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ABSTRACT

A promising avenue for characterizing individuals lies in an examination of the antecedents of recorded behaviors. Autobiographical information from college students was used as an alternative to traditional personality methodology to demonstrate the scientific utility of biodata. The traits selected for investigation were positive and negative emotionality. Biodata items were clustered rationally, based on their correlations with the traits in question and divided into two classes, i.e., behavioral and developmental. Hypotheses were formed about the relationship between various background variables and emotionality, independent of the clustering process. Results yielded a substantial overlap between the hypotheses and the clusters, providing evidence for the validity of the clusters and for the utility of biodata methodology in personality research. In addition, the biodata substantiated virtually all previous research findings. The findings appear to extend current knowledge of the specificity of the relationships between background and positive and negative emotionality. (Author/JAC)

DEVELOPMENTAL ANTECEDENTS AND BEHAVIORAL CORRELATES OF POSITIVE AND NEGATIVE EMOTIONALITY

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In 1970 Fiske and Pearson stated that "the lack of specification and insufficient delineation of target concepts to be measured, in combination with the nonsystematic coordination of measures with constructs, has led us to the present state of chaos in personality measurement today." (1970, p. 50) A decade later, the prognosis is much the same: personality has made little or no positive progress toward becoming a science (Fiske, 1978; 1979). With very few notable exceptions, such as Kagan and Moss's (1962) study of sex roles, psychometric investigations concerned with the development of personality traits have yielded disappointing results. Fiske (1979) emphasized once more the fundamental problem of validity for the type of data which characterizes persons. His recognition was that a science cannot develop for the world of characterizations of persons as long as the data investigating the world are obtained from people's judgments about people and behavior.

In contrast the data in studying behavior raise very few questions regarding validity (Fiske, 1979). Furthermore, the study of actions provides some insight concerning the characterizations of persons. Fiske discusses these two broad and contrasting categories of phenomena - on the one hand characterizations of persons and on the other hand behaviors - and concludes that for the present psychologists should see themselves as investigators of some particular set of events or behavioral products.

Fiske (1979) suggests that a promising alternative is to look for antecedents of recorded acts. It is within this context that scored autobiographical information, or biodata, can be useful for characterizing individuals by examining behavior and its antecedents. Biodata techniques have a number of distinct advantages capable of allaying many of the problems associated with traditional

methodology in personality research. Scored autobiographical data have proven to be a valid predictor of a broad spectrum of external criteria (Plag & Goffman, 1967; Prediger, 1964). Second, the method yields objective, reliable results (Chaney & Owens, 1964) and is less fakeable than more subjective criteria such as ratings (Owens & Henry, 1966). Third, biodata items are capable of capturing salient developmental experiences without resort to costly longitudinal research (Owens & Schoenfeldt, 1979). The approach instead is quasi-longitudinal (Mikesell & Tesser, 1971) and does not require that individuals be observed over a long period of time. Rather, they are asked to recall significant early life experiences in a highly structured situation. For example, one item is, "In high school how often did you discuss intimate and/or important matters with your mother?", and individuals respond on a 5-point continuum from 1-very often to 5-never. Thus, biodata can be seen as a form of unobtrusive measurement in that persons generally respond to items openly and are usually unaware of many of the inferences which may be drawn from their responses.

In item analysis studies of biodata, a given biodata item may be of a highly empirical nature, but Williams (1961) noted the importance of not interpreting a significant item-criterion correlation in a blindly empirical manner. One resolution to this difficulty of "blind empiricism" is to sort items into rational content clusters. The appropriateness of this technique is supported by Siegel's (1956) finding that such clusters can be used to derive homogeneous subscales capable of yielding high reliability coefficients and the low intercorrelations characteristic of independent dimensions. By forming rational clusters of biodata items, an effective technique for studying personality traits becomes apparent. Rational clusters of biodata items which correlate with the personality trait in question could be formed, and a large amount of information could be obtained concerning the antecedents of and the behaviors associated with

the trait. A further possibility for validation also exists by having individuals work independently to formulate hypotheses and to derive the rational clusters. This prevents criterion-hypothesis contamination and to the extent that there is overlap between hypotheses and clusters, evidence is provided for the validity of the clusters and for the utility of biographical information in the study of personality traits in general.

In the present study the methodology just reviewed was applied to an examination of positive and negative emotionality. Yarrow (1979) noted that a recent renewal of interest in emotions has occurred, and with this, there has been an increasing awareness that an understanding of emotions cannot be obtained simply from the viewpoint of the outside observer. In addition, Yarrow (1979) points out that the origins of individual differences in emotional expression and behavior are an issue requiring close scrutiny.

Emotionality

Little doubt remains that individual variations in the form and intensity of emotional expression are influenced by past experiences (Yarrow, 1979). Though some emotionality is simply temperamental, much of it is also learned. It is shaped by cultural sanctions, and more specifically, it is facilitated or repressed through interactions with parents, siblings, and peers. The data on extremely depriving environments provide strong evidence of environmental effects on emotional development, but we still know little about the effects on emotional development of variations in normal environments. Even then, most research surrounds negative emotions alone to the exclusion of the impact of the environment on positive emotions.

Nonetheless, many studies of emotionality have taken place on both the microscopic and macroscopic levels, and these results have led to much of what is currently known about emotional development. For instance, many investigators believe that if a child received abundant love and understanding during

early childhood, if the imposition of societal demands were applied with some flexibility, then in later years there is a minimal amount of difficulty and strain in coping with conflicts (Hountras, 1961). Correlational studies of children and adolescents suggest that warm secure conditions within the family lead to self confidence and instrumental confidence (Hartup, 1979). Thus, children whose parents were warm and encouraged independence within a secure environment would more likely grow up to be tolerant of frustrating situations. Indeed, Yarrow (1979) points out that the child develops an awareness of the relationship between his or her actions and changes in the environment. Because positive self-evaluation is undoubtedly associated with the ability to control the environment, the extent to which parents allow the child to manipulate the environment successfully will determine later reactions to stressful situations. As Hartup (1979) noted, the parent-child relations produce an affective and instrumental base whereby a young person can explore the wider social world without experiencing undue anxiety.

On the other hand, achievement of independence and emotional maturity are hampered by excesses in parental domination, friction between parents, sibling rivalry, and an unwillingness by parents to allow adolescents to share in decisions which affect the family (Kaluger & Kaluger, 1974). Bronson (1966) found in working with data from the Berkeley Growth Study that poor marital adjustment, marital hostility, and indifference during the toddler and preschool years were predictive of reactive/explosive, as opposed to placid/controlled styles of emotional expression during the elementary and school age years. Belsky (1981) noted, however, that although the marital relationship influences personality development and may be long lasting, we still know little about the actual processes of influence.

Other research has suggested that a parent's method of punishment affects

the child's later emotional responses to situations. Rappoport (1972) reports that it has often been said that when parents punish children, they do it more to make themselves feel good than to instruct the child. Thus, by punishing the child for some transgression, the parent engages in a socially approved means of expressing whatever hostility he or she feels. Because this is a theoretically plausible explanation, it has often been recommended that parents should never punish children in anger in order to avoid showing the child a model of uncontrolled emotionality which can be imitated.

Other experimental research on cognitive styles, particularly field dependence-independence, sheds some light on emotional development. The original impetus for these studies came from an interest in how normal adults perceive the same elements in a variety of contexts (Witkin, et. al., 1962; Kagan & Kogan, 1970). To discover causes of pervasive differences in cognitive style, the behavior of mothers toward their ten year old children was examined (Witkin, et. al., 1962). A number of factors seemed to contribute to field dependence including mothers who are reluctant to give increased responsibility, but instead encourage social conformity and being good. Interestingly enough, field dependent individuals are also more sensitive to feedback from the environment; in a test situation featuring an unfavorable environment, they were profoundly more disturbed. This study has implications for determining antecedents of those individuals who, when faced with a negative or frustrating situation, will react in a negative manner.

In spite of the large number of studies which examine emotional development, Yarrow (1979) points out our continuing need for longitudinal research to investigate the conditions under which experiences during childhood affect later capacity to cope with stressful experiences. The present study examines emotionality and its developmental antecedents and behavioral correlates in a quasi-longitudinal fashion.

METHODS

Subjects

The sample employed in the present study consisted of 1037 males and 897 females attending a large southeastern university in the United States. All subjects were in the first month of their freshman year and were obtained as part of a larger longitudinal study (Owens & Schoenfeldt, 1979). Although responses were obtained from virtually all freshmen, participation in the study was essentially voluntary. The subjects completed all measurement instruments over the course of a three hour test session.

Measures

Emotionality. Two in-house measures of emotional response patterns served as measures of positive and negative emotionality. The index of positive emotionality (P-E) contained twenty-eight items measuring the tendency of the subject to react with positive emotions, such as enjoyment, liking, interest, and relief to uncertain, frustrating, or conflict situations. The negative emotionality index (N-E) contained twenty-eight items tapping the tendency of a subject to respond with negative emotions such as boredom, fear, anger, or sadness to uncertain, frustrating, or conflict situations. The split-half reliability coefficients for both indices were in excess of .80. The correlations between the positive and negative emotionality scales were .39 and .23 for males and females respectively.

Autobiographical data questionnaire. The Biographical Questionnaire (BQ) was developed by Owens (1968) and his colleagues over a period of several years. The BQ's development consisted of generating a pool of 2000 items by rational and empirical means. The 389 item questionnaire contained items which were all judged to be relevant to the life-history of the population under study. A more detailed explanation of the item generation procedure may be found in Owens and Schoenfeldt (1979).

Procedures

Hypothesis formation. Hypotheses were formed by the second author by examining previous literature directly related to emotionality, and in some cases, by logical deduction of findings in peripherally related research. Table 1 provides a list of the hypotheses generated and the references from which the hypotheses were obtained. It should be noted that the author made no attempt to specify whether a given hypothesis would be related to either positive or negative emotionality. The past research was not always specific, and because the relationships were believed to be complex, hypotheses were limited to emotionality as a general dimension.

Cluster analysis. Analysis of positive and negative emotionality was carried out as follows. Point biserial correlations were computed between males and females total scores on the emotionality indices and their responses to each of the 389 items of the Biographical Questionnaire. Due to the potential for spuriousness incurred by the number of computations required within this analytic format, no BQ item-emotionality correlation was examined unless it exceeded the .01 significance level.

Based on the nature of the relationship between a significant item and positive or negative emotionality, an item was assigned to membership in one of two classes: Behavioral or Developmental. The behavioral class consisted of items containing subjects' self-reports of recent experiences and behaviors: the developmental class consisted of items containing subjects' self-reports of experiences and behaviors during childhood and early adolescence along with reports of their direct reactions to the locus of these influences.

To summarize the results of the analyses and to increase their interpretability, significant item-scale correlations were grouped into clusters on the basis of the investigator's judgments regarding similarity in item content without regard to sex. This clustering procedure was carried out twice, once to establish the

nature of the item cluster and once to finalize item assignments to the clusters. These clusters were not mutually exclusive with regard to item content, but an attempt was made not to classify an item into more than one cluster unless a significant BQ item-emotionality score correlation clearly had multiple implications. The average magnitude of the item-emotionality correlations within each cluster was then determined for each sex separately.

Next, the item pool was reexamined to determine the total number of items, regardless of significance, which could be classed within a given cluster. The percentage of items classed within a cluster and yielding significant item-emotionality correlations was then calculated.

In summary, several rational clusters were formed in each of two classes: developmental and behavioral. To reiterate, the clusters were formed by one investigator with very little knowledge of the literature concerning emotionality and its antecedents. The development of hypotheses concerning relationships between past experiences and emotionality was performed independently of this clustering process.

Results and Discussion

Because the results of the present study are so extensive, they will be presented in tabular form. Rational clustering of the biodata items yielded twelve developmental clusters and fourteen behavioral clusters. Table 2 provides a brief description of the clusters within the developmental class, and Table 3 describes clusters in the behavioral class. In addition, both tables include the percentage of significant items within each cluster, the average magnitude of the correlations in the cluster, and the number or numbers corresponding to the matching hypothesis from Table 1. Within both the developmental and behavioral classes the magnitudes of the cluster-emotionality correlations were low, a result which is primarily a reflection of the statistical characteristics of item analytic techniques.

With regard to the overlap between hypotheses and clusters, only one hypothesis was not matched to a biodata cluster - that of friction between parents (Bronson, 1966). However, the biodata items do not include questions regarding the relationship between the parents themselves, but only relationships between each parent and the child. Three clusters within the developmental class and seven clusters within the behavioral class were not predicted by past literature. These clusters may be viewed as new information provided by the use of biodata in examining emotionality.

The focus of the present study is on the utility of biodata techniques for the investigation of personality traits. One aspect of utility is validity. This was assessed in this case by establishing the extent to which hypotheses derived from the literature on positive and negative emotionality overlapped with the results obtained from clusterings of biodata items correlated with indices of these traits. It is apparent in Tables 2 and 3 that the degree of overlap is substantial, providing strong evidence for the validity of the technique in this particular case.

Another crucial aspect of the scientific utility of a technique is the capacity of the method for extending current knowledge and understanding of a phenomena and the extent to which it spurs further investigation. The additional information provided by the three unpredicted developmental clusters and the seven unpredicted behavioral clusters indicates the effectiveness of biodata methods in this regard when aligned with Fiske's recommendations. Examination of the antecedents of emotionality in this case leads to a finer definition of the trait and a more adequate description of its behavior correlates. The utility of the technique is such that a bright, active future seems in the offing, possibly one which will lead to a significant improvement in our understanding of both our trait measures and the nature of personality.

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Table 1

Hypotheses of Developmental and Behavioral Antecedents of Positive and Negative Emotionality

	Hypothesis	Reference
1.	Love and understanding during childhood	(Hountras, 1961)
2.	Parental warmth	(Hartup, 1979)
3.	Parents allow child to manipulate environment successfully	(Yarrow, 1979)
4.	Parents encouraged independence within a secure environment	(Hartup, 1979)
5.	Imposition of societal demands applied flexibly by parents.	(Hountras, 1961)
6.	Parents often punish child in anger.	(Rappoport, 1972)
7.	Parental domination.	(Kaluger & Kaluger, 1974)
8.	Sibling rivalry.	(Kaluger & Kaluger, 1974)
9.	Mothers encouraged social conformity and being good.	(Witkin, et. al., 1962)
10.	Occasional regressions from established rules accepted as inevitable.	(Hountras, 1961)
11.	Friction between parents	(Bronson, 1966)
12.	Unwillingness by parents to allow adolescents to share in decisions which affect the family.	(Kaluger & Kaluger, 1974)
13.	Mothers reluctant to give increased responsibility	(Witkin, et. al., 1962)
14.	Maladjustment	(Webb, 1915; Burt, 1939; Vernon, 1953)
15.	Androgynous individuals or those who are most adjusted to sex roles.	(Bem, 1975)
16.	Social desirability - (the "trait" view)	(Wiggins, 1973)

Table 2

Developmental Clusters

Cluster Description	Males NE %	Males NE r	Males PE %	Males PE r	Females NE %	Females NE r	Females PE %	Females PE r	Matching Hypothesis Number*
PARENTAL TRAINING - Parents encouraged emotional control; exposed children to a variety of people and situations; encouraged exploration of new situations.	-	-	1.00	.12	-	-	1.00	.11	3
PARENTAL EMPHASIS - SOCIAL BEHAVIOR - Parents concerned that children not offend others; encouraged them to display proper social behavior; emphasized morality and religion in training.	.17 .17	.13[a] -.09[b]	-	-	.33	.11	.33	.10	5,9
PARENTAL EMPHASIS - INDEPENDENCE - Parents allowed their children independence in high school and elementary school, allowed children to make their own decisions; rewarded them for doing things on their own and standing up for their rights; encourage independent activities.	.30	-.12	.20	.10	.60	-.10	-	-	3,4,13
PARENTAL EMPHASIS - SUCCESS - Parents emphasized success and getting ahead; they pushed for achievement and were concerned about grades.	.25	.14	-	-	.38	.11	-	-	7,9
PARENTAL SOCIO-ECONOMIC STATUS - Parents had a high income level; lived in a good neighborhood; were well educated; satisfied with jobs and belonged to upper social strata.	.13	.10	.13	.09	-	-	-	-	
PARENTAL SOCIAL ORIENTATION - Parents belonged to a number of clubs; had a number of interests outside the home and office; entertained frequently and had a variety of guests.	-	-	-	-	.25	.12	.25	.09	
PARENTAL WARMTH - Parents supplied attention, sympathy and support; interested in activities of children; interacted with children's friends.	.14	-.10	-	-	.19	-.09	.21	.10	1,2

Table 2 (continued)

Cluster Description	Males NE %	Males NE r	Males PE %	Males PE r	Females NE %	Females NE r	Females PE %	Females PE r	Matching Hypothesis Number*
NEGATIVE PARENTAL BEHAVIOR - Parents neglected their children; treated them coldly; compared them unfavorably to others; criticized children and were often angry with them; provided concrete rewards inconsistently and withdrew from difficult situations. Often left children alone.	.79	.17	.40	.10	.50	.14	-	-	6
PARENTAL DISCIPLINE - Parents punished children for disrespect and disobedience; Punished them by removing their privileges or by ignoring them; Attempted to make decisions for them.	.23	.18	.46	.10	.54	.16	.16	.10	6,7,10
PARENT-CHILD CONFLICT - Individuals reported being unhappy at home and were frustrated by rules of home; Parents disagreed with their ideas and their parents.	.73	.13	.09	.13	.36	.14	-	-	
POSITIVE REACTIONS TO PARENTS - Individuals spent time with, were similar to, and to be like and please their parents; Considered parents energetic and talked things over with them.	.13 .13	.11[a] -.09[b]	.25	.11	-	-	-	-	1,12
SIBLING RELATIONS - Individuals younger than siblings; felt siblings were more successful than they; siblings were similar to them and interested in them; they fought with their siblings.	.40	.13	.09	.11	.13	.12	.07	.09	8

*Hypothesis Number from Table I; a blank indicates that no hypothesis matched the cluster.
[a]male stereotypic behaviors
[b]female stereotypic behaviors
% = the number of significant items in the cluster
r = mean correlation of items

Table 3

Behavioral Clusters

Cluster Description	Males				Females				Matching Hypothesis Number*
	NE		PE		NE		PE		
	%	r	%	r	%	r	%	r	
SOCIAL MATURITY - Individuals reported an ability to understand the feelings of others; helped friends with problems; had effectively met demands of social situations; got along well with very different types of people; tried to calm down when angry and discuss the problem; tried to become a benefit to society.	.28	-.12	.33	.10	.22	-.14	.33	.10	14
SOCIAL ADJUSTMENT AND ACITIVITY - Individuals reported being happy in school; were popular; easy to get to know; had a number of close and casual friends; were invited to social events; belonged to a number of clubs.	.21	.10	.38	.10	.04	.10	.17 .04	.11 -.10[a]	14
SUCCESS WITH OPPOSITE SEX - Individuals dated frequently; were popular with opposite sex; had friends among opposite sex; began dating early and learned social dancing early.	-	-	-	-	.14	.10	.14	.13	
SOCIAL DESIRABILITY - Individuals compared themselves to others; tried to be like a variety of others; followed the recommendations of friends; felt guilty over the violation of a variety of external standards; were sensitive to criticism and desired to become more socially acceptable.	.58	.14	.25	.10	.46	.14	.08	.09	16
INDEPENDENCE - Individuals reported being independent; unconventional; tried to satisfy their own desires; felt guilty when they violated external standards and had a desire to be alone to pursue their own interests.	.42	-.15	.08	.09	.08	-.10	-	-	4

Table 3 (continued)

Cluster Description	Males NE %	Males NE r	Males PE %	Males PE r	Females NE %	Females NE r	Females PE %	Females PE r	Matching Hypothesis Number*
LEADERSHIP - Individuals reported leading group activities; were leaders in high school; active in student politics; active in politcs; influenced others; were respected & envied by friends and desired power.	-	-	.55	.12	-	-	.36	.11	
ACADEMIC ACHIEVEMENT AND INTERESTS - Individuals reportedly enjoyed classes; enjoyed school; did well in classes; had a high class standing and participated in school subject matter club.	.16	-.12	.07	.12	.09	-.12	.09	.12	
SCIENTIFIC INTERESTS AND ACTIVITIES - Individuals reportedly conducted experiments; worked with scientific apparatuses; were interested in and enjoyed math courses; read science magazines; collected things and built things.	.08	.13	.23	.15	.08	-.10	.62	.10	
INTELLECTUAL INTERESTS - Individuals reported being active in arts groups; read frequently, including literary and news magazines; watched televised news shows and PBS; attended cultural events and participated in a variety of school arts groups.	.29	.14	.12	.10	.24	-.14	.47	.10	
PHYSICAL PURSUITS - Individuals reported playing on sports teams; played individual sports; enjoyed courses involving physical manipulation (Vo-Tech, home & physical ed); watched sporting events on TV.	.27	-.12	.13	.10	.13	-.15	.13	.12	
WORK - Individuals held part time jobs; enjoyed part-time jobs; began working early; worked hard; chose college major based on job experience; enjoyed business courses; read business magazines; preferred to work on one thing at a time.	.24	-.11	.18	.11	.12	-.11	.35	.09	

Table 3 (continued)

Cluster Description	Males NE %	Males NE r	Males PE %	Males PE r	Females NE %	Females NE r	Females PE %	Females PE r	Matching Hypothesis Number*
SEX ROLE BEHAVIORS - Males with high scores enjoyed physical activities and read men's magazines. Females with high scores read home and women's magazines; enjoyed home ec. courses, soap operas, and desired to become a better prepared family member (- role inappropriate).	.40	-.20	.30 .10	-.11[a] .09[b]	.20	-.14	.20	.10	15
MALADJUSTMENT - Individuals reportedly took things out on a variety of others; were self-conscious. nervous in new situations; felt that friends didn't really like them, used them and were bored by them; Others received better grades due to favoritism and that teachers punished them unfairly; they brooded over the meaning of life and felt downcast and rejected. They became more angry overtime and became silent or tried to get even. They desired power.	.64	.23	.32	.12	.52	.12	.04	-.09	14
EMOTIONAL VOLATILITY - Individuals angered easily; expressed their anger openly; said what they felt; were forthright. They did not try to calm down when angry and expressed angry at a variety of others directly.	.17	.19	-	-	.17	.12	-	-	6