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Personality Correlates of Depressive Style in Autobiographies of Creative Achievers

ABSTRACT This study compared neurotic and depressive personality characteristics in creative achievers versus eminent but non-creative achievers. Forty-eight subjects' (25 men, 23 women) autobiographies were assessed by trained raters on personality using the California Q-Set. Creative achievers included literary and visual artists whereas the control group consisted of political, military and social leaders. The Q-Set ratings were used to assess the five factors of personality (neuroticism, extroversion, openness to experience, agreeableness and conscientiousness). Neuroticism was further divided into subscales that assessed depressive style, impulsivity and anxiety. Results showed that creative achievers were rated significantly higher than controls on general neuroticism, as well as on depressive style and impulsivity. Creative achievers did not differ from controls in anxiety. It was also found that creative achievers were rated significantly higher than controls on openness to experience and agreeableness, but lower on conscientiousness. None of the effects for creativity was affected by subjects' sex.

Freud (1908/1973) felt creative artists were like children at play. They both create fantasy worlds invested with emotion and arrange the world around them in accordance with those fantasies. In fact, Freud hypothesized that creative production could be considered a substitute for childhood play. This fantasy world, distinct from reality, allows creative artists to bring unpleasant emotions from real life into a creative work. Situations and events that people generally find painful in everyday life, produce enjoyment when part of a creative work. The

following question arises however. Do artists pay a psychological price for creating these "fantasy worlds"?

Many famous creative artists are considered to have suffered from depression. For example, Sylvia Plath, Jack London, Virginia Woolf, Jackson Pollock and Vincent Van Gogh were all reputed to have experienced depression that led them to commit suicide (Prentky, 1989). Do these famous examples reflect a true relation between creativity and depression, or is this a case where vivid historical examples lead people to infer a relationship where one may not really exist? The present study attempts to confirm a link between creativity and depression by examining the written autobiographical accounts of the lives of creative achievers.

The creative process can be defined as "the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other" (Rogers, 1959, p.71). In an influential review of how to assess creativity, Hocevar and Bachelor (1989) suggested that judgements of products, eminence (recognized as creative in own field) and self-reported creative activities, all are valid measures of creativity because they reflect what society consensually judges as creative. Cattell (1971) had earlier asserted that actual life performance is the best measure of creativity. He argued that an appropriate method of selection is to examine outstandingly creative people who have been identified by their peers as the best in their field. Employing a definition of creativity based on recognized creative achievement is the approach used in this study.

Three research strategies have been used to examine the relation between creativity and affective illness (Jamison, 1989). The first is to use historical and biographical studies of prominent individuals (e.g., Goertzel, Goertzel & Goertzel, 1978; Ludwig, 1992). Although such studies typically yield strong associations between mood disorders and creativity, they are flawed by reliance on anecdotal evidence of psychopathology, indirect access to subjects' internal states, and use of descriptive statistics. A second approach is to study the creative abilities of patients with diagnosed affective disorders. For example, Richards et al. (1988) compared the peak vocational creative accomplishments of diagnosed manic-depressives, cyclothymes and their first-degree relatives with those of control subjects who had no history of affective disorder. Their results showed that creativity was rated higher in

the affective disorder group compared to the control group; however, this effect was significant only if the relatives were included in the affective disorder group.

A third strategy involves using systematic, diagnostic assessment methods to study living writers and artists. For example, Jamison (1989) examined the psychiatric treatment history of 47 British writers and artists who had received prestigious awards in their field. Specifically, subjects were asked "detailed (open-ended and scaled) questions about history and type of treatment, if any, for affective disorder" (p. 127). The results showed that 38% of subjects reported psychiatric treatment for depression at some time in their lives (23% received anti-depressant medication, 8% received psychotherapy alone and 6% were treated for bipolar illness). Unfortunately, because the study did not include a control group, these results are at best only suggestive of a link between creativity and depression.

Using a structured clinical interview, Andreason (1987) evaluated the history of mental illness in 30 creative writers from the distinguished University of Iowa Writers' Workshop and in a control group of 30 successful professionals who were matched on age, sex and educational status. The results revealed that 80% of creative writers had an affective illness at some time compared with 30% of controls, and that 43% of creative writers had some type of bipolar illness versus 10% of controls. Although Andreason's (1987) results appear to confirm an association between creativity and mood disorders, her research contains two methodological problems that should be noted. First, by personally interviewing the creative writers, the author was not blind to their experimental status. Second, different instruments were used to assess mood disorders in the creative and control subjects. Each of these factors could have possibly led to inflated rates of mood disorder in the creative writer sample.

In sum, although all three research strategies have yielded suggestive evidence of an association between creativity and mood disorders, there is still some question as to the true strength of this association. The present study represents an extension of the Jamison (1989) and Andreason (1987) approach of using systematic assessment methods to study the lives of creative artists. Rather than interviewing creative achievers, we made use of randomly selected, written, autobiographical materials to examine the presence of depressive symptomatology in the lives of eminent, creative

individuals as compared with a control group which consisted of equally eminent but non-creative achievers (e.g. political leaders)[1]. An autobiography is a type of self-report data but since it was not solicited in the form of questions about depression or mental illness, the possibility of subjects exaggerating a history of mental illness is reduced. Because bibliographies of autobiographies exist in which people are classified according to their occupation and source of fame, it was possible to randomly select a sample of creative achievers and eminent-but non-creative achievers.

It is difficult through the use of biographical or autobiographical materials to diagnose depression. Although Ludwig (1992) attempted to present frequency of depression in his sample of creative biographies, "no attempt was made to establish formal psychiatric diagnoses for subjects" (p. 338). Presumably he found it difficult to identify specific episodes of depression unless the subject sought therapy, was hospitalized or attempted suicide. To allow for a wider scope in studying depressive symptomatology in the present study, a depressive personality style rather than actual episodes of depression was examined. Zenmore and Rinholm (1989) note that vulnerability to depression can be assessed by rating the extent to which people experience depressotypic symptoms such as mood swings and concern about one's adequacy. Similarly, Block, Gjerde and Block (1991) noted that a number of depression-predisposing personality characteristics have been identified, including a lack of confidence in one's abilities, excessive dependence on other people, helplessness and low self-esteem. A systematic description of depressive personality characteristics has also been provided by Costa and McCrae (1987) who have extensively studied the structure of personality at the level of behavioral traits. They note that a collection of depression-related characteristics (e.g., the frequent experience of dysphoric feelings) emerges reliably as an important component of neuroticism.

The California Q-Set (Block, 1961) was used to assess the personality of creative and eminent achievers. It provides a general and comprehensive evaluation of an individual's personality, including normal and pathological items. We planned

[1] In support of this decision, other studies of eminent individuals have made this distinction between political and creative achievers (Goertzel et al., 1978; Ochse, 1990; Simonton, 1984). Although politicians may be considered as having creative personalities, their fame has not been achieved through the production of creative products.

to use the Q-Set items to assess each subject's level of neuroticism as well as to examine its more specific facets such as depressive style, impulsiveness and anxiety. Neuroticism is one of five central dimensions of personality that can be reliably identified in factor analyses of general measures of personality. It refers to "individual differences in the tendency to experience distress and in the cognitive and behavioral styles that follow from this tendency" (McCrae & John, 1992, p.195). High levels of neuroticism have been associated with the experience of chronic negative affect (Watson and Clark, 1984) and the development of a variety of psychiatric disturbances (McCrae & John, 1992). We also planned to assess the other four central dimensions of personality, namely, extroversion, openness to experience, agreeableness and conscientiousness.

It was hypothesized that creative achievers would score higher on neuroticism than control subjects. Ochse (1991) reviews evidence that suggests that creative individuals score higher on general measures of psychopathology or neuroticism. More specifically, it was hypothesized that creative achievers would rate higher on the depressive facet of neuroticism than control subjects. No predictions were offered regarding other aspects of personality.

METHOD

Subjects

Forty-eight subjects (25 males, 23 females) were selected from Briscoe's (1982) *A Bibliography of American Autobiography, 1945-1980*. Different headings in the index were used to select creative and non-creative subjects. Visually creative subjects were selected under the headings: painter, photographer, movie director and sculptor. Literary creative subjects were selected from categories: novelist and poet. Non-creative (control) subjects were selected from headings: U.S. Supreme Court Justice, senator, president, U.S. Army General, social activist, suffragist and labor leader.

In each bibliographic index category (novelist, painter, etc.), subject names were recorded until a quota of nine creative subjects and nine non-creative achievers per cell was filled for each sex. A search was made for the autobiographies at the McGill University library. If any subject groups remained unfilled, an additional exploration was conducted through McGill University's Inter-Library Loan Service. This service consists of access to the holdings of thousands of university and public libraries across Canada and the United States. Autobiographies for all groups were not equally easy to obtain, resulting in less subjects for some groups. The final

sample included 9 male visual creators, 6 female visual creators, 7 male literary creators, 8 female literary creators, male controls and 9 female controls. (See Appendix A for bibliographic listing of subjects).

To insure a base level of eminence in either a creative or non-creative field, subjects' names were looked-up in *Who's Who in America* (1993) and *Who Was Who in America* (1896-1989).[2] Forty of the 48 (83.3 %) subjects were listed in these two references with minimum of 1.5 centimeters of print. The remaining 8 subjects were found in bibliographic dictionaries under their respective fields of eminence and were distributed evenly across the two creative and non-creative categories. Similar methods to ensure eminence have been discussed by Simonton (1984).

Materials

The California Q-Set (CQS; Block, 1961) is a comprehensive personality assessment instrument that consists of 100 statements descriptive of a wide range of personality, behavioral and motivational factors. The items range from negative factors (e.g., "is guileful and deceitful") to neutral factors (e.g., "enjoys sensuous experiences") to more positive factors (e.g., "has a clearcut, internally consistent personality"). The CQS was not designed to measure any specific personality variable, instead, "it is a pool of items which, like those in the MMPI, can be conceivably used in the development of many different scales" (Edwards, 1965, p. 170).

This study focused on the adult years as represented by the last 50 pages in each autobiography.[3] Some autobiographies covered just the childhood or young adult years, so to insure some similarity of content in the last 50 pages, only those subjects who described their life from at least age 25 were included. Trained raters evaluated a subject's personality by sorting the 100 items into 9 categories, ranging from "extremely uncharacteristic" of that person (a score of 1) to "extremely characteristic" (a score of 9). A fixed distribution of cards was used whereby raters place 5 cards each in the "extremely characteristic" or "extremely uncharacteristic" categories, 8 cards each in the "quite characteristic" or "quite uncharacteristic" categories, 12 cards each in the "fairly characteristic" or "fairly uncharacteristic" categories, 16 in "somewhat characteristic" or "somewhat uncharacteristic" and 18 cards in a "relatively neutral or unimportant" category. Cards in the extreme categories carry the most statistical weight, whereas those in the neutral category carry the least statistical weight.

In this study, the CQS ratings were used to retrieve the five factors of personality, namely, neuroticism, extroversion, openness, agreeableness and conscientiousness (McCrae, Costa & Busch, 1986), as well as to identify a depression facet of neuroticism.

Procedure

Training of raters. Five female coders (2 graduate, 3 undergraduate Psychology and English majors) were trained to use the CQS to rate the autobiographies. Each autobiography was rated by two coders who were blind to the hypotheses of the study. Any reference to a subject's name or works was removed before presenting copies of autobiographies to the raters. No rater reported recognizing a subject. Initially, all 5 raters coded 3 autobiographies using the CQS. Any problems they experienced in coding the autobiographies or with the CQS items were subsequently discussed and clarified by the first author. The coders continued to meet with the experimenter once a week over a 12 week period in order to clarify difficulties with the ratings.

RESULTS

Preliminary Analyses

Reliability of CQS profile ratings.

Reliability of the CQS ratings was assessed by computing within-subject correlations between the 100 CQS ratings of the same subject by two judges. The within-subject correlations of the CQS profiles ranged from $r(98) = .28$ to $r(98) = .82$ with a mean r of .59. Using the Spearman-Brown formula, this yielded effective inter-rater reliabilities ranging from .44 to .90 with an average reliability of .74.

Factor analysis of CQS items related to neuroticism.

McCrae, Costa and Busch (1986) factor analyzed the CQS descriptions of 403 adult men and women. Five clear factors

[2] Criteria necessary for inclusion in these two dictionaries are based on awards, distinctions and prominent positions held. Just being included in such a reference ensures a baseline level of eminence having been achieved in American society. See Who's Who in America (1993) for specific, cut-off criteria. The sample used here may be moderately heterogenous in terms of amount of eminence achieved relative to each other, but 83 % of the sample achieved an equivalent standard of notable recognition in their field.

[3] The only exception was Richard Nixon who, in discussing his presidency, could be easily identified. In order to avoid this problem, fifty pages from his years as senator and vice-president were used for analysis. In general, since we were measuring depressive personality style and not depressive episodes or hospitalizations, using the last fifty pages of the autobiographies (rather than the entire book) appeared justified. In this way, we might miss actual depressive episodes experienced earlier in life but the subject's approach towards life and overall personality style could be accurately examined.

emerged matching those commonly found for trait adjectives, namely neuroticism, extroversion, openness, agreeableness, and conscientiousness. They further showed that these five factors displayed convergent and discriminant validity against self-reports and peer and spouse reports on measures of the five factor model.

McCrae et al.'s (1986) analysis yielded 31 items that related to neuroticism. To test whether a depression factor could be retrieved from these items, a Principle Components Factor Analysis (with Varimax rotations) was performed on the items. A six-factor solution was specified. This analysis yielded 6 factors with eigenvalues above 1.0. Table 1 provides the items and loadings for the three largest factors. Factor 1, labelled "impulsiveness", had an eigenvalue of 6.14 and included 6 items (Cronbach $\alpha = .77$). Factor 2, labelled "depressive style", had an eigenvalue of 3.51 and included 9 items ($\alpha = .78$). Another relatively clear factor emerged for anxiety, consisting of 4 items ($\alpha = .68$). These three factors accounted for 41% of the variance among neuroticism items. The other factors that emerged in the analysis of the neuroticism items accounted for only 20 % of the variance, were less cohesive, and were more difficult to label.[4]

Group differences on Neuroticism and its components.

Separate 2 X 2 ANOVAs were performed on the CQS summary scores for Neuroticism and the three subscales for Depressive Style, Impulsiveness and Anxiety with Sex and Group (Creative Artist/Control) as between-subject factors. A significant main effect for Group was revealed on Neuroticism, $F(1, 44) = 4.77$, $p < .05$. It can be seen on Table 2 that creative artists scored significantly higher than controls on neuroticism. Significant main effects for Group were also obtained on depressive style, $F(1, 44) = 5.42$, $p < .05$, and impulsiveness, $F(1, 44) = 13.82$, $p < .01$; but not for anxiety, $p < .30$. Table 2 shows that creative artists scored significantly higher than controls on both depressive style and impulsivity. No significant main effects or interactions emerged for sex.

To examine differences between written and visual creative artists, t-test comparisons were performed on Neuroticism, Depressive Style and Impulsiveness. A significant difference

[4] Two of the factors seemed to assess psychosomatic concerns and general vulnerability. Neither of these two factors yielded an internal reliability that was considered adequate for further analysis ($\alpha = .54$ and .53, respectively). No label for the final 4-item factor was readily apparent.

TABLE 1 **Factor Loadings for Q-Set Items Related to Neuroticism**

CQS Items	FACTOR 1 "Impulsiveness"	FACTOR 2 "Depressive Style"	FACTOR 3 "Anxiety"
(50) Unpredictable	.81	.15	.04
(70) Behaves ethically	-.78	.07	.14
(83) Sees heart of problems	-.52	-.08	-.12
(24) Prides self on objectivity	-.51	.00	.20
(75) Clear-cut personality	-.84	-.15	-.29
(33) Calm, relaxed	-.56	.03	-.47
(13) Thin-skinned	.41	.50	-.06
(82) Fluctuating moods	.53	.66	.10
(72) Concerned with adequacy	.34	.67	-.00
(45) Brittle ego	.38	.53	-.19
(55) Self-defeating	.01	.45	.05
(89) Compares self to others	.10	.66	.02
(23) Extrapunitive	.17	-.47	.29
(88) Personally charming	.07	-.62	-.46
(92) Socially poised	-.11	-.64	-.11
(68) Basically anxious	.03	.21	.66
(34) Irritable	.31	.03	.68
(78) Feels victimized, cheated	.03	.09	.69
(84) Cheerful	.07	-.32	-.77

was observed only for Depressive Style, t (28) = -2.19, $p < .05$, indicating that written artists scored higher than visual artists on depressive style (M's = 4.88 and 4.33, respectively).

Group differences on other aspects of personality.

2 X 2 ANOVAs were also performed on Extroversion, Openness to Experience, Agreeableness, and Conscientiousness. Significant Group main effects were found for Openness, $F(1, 44) = 11.04$, $p < .01$, Agreeableness, $F(1, 44) = 4.17$, $p < .05$, and Conscientiousness, $F(1, 44) = 29.01$, $p < .001$. It can be seen on Table 2 that creative subjects were rated higher than controls on openness and agreeableness, but lower on conscientiousness. There were no main effects or interactions related to sex on these measures. Also, t-test comparisons between the two creative artists groups revealed no differences on these measures.

TABLE 2 **Mean Personality Ratings by Group**

Personality Dimension	Creative Achiever	Non-Creative Achiever
Neuroticism	3.86	3.56
Depressive Style	4.61	4.15
Impulsiveness	3.87	2.98
Anxiety	3.59	3.64
Extroversion	6.10	6.21
Openness to Experience	5.69	5.11
Agreeableness	5.81	5.38
Conscientiousness	6.02	6.66

Note. $n = 30$ for creative achievers and $n = 18$ for controls.

DISCUSSION

The results confirmed the prediction that creative achievers would be judged to be more neurotic than a control group. Neuroticism reflects the experience of psychological distress and has been associated with chronic negative affect and psychiatric disturbance. The finding that creative achievers rank higher on this dimension of personality supports the connections made in the past between emotional instability and creativity (Barron, 1968; MacKinnon, 1962, 1978; Ochse, 1990).

The results also confirmed the prediction that creative achievers would be more likely than a control group of achievers to possess characteristics specifically related to a depressive personality style. Thus, creative achievers were more likely to be described as concerned with their own adequacy, experiencing fluctuating moods, and possessing less social poise than non-creative achievers. Literary creators were particularly vulnerable to depression, and this may be the reason previous studies have been able to link creativity and depression using samples of creative writers (Andreason, 1987; Barron, 1968; Jamison, 1989).

What accounts for this connection between depression or depressive style and creativity? Similarities in early family environments of creative achievers and depressed people may provide a clue. Many creative achievers come from homes characterized by parental rejection and restrictiveness (Drevdahl, 1964; Goertzel et al., 1978) and a large percentage of both creative achievers and suicidal depressives experienced the loss of a parent in childhood (Albert, 1971, 1980). Similarly, adult depressives recall experiencing more parental rejection, more negative evaluations of themselves and less tolerant, affectionate behavior and warmth from their parents (Crook, Raskin & Elliot, 1981; Zenmore & Rinholm, 1989). The seeds for future creative achievement and depressive style may be planted in a childhood characterized by parental rejection, restrictiveness or loss.

In evaluating the present study's evidence for a relation between creativity and neuroticism and depressive style, it should be noted that our methodology had several features that set it apart from previous work. Thus subjects were *randomly* selected from a comprehensive bibliography, a control group that was matched on eminence was obtained, and ratings of personality were made by raters who were blind to both the hypotheses of the study and the identity of the subjects. Further, a comprehensive system of coding personality was employed and its reliability was established. The study included two kinds of creative artists and sampled equally among men and women.[5] (Sex was not found to moderate any of the effects of creativity on personality). And finally,

[5] In some categories, autobiographies written by men were easier to find than those written by women. In particular, autobiographies of female politicians and visual artists were scarce. The assumption could be made, therefore, that the women in this study were not as representative of their field as the male achievers. However, those women whose autobiographies we did locate were as likely as men to merit recognition in Who's Who dictionaries. Actually, the women who did achieve fame in these fields could be especially talented because they had to struggle for success in a male dominated field.

autobiographical rather than biographical materials were evaluated allowing for direct analysis of the subjects' thoughts, beliefs and emotions. By addressing some of the previous methodological faults noted by authors such as Briggs (1988) and Rothenberg (1990), we hope to have strengthened the connection between creativity and depression.

In addition to the expected relations of creativity to neuroticism and depressive personality style, a relation was also found for impulsiveness. Creative achievers were rated as significantly more impulsive than controls. That is, creative achievers were found to be more unpredictable, less likely to be ethically consistent, and less proud of being rational. The differences between creative and controls on impulsiveness is interesting, given that impulsiveness resembles hypomania. Manic and hypomanic states are associated with increased activity, unusual thought processes, and hypersensitivity. Jamison et al. (1980), Jamison (1989), Richards et al. (1988) and Andreason (1987) all uncovered a higher than normal distribution of manic-depressive individuals in creative populations. If impulsiveness does reflect a tendency toward manic states, it may open up the thought processes of creative individuals and facilitate the creative process.

The finding that creative achievers rate higher than the control group of achievers on depressive style and impulsiveness raises some questions about the creative lifestyle. Impulsiveness or an unpredictable, inconsistent approach to life could be a response to the darkness and inertia of depression while depression could be a way to bring unpredictable, impulsive behavior under control. This portrait of a creative individual conforms to Miller's (1981, 1990) view of a creative person cycling through depression and grandiosity, trying to cope with a narcissistic disturbance or injury.

Although creative achievers rated higher than controls on both depressive style and impulsiveness, they were no different from controls in their level of anxiety. This suggests that there is some specificity to the relation of creativity to aspects of neuroticism. However, it should be acknowledged that the anxiety subscale used in this study included only four items and possessed relatively low reliability. Thus, it may not represent a stringent test of the specificity hypothesis.

The study also suggested that the personality profile of creative individuals differs from the control group of achievers in areas other than neuroticism. In fact, of the five central dimensions of personality identified by Costa and McCrae and

others, only for extroversion was a significant difference between creative and non-creative achievers not obtained. Creative achievers were rated higher than controls on both openness to experience and agreeableness whereas they were rated lower on conscientiousness.

To find neuroticism, agreeableness and openness to experience rated highly in the same individual is unusual and provides some insight into the unique personality of the creative achiever. Barron (1968) and MacKinnon (1962, 1978) proposed that the creative individual is more emotionally unstable than the average person but has strong coping abilities. Emotional instability is represented in this study by neuroticism, and an argument could be made that agreeableness and openness reflect a positive or well-adjusted approach to life. Agreeableness has been found to be positively associated with measures of well-being (McCrae & John, 1992) and openness to experience has been posited as a key aspect of a fully-functioning, self-actualized individual (Rogers, 1959). Creative individuals may cope with affective difficulties by becoming open to new experiences and new people. In this way, creative people learn much about the world and other people and can gain a sense of control over their environment. Freud (1908/1973) noted the battle between neurosis and ego control in the creative artist. The creative artist, according to Freud's theory, has access to primary process thinking and unconscious fantasies. Unlike the neurotic or psychotic who becomes controlled by or engulfed in them, creators use the ego to control the fantasies and create a unique product.

Although this study attempted to account for the methodological problems existing in previous research, some new difficulties pertinent to this study need to be addressed. The achievers examined here were specifically those who had written an autobiography. The resulting selection bias means that our sample may be especially introspective or reflective. However, this bias does not negate the differences obtained between the creative and the control group of achievers on neuroticism and its facets. Autobiographical research is open to the criticism that subjects may omit important aspects of their life experience. Future studies could combine the assessment of autobiographies and biographies to ensure that creative achievers were relating accurate accounts of their lives.

Another possible concern particular to this study is the depressive personality style and impulsiveness found here to be typical of the creative achiever do exist well within the

domain of normal personality. Scores for these facets were not extremely high or even rated as quite characteristic for the creative achievers; however, the scores were significantly higher than those of the control achievers. Our evidence suggests that, in general, both types of achievers are fairly well adjusted but if either did experience psychological distress, the creative achiever would be most likely to suffer from dysphoria or hypomania. Also, the creative achiever, as evidenced by the higher neuroticism scores, does appear to be more likely than control achievers to experience psychological distress.

Does society create some of the distress experienced by creative achievers by labelling them as different? Briggs (1988) suggests that creative works are, by definition, different from what society generally observes. Perhaps society labels creative people as neurotic, depressed or pathological because they do things differently from most other people. The self-critical, moody, hypersensitive individual that we label depressive could be a creative person trying to cope with a world that censors him or her. The present study did not examine the possible role played by society's response to the creative works produced by the artistic individuals included in this study. It would have been interesting to assess the general reception that such works received and consider whether this served to moderate the relation of creativity to neuroticism and depression.

REFERENCES

ALBERT, R. (1971). Cognitive development and parental loss among the gifted, and the creative. *Psychological Reports, 29,* 19-26.

ALBERT, R. (1980). Family positions and the attainment of eminence: A study of special family positions and special family experiences. *Gifted Child Quarterly, 24,* 87-95.

ANDREASON, N. (1987). Creativity and mental illness: Prevalence rates in writers and their first-degree relatives. *American Journal of Psychiatry, 144,* 1288-1292.

BARRON, F. (1968). *Creativity and personal freedom.* Princeton, NJ: Van Nostrand.

BLOCK, J. (1961). *The Q-sort method in personality assessment and psychiatric research.* Springfield, IL: Charles C. Thomas.

BLOCK, J., GJERDE, P. & BLOCK, J. (1991). Personality antecedents of depressive tendencies in 18-year olds: A prospective study. *Journal of Personality and Social Psychology, 60(5),* 726-738.

BRIGGS, J. (1988). *Fire in the crucible: The alchemy of creative genius.* New York: St. Martin's Press.

BRISCOE, M. L. (1982). *A bibliography of American autobiography, 1945-1980: A bibliography.* Madison, WI: University of Wisconsin Press.

COSTA, P. & McCRAE, R. (1987). Validation of the Five-Factor Model of Personality across instruments and observers. *Journal of Personality and Social Psychology, 52,* 81-90.

CROOK, T., RASKIN, A. & ELLIOT, J. (1981). Parent-child relationships and adult depression. *Child Development, 52,* 950-957.

DREVDAHL, J. (1964). Some developments and environmental factors in creativity. In C. Taylor (Ed.), *Widening horizons in creativity.* New York: Wiley.

EDWARDS, A. L. (1965). A review of the California Q-Set. In O. K. Buros (Ed.) *The sixth mental measurements yearbook.* Highland Park, NJ: Gryphon Press.

FREUD, S. (1973). Creative writers and daydreaming. In J. Strachey (Ed. & Trans.), *The standard edition of the complete Psychological works of Sigmund Freud* (Vol. 9, p. 143). London, England: The Hogarth Press. (Originally published in 1908).

GOERTZEL, M., GOERTZEL, V. & GOERTZEL, T. (1978). *Three hundred eminent personalities.* San Francisco, CA: Jossey-Bass.

HOCEVAR, D. & BACHELOR, P. (1989). A taxonomy and critique of measurements used in the study of creativity. In J. Glover, R. Ronning & C. Reynolds (Eds.), *Handbook of creativity* (pp. 53-75). New York: Plenum Press.

JAMISON, K. (1989). Mood disorders and patterns of creativity in British writers and artists. *Psychiatry, 52,* 125-134.

JAMISON, K., GERNER, R., HAMMEN, C. & PADESKY, C. (1980). Clouds and silver linings: Positive experiences associated with primary affective disorders. *American Journal of Psychiatry, 137(2),* 198-202.

LUDWIG, A. M. (1992). Creative achievement and psychopathology: Comparison among professions. *American Journal of Psychotherapy, 46,* 330-356.

MACKINNON, D. (1962). The personality correlates of creativity: A study of American architects. In G. Nielson (Ed.) *Proceedings of the XIVth International Congress of Applied Psychology, Copenhagen, 1961* (Vol. 2, pp. 11-39). Copenhagen: Munksgaard.

MACKINNON, D. (1978). *In search of human effectiveness.* Buffalo, NY: Creative Education Foundation.

McCRAE, R. & JOHN, O. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60,* 175-215.

McCRAE, R., COSTA, P. & BUSCH, C. (1986). Evaluating comprehensiveness in personality systems: The California Q-Set and the five-factor model. *Journal of Personality, 54,* 430-446.

MILLER, A. (1981). *The drama of the gifted child.* New York: Basic Books.

MILLER, A. (1990). *The untouched key.* New York: Doubleday.

OCHSE, R. (1990). *Before the gates of excellence.* New York: Cambridge University Press.

OCHSE, R. (1991). The relation between creative genius and psychopathology: An historical perspective and a new explanation. *South African Journal of Psychopathology, 21,* 45-53.

PRENTKY, R. (1989). Creativity and psychopathology: Gamboling at the seat of madness. In J. Glover, R. Ronning & C. Reynolds (Eds.), *Handbook of creativity*, pp. 243-269). New York: Plenum Press.

RICHARDS, R., KINNEY, D., LUNDE, I., BENET, M. & MERZEL, A. (1988). Creativity in manic-depressives, cyclothymes, their normal relatives and control subjects. *Journal of Abnormal Psychology, 97*, 281-288.

ROGERS, C. (1959). Toward a theory of creativity. In H. Anderson (Ed.), *Creativity and its cultivation* (pp. 69-82). New York: Harper & Row.

ROTHENBERG, A. (1990). *Creativity and madness: New findings and old stereotypes.* Baltimore, MD: Johns Hopkins University Press.

SIMONTON, D. (1984). *Genius, creativity and leadership.* Cambridge, MA: Harvard University Press.

WATSON, D. & CLARK, L. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465-490.

Who's who in America. (1993). Chicago, IL: Marquis.

Who was who in America. (1896-1989). Chicago, IL: Marquis.

ZENMORE, R. & RINHOLM, J. (1989). Vulnerability to depression as a function of parental rejection and control. *Canadian Journal of Behavioral Science, 21*, 364-376.

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AUTHOR'S NOTES

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Appendix A

Bibliography of Subjects' Autobiographies

VISUAL MALES

Movie Directors

DeMille, Cecil. (1959). The Autobiography of Cecil B. DeMille. Englewood Cliffs, NJ: Prentice Hall Inc. (1881-1959)

Parrish, Robert. (1976). Growing up in Hollywood. New York: Harcourt Brace Jovanovich. (1916-)

Walsh, Raoul. (1974). Each man in his time: The life story of a director. New York: Farrar, Straus & Giroux. (1892-)

Painters

Berman, Leonid. (1978). The three worlds of Leonid. New York: Basic Books. (1896-1976)

Grosz, George. (1946). A little yes and a big no: The autobiography of George Grosz. New York: The Dial Press. (1893-1959)

Neuhaus, Eugen. (1964). Drawn from memory: A self-portrait. Palo Alto, CA: Pacific Books. (1879-1963)

Simmons, Edward. (1922). From seven to seventy: Memories of a painter and a Yankee. Ed. H.B. Weinberg. New York: Harper and Brothers. (1852-1931)

Sculptors

Calder, Alexander. (1966). Calder: An autobiography with pictures. New York: Pantheon Books. (1898-1976)

Montana, Pietro. (1977). Memories: An autobiography. Hicksville, NY: Exposition Press. (1895?-)

VISUAL FEMALES

Painters

Greenman, Frances. (1954). Higher than the sky. New York: Harper & Bros. (1890-)

Moses, Anna Mary. (1969). The art and life of Grandma Moses. Otto Kallir (Ed.), New York: The Gallery of Modern Art. (1860-1961)

Nunez, Bonita. (1980). The spirit woman: The diaries and paintings of Bonita WaWa Calachaw Nunez. SanFrancisco, CA: Harper & Row. (1888-1972)

Sculptors

Hoffman, Malvina. (1965). Yesterday is tomorrow: A Personal History. New York: Crown Publishers. (1887-1966)

Turnbull, Grace. (1953). Chips from my chisel: An autobiography. Rindge, NH: Richard R. Smith. (1880-1976)

Photographers

Bourke-White, Margaret. (1963). Portrait of myself. New York: Simon & Schuster. (1905-1971)

LITERARY MALES

Novelists

Himes, Chester. (1972-76). The quality of hurt: The autobiography of Chester Himes.Garden City, NY: Doubleday & Co. (1909-)

Nabokov, Vladimir. (1951). Speak, memory: An autobiography revisited. New York: Harper & Bros. (1899-1977)

Poets

Davison, Peter (1973). Half remembered; A personal history. New York: Harper and Row. (1928-)

Francis, Robert. (1971). Trouble with Francis; An autobiography. Amherst, MA: University of Massachusetts Press. (1901-)

Masters, Edgar Lee. (1936). Across Spoon River: An autobiography. New York: Farrar and Rinehart. (1869-1950)

Simpson, Louis. (1972). North of Jamaica. New York: Harper and Row. (1923-)

VanDoren, Mark. (1958). The autobiography of Mark VanDoren. New York: Harcourt Bruce and Company. (1894-1972)

LITERARY FEMALES

Novelists

Baum, Vicki. (1964). It was all quite different: The memoirs of Vicki Baum. New York: Funk & Wagnalls Co. (1888-1960)

Buck, Pearl. (1954). My several worlds: A personal record. New York: John Day. (1892-1973)

Ferber, Edna. (1938). Peculiar treasure: Autobiography. New York: Doubleday & Co. (1887-1968)

Franken, Rose. (1963). When all is said and done: An autobiography. Garden City, NY: Doubleday & Co. (1895-)

Glasgow, Ellen. (1954). Woman within. New York: Harcourt, Brace & Co. (1873-1945)

Hobart, Alice. (1959). Gursty's child. New York: Longman's, Green & Co. (1882-1967)

Hurst, Fannie. (1958). Anatomy of me: A wanderer in search of herself. Garden City, NY: Doubleday & Co. Inc. (1889-1968)

Poets

L'Engle, Madeleine. (1972). A circle of quiet. New York: Farrar, Straus & Giroux. (1918-)

CONTROL MALES

US Army Generals

Chynoweth, Bradford. (1975). Bellamy Park memoirs. Hicksville, NY: Exposition. (1890-)

Cutler. Robert. (1966). No time for rest. Boston, MA: Little, Brown & Co. (1895-1974)

Howard, Oliver. (1907). Autobiography of Oliver Otis Howard, Major General, U.S. Army. New York: Baker & Taylor. (1830-1909)

Senators

Hughes, Harold. (1979). The man from Ida Grove: A Senator's personal story. Waco, Texas: World Books. (1922-)

Presidents

Nixon, Richard. (1983). Richard Nixon: The memoirs of Richard Nixon. New York: Grossett and Dunlap. (1913-)

Social Activists

Newton, Huey. (1973). Revolutionary suicide. New York: Harcourt Brace Jovanovich, Inc. (1942-)

Labor Leaders

Bisno, Abraham. (1967). Abraham Bisno: Union pioneer. Madison, WI: University of Wisconsin Press. (1866-1929)

Edelman, John. (1974). Labor lobbyist: The autobiography of John W. Edelman. Indianapolis, IN: The Bobbs-Merrill Company. (1892-1971)

Gompers, Samuel. (1925). Seventy years of life and labor: An autobiography. New York: Augustus M. Kelly Publishers. (1850-1924)

CONTROL FEMALES

Suffragists

Blatch, Harriot. (1940). Challenging years: The memoirs of H.S.B. With Alma Lutz. New York: Putnam & Sons. (1856-1940)

Kearney, Belle. (1900). A slaveholder's daughter. New York: Abbey Press. (1863-1939)

Livermore, Mary. (1899). The story of my life. Hartford, CT: A.D. Worthington. (1820-1905)

Judges

Allen, Florence. (1965). To do justly. Cleveland, OH: The Press of Western Reserve University. (1884-1966)

Labor Leaders

Lang, Lucy. (1948). Tomorrow is beautiful. New York: The MacMillan Co. (1884?-1962)

Nestor, Agnes. (1954). Woman's Labor leader: An autobiography of Agnes Nestor. Rockford, IL: Bellevue Books Publishing Co. (1880-1948)

Social Activists

Goldman, Emma. (1931). Living my life. New York: Da Capo. (1869-1940)

Nathan, Maud. (1974). Once upon a time and today. New York: Arno Press. (1862-1946)

Schneiderman, Rose. (1967). All for one. New York: Paul S. Eriksson, Inc. (1882?-)

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The Effects of Musical Mood Induction on Creativity

ABSTRACT A music mood induction was used to induce either elated, depressed, or neutral mood in 71 college undergraduates. The elated group scored significantly higher than the depressed group on mood ratings. Creativity measures administered to each group revealed that subjects in the elated and depressed groups showed significantly greater creativity than subjects in the neutral group. Findings were interpreted in light of existing research on the relationship between mood and creativity.

Most of the research on mood and creativity has involved mood disorders found in creative individuals. In early empirical research on the subject, Juda (1949) found an increased prevalence of Type I bipolar disorder among artists. Andreason and Canter (1974), in studying the prevalence of various types of psychopathology in a sample of creative writers and their relatives, found that writers had a higher rate of affective disorders (primarily depression) than did controls. A similar pattern of psychopathology was found among the parents and siblings of the creative group.

Andreason (1987) examined rates of mental illness in 30 creative writers, 30 matched control subjects, and the first-degree relatives of each group. The writers showed a significantly higher rate of mental illness, primarily affective disorder, with a tendency toward the bipolar subtype.

Richards, Kinney, Lunde, Benet, and Merzel (1988) compared the creative accomplishments of seventeen manic-depressives, 16 cyclothymes, and 11 normal first-degree relatives with 33 controls. Creativity was found to be