combination of these disorders; a substance dependence disorder group, consisting of study members meeting the criteria for Alcohol Dependence, Marijuana Dependence, or both; and a conduct disorder group, consisting of study members meeting the criteria for Conduct Disorder. In addition, scales were created to measure the four major classes of symptomatology continuously. Each of these scales was created by summing the study member's scores on interview symptom items relevant to each domain; 2-month test–retest reliabilities for the four scales ranged from .78 to .85.

Symptom scales at age 15. To determine the MPQ's relationship with past psychopathology, we used data from a mental health assessment made at age 15. At age 15, the Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982) was used to obtain diagnoses of mental disorder in the last 12 months. For the current study, we used four symptomatology measures that paralleled the symptomatology measures at age 18: an Affective Disorder scale and an Anxiety Disorder scale were derived from the DISC and a Substance Use scale and a Conduct Disorder scale were derived from a self-report delinquency measure developed by Moffitt and Silva (1988). Extensive information regarding the sample's mental health at age 15 may be found in McGee et al. (1990).

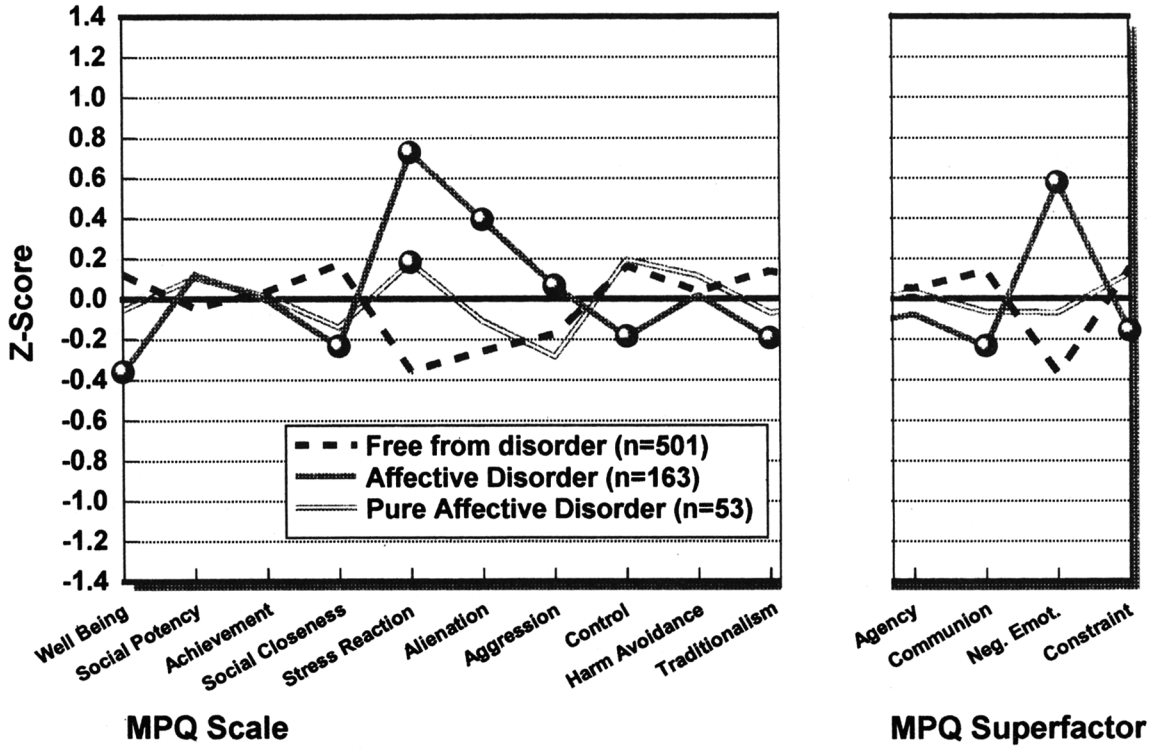

Figure 1. Multidimensional Personality Questionnaire (MPQ) profiles of the affective disorder diagnostic group, pure affective disorder group, and controls. Circles on the disorder lines represent significant differences from the free from disorder group at $p < .01$. Neg. Emot. = Negative Emotionality.

Symptom scales at age 21. To determine the MPQ's ability to predict psychopathology, we used data from a mental health assessment made at age 21. At age 21, the same DIS administered at age 18 was used to obtain diagnoses of mental disorder in the last 12 months. For the current study, we used four symptomatology scale measures that paralleled the symptomatology scale measures at age 18, with the exception that the Conduct Disorder scale was replaced with an Antisocial Personality Disorder (APD) scale, consisting of symptoms listed in the *DSM–III–R* (American Psychiatric Association, 1987) as criteria for APD. Extensive information regarding the sample's mental health at age 21 may be found in Newman et al. (in press).

Results

How Did Diagnosed Individuals Differ From Healthy Individuals?

To assess the relation between personality and diagnostic status, we compared the MPQ profiles of members of our four diagnostic groups at age 18 (affective disorder, anxiety disorder, substance dependence disorder, and conduct disorder) against a group of controls. We computed four multivariate analyses of variance (MANOVAs), each comparing a specific diagnostic group with a group of healthy controls on the 10 primary scales of the MPQ.[1]

The first MANOVA compared the affective disorder group with the control group (see Figure 1) and revealed significant omnibus differences between the groups, $F(10, 653) = 22.93$, $p < .01$. The significant omnibus F was followed with univariate F tests comparing the affective disorder group and the controls on each of the 10 MPQ scales and the four MPQ superfactors; for each of these tests, $df = 1, 662$ and $\alpha = .01$. The affective disorder group differed significantly from the controls by being low on Well Being, low on Social Closeness, low on Control, low on Traditionalism, high on Stress Reaction, high on Alienation, and high on Aggression. At the superfactor level, they scored low on Communion, low on Constraint, and high on Negative Emotionality.

The second MANOVA compared the anxiety disorder group with the control group (see Figure 2) and revealed significant omnibus differences between the groups, $F(10, 704) = 20.33$, $p < .01$. Univariate F tests ($df = 1, 713$ and $\alpha = .01$) showed that the anxiety disorder group scored significantly lower on Well Being, Social Closeness, and Control, as well as higher on Stress Reaction and Alienation. At the superfactor level, they scored lower on Agency, lower on Communion, and higher on Negative Emotionality.

The third MANOVA compared the substance dependence disorder group with the control group (see Figure 3) and revealed significant omnibus differences between the groups, $F(10, 656) = 27.48$, $p < .01$. Univariate F tests ($df = 1, 665$ and $\alpha = .01$) showed that the substance dependence disorder

[1] Because the MPQ superfactors represent linear combinations of the primary MPQ scales, they were not included as additional dependent variables in the MANOVA.

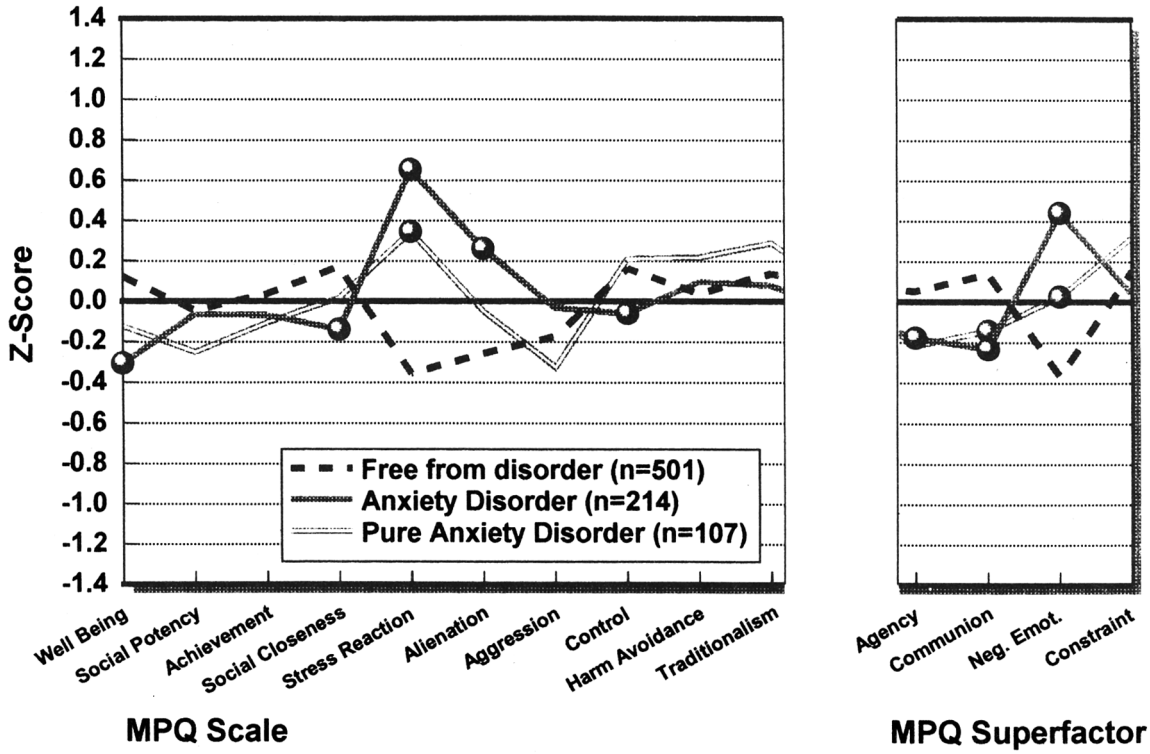

Figure 2. Multidimensional Personality Questionnaire (MPQ) profiles of the anxiety disorder diagnostic group, pure anxiety disorder group, and controls. Circles on the disorder lines represent significant differences from the free from disorder group at $p < .01$. Neg. Emot. = Negative Emotionality.

group scored significantly lower on Well Being, Social Closeness, Control, Harm Avoidance, and Traditionalism, as well as higher on Social Potency, Stress Reaction, Alienation, and Aggression. At the superfactor level, they scored lower on Communion, lower on Constraint, and higher on Negative Emotionality.

The fourth MANOVA compared the conduct disorder group with the control group (see Figure 4) and revealed significant omnibus differences between the groups, $F(10, 558) = 29.48$, $p < .01$. Univariate F tests ($df = 1, 567$ and $\alpha = .01$) showed that the conduct disorder group scored significantly lower on Well Being, Social Closeness, Control, Harm Avoidance, and Traditionalism, as well as higher on Social Potency, Stress Reaction, Alienation, and Aggression. At the superfactor level, they scored lower on Communion, lower on Constraint, and higher on Negative Emotionality.

These findings were consistent with the hypothesis that study members with mental disorders and control study members had different personality profiles. Moreover, the profiles of the disordered groups differed among themselves in meaningful ways, although each disordered group scored high on Negative Emotionality.

To What Extent Were Personality Differences Between Diagnosed Groups and Healthy Controls Attributable to Comorbidity?

To determine whether the relation between personality and diagnostic status shown in Figures 1–4 would hold when comorbid cases were not included in our analyses, we compared the MPQ profiles of members of four pure diagnostic groups (pure affective disorder, pure anxiety disorder, pure substance dependence disorder, and pure conduct disorder) with our group of controls. Pure groups were formed by retaining, within each diagnostic group, participants who had only the type of diagnosis given in the group name; those carrying diagnoses from two or more of the four diagnostic groups were thereby removed from these analyses. Of the 163 participants in the affective disorder group, 53 (33%) were pure; of the 214 participants in the anxiety disorder group, 107 (50%) were pure; of the 166 participants in the substance dependence disorder group, 66 (40%) were pure; of the 68 participants in the conduct disorder group, only 12 (18%) were pure. Thus, even at the level of these four broad groups, comorbidity was extensive in these data: On average, 65% of the participants within a specific diagnostic group were comorbid.

We computed four MANOVAs, each comparing a specific pure diagnostic group with the controls on the 10 primary scales of the MPQ. The first MANOVA compared the pure affective disorder group with the control group (see Figure 1). The MANOVA revealed significant omnibus differences between the groups, $F(10, 543) = 3.34$, $p < .01$. The significant omnibus F was followed with univariate F tests comparing the pure affective disorder group with the controls on each of the 10 MPQ scales and the four MPQ superfactors; for each of these tests, $df = 1, 552$ and $\alpha = .01$. The pure affective disorder group differed significantly from controls on only 1 MPQ scale, Stress Reaction.

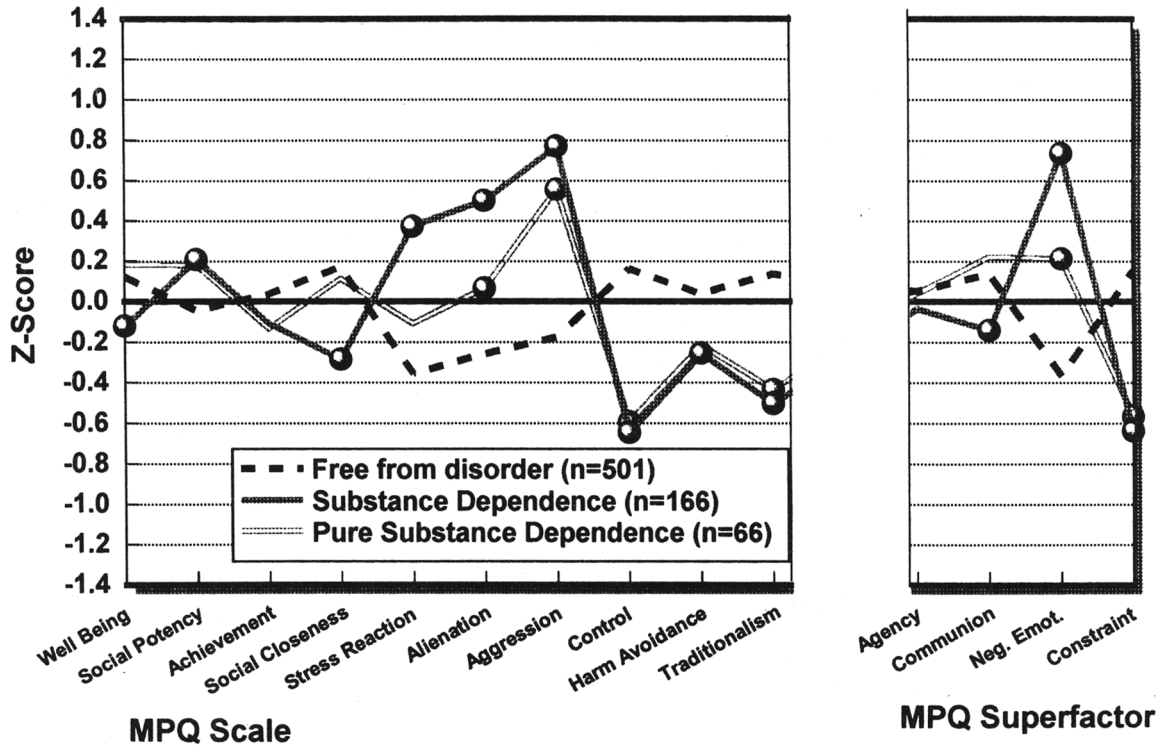

Figure 3. Multidimensional Personality Questionnaire (MPQ) profiles of the substance dependence diagnostic group, pure substance dependence group, and controls. Circles on the disorder lines represent significant differences from the free from disorder group at $p < .01$. Neg. Emot. = Negative Emotionality.

The second MANOVA compared the pure anxiety disorder group with the control group (see Figure 2) and revealed significant omnibus differences between the groups, $F(10, 597) = 6.57$, $p < .01$. Univariate F tests ($df = 1, 606$ and $\alpha = .01$) showed that the pure anxiety disorder group scored significantly higher on 1 MPQ scale, Stress Reaction. At the superfactor level, they scored lower on Communion and higher on Negative Emotionality.

The third MANOVA compared the pure substance dependence disorder group with the control group (see Figure 3) and revealed significant omnibus differences between the groups, $F(10, 556) = 7.27$, $p < .01$. Univariate F tests ($df = 1, 565$ and $\alpha = .01$) showed that the pure substance dependence disorder group scored significantly higher on Alienation and Aggression and lower on Control and Traditionalism. At the superfactor level, they scored higher on Negative Emotionality and lower on Constraint.

The fourth MANOVA compared the pure conduct disorder group with the control group (see Figure 4) and revealed significant omnibus differences between the groups, $F(10, 502) = 2.33$, $p = .01$. Univariate F tests ($df = 1, 511$ and $\alpha = .01$) showed that the pure conduct disorder group scored significantly higher on Alienation and Aggression. At the superfactor level, the group scored higher on Negative Emotionality.

Severity. To determine whether comorbidity was associated with disorder severity, we compared the standardized (z scored) symptom scale scores of controls and participants with pure and comorbid disorders. Specifically, we computed four ANOVAs comparing controls, participants in a specific group with one disorder, and participants in the same group with comorbid disorders on the group's corresponding symptom scale. The results of these analyses can be seen in Table 2. The data in the table show a clear association between diagnostic status and amount of symptomatology; for each group, controls were less severe than participants with one disorder, who were less severe than those with comorbid disorders. On average, participants with single disorders differed from the controls by 1.7 *SD*; on average, participants with comorbid disorders differed from the pure cases by .71 *SD*.

Summary. Across all four disorder groups, much of the difference between diagnosed cases and controls appeared to be attributable to the presence of participants with more severe comorbid disorders. Many significant differences between disordered study members and controls were not present when participants with only a single disorder were examined. The pure diagnostic groups contained smaller numbers of study members, reducing the statistical power of these comparisons. Nonetheless, with the possible exception of conduct disorder, the change appeared to represent a reduction in the extremity of personality scores, and not just a reduced capacity to detect significant group differences.

Could the Link Between Personality and Mental Disorder Be an Artifact of Design Features, Such as Gender, a Continuous vs. a Discrete Conceptualization of Mental Disorder, or Time of Assessment?

Three factors may cloud the interpretation of findings linking personality to mental disorder: gender, conceptualization of dis-

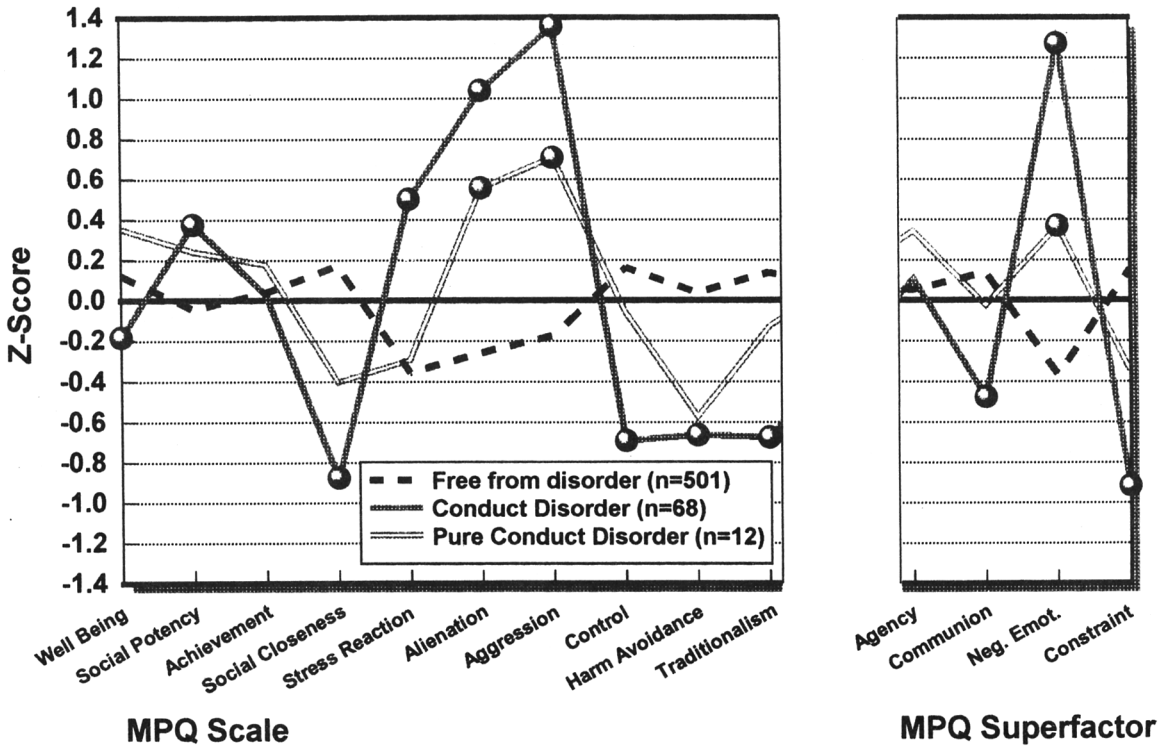

Figure 4. Multidimensional Personality Questionnaire (MPQ) profiles of the conduct disorder diagnostic group, pure conduct disorder group, and controls. Circles on the disorder lines represent significant differences from the free from disorder group at $p < .01$. Neg. Emot. = Negative Emotionality.

order, and time of assessment. To determine whether the relation between personality and diagnostic status shown in Figures 1–4 would hold when these factors were taken into account, we undertook a series of correlational and regression analyses. First, to establish a baseline for these analyses, we correlated the four MPQ factors with dummy codes representing membership in our four diagnostic groups (where members of a given group were assigned a score of 1 and nonmembers a score of 0). The results of these analyses can be seen in Table 3. The correlations in Table 3 parallel Figures 1–4 in showing considerable linkage between personality and diagnostic status. In particular, lower Agency was weakly associated with anxiety disorder; lower Communion was associated with affective, anxiety, and conduct disorders; higher Negative Emotionality was associated with every disorder; and lower Constraint was associated with substance dependence and conduct disorders.

Controlling for gender. To determine whether these correlations were influenced appreciably by gender, we predicted di-

Table 2
Total Symptom Scale Z Scores for Cases Free From Disorder, Pure Cases, and Comorbid Cases Within Each Disorder Category

Disorder category	Free	Pure	Comorbid	*F*	*df*
Affective					
Score	−.40	1.34	1.81	683.22*	(2, 661)
N	501	53	110		
Anxiety					
Score	−.43	.67	1.50	329.95*	(2, 712)
N	501	107	107		
Substance dependence					
Score	−.39	1.06	1.99	633.89*	(2, 664)
N	501	66	100		
Conduct disorder					
Score	−.30	2.19	2.79	647.31*	(2, 566)
N	501	12	56		

* $p < .01$.

Table 3
Correlations Between Personality Superfactors and Diagnoses of Mental Disorder at Age 18

Diagnosis	Agency	Communion	Neg. emot.	Constraint
Affective				
Sex not controlled	−.04	−.12*	.29*	−.08
Sex controlled	−.01	−.13*	.31*	−.14*
Anxiety				
Sex not controlled	−.10*	−.14*	.26*	.02
Sex controlled	$-.08_a$	−.15*	.29*	−.03
Substance dependence				
Sex not controlled	−.02	−.08	.37*	−.31*
Sex controlled	−.04	−.07	.35*	−.28*
Conduct disorder				
Sex not controlled	.03	−.14*	.38*	−.27*
Sex controlled	.00	−.13*	.35*	−.22*

Note. For all coefficients, $n = 897$. Sex controlled coefficients are semipartial correlations between a personality scale and diagnostic group status with sex controlled. For the coefficient with the subscript, $p = .02$. Neg. Emot. = Negative Emotionality.
* $p < .01$.

agnostic group status from each MPQ factor, with gender controlled. If the significance of the semipartial correlations between the factors and diagnostic group membership (with gender controlled) are not different from the significance of the zero-order correlations between the factors and diagnostic group membership, then the control for gender did not eliminate a significant relation between the scales and diagnostic group status. As can be seen in Table 3, controlling for gender had little influence on correlations between personality and diagnostic group status.[2] In one instance (for the correlation between Agency and anxiety group membership), the significance level changed from $p < .01$ to $p = .02$.

Comparing symptom scales to diagnostic categories. To determine whether conceiving of mental disorders as continuous rather than as discrete would influence correlations between personality and diagnostic status, we correlated our affective, anxiety, substance dependence, and conduct disorder symptom scales with the four MPQ factors (see Table 4). A comparison of age 18 data in Tables 3 and 4 reveals that using symptom scales instead of diagnostic categories had little influence on correlations between personality and mental disorder. If anything, the correlations in Table 4 are slightly larger than those in Table 3.

Personality assessed at age 18 and disorder assessed at ages 15 and 21. If the correlations reported thus far are due to the contemporaneous assessment of personality and diagnostic status, we would expect to observe highly attenuated relations between personality and diagnostic status measured at different points in time. To address this possibility, we first computed correlations among the four symptom scales at each age (15, 18, and 21) and between ages. These correlations (see Table 5) demonstrate both consistency and change in reported symptomatology across late adolescence. Although significant correlations link symptomatology at one age with symptomatology at another age, these correlations are of moderate size. Second, we correlated the four personality factors with symptomatology measured at different ages. The results of these analyses can be seen in the first four columns of Table 4; they demonstrate that measures of mental disorder made at ages 15 and 21 showed much the same pattern of correlations with personality as measures of mental disorder made at age 18. Agency was not consistently related to the mental health symptom clusters, regardless of time of measurement. Lower communion was robustly associated with conduct disorder symptoms and to a lesser extent with affective disorder symptoms. Higher Negative Emotionality was significantly associated with all four symptom clusters, regardless of whether these were measured contemporaneously, retrospectively, or prospectively. Lower Constraint was significantly associated with substance dependence symptoms and conduct disorder symptoms, regardless of whether these were measured contemporaneously, retrospectively, or prospectively.

Concurrent, retrospective, and predictive validity of personality. To evaluate the concurrent, retrospective, and predictive value of personality in relation to mental disorder, we performed multiple regressions in which all 10 MPQ scales were used to predict symptom scales at ages 15, 18, and 21. The results of these analyses can be seen in the fifth column of Table 4, which shows that the set of 10 MPQ scales correlated significantly with all four symptom scales at each age. To cross-validate the regressions estimated in the concurrent psychopathology data (at age 18) in the retrospective (age 15) and prospective (age 21) data, we correlated the psychopathology scores predicted by each age 18 regression equation with corresponding scores observed at ages 15 and 21. A comparison between the fifth and sixth columns of Table 4 shows that the age 18 equations predicted psychopathology at ages 15 and 21 almost as well as equations specifically fitted to those data.

Summary. Across Tables 3 and 4, all four symptom clusters were consistently linked with higher Negative Emotionality; substance dependence symptoms and conduct disorder symptoms were consistently linked with lower Constraint, and conduct disorder symptoms were consistently linked with lower Communion. Therefore, these relations appear to be robust across variations in research design.

Discussion

In the current study, we examined relations among measures of personality and psychopathology in a birth cohort. The findings may be understood in terms of the methodological strengths and limitations of the study, in terms of "personological resumes" for each disorder and general implications the study has for efforts to relate personality and mental disorder.

Methodological Strengths and Limitations

Advantages of an epidemiological sampling frame. The presence of both men and women in our epidemiological sam-

[2] We repeated the analyses in Table 3 using all 10 primary MPQ scales rather than the four MPQ superfactors. As with the superfactors, controlling for sex did not eliminate any statistically significant relations between personality and diagnostic group status.

Table 4
Correlations and Multiple Correlations Between Personality and Symptoms of Mental Disorder Measured at Different Ages

Symptom cluster	Agency	Communion	Neg. emot.	Constraint	*R*	Cross-validation *r*
Affective						
Age 18	−.03	−.19*	.36*	−.10*	.48*	
Age 15	.00	−.04	.23*	−.08	.28*	.26*
Age 21	−.07	−.14*	.24*	−.08	.32*	.29*
Anxiety						
Age 18	−.10*	−.17*	.45*	.00	.57*	
Age 15	−.09*	−.10*	.24*	.08	.38*	.36*
Age 21	.00	−.08	.27*	−.04	.33*	.31*
Substance dependence						
Age 18	.00	−.10*	.43*	−.37*	.54*	
Age 15	.01	−.03	.22*	−.23*	.33*	.32*
Age 21	.00	−.07	.36*	−.34*	.47*	.47*
Conduct disorder						
Age 18	.02	−.14*	.44*	−.37*	.57*	
Age 15	.01	−.12*	.33*	−.30*	.43*	.42*
Age 21	−.02	−.17*	.43*	−.37*	.54*	.54*

Note. For correlations at age 18, $n = 897$. For correlations at age 15, $n = 879$–902. For correlations at age 21, $n = 887$–919. R = multiple correlation when all 10 Multidimensional Personality Questionnaire (MPQ) scales were used to predict the scale listed on the same line on the left side of the table. Cross-validation r = correlation between values predicted by the 10 MPQ scale regression equation derived using the age 18 psychopathology scale as the dependent variable and psychopathology scale values observed at age 15 or age 21. Substance dependence at age 15 refers to self-reported drug use; conduct disorder at age 21 refers to symptoms of antisocial personality disorder (see the Method section). Neg. emot. = negative emotionality.
* $p < .01$.

ple allowed us to determine whether the distribution of gender within diagnoses could account for correlations between measures of personality and psychopathology. This appeared not to be the case: Correlations between major dimensions of personality and major clusters of psychopathological symptoms were not significantly affected when gender was controlled. Epidemiological data also allowed us to determine, with sufficient power, whether categorical and continuous measures of disorder would differ in their association with dimensions of personality. The distinction had little influence: Correlations between personality and diagnostic categories of mental disorder were similar to correlations between personality and continuous scales assessing the number of psychopathological symptoms present. Finally, an epidemiological sampling frame allowed us to form

Table 5
Correlations Among Mental Disorder Symptom Scales at Different Ages

Age and scale	Age 15				Age 18				Age 21			
	Aff.	Anx.	Drug	CD	Aff.	Anx.	Sub.	CD	Aff.	Anx.	Sub.	APD
Age 15												
Aff.	—											
Anx.	.29*	—										
Drug	.27*	.03	—									
CD	.29*	.11*	.78*	—								
Age 18												
Aff.	.31*	.24*	.15*	.20*	—							
Anx.	.29*	.40*	.13*	.20*	.51*	—						
Sub.	.17*	.06	.42*	.47*	.30*	.28*	—					
CD	.11*	.00	.34*	.45*	.17*	.18*	.64*	—				
Age 21												
Aff.	.25*	.18*	.10*	.14*	.34*	.29*	.19*	.15*	—			
Anx.	.20*	.18*	.11*	.09*	.27*	.25*	.10*	.06	.49*	—		
Sub.	.15*	.01	.33*	.37*	.18*	.17*	.62*	.55*	.28*	.17*	—	
APD	.08	.04	.34*	.45*	.16*	.16*	.44*	.45*	.23*	.16*	.50*	—

Note. $N = 868$–959. Aff. = affective symptoms; Anx. = anxiety symptoms; sub. = substance dependence symptoms; CD = conduct disorder symptoms; Drug = drug use; APD = antisocial personality disorder symptoms.
* $p < .01$.

comparison subgroups that were representative of the populations from which they were drawn (cf. Mednick, 1978). Using this strategy, we were able to determine that comorbidity has a significant role to play in affecting relations among personality and psychopathology variables. Many correlates of psychopathology, visible when the influence of comorbidity was not considered, were not visible when pure groups (groups excluding participants with comorbid disorders) were examined.

Advantages in terms of personality measurement. The current study used a measure of personality, the MPQ, that balances "bandwidth" and "fidelity" (Cronbach, 1970). In the current study, this balance allowed us to identify specific personological correlates of mental disorders at both the superfactor and scale levels of the personality trait hierarchy.

Advantages of multiple waves of psychopathology data. In the current study, similar relations between personality and psychopathology were seen regardless of whether psychopathology was measured in the past, concurrently, or prospectively. These findings suggest that time of measurement is not likely to seriously bias estimates of relations among personality and psychopathology variables.

Limitations of self-report data. The current study was limited in its exclusive reliance on self-report measures of personality and psychopathology. Future studies should use multimethod assessments and draw on information from multiple sources, such as family members, peers, clinicians, or mental health records. The relations observed to date in self-report multitrait–multidiagnosis studies (the current study and Trull & Sher, 1994) require replication with multimethod data in order to more effectively separate construct variance from method variance.

"Personological Resumes" of Mental Disorders

In this section, we relate our findings to other relevant literatures and present "personological resumes" for each disorder. The profiles of individuals with single disorders will, at times, be useful in this descriptive endeavor. Nonetheless, these comparisons are not intended to identify the "true" correlates of a given disorder—they are used here to highlight salient personality features that are present across the full range of severity within a given disorder group. We also compare our results to those from Trull and Sher's (1994) multitrait–multidiagnosis study (Trull and Sher did not study conduct disorder, so comparisons for this disorder could not be made).[3]

Affective disorders. Participants with affective disorder had personality profiles that were quite different from controls (significant differences were found on 7 of the 10 MPQ scales). Specifically, and in concert with Trull and Sher's (1994) findings for individuals with lifetime diagnoses of major depression, individuals with affective disorder in our study were higher on Stress Reaction and Aggression and lower on Control, Traditionalism, and Communion.

These differences, however, appear almost entirely attributable to comorbidity. When participants with pure affective disorder were examined, only 1 MPQ scale remained significantly elevated relative to controls: Stress Reaction. As this same pattern was found for anxiety disordered cases, we explore its implications further in the next section.

Anxiety disorders. Participants with anxiety disorder had personality profiles that were quite different from controls (significant differences were found on 5 of the 10 MPQ scales). Specifically, and in concert with Trull and Sher's (1994) findings for cases with lifetime diagnoses of any anxiety disorder, our anxiety disorder cases were higher on Stress Reaction and lower on Control and Communion. In contrast to Trull and Sher's (1994) findings, we did not find greater Aggression (less NEO Agreeableness) or less Traditionalism (greater NEO Openness) in our participants with anxiety disorder.

It is possible that this cross-study difference is a function of sampling differences between the two studies. Half of Trull and Sher's (1994) sample consisted of cases at high risk for alcoholism (cases whose fathers received an alcoholism diagnosis). Hence, it is possible that their sampling strategy converged on anxious persons with premorbid or subclinical variants of full-blown alcoholism (akin, perhaps, to Cloninger's [1987] anxious Type I alcoholic individuals), rather than on individuals with anxiety disorder only.

In our sample, personality differences between individuals with anxiety disorder and controls appear almost entirely attributable to comorbidity. When individuals with pure anxiety disorder were examined, only Stress Reaction remained significantly elevated relative to controls.

Stress Reaction was thus elevated across the entire range of severity in both the affective and anxiety disorder groups. This finding is consistent with the recent proposal that a tendency to react catastrophically to negative life events may lack specificity to affective disorders and may instead be associated with both affective and anxiety disorders (Clark & Watson, 1991a). Stress reactivity may be a primary personological manifestation of a general neurotic syndrome that can present phenotypically as either affective or anxiety disorder. For example, when multivariate quantitative genetic techniques were used to isolate genetic variance in individuals with Generalized Anxiety Disorder and Major Depressive Disorder, the genetic correlation between the two conditions ranged from 0.83 to 1.0 (Kendler, Neale, Kessler, Heath, & Eaves, 1992).

Substance dependence disorders. Participants with substance dependency had personality profiles that were very different from controls (significant differences were found on 9 of the 10 MPQ scales). Specifically, and in concert with Trull and Sher's (1994) findings for individuals with lifetime diagnoses of any substance use disorder, our participants with substance dependence disorder were higher on Stress Reaction and

[3] Although Trull and Sher (1994) used the NEO Five Factor Inventory (which assesses the "Big Five" traits of Neuroticism, Agreeableness, Extraversion, Conscientiousness, and Openness to Experience; Costa & McCrae, 1989) and not the MPQ, joint factor analyses of these two instruments have revealed meaningful interrelationships. Specifically, NEO Neuroticism is well-measured by MPQ Stress Reaction, NEO Agreeableness by MPQ Aggression (inversely), NEO Extraversion by MPQ Communion, NEO Conscientiousness by MPQ Control, and NEO Openness to Experience by MPQ Traditionalism (inversely; Church, 1994). Thus, although direct comparisons may not be possible, similarities between the NEO and the MPQ allowed us to evaluate the picture emerging from multitrait–multidiagnosis studies of personality and psychopathology.

Aggression and lower on Control, Traditionalism, and Communion. Many of these differences remained when participants with comorbid disorders were removed from the analyses: When those with pure substance dependency were examined relative to controls, their higher Alienation and Aggression and their lower Control and Traditionalism could be seen clearly.

These findings are consistent with evidence showing higher Negative Emotionality and lower Constraint in individuals with clinical alcoholism (Sher & Trull, 1994). However, the findings also suggest that the higher Negative Emotionality scores obtained by individuals with substance dependency may be due to a specific, interpersonal component of Negative Emotionality: a sense of victimization and betrayal (Alienation) combined with a capacity and willingness to do harm to others (Aggression). This interpersonal style, paired with high Social Potency and low Constraint, forms a picture of the substance dependent individual parallel to empirical accounts of the criminal personality (Caspi et al., 1994; Krueger et al., 1994). These findings are thus consistent with a perspective on alcoholism and substance dependence that emphasizes the antisocial personality style associated with many cases of these disorders (Zucker & Gomberg, 1986). The findings are particularly noteworthy in that they appear not to depend on the comorbidity between substance dependence and conduct disorder; the antisocial substance-dependent personality style emerged even when individuals with pure substance dependency were compared with controls.

Conduct disorder. Participants with conduct disorder had personality profiles that were very different from those of controls (significant differences were found on 9 of the 10 MPQ scales). Moreover, these differences were, on average, much larger in magnitude than those for the other three classes of disorder.

These patterns are strikingly consistent with classic descriptions of the psychopathic personality style (e.g., Cleckley, 1941), which emphasize notable but superficial charm and an incapacity for love (high Social Potency paired with low Social Closeness), a mistrust of others (high Alienation), a capacity for violence (high Aggression), and impulsivity (low Control, Harm Avoidance, and Traditionalism). The extremity of this personality pattern suggests that conduct disorder may be a childhood precursor of adult antisocial personality disorder (as conceptualized in the fourth edition of the *DSM*; American Psychiatric Association, 1994). In fact, the MPQ scales were able to predict symptoms of antisocial personality disorder measured 3 years in the future almost as well as they predicted concurrent assessments of conduct disorder symptoms.

The findings also emphasize the importance of examining the personological correlates of psychopathology at the primary scale level rather than at the superfactor level. The conduct disordered personality style appears to be a unique gestalt, the nature of which may be obscured by collapsing across different components of personality which, although correlated in the population, are not equally relevant in understanding conduct disorder. For example, although MPQ Stress Reactivity and MPQ Aggression are both components of the MPQ superfactor Negative Emotionality, the latter appears to be more relevant than the former in describing the conduct disordered personality style.

Broad Implications for the Study of Personality and Psychopathology

Importance of negative emotionality. Each disordered group could be differentiated from controls by the presence of high negative emotionality. Although this higher order construct has often been regarded as relevant to internalizing (affective and anxiety) disorders (Clark & Watson, 1991a, 1991b), it is less often emphasized in relation to externalizing (substance dependence and conduct) disorders (Sher & Trull, 1994). The current results suggest that negative emotionality goes hand in hand with both internalizing and externalizing disorders. Moreover, the results suggest that different facets of negative emotionality (e.g., Stress Reaction vs. Aggression) may contribute to determining the precise form that maladaptation takes (e.g., internalizing vs. externalizing disorder).

Importance of comorbidity. The precise meaning of comorbidity in psychopathology has yet to be fully clarified (Caron & Rutter, 1991; Lilienfeld, Waldman, & Israel, 1994; Maser & Cloninger, 1990). Although the meaning of comorbidity may not be clear at this time, its methodological implications are clear: Comorbidity must be determined and taken into account in studies that examine the correlates of mental disorder.

The current study underscores the importance of assessing comorbidity. Once comorbid cases were removed from our analyses, fewer personological correlates of psychopathology remained. Moreover, the remaining participants with "pure" disorders were unusual in their rarity; on the average, only 33% of those meeting the criteria for a given diagnosis were pure. This suggests that, in the population at large, and contrary to common medical diagnostic practice (which encourages clinicians to determine the one "true" diagnosis in every case), comorbidity in psychopathology may be more the rule than the exception (Widiger & Frances, 1985).

With regard to understanding personality and psychopathology, research designs that attempt to establish "pure" psychopathology groups by screening for "other" disorders may create groups that are uncommon in nature and less consequential in their impairment. Comorbid cases of child and adolescent psychopathology are not only more prevalent than pure cases, they also have worse developmental histories (e.g., Moffitt, 1990), more impairment in current functioning (e.g., Barkley, Fischer, Edelbrock, & Smallish, 1990, 1991; Newman et al., in press), and poorer prognoses (e.g., Harrington, Fudge, Rutter, Pickles, & Hill, 1991; Verhulst & van der Ende, 1993) and are less responsive to intervention (e.g., Pliszka, 1989). These observations, paired with the current findings, suggest that personality traits are linked to the most consequential expressions of mental disorder (i.e., the comorbid forms). Epidemiological studies, which endeavor to assess individuals spanning the full range of functioning, are required to further evaluate this suggestion and to sort out issues surrounding comorbidity in psychopathology.

Personality development and the origins and persistence of psychopathology. The importance of attempting to understand psychopathology in terms of personality may be apparent by considering the "nomological net" surrounding personality and its development. Specifically, the MPQ scales have been found to be heritable in twins reared apart (Tellegen et al., 1988), predictable in the current sample from age 3 (Caspi &

Silva, 1995), and stable through early adulthood (McGue, Bacon, & Lykken, 1993). Compelling theory and data suggest that the origins of personality may be found in temperament (A. H. Buss & Plomin, 1984; Caspi & Silva, 1995; Goldsmith et al., 1987) and that these temperamental variations are shaped in an environment often covariant with temperament (Plomin & Bergeman, 1991; Scarr & McCartney, 1983). The relational matrix that emerges as a result of the consistency in these early transactions provides the child with a paradigm for future transactions, influencing emotional, cognitive, and behavioral proclivities in adulthood—in a word, personality (D. M. Buss, 1987; Wachtel, 1993, 1994).

Thus, although specific episodes of psychopathology may be transient, documentation of a link between personality and psychopathology, paired with knowledge about the coherence of personality from childhood through adulthood, suggests that, in the absence of significant characterological change, personality may act as a persistent risk factor for psychopathology. This interpretation would place particular emphasis on the importance of primary prevention: Psychopathology, and particularly its comorbid expression, appears meaningfully linked to consistent individual-difference characteristics that have their origins in childhood. Alternatively, it is possible that the life experience of a major mental disorder might modify personality. Such interpretations need not be in competition; they emphasize the need for research designs that are capable of outlining the varied and interactive pathways that may link personality with mental disorder across the life course.

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