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Configurational Analysis with the Missouri Children's Picture Series: Assessment of Personality Style

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CONFIGURATIONAL ANALYSIS WITH THE MISSOURI CHILDREN'S PICTURE SERIES: ASSESSMENT OF PERSONALITY STYLE

by

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VITA

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CHAPTER I

INTRODUCTION

Adult personality assessment has historically relied on two types of instruments, clinically oriented projective tests and a few established objective self report inventories. Projective testing, while rich in clinical information, requires extensive clinical training and administration time. While limited in breadth of information, objective instruments have been proven useful and sufficient for many research and clinical needs. Clinicians have thus been able to select the approach most suitable to their needs. Until this time, however, there has been no objective, easily and directly administered, comprehensive personality inventory available for assessing children. Clinicians have previously been limited to projective testing and lengthy play interviews to form a general assessment of a child's personality. Existing personality inventories for children consist of parent and teacher ratings, at the cost of not providing clinicians the opportunity of obtaining information directly from the child. Given this dilemma, the Missouri Children's Picture Series (MCPS), a relatively new instrument that shows some promise in this area, warrants further investigation.

The MCPS is a nonverbal, objective personality inventory which has a number of unique characteristics that are important in testing young

children. The test consists of a set of picture cards to sort and provides scores on eight scales, such as maturity, aggression and inhibition. Reading skills vary greatly with young children and present a common problem confounding test results and hindering the development of objectively scored, self report, personality inventories for this age group. The pictorial format of the MCPS eliminates this problematic variable. Since the test is quickly administered and has extremely few verbal instructions, the usual complications with young children's limited attention span and comprehension are greatly reduced. Overall, sorting the MCPS picture cards is a rapid, easily understood and enjoyable task and these are significant assets in testing this population.

Prior research with the MCPS focused on validating individual scales. Mixed results have been reported, with some scales having greater validity than others at measuring the dimensions they were designed to differentiate. Other studies with the instrument, comparing all the scales with specific populations rather than isolating any single scale, have been more encouraging.

It appears that looking at single scale elevations may be most useful in screening for gross pathology, and some of the MCPS scales have been found to have validity for this purpose. The instrument's economy and unique format have reportedly been found useful and support further investigation, however, a different approach may be necessary to make the best use of this inventory for global personality assessment.

The broad realm of personality is multidimensional and

interactive, requiring a more complex, multidimensional assessment approach to form an overall picture of an individual's personality style.

In the history of the development of the Minnesota Multiphasic Personality Inventory (MMPI), the most widely used objective personality inventory for adults, more sophisticated interpretive approaches have proven to be most effective in utilizing the instrument. Originally, single scale elevations were considered in MMPI interpretation and this yielded limited results. Configurational analysis systems were then developed, examining test profile patterns and identifying configurations occuring with several scales analyzed together. Such interpretive approaches have expanded the personality information obtained with this inventory and the populations appropriate for its use.

The MCPS is quite similar in structure to the MMPI and a configurational analysis approach seems to be indicated in order to use the instrument to assess general personality style in young children.

The methodology for this type of research, assessing general personality style from profile patterns, is highly empirical, relying on accumulated data. Descriptive data is gathered from a variety of sources in order to identify some consistent characteristics associated with individuals obtaining a particular profile configuration.

The current study parallels the approach used in creating a configurational analysis system methodology for the MMPI in order to establish a means of similarly utilizing this unique instrument, the MCPS, to assess personality in young children. Particular profile

patterns obtained with the MCPS were identified and then the associated personality characteristics empirically established.

In developing a method for measuring personality style with the MCPS, some theoretical structure for understanding personality is helpful to define the meaningful constructs to be assessed. An underlying theoretical foundation is then useful in organizing the empirical, descriptive data gathered in this exploratory type of research. A model of the structure of personality defines what basic dimensions it encompasses and how it is formed. In developing a comprehensive portrait of an individual's personality, such a model guides the factors to be assessed and integrates them into a coherent whole. Without such a model, the descriptive data that can be gathered about an individual is only a disjointed collection of information. This data must be ordered in a way that gives a meaningful description of personality style.

In this study, Cattell's (1946, 1967) model of personality structure and development was utilized, with corresponding instruments employed to gather descriptive information about subjects with particular profile patterns. Thomas and Chess' (1968) work identifying early temperamental differences and their role in personality development supports Cattell's work and his assumption of the existence of stable, measurable personality traits. Thomas and Chess' work extends this model of personality structure downward developmentally, exploring the temperamental characteristics identifiable in young children, their measurement, and their influence on personality style.

In summary, this study develops a configurational approach to

interpreting MCPS profiles. If it is possible to empirically attach meaning about personality characteristics to specific two point code types, that is, to configurational patterns looking at the two highest MCPS scales together, then the MCPS can be developed as a general personality inventory. The MCPS is the only objective personality assessment instrument for young children currently existing and a configurational analysis approach would improve its utility as a clinical instrument.

CHAPTER II

REVIEW OF RELATED LITERATURE

The present chapter provides a review of several areas of literature relevant to the current study. The previous research with the MCPS will be reviewed to examine the development of the instrument and summarize the current knowledge. Then the rationale and history of configurational analysis approaches to profile data will be outlined. This will elaborate the theoretical and methodological precedents relevant to the current study. The next two sections of the literature review will present Cattell's (1946, 1957, 1967) theoretical model about the structure and development of personality and then the work of Thomas and Chess (1977, 1984), extending the exploration of personality specifically to children.

An extensive body of literature exists supporting neurological and biochemical determinants of behavior. The early work of Cattell, elaborating a model of personality structure based on stable, basic traits that can be identified and measured in individuals, coincides with our current knowledge integrating physiological determinants and behavioral characteristics. Thomas and Chess have established an impressive body of longitudinal data studying young children which supports the existence of inherent temperamental characteristics and their significant role in personality development. The review of these

two complementary bodies of literature is designed to provide background on the constructs underlying the understanding of personality guiding the present study. The two instruments used in the present study to measure personality characteristics related to MCPS configurational types are based on this view of personality. The first of these two sections briefly identifies Cattell's theory of personality. The second presents the supporting work of Thomas and Chess, identifying temperamental antecedents and exploring their role in personality development in children.

The final section of this chapter summarizes a preliminary work by this author in this area leading to the present study. The chapter concludes with the present study, which integrates these various areas and develops a configurational use of the MCPS as a personality assessment tool with children.

The Missouri Children's Picture Series

A number of unique problems emerge from the literature on assessment of children that are not encountered, or at least are not as significant, with adults. The limited verbal and reading skills of younger children is a crucial element in the type of instrument that can be effectively used. This poses a severe restriction to the development of simple, self-report type inventories for children. Children's shorter attention span requires that a test designed for assessing young children place much greater emphasis on the time and concentration elements. It is essential for the test to be relatively short and capture the child's interest in order to obtain reliable

results. As a result of these problems with easily testing young children directly, most of the available, objective personality assessment instruments for children rely on information obtained from inventories completed by a parent or other adult. That is, the assessment of personality characteristics is based on parental report rather than any direct measure obtained from the child.

The MCPS ingeneously addresses these critical limitations in assessing young children. The test's nonverbal, pictorial format eliminates the verbal and language restrictions of other instruments, making it appropriate for a younger range of children. The presentation of drawings on cards that the child sorts is both attractive, capturing the child's attention, and involves a pleasant and easily understood task in which the child can actively participate.

The development of the MCPS will now be presented and the theoretical and empirical foundations for this instrument explored. Then the current literature available using the MCPS will reviewed.

In the develpment of the MCPS the authors began by defining the relevant dimensions of children's behavior. An underlying premise in the instrument's development is the basic assumption that individual differences observed in the stated interests of children are related to important variables in the description and prediction of behavior (Sines, Pauker & Sines, 1974). Based on their own checklist, the Missouri Children's Behavior Checklist (Sines, Pauker, Sines & Owens, 1969), and their review of the literature, the authors identified six frequently described dimensions of children's behavior. They found these dimensions to be relatively independent, internally consistent

and meaningfully discriminating between nonpatient boys and boys seen at a child psychiatry clinic.

The first five of these checklist scales were used in the construction of the MCPS. In addition to these five clinically relevant dimensions the authors included three more scales they believed to be significant, reflecting individual differences on personality relevant variables. These three scales, labeled conformity, masculinity-femininity, and maturity, were easily identified aspects of the test responses or of the children themselves (sex and age) and were established on a validation group of 3,877 school children from ages 5 to 16.

The actual picture content of the cards was derived from lists of activities that fourth and sixth grade elementary school children indicated they most liked to do and least like having to do. An artist then interpreted these various activities in the form of line drawings with the instructions of generalizing the situations by minimizing facial details, accenting the focal child with heavier lines, and keeping the child as "sexless" or neutral as possible (sample items may be found in Appendix A).

The authors' standardization group consisted of 3,877 children from kindergarten through 11th grade. The only demographic information available is that approximately five percent of the sample were Negro children.

The level of statistical significance that was used or settled on in selecting items for the scales varies from .05 to .15. The eight scales are composed of different number of individual items, varying

from 24 to 33 in total. Interscale correlations were found to range from .04 to .65, in the authors' opinion, reflecting a fair amount of independence between scales (See Appendix B).

The split-half and test-retest reliabilities vary a great deal across the eight scales. Test-retest reliability data reported in the manual for a sample of 171 norm group and 64 clinic children showed a small clinical group of boys with very low coefficients, from .01 to .37. For the nonclinical normative subjects and clinic girls, they were much higher, ranging from .45 to .77 and were statistically significant. In general, reliability coefficients are consistently higher for girls than for boys. In the larger normative group of 3,877 children used by the authors, split-half reliability coefficients ranged widely from .20 to .91, reflecting substantial differences in stability for the eight scales (MCPS manual, Sines, Pauker & Sines, 1974). The authors of the instrument themselves did not report any work on the validity of the MCPS scales and this issue was explored in subsequent studies by other researchers. Given the poor reliability of some of the MCPS scales, it may be expected that this will affect the validity of the individual scales.

The authors also assessed the relationship between MCPS scale I scores and and WISC IQ Scores. The correlations were very low and suggest the MCPS scores are relatively independent of intelligence (MCPS manual, Sines, Pauker & Sines, 1974).

Over the last 10 years since the instrument's development, studies utilizing the MCPS fall into two main categories. The first group of studies focuses on validating individual scales of the MCPS, while the

second group has been more concerned with validating the instrument with various distinct populations of children.

Individual scales of the MCPS have been found to be most effective in screening for pathology with clinical populations. A study by Willis and Gordon (1974) with emotionally disturbed children at a therapeutic camp found some significant results for several scales. In this study, MCPS scores were correlated with counselor ratings and with parental attitudes. The scales were classed as measures of adjustment or maladjustment, with maturity emerging as a measure of adjustment and activity level, aggression, somatization and conformity as measures of maladjustment. The scales were also found to be intercorrelated with each other. Studying institutionalized aggressive children, Defillipis (1979) found that the MCPS discriminated these children from a group of normal children. The aggression and maturity scales showed the largest and most consistent differences. Also, IQ was found to be unrelated to MCPS scores among the normal middle class children yet correlated significantly with MCPS scores among the disturbed, lower-class children. Baker, Ulman and Stein (1978) report good reliability on the MCPS for boys in residential treatment. These authors discovered a split-deck procedure yielded even higher reliability, offsetting these boys' distractibility and short attention span problems through the use of a two session administration.

Two studies have validated this instrument with a hearing-impaired population (Logue, Penrod & Zackheim, 1976; Vegeley, 1971). Vegeley (1971) tested 160 severely hearing impaired children between the ages of 10 and 16, finding that the girls did not differ significantly from

normally hearing girls and the boys differed only slightly on a few scales. Vegeley concluded that the MCPS is a useful test for hearing-impaired children and that this population of children did not interpret the pictured situations consistently differently than the normal hearing children. The author does voice caution in that the reliability and validity of the MCPS is still uncertain but these issues are apparently no different for a hearing-impaired population than a normal one. Logue, Penrod and Zackheim (1976) also attempted to validate the MCPS with a deaf population consisting of 118 residential students between the ages of 9 and 14 years. They found the norms to be consistent with earlier research and personality characteristics that have been identified with deaf children. Generally higher scores were found for the deaf group than the standardized population, especially for deaf boys. Aggression, activity level and maturity scores tended to differ from the norms with a normal hearing population, although the authors do not report these differences to be at a significant level. They conclude that the MCPS appears to be a useful instrument for personality assessment with deaf children of normal intelligence, 9 years of age or older.

Another special population was studied with the MCPS by Tavormina, Kastner, Slater and Watt (1976). These researchers used the MCPS and several other instruments to assess psychopathology among a group of chronically ill children. This group was composed of diabetic, asthmatic, cystic fibrotic and hearing-impaired children. Although the study focused on the personality and adjustment of these children rather than the instruments utilized, it is applicable to the

discussion of the MCPS in that the results with this intrument were consistent with those from several other standardized personality instruments.

A number of studies have had less convincing results in attempting to validate the MCPS. Dollinger, Schum and Nichols (1981) report two small studies intended to validate the sleep disturbance scale of the MCPS. The first of these studied 37 children at a summer residential program who were diagnosed as having speech, language, hearing or reading problems. They were divided into three groups; restless sleepers (n=9), frequent nocturnal enuretics (n=4) and a cohort group of children with no sleep problems. Analysis of the MCPS scores of these children did not show significant results in the sleep disturbance scale's utility to predict the children who would have these sleep problems. The second study reported by the authors used 63 children referred for academic and social emotional problems and correlated MCPS sleep disturbance scale scores, parental questionnaires and problem checklists. Again the authors report poor ability on the MCPS sleep disturbance scale to predict sleep problems.

Several studies with the MCPS have been conducted with a normal population of school children. The first of these, by Stoops and Graham (1976), focused on the aggression scale only, with a group of 40 fourth grade boys. Results on the MCPS aggression scale were correlated with four other measures, consisting of teacher ratings, verbal sentence completion, a game and several TAT cards. The authors did not find significant correlations between these different measures. Significant correlation was found between the aggression and activity

level scales on the MCPS and the authors suggest that this may reflect that high scorers on the activity scale tend to be more immature, therefore less likely to rely on verbal means of expressing aggression. They also conclude that perhaps aggressive behavior is largely determined by situational variables rather than represent a general, consistent trait. The authors go on to consider that children may express anger through different modalities and the measures selected here may represent different expressive modes.

Finally, in an archival study undertaken by Register and L'Abate (1972) reviewing tests on 350 school children, some support is cited for the MCPS as a whole to discriminate among groups with varying degrees of personality disturbances. The aggression, inhibition and hyperactivity scales were found to be the best discriminators. Also the results with the MCPS were found to relate well with other standard, more time-consuming psychological tests.

As evidenced above, the available research on the MCPS is far from extensive and often very restricted in focus. Also, the studies tended to have severe methodological problems, such as ill-defined categories or groups, insignificantly small samples, unreliable measures and very little statistical evidence or support for findings. In general, most of the studies were not very sophisticated or conclusive. The state of this research leaves tremendous gaps in our knowledge of the instrument and leads to unanswered questions regarding the essential elements that this test is measuring. This uncertainty should engender caution and encourage moving to more basic exploration of the dimensions being measured rather than treating these MCPS scales as established, clearly

defined variables for which we know the underlying personality correlates.

In reviewing the available data on the MCPS, it appeared that a return to the exploratory, descriptive analysis of the personality dimensions tapped by the MCPS was necessary. Although this entails a step backwards in methodological sophistication, this is an essential move to enhance our understanding of the instrument itself before reliably applying it to study complex problems of human behavior and personality. To attain this fundamental understanding of the test, the actual MCPS scales need to be taken as unknown dimensions and their extra-test correlates then empirically identified. Also, a configurational approach which is premised on personality variables being intercorrelated, existing together in the individual and impacting on each other is particularly suitable for investigating the data that can be obtained with this instrument.

Rationale for Configurational Analysis

The history of configurational approaches to profile data and the corresponding rationale can be understood most readily in the early development of the Minnesota Multiphasic Personality Inventory (MMPI). Initial investigators found mixed results in their studies to validate individual scales on the MMPI. After a decade of clinical use and research, the MMPI was not successful for the purpose it was designed (Graham, 1980). The original purpose of the MMPI to identify some unique clinical dimensions and screen individuals who scored in the pathological range on these scales, did not prove to be the most

fruitful means of utilizing the data. Although patients in a particular clinical group often scored high on that scale, they also scored high on other scales as well. Normals also sometimes obtained high scores on one or more of the clinical scales. These findings demonstrated that the individual scales were not pure measures of distinct psychiatric syndromes. Rather, it was apparent that many of the clinical scales are highly intercorrelated and it is unlikely that only one scale would be elevated for a certain individual.

Current use of the MMPI is quite different from the original method developed. The newest, most valuable approach to MMPI analysis attends to the entire profile. Research and clinical use of the MMPI has moved in the direction of analyzing patterns and all the data on the profile, that is , moving to treating the data in a configurational rather than an atomistic way. In this approach, each scale is treated as an unknown. Through empirical research and clinical experience, a body of data is accumulated regarding the behaviors and characteristics of individuals who score similarly. Behavioral-empirical correlates of particular profile patterns can then be identified.

Numerous advantages result from this new perspective. A configurational approach provides a more efficient form of screening since it incorporates more data on which to base discriminations. This type of analysis also allows clinical interpretations of the patterns emerging rather than solely quantitative analysis. Therefore, configurational analysis provides a bridge between actuarial, objective data and the clinical interpretation and practical use of such results. This approach also serves as a continuous validating device. Since no

single scale holds up well alone, they are each continuously tested against other scales, the entire profile and in relation to each other. Finally, a configurational approach expands the populations for whom the test is appropriate and the type of data that can be obtained. Within normal populations, where single pathological aspects may not be the information being sought, one can empirically gather a great deal of data on personality styles and descriptive information about characteristic patterns that emerge.

As summarized by Hathaway and Meehl (1956, in Welsh & Dahlstrom) the move to code types emphasizes three things: that the shape of the total profile is more significant than single elevated scales, that it is more productive to begin with the test and examine subjects scoring similarly rather than guess at diagnoses and symptoms expecting a test to then validate these, and lastly, that interest has increased in understanding normal traits and characteristics as well as traditional, strictly psychiatric variables.

Research on configurational analysis has been based on few general approaches and methods. Meehl and Dahlstrom (1969) stressed configurational approaches to MMPI interpretation, supporting Hathaway and McKinley's early conclusion that an interpretation considering the relationship between scales would be much richer diagnostically than utilizing only single scales. Beginning to move in this direction, some of the earliest MMPI researchers found that grouping profiles according to the two highest clinical scales was a fruitful approach and began identifying reliable behaviors and characteristics unique to each such profile type (Black, 1953; Guthrie, 1952; Meehl, 1951). The

study by Black (1953) is also particularly interesting in that this configurational approach using two point code types found the MMPI to be meaningful for studying the whole range of personality adjustment, including a normal population. These results established the MMPI's usefulness for identifying individual personality styles and characteristics, as evidenced by any deviations from the mean, rather than needing to use only extreme scores for the instrument to have meaning.

More complex rules for classifying profiles, utilizing more scales and delineating criteria for classifying similar groups of profiles, were then developed by several researchers (Gilberstadt & Duker, 1956; Marks & Seeman, 1963). However, several difficulties with this approach emerged. Evidence accumulated indicating that few profiles could be classified according to the complex rules and furthermore, the more complex classifications did not add sufficiently to the results to warrant the added difficulty and complexity. The current trend in MMPI interpretation seems to again have moved back towards the simpler, two scale approach (Gynther, Altman & Sletten, 1973; Lewandowski & Graham, 1972). Am immense quantity of research on the MMPI has demonstrated that reliable personality correlates can be obtained through this two scale configurational analysis system. Ultimately, this approach does not rely on exact meanings for the individual scales, but rather on empirically established data identifying what the characteristc patterns represent (Graham, 1980). The bulk of this work has been descriptive in nature and utilized similar methods to identify the extra-test correlates for each group. These highly empirical studies

have often relied on clinical records. From these records, diagnosis, symptoms, history and narrative information have commonly been used (Hathaway & Meehl, 1956; Guthrie, 1952; Meehl & Dahlstrom, 1960; Marks & Seeman, 1963). Studies involving nonhospitalized populations and normals have also relied on descriptive methods for classification, such as adjective checklists (Black, 1953) and expert ratings such as from interviews and narratives (Drake, 1954). In accumulating such data describing individuals in particular code types, it has been necessary to draw from these non-standardized, more exploratory methods and verify results through continued study. There has not emerged a single comprehensive instrument most well suited to classify the broad realm of personality characteristics being surveyed. While this methodology is not highly sophisticated, it has proved to be effective in studying and classifying configurational data and led to a wealth of empirically established, reliable information.

The impressive body of empirical data that has accumulated serves to strengthen the MMPI's place as the most widely used instrument in the realm of adult personality assessment. Unfortunately, no such wealth of data exists for assessing children and no comparable instrument has been developed. A number of unique problems exist in assessment with children that pose significant limitations not similarly restricting testing with adults.

Structure of Personality

Any attempt to assess personality or identify such aspects of the individual must rest on an underlying philosophical and theoretical

view of the structure of the personality. In describing an individual or outlining the basic dimensions comprising personality, a reasonable model of personality structure must be involved to select the significant dimensions and represent a coherent, comprehensive overview of the person. Cattell developed a model describing the structure of personality which served in the MMPI configurational analysis development. Cattell's (1946, 1957, 1964, 1967) has been labelled a "trait theory" in that it identifies the underlying characteristics that are essential in forming a comprehensive map of the personality domain, or what he calls the sphere of personality. Cattell's model emerged from a very empirical, quantitative approach, utilizing factor analysis as the core methodology for selecting the essential variables. Without detailing Cattell's work, it is sufficient here to summarize that the specific traits identified by Cattell formed clusters that fit together in describing individuals and 12 major personality factors emerged.

Cattell's model was selected in the current study for two major reasons. First, it is comprehensive, attempting to organize a global picture of the individual, therefore, useful in studying personality inventories which assess individuals across many dimensions. The previously noted argument for configurational analysis of profiles, providing combined analyses of related personality dimensions coincides with Cattell's view of personality as multifactored. Secondly, this model is well suited to studying personality among normal subjects because it organizes each of the relevant personality dimensions along a bipolar continuum. This allows for examination of normal deviations

along any specific dimension without necessarily focusing on pathological extremes.

Although not overtly evident, Cattell's basic premises underlie a great deal of the later work on personality structure and assessment. Perhaps the complexity of Cattell's methodology and his quantitative emphasis have not made the model very popular or attractive to unsophisticated researchers. However, Cattell's basic belief that there is a stable, identifiable underlying structure to personality which emerges when one assesses numerous characteristics of the individual, has permeated the work in personality assessment. The instrument used or specific variables measured become then less important because one is tapping the same basic structure.

Early research using the MMPI with normal subjects, such as the studies by Hathaway and Meehl (1956) and by Black (1953) relied on adjective checklists based on Cattell's dimensions of the sphere of personality. Given this precedent and the previously noted reasons why this model is especially suitable, the present study attempted to identify personality correlates of certain profile types on the MCPS, following Cattell's fundamental model of the traits and factors that describe underlying personality dimensions.

The Role of Temperament in Personality Development

Cattell's model of personality structure assumes the existence of stable, underlying personality traits. It is reasonable to extend this concept then to children and trace the early source of these characteristics. In studying personality development specifically in

children, Thomas and Chess have been key figures in our current understanding. In recent years, Thomas and Chess (1984) have explored the important role of temperament in the development of a child's personality. Their work is quite complementary with Cattell's in that it supports the establishment of basic traits or temperamental characteristics in children that are relatively constant and consistent.

Thomas and Chess conducted a 20 year longitudinal study (1977, 1984) to determine the significance of early temperamental dimensions in later personality development and adjustment. The authors attempted to identify certain temperamental types, to assess the stability of these over time and to study the interaction of temperament with the environment. They also hypothesized that children with certain temperamental attributes were at higher risk for behavioral disorders and later problems. The authors identified and measured nine temperamental dimensions; activity level, quality of mood, approach or withdrawal to new situations, rhythmicity, adaptability, threshold of responsiveness, intensity of reaction, distractibility, and attention span and persistence. From measures on these dimensions at different ages, children were classified into three temperamental types, each with a different style of relating to the environment; difficult, easy and slow to warm up. The difficult child demonstrates strong, negative reactions to new situations, adapts slowly and is irregular in eating and sleeping habits. The easy child, in contrast, adapts easily, is positive in mood and regular in habits. Finally, the slow to warm up child is hesitant approaching new situations but does not display a

strong negative reaction, and without being pressured, can adapt favorably. A proportion of children, of course, do not fall precisely into a single type and demonstrate mixed temperamental traits. Within the three types identified, the authors followed these children to young adulthood. They found the identified traits to be relatively stable over time and to play a significant role in personality development.

The authors used a variety of qualitative and quantative methods to study the development of the children in their sample. Several types of questionnaires were completed by the parents, interviews with parents were conducted and also the authors utilized their direct observations and clinical judgment. The authors also interviewed the children themselves when they reached young adulthood, obtaining clinical data and also developing a rating of early adult adjustment.

The findings of the study not only supported the initial hypothesis that temperamental qualities play a role in personality development but also provided a broader understanding of a number of significant factors that interrelate in the course of personality development. Environment was found to be as significant as temperament. The interaction between a child's temperament and his environment (such as influence of parents' attitudes, school environment, external demands and the attitude of other important persons) was the most critical factor in the course of the child's adjustment. The authors found that it was the "goodness of fit" of the environmental expectations with the demands of the child's temperamental style and capacities which determined the psychological

development of the child.

Children with the difficult temperamental constellation were indeed found to be at high risk for the development of behavior disorders. However, this was mediated by the fit of the child's temperament with the previously mentioned environmental factors. Therefore, all children with a difficult temperamental style did not develop problems, but rather the other external factors became more important in how well they interacted with the child's temperament. For example, if the parents understood and valued the child's intense reactions and were flexible towards the child's irregular patterns and slow adaptation, the difficult temperamental constellation would not necessarily impede healthy development and overall adjustment.

In the current study, Thomas and Chess' work identifying the role of temperament will be considered as one dimension in exploring the overall personality style of normal school children.

Present Study

A preliminary study by the author of the present study (Cox, C., unpublished Master's thesis, 1983) attempted to integrate the two areas of literature discussed above following the development of the MMPI and the early research on the MCPS. A configurational approach, found effective with the MMPI, was applied to the MCPS in order to develop this relatively new and promising instrument to assess personality with children. The precedent of MMPI research was followed to investigate the MCPS's usefulness as a global personality inventory rather than a screening instrument for pathological populations. This earlier

preliminary study identified some initial patterns and established support for the usefulness of the MCPS for this purpose.

Specifically, testing normal school children in the preliminary study, it was found that several two point code types occurred more frequently than others. Seven code types were identified. For these code types, corresponding characteristics were empirically gathered from teachers' descriptions of the subjects in each code type group. This initial study began establishing different personality characteristics that identified individuals obtaining a particular two point code on the MCPS. It was found that it was indeed possible to follow the methodology established in the MMPI literature, empirically gathering descriptive information to utilize configurational patterns on the MCPS in order to identify personality styles in normal subjects.

The present study continued this preliminary work, attempting to cross validate the earlier findings, expand the population studied and broaden the understanding of the personality dimensions being tapped.

In this study, some methodological changes from the earlier work included the elimination of a cut off score for scale elevations on the MCPS which had previously not been useful. Therefore, profiles with similar two high scale configurations were analyzed regardless of elevation. This also follows the current use of the MMPI, to obtain information on personality style with normal subjects where useful data can be obtained analyzing the highest scales for an individual subject in relation to the rest of that particular profile, without necessarily having significant elevations. Also the previous population had a large proportion of Hispanic subjects, which confounded some

interpretations. The current study attempted to obtain a more representative population.

The earlier work by this author obtained descriptive data on subjects only from teachers. The current study also collected information reported by parents to compile a more global picture of the characteristics for particular code types from a variety of sources and circumstances. In attempting to broaden the scope of the personality dimensions assessed, developmental information pertaining to temperament was also included.

In summary, the present study identified the commonly occurring MCPS two point code types for a normal population of school children. Descriptive data from teachers and parents and also information about temperament from parents was gathered in order to identify empirically the corresponding characteristics describing individuals obtaining a particular code type on the MCPS.

The present study explored two primary questions:

1. The earlier research identified commonly occuring MCPS two point code types in a normal population. Here, the consistency of the common two point code types previously found within a normal population was assessed and therefore if possible to cross validate the earlier findings.

2. Secondly, do the MCPS code types identified have meaning when compared with measurable personality

traits defined by Cattell's personality factors and temperamental qualities defined by Thomas and Chess' temperamental constellations?

CHAPTER III

METHOD

Subjects

The subjects were 194 normal grade school children in a midwestern state. These children ranged in ages from 6 to 12 years old and included approximately half males and half females. This population was from an integrated, middle class neighborhood, attending a local parochial school. The subject sample is summarized in Table 1.

Materials

Missouri Children's Picture Series (Sines, Pauker & Sines, 1971). This test consists of 238 line drawings on individual 3" X 5" cards. The subject is instructed to sort the cards into two piles, those that "look like fun" and those that "do not look like fun". The cards selected are then coded onto score sheets. These sheets are scored with transparent stencils and the subject obtains a raw score on eight scales; conformity, masculinity-femininity, maturity, aggression, inhibition, activity level, sleep disturbance and somatization. The total number of items scored on each scale varies between 24 and 33. The items on each scale may be scored either for being selected as fun or not being chosen. (See Appendix A for sample items from each scale) Tables are provided in the test manual to convert the raw scores to

TABLE 1

Sample Characteristics

Age	Males	Females	Totals
6	11	11	22
7	14	23	37
8	16	17	33
9	19	15	34
10	19	23	42
11	12	10	22
12	3	1	4
Totals	94	100	194

T-scores. These tables are normed according to age and sex.

Adjective Checklist (Black, 1956).The adjective checklist used consists of 141 descriptive words that pertain to personality characteristics and temperament. This list was used originally by Black in research with the MMPI to empirically establish descriptions of the various code types. Black utilized the original checklist devised by Hathaway and Meehl (1951), revising some of the words that appeared outmoded (See Appendix C for Adjective Checklist and revisions). Some of the characteristics are presented in a bipolar fashion, with opposite traits listed, while others tend to be more global or unilateral, and are represented by a single word.

Most of the adjectives on this list are drawn from Cattell's descriptive terms encompassing his defined sphere of personality. These adjectives were empirically clustered by Cattell into 12 major personality factors. These factors are bipolar in nature and an individual can score towards a particular pole on the continuum for each factor. A subject can obtain a score on each of the 12 major factors from the total adjectives selected that correspond to the cluster describing the factor. (See Appendix D for adjective clusters for each factor)

Scale for the Development of Temperamental Qualities (Shack, 1974). This measure consists of a questionnaire on nine different temperamental qualities; activity level, quality of mood, approach/withdrawal, rhythmicity, adaptability, threshold of responsiveness, intensity of reaction, distractibility and attention span and persistence which was developed to adapt the early work of

Thomas, Chess and Birch (1964). Parents rate their child on a four point scale and give estimates of their child's temperament on each of these scales at a number of ages, such as at 2 months, 6 months, 1 year and 5 years. Average scores are obtained for each child on the nine scales and these are compared to group means.

This questionnaire is based on the work by Thomas and Chess (1964, 1977, 1984) on early childhood temperament. These authors group certain clusters of scales and classify children's temperament into four categories; easy, difficult, slow to warm up and mixed (See Appendix E for sample questionnaire).

Procedure

The principal of the participating school elicited the teachers' participation and developed a time schedule convenient for them.

The children in the first through sixth grades each took home to their parents a packet containing a consent letter explaining the study, and an adjective checklist and developmental questionnaire to complete. Confidentiality and the procedures for returning materials were explained to parents and they had the option of not including their child in the study if they wished (See Appendix F). Six parents chose to exclude their children from the study and these children were not tested.

The MCPS was administered to the children in groups with their own classmates. The test required 15 to 20 minutes to complete.

Teachers were given Adjective Checklists to complete on their own students and these were returned to the investigator within a two week

period. All of the materials from students, teachers and parents were collected, coded to insure confidentiality and then scored.

The MCPS results for each subject were scored on the eight scales using the keys provided in the manual and converted to T-scores with the norms provided according to sex and age. Each profile was classified according to the two highest scales, or T-scores, regardless of elevation. The two point code types obtained by subjects were thus identified. According to the distribution of code types for the subject population, the two point code types obtained by the majority of subjects were selected for further analysis.

The Adjective Checklists from teachers and parents were scored for both the frequency of usage of individual adjectives and also clusters of adjectives identified by Cattell into 12 major personality factors. The 12 factors are bipolar, therefore adjectives may be selected from the positive or negative side of each dimension. The raw score, or total number of adjectives selected, for each factor was then divided by the total number of adjectives checked on that entire Adjective Checklist. This procedure provided a percentage score correcting for response style.

The Developmental Questionnaire returned by parents were scored using Thomas and Chess' (1977) guidelines (Appendix G summarizes the scoring criteria). Means were calculated for this sample on each of the nine temperamental scales (Appendix H). Subjects were then classified into four possible temperamental categories; easy, difficult, slow to warm up and mixed, using the means calculated for this particular sample and the scale constellations defined by the

authors.

Qualitative and quantitative analyses of the data were conducted. Teacher and parent response styles and frequency of usage of specific descriptive terms was examined. The descriptive data obtained for each code group was examined qualitatively looking at single adjectives that were frequently associated with particular code types. Frequent parent descriptions and teachers descriptions of subjects in particular code type groups were compiled. Mean scores on the 12 Adjective Checklist factor clusters were obtained for both teacher and parent rating. These ratings for the different code groups were compared. Correlations were obtained between parent and teacher scores on the 12 Adjective Checklist factors. The intercorrelations between factors was also determined. A one way analysis of variance was performed for each of the 12 Adjective Checklist factors to assess differences between code types. This analysis was performed for both teacher and parent Adjective Checklist scores. An analysis of variance was also performed on the temperamental measure across code type groups to assess differences on this dimension.

CHAPTER IV

RESULTS

The MCPS was administered to a total of 194 subjects. Table 2 provides, for the reader's convenience, the names and the accompanying numbers of the eight MCPS scales. These scales will then be referred to by their number.

The MCPS two point code scores for the 194 subjects tested were compiled. Table 3 summarizes the distribution of scores obtained. The two point code types obtained by the greatest number of subjects are starred.

From this sample's distribution of scores, eight major two point code types were identified. From the 194 subjects tested, 154 or 80% could be classified into these 8 code groups. The remaining 40 subjects were scattered across other uncommon code types, without sufficient subjects to allow further analysis.

A comparison of the distribution of scores for these 194 subjects with the 311 subjects tested in the previous study by this author is offered in Figure 1. The code types commonly identified are quite similar for these separate samples of school children and some two point code types clearly continued to emerge more frequently than others. The first and second samples differed primarily on the 5-6 code type which described 9% of the first population and less than 2%

TABLE 2

MCPS Scale Names

Scale	Name
1	Conformity
2	Masculinity-Femininity
3	Maturity
4	Aggression
5	Inhibition
6	Activity Level
7	Sleep Disturbance
8	Somatization

TABLE 3

MCPS Two Point Code Types

Code Type	Number of Subjects	Profiles with Scale(s) T > 70
1-2	0	0
1-3	0	0
1-4	5	1
1-5	1	0
1-6	2	0
1-7	2	0
1-8	2	0
2-3	15 *	3
2-4	4	1
2-5	0	0
2-6	0	0
2-7	12 *	4
2-8	3	1
3-4	2	0
3-5	14 *	2
3-6	1	0
3-7	45 *	24
3-8	1	0
4-5	1	0
4-6	24 *	4
4-8	11 *	3
5-6	3	2
5-7	15 *	7
5-8	1	0
6-7	5	0
6-8	18 *	7
7-8	2	1
Totals	194	60

* Eight major code types

FIGURE 1

Comparison of Code Type Distribution for First & Second Study

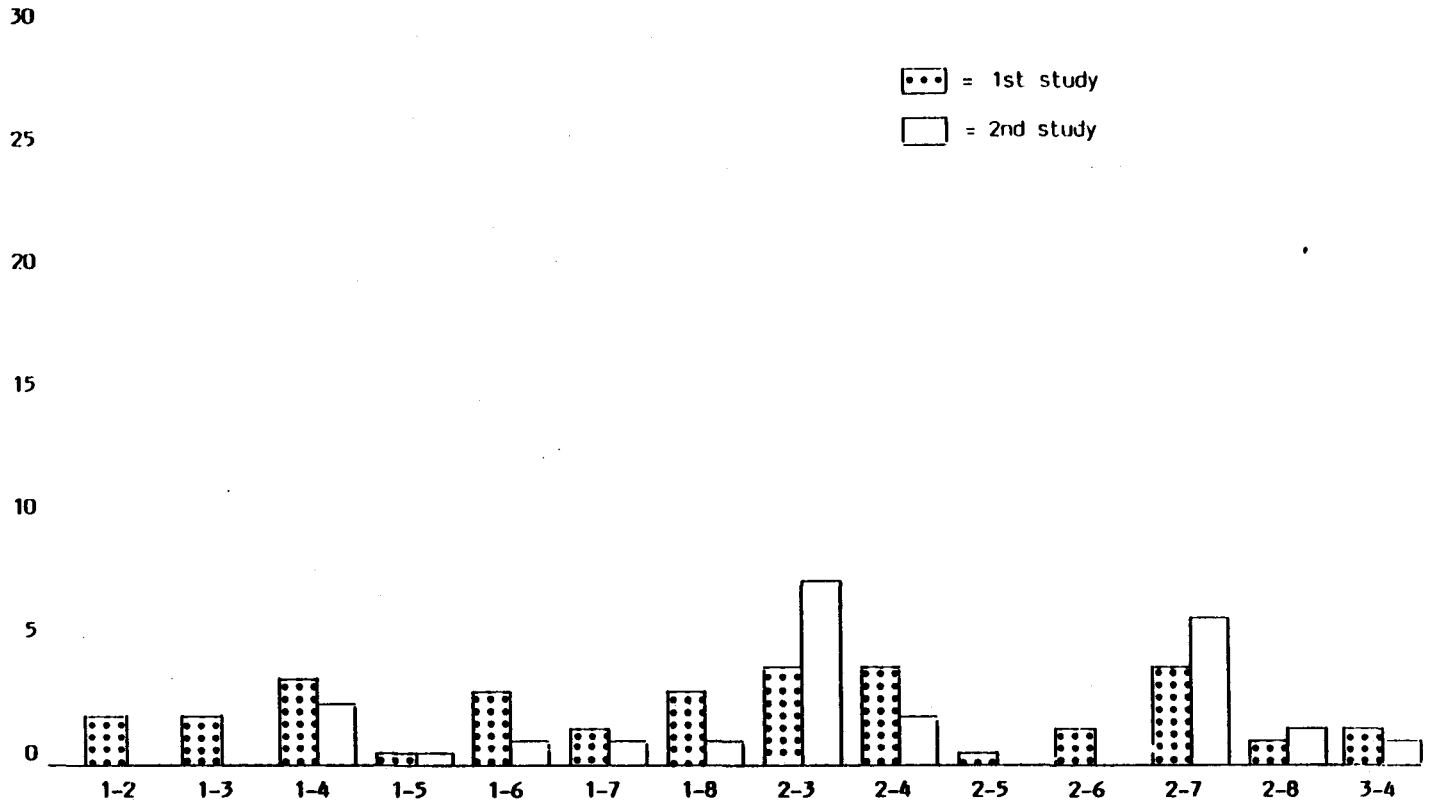
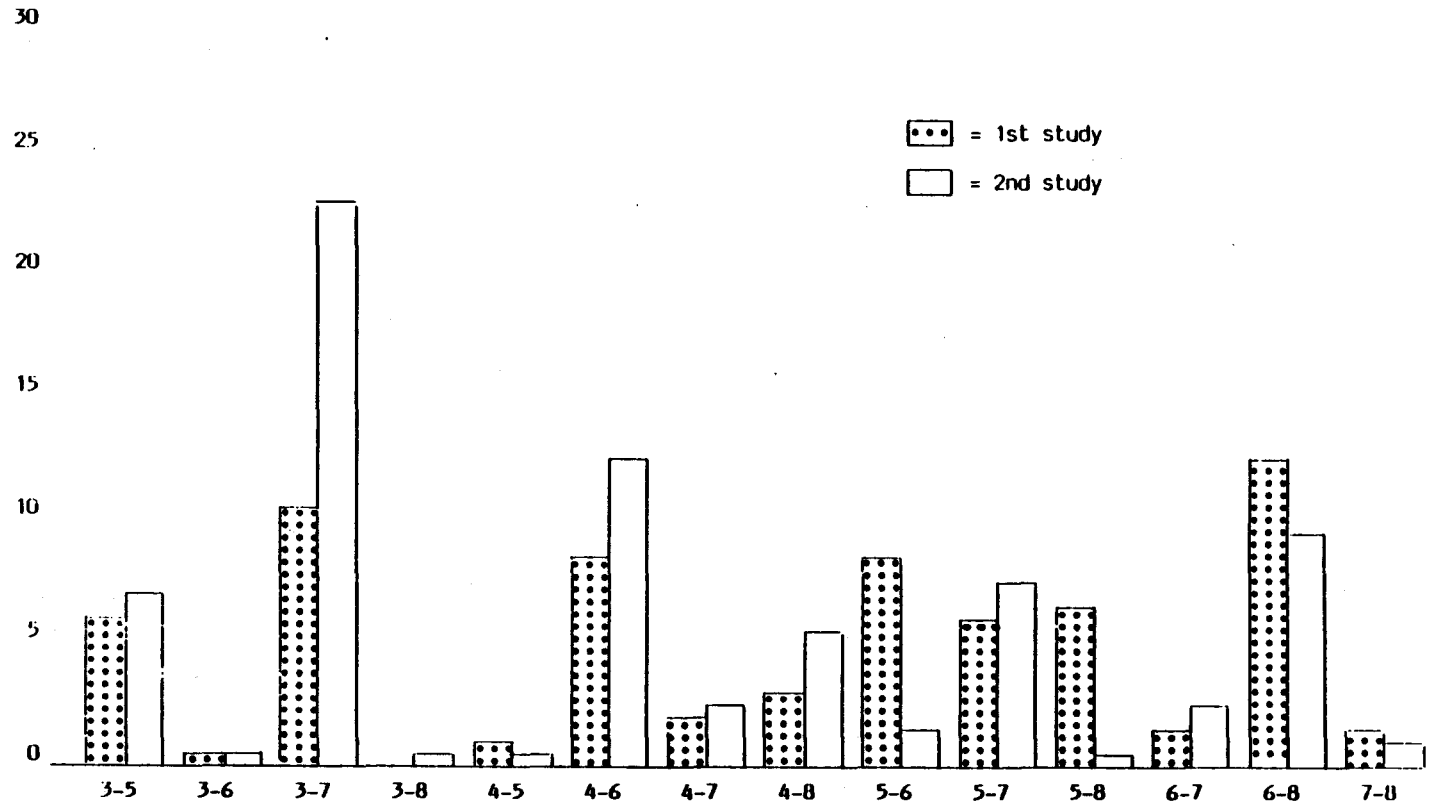


FIGURE 1

(Continued)



of the second population, and the 5-8 code type, which described over 6% of the first population and less than 1% of the second population. Also in the current, second study, a significant number of subjects scored highest on the 2-3 and 4-8 code types and these two groups were available for analysis in this study. Six other code types overlapped between the two studies, that is a large proportion of subjects in the study obtained these code types, and descriptive information about these six code types was gathered in the earlier study and in this current work.

Table 4 summarizes the distribution of subjects across the eight code types by age. The higher number of subjects at the middle age range reflect the school population, with more second through fifth grade classes being available for testing. Since the T-scores obtained by subjects are already normed by age and sex, these differences in distribution should not influence interpretation of the findings. On Table 5, the distribution of these subjects by sex across the eight code groups is summarized. No significant differences in sex were found across code groups, $\chi^2(7) = 4.67$, $p = .69$. It can be noted that the 2-3 code type is the only group with an apparently unbalanced number of boys and girls obtaining this code type.

The Adjective Checklists from teachers and parents for subjects in these eight code type groups were then compiled and analyzed.

Two teachers, due to emergencies, were unable to complete all of the Adjective Checklists on the children in their class. Therefore, a number of the subjects tested were lost since no further data for analysis was available. Of the 154 subjects classified into the eight

TABLE 4

Distribution of Code Types by Age

Code Type	Age							Totals
	6	7	8	9	10	11	12	
2-3	3	5	0	3	2	2	0	15
2-7	1	2	1	3	4	1	0	12
3-5	2	4	0	1	3	2	2	14
3-7	4	8	10	13	5	5	0	45
4-6	2	9	4	5	2	2	0	24
4-8	0	0	2	1	4	4	0	11
5-7	2	1	5	0	3	3	1	15
6-8	1	2	4	5	4	2	0	18
Totals	15	31	26	31	27	21	3	154

TABLE 5

Distribution of Code Types by Sex

Code Type	Males	Females	Totals
2-3	10	5	15
2-7	7	5	12
3-5	8	6	14
3-7	21	24	45
4-6	11	13	24
4-8	6	5	11
5-7	8	7	15
6-8	8	10	18
Totals	79	75	154

code groups, data for further analysis was available from teachers on 113. (See Table 6)

Parents returned slightly over 50% of the materials sent home with subjects, or 103 Adjective Checklists and 99 completed Developmental Questionnaires. Those Adjective Checklists returned by parents for subjects in the eight major groups were then analyzed. Of the 103 parent Adjective Checklists returned, 81 corresponded with subjects in the eight code groups and the distribution of these is summarized on Table 6.

The analysis of the parent and teacher Adjective Checklists for the eight major code types progressed from the specific to the global. First, the Adjective Checklists were studied directly, analyzing frequency of usage of words and specific adjectives identified with the code types. Then more comprehensive characteristics were assessed from scores on Cattell's 12 personality factors, obtained from adjective clusters from the checklists. The results will here be presented following this specific to general progression and comparing teacher and parent ratings at each of these two levels.

Specific Descriptive Characteristics

Teachers used some adjectives more frequently than others to describe subjects. The usage of the Adjective Checklist words is summarized on Table 7. Words such as honest, cheerful and friendly were used quite often, occurring respectively in 49, 52 and 72 of 113 checklists.

Parents as a group also used some adjectives more frequently than

TABLE 6

Number of Adjective Checklists
Completed for Eight Major Code Groups

Code Group	Teachers	Parents
2-3	9	9
2-7	7	7
3-5	10	7
3-7	39	28
4-6	18	10
4-8	8	4
5-7	10	7
6-8	12	9
Totals	113	81

TABLE 7

Adjective Frequency for Teachers
(n=113)

49	honest	36	generous	4	eccentric	4	gloomy
4	dishonest	0	tight fisted	4	flattering	36	laughterful
7	self denying	39	easygoing	5	self centered	4	frivolous
4	selfish	30	mature	4	lively	17	serious
26	loyal	14	infantile	14	aggressive	8	high strung
13	fickle	17	clear thinking	2	inflexible	19	relaxed
33	fair minded	1	incoherent	26	adaptable	16	impulsive
4	partial	25	independent	5	hostile	21	deliberate
28	reliable	15	dependent	72	friendly	16	emotional
11	undependable	6	wise	1	jealous	0	unemotional
24	persevering	5	foolish	1	ruthless	7	irritable
21	quitting	2	polished	50	kind	56	good tempered
25	orderly	10	rough	1	shrewd	12	unself controlled
30	disorderly	17	interests wide	7	naive	22	self controlled
26	conscientious	7	interests narrow	16	clever	17	contented
19	practical	1	self effacing	1	conceited	10	grateful
6	unrealistic	20	shows off	7	self dissatisfied	0	thankless
29	worrying	12	argumentative	22	self confident	17	soft hearted
11	decisive	47	talkative	3	self distrusting	2	hardhearted
10	indecisive	32	quiet	36	energetic	1	cynical
15	enterprising	11	boastful	9	apathetic	8	idealistic
4	shiftless	9	modest	27	enthusiastic	39	popular
4	many physical complaints	6	arrogant	6	versatile	9	unpopular
		6	humble	11	submissive	0	suspicious
0	neurotic	2	pugnacious	30	sensitive	29	trustful
2	depressed	35	peaceable	8	poised	16	impatient
52	cheerful	15	thoughtful (a thinker)	12	awkward	30	curious
6	moody			6	sophisticated	2	inarticulate
34	balanced	17	reasonable	15	shy	0	likes drinking
16	absent minded	4	affected	12	adventurous	4	religious
22	alert	31	natural	11	timid	2	worldly
5	seclusive	9	logical	0	aloof	5	rebellious
52	sociable (mixes well)	1	aesthetic interests	12	affectionate	1	conventional
				12	sentimental	12	individualistic
7	frank	4	courageous	10	hardheaded	17	dreamy
4	secretive	1	cowardly	45	cooperative	17	easily bored

others. A summary of the frequency of usage of adjectives by parents occurs on Table 8.

In general, among both parents and teachers, generally positive, commonly used words described a majority of children across code types, while more negatively laden words occurred less frequently (See Appendix I for common connotations attributed to Adjective Checklist words).

Parents and teachers differed drammatically on their overall usage of several adjectives. While both used words such as honest, cheerful, sociable, kind and friendly quite often, a number of other adjectives were also used quite frequently by parents while being used much less often by teachers. Several such adjectives were loyal, generous, sensitive, softhearted and most drammatically, affectionate (used on 54 of 81 parent Adjective Checklists and 12 of 113 teacher Adjective Checklists).

As summarized on Table 9, teachers described most of the code types, as groups, in generally consistent, positive terms. This table reports the adjectives most frequently used to describe subjects in each code group. The number listed represents the percentage of subjects in that code group described by that particular adjective. For example, in the 3-5 code type, 70% of the subjects, or 7 out of the 10 in this groups, were described as fair minded. A notable exception to these generally, positive, benign descriptions is the 2-7 code type. Teachers described this group with words often quite negatively valued. This is indicative of characteristics which must be strongly salient to teachers to overcome the previously noted positive response style

TABLE 8

Adjective Frequency for Parents
(n=81)

63	honest	51	generous	1	eccentric	1	gloomy
3	dishonest	3	tight fisted	5	flattering	28	laughterful
5	self denying	40	easygoing	3	self centered	3	frivolous
9	selfish	18	mature	3	lively	12	serious
51	loyal	5	infantile	7	aggressive	10	high strung
1	fickle	21	clear thinking	2	inflexible	12	relaxed
41	fair minded	0	incoherent	39	adaptable	14	impulsive
5	partial	33	independent	0	hostile	7	deliberate
39	reliable	9	dependent	59	friendly	42	emotional
5	undependable	17	wise	10	jealous	0	unemotional
20	persevering	0	foolish	0	ruthless	5	irritable
8	quitting	6	polished	55	kind	35	good tempered
21	orderly	7	rough	2	shrewd	6	unself controlle
21	disorderly	45	interests wide	13	naive	17	self controlled
25	conscientious	4	interests narrow	16	clever	23	contented
25	practical	3	self effacing	0	conceited	23	grateful
5	unrealistic	17	shows off	7	self dissatisfied	0	thankless
26	worrying	21	argumentative	27	self confident	40	soft hearted
11	decisive	44	talkative	2	self distrusting	1	hardhearted
8	indecisive	10	quiet	33	energetic	0	cynical
20	enterprising	7	boastful	1	apathetic	10	idealistic
0	shiftless	23	modest	35	enthusiastic	36	popular
6	many physical complaints	1	arrogant	14	versatile	1	unpopular
		7	humble	3	submissive	1	suspicious
0	neurotic	1	pugnacious	54	sensitive	35	trustful
3	depressed	18	peaceable	9	poised	23	impatient
47	cheerful	24	thoughtful (a thinker)	3	awkward	40	curious
21	moody			1	sophisticated	0	inarticulate
25	balanced	25	reasonable	21	shy	1	likes drinking
15	absent minded	0	affected	21	adventurous	17	religious
38	alert	29	natural	6	timid	5	worldly
0	seclusive	18	logical	1	aloof	2	rebellious
54	sociable (mixes well)	14	aesthetic interests	57	affectionate	7	conventional
				24	sentimental	12	individualistic
27	frank	14	courageous	13	hardheaded	13	dreamy
4	secretive	3	cowardly	39	cooperative	10	easily bored

TABLE 9

Teacher Descriptions of Code Types

Code Type	Adjectives (percentage)		
2-3 n=9	67 friendly	44 balanced	44 curious
	67 talkative	44 clever	33 impatient
	56 energetic	44 laughterful	33 infantile
	56 sociable	44 good tempered	33 disorderly
	44 persevering	44 popular	
2-7 n=7	71 undependable	57 sociable	43 shows off
	71 easily bored	43 apathetic	43 talkative
	57 quitting	43 fickle	43 friendly
	57 dependent	43 disorderly	43 laughterful
	57 cheerful	43 absent minded	43 dreamy
3-5 n=10	70 fair minded	50 easy going	40 generous
	70 friendly	50 natural	40 conscientious
	60 honest	50 energetic	40 persevering
	60 laughterful	50 enthusiastic	40 adaptable
	50 loyal	50 good tempered	40 cooperative
	50 cheerful	50 popular	40 peaceable
	50 sociable	40 quiet	40 emotional
3-7 n=39	67 friendly	44 cooperative	31 generous
	51 kind	38 talkative	31 popular
	51 good tempered	38 quiet	28 balanced
	49 sociable	36 mature	28 easy going
	44 honest	33 reliable	26 laughterful
	44 cheerful	31 peaceable	

TABLE 9
(continued)

Code Type	Adjectives (percentage)		
4-6 n=18	50 friendly 50 energetic 50 good tempered 44 generous 44 talkative 39 curious 39 sociable	39 kind 39 cooperative 33 independent 33 mature 28 enthusiastic 28 fickle 28 worrying	28 orderly 28 disorderly 28 honest 28 cheerful 28 peaceable
4-8 n=8	75 friendly 62 fair minded 62 disorderly 62 cheerful	50 honest 50 balanced 50 sociable 50 easy going	50 good tempered 50 popular 50 trustful 50 curious
5-7 n=10	60 easy going 50 honest 50 disorderly 50 cheerful 50 friendly 50 sensitive	50 kind 50 dreamy 50 cooperative 50 good tempered 40 worrying 40 individualistic	40 modest 40 peaceable 40 natural 40 quiet
6-8 n=12	83 friendly 67 talkative 67 cheerful 67 cooperative 67 kind 58 trustful 58 good tempered	50 fair minded 50 honest 50 sociable 50 conscientious 50 enthusiastic 50 popular 50 sensitive	42 affectionate 42 generous 42 natural 42 balanced 42 loyal

otherwise representative of the teacher ratings.

Some qualitative differences in descriptions of the code groups deserve consideration. Given the strong positive response style noted, commonly used words that are omitted to describe a particular group need to be analyzed since this deviates from the expected bias. Similarly, less frequently used words that are applied to describe a significant proportion of a code group also must carry more meaning because they are not common and appear to be more selectively used. For example, although most code groups are similarly described by teachers as friendly and sociable, with these adjectives used for almost 50% of the children in each of the code groups, the code type 5-7 is not commonly described as sociable. This adjective was only used for 20% of the subjects, or 2 out of 10, in the 5-7 code group. Another example in the teacher descriptions of code type 5-7 is also the word "dreamy" which is used to describe 50% of the subjects in this code group (or 5 of 10 subjects). This word is only used by teachers on 17, or 15%, of 113 total Adjective Checklists (See Table 7), therefore, it's more frequent usage to describe a large percentage of subjects in a particular code type is more revealing when compared thus with other code types and the frequency of usage of the adjectives in general. On Table 9, therefore, and similarly on Table 10, summarizing parent descriptions of the eight code type groups, the third column of adjectives, while not necessarily being the words most frequently used, often are the most distinctive between groups. Contrasting Table 9 and Table 10 provides a comparison of teacher and parent ratings of the eight code groups using single adjectives.

TABLE 10

Parent Descriptions of Code Types

Code Type	Adjectives (percentage)					
2-3 n=9	78	honest	67	easy going	56	adaptable
	78	wide interests	56	fair minded	56	friendly
	78	affectionate	56	persevering	56	kind
	78	sensitive	56	disorderly	56	enthusiastic
	67	loyal	56	alert	56	cooperative
	67	energetic	56	generous	56	laughterful
	67	cheerful	56	logical	56	good tempered
	67	sociable	56	talkative	56	curious
	67	frank				
2-7 n=7	100	kind	71	curious	57	enthusiastic
	86	easy going	57	soft hearted	43	disorderly
	86	friendly	57	loyal	43	talkative
	71	honest	57	cheerful	43	unrealistic
	71	generous	57	independent	43	moody
	71	affectionate	57	argumentative	43	impatient
	71	emotional	57	energetic		
3-5 n=7	100	loyal	71	sociable	57	emotional
	86	fair minded	71	friendly	57	enthusiastic
	86	generous	71	affectionate	57	easy going
	86	adaptable	71	cooperative	57	talkative
	86	kind	71	soft hearted	57	balanced
	86	sensitive	57	grateful	57	practical
	71	honest	57	trustful	57	reliable
	71	cheerful	57	curious	57	conscientious
3-7 n=28	82	honest	61	alert	54	talkative
	82	sociable	57	reliable	50	emotional
	79	friendly	57	generous	50	natural
	71	affectionate	54	loyal	46	adaptable
	64	cheerful	54	popular	46	trustful
	64	kind	54	cooperative	43	worrying
	64	sensitive	54	good tempered	43	wide interests

TABLE 10
(continued)

Code Type	Adjectives (percentage)		
4-6 n=10	80 sensitive 80 soft hearted 80 affectionate 70 emotional 70 loyal 60 curious 60 energetic 60 argumentative	60 talkative 60 generous 60 honest 50 friendly 50 kind 50 wide interests 50 popular 50 moody	50 alert 40 practical 40 worrying 40 frank 40 clear thinking 40 jealous 40 hardheaded 40 impulsive
4-8 n=4	100 reliable 100 generous 100 friendly 100 sensitive 100 emotional 75 honest	75 loyal 75 moody 75 sociable 75 naive 75 kind 75 self confident	75 enthusiastic 75 affectionate 75 sentimental 75 contented 75 trustful 75 curious
5-7 n=7	86 fair minded 86 kind 71 honest 71 easy going 71 independent 71 loyal	57 disorderly 57 wide interests 57 generous 57 talkative 57 friendly	57 sensitive 57 affectionate 57 cooperative 57 good tempered 57 curious
6-8 n=9	100 honest 89 wide interests 89 friendly 78 cheerful 78 sociable 67 popular 56 loyal 56 fair minded	56 generous 56 talkative 56 kind 56 affectionate 44 easy going 44 wise 44 independent 44 reasonable	44 adaptable 44 self confident 44 sensitive 44 adventurous 44 contented 44 grateful 44 trustful 44 religious

In general, as previously noted, teachers rated the 2-7 group (Table 9) in the most negative terms, and parent ratings (Table 10) differed highly with teacher ratings on this particular group. Otherwise, parent descriptions of the eight groups again were generally positive. Parents tended to be even more positive and consistent than teachers on their usage of generally benign, high frequency adjectives like "honest", "kind" and "friendly". Again, the third column of adjectives summarized on the parent descriptions of the groups tend to be more selective and reveal more subtle differences or trends between groups.

Global Personality Characteristics

Moving to a more global level, the Adjective Checklists from teachers and parents were then analyzed by scores on 12 factors, clusters of adjectives identified by Cattell as defining specific personality dimensions (Appendix D lists Cattell's personality factors and summarizes the adjective clusters for each of the 12 dimensions).

On Figure 2 the group means on the 12 factors, or personality dimensions, are compared for the eight different code type groups based on teacher descriptions. These group means represent the percentage of adjectives for that code group that are scored in the indicated direction on that personality dimension. These personality factors or dimensions are bipolar. However, since these are normal subjects in this study, all the groups may score in a healthy or positive direction on a number of factors but may differ between groups in degree of strength of certain characteristics. By nature of the personality

FIGURE 2

Code Group Means on Cattell's 12 Factors

from Teacher Adjective Checklists

Key

Groups 1 - 8 Ordered from left to right for each factor

Group 1 = 2-3 code type	Group 5 = 4-6 code type
Group 2 = 2-7 code type	Group 6 = 4-8 code type
Group 3 = 3-5 code type	Group 7 = 5-7 code type
Group 4 = 3-7 code type	Group 8 = 6-8 code type

Group Means = Percentage of adjectives scored in the particular direction noted.

Factor 1 = Cyclothymia vs. Schizothymia

Factor 2 = Intelligence, general mental capacity vs. Mental defect

Factor 3 = Emotionally mature, stable character vs. Demoralized, general emotionality

Factor 4 = Hypersensitive, infantile emotionality vs. Phlegmatic frustration tolerance

Factor 5 = Dominance vs. Submissiveness

Factor 6 = Surgency vs. Agitated, melancholic desurgency

Factor 7 = Positive character integration vs. Immature, dependent character

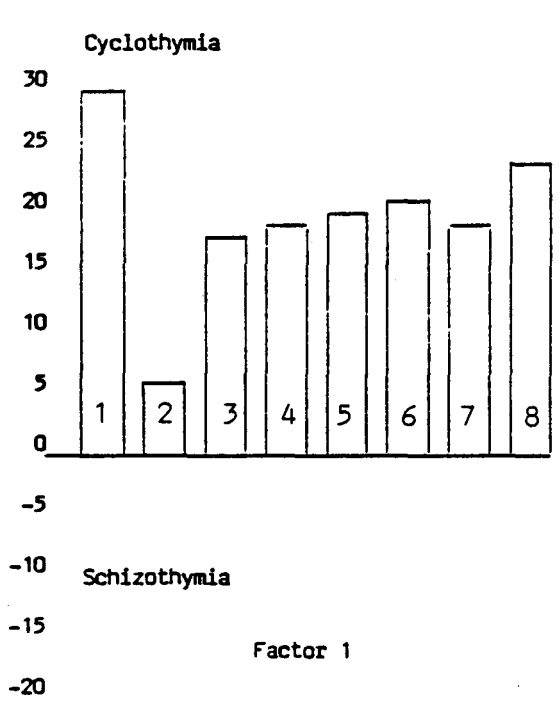
Factor 8 = Charitable, adventurous cyclothymia vs. Obstructive, withdrawn schizothymia

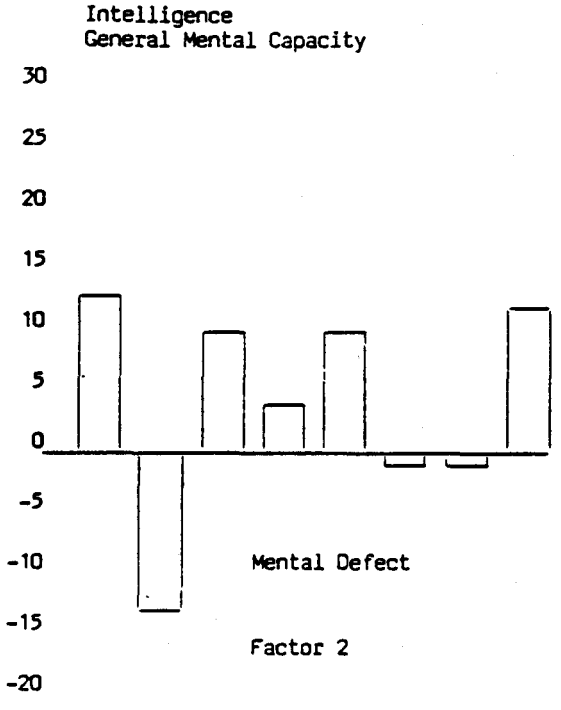
Factor 9 = Sensitive, imaginative, anxious emotionality vs. Rigid, tough poise

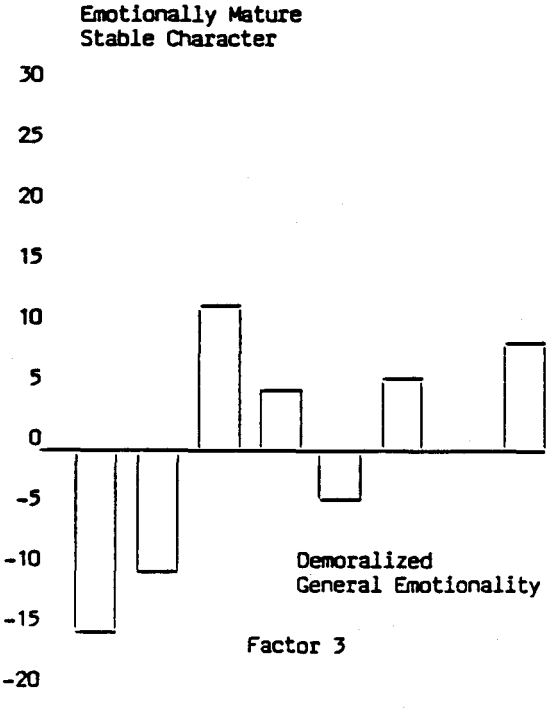
Factor 10 = Neurasthenia vs. Vigorous, obsessionally determined character

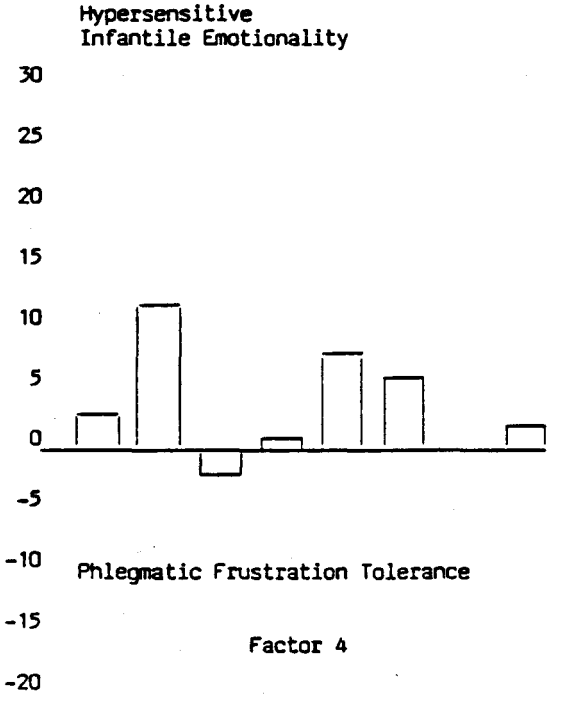
Factor 11 = Trained, socialized, cultured mind vs. Boorishness

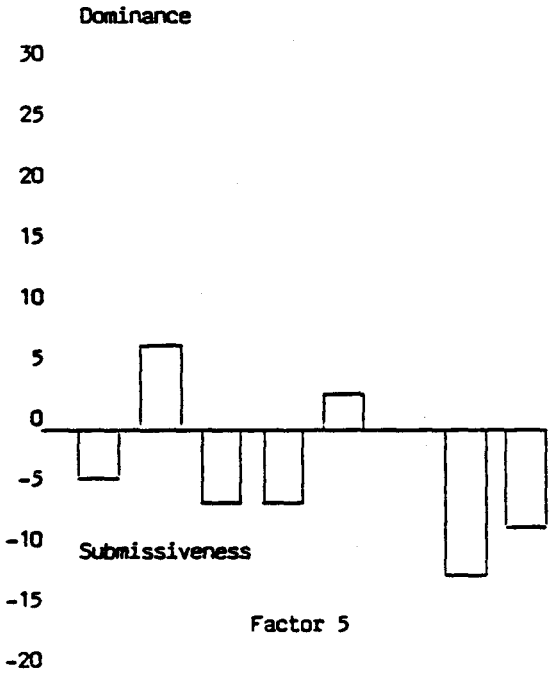
Factor 12 = Surgent cyclothymia vs. Paranoia

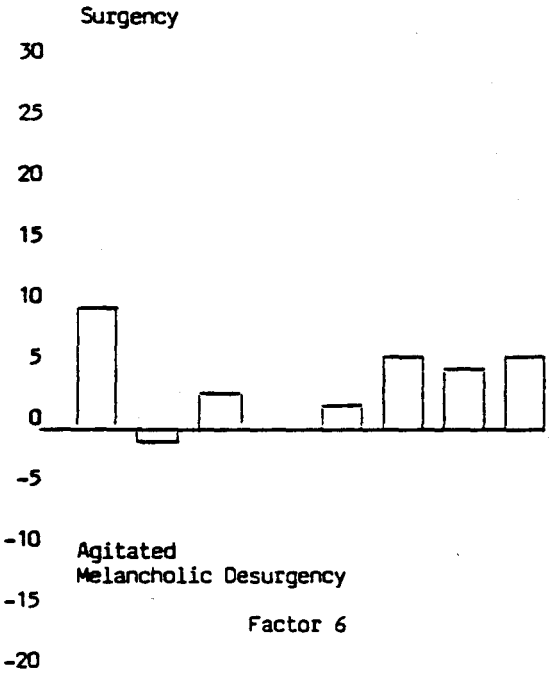

Cyclothymia
30
25
20
15
10
5
0
-5
-10
-15
-20
1
2
3
4
5
6
7
8
Schizothymia
Factor 1

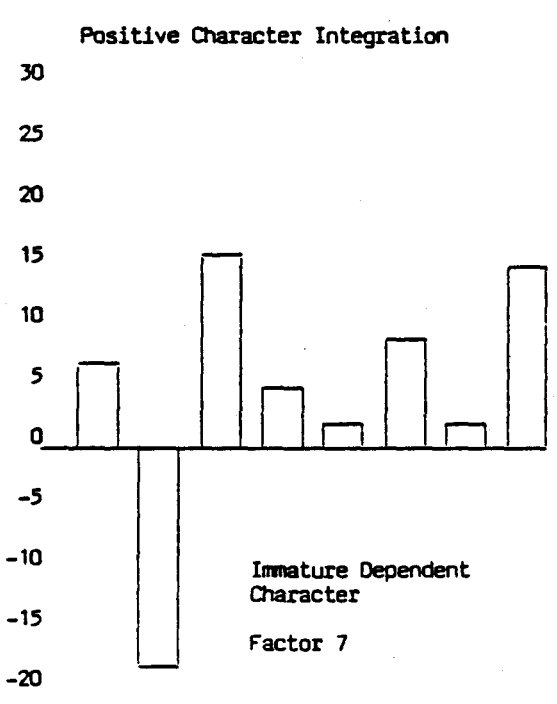

Intelligence
General Mental Capacity
30
25
20
15
10
5
0
-5
-10
-15
-20
Mental Defect
Factor 2

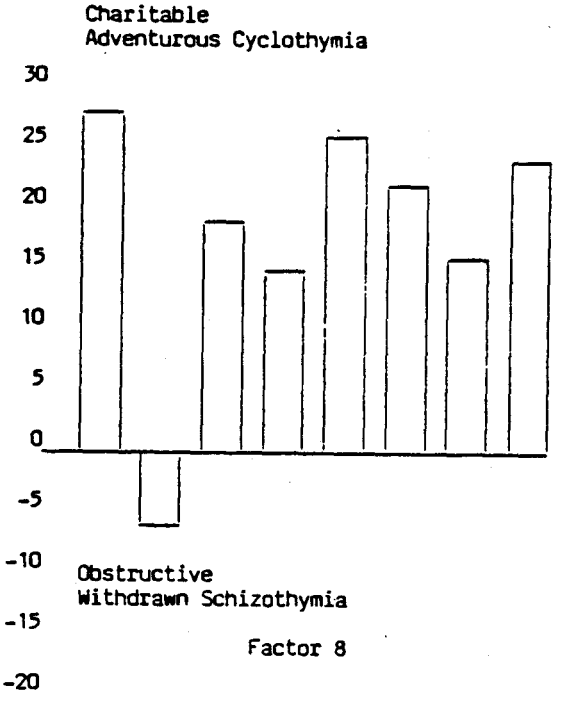

Emotionally Mature
Stable Character
30
25
20
15
10
5
0
-5
-10
-15
-20
Demoralized
General Emotionality
Factor 3


Hypersensitive
Infantile Emotionality
30
25
20
15
10
5
0
-5
-10
-15
-20
Phlegmatic Frustration Tolerance
Factor 4

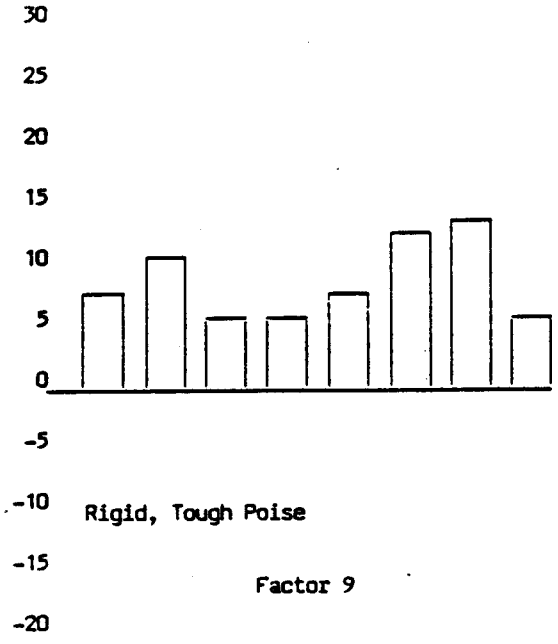

Dominance
30
25
20
15
10
5
0
-5
-10
-15
-20
Submissiveness
Factor 5


Surgency
30
25
20
15
10
5
0
-5
-10
-15
-20
Agitated
Melancholic Desurgency
Factor 6


Positive Character Integration
30
25
20
15
10
5
0
-5
-10
-15
-20
Immature Dependent
Character
Factor 7


Charitable
Adventurous Cyclothymia
30
25
20
15
10
5
0
-5
-10
-15
-20
Obstructive
Withdrawn Schizothymia
Factor 8

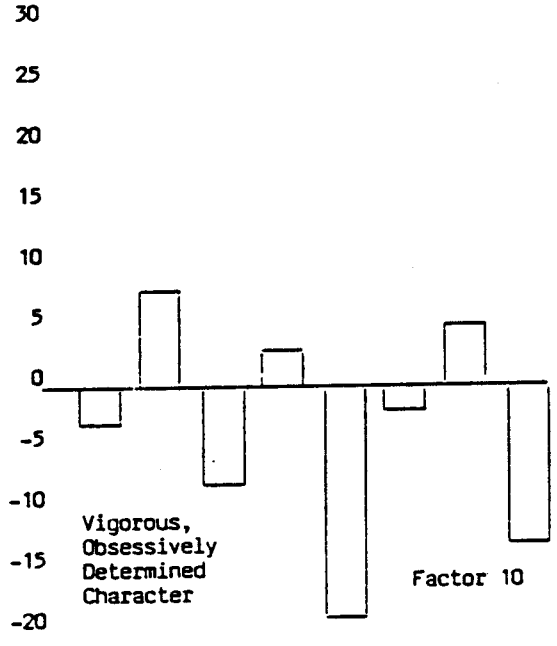
Sensitive, Imaginative
Anxious Emotionality



Rigid, Tough Poise

Factor 9

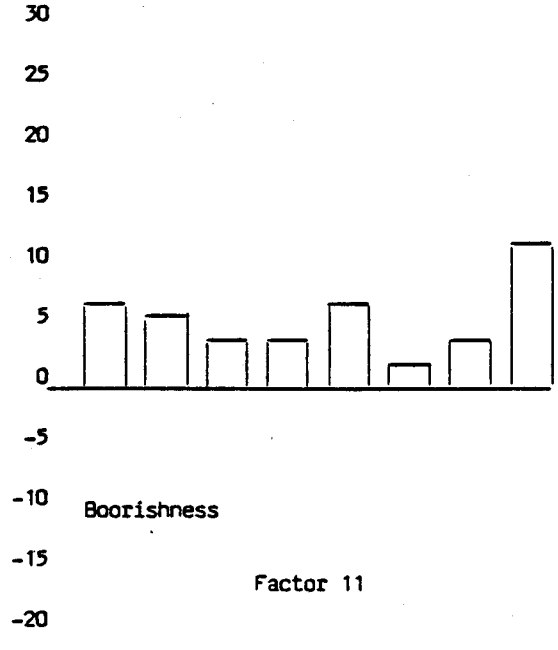
Neurasthenia



Vigorous,
Obsessively
Determined
Character

Factor 10

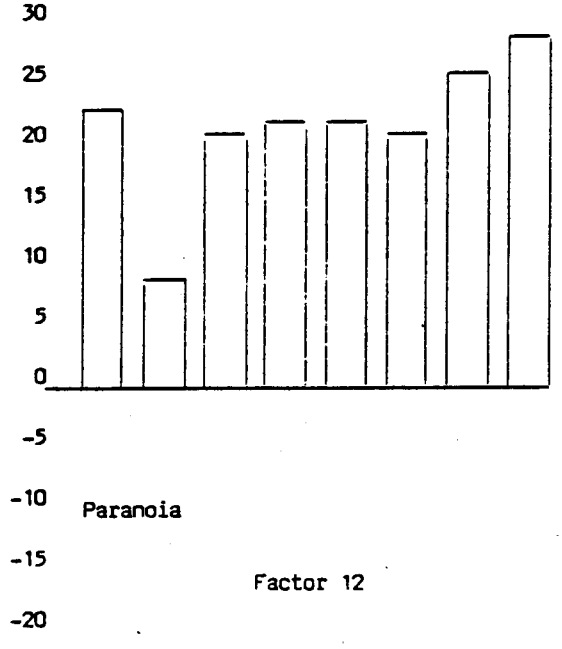
Trained, Socialized
Cultured Mind



Boorishness

Factor 11

Surgent Cyclothymia



Paranoia

Factor 12

traits or dimensions being tapped, some are quite global with a clear healthy or positive side in the polarity, while others, such as dominance versus submissiveness (Factor 5) are traits on which normals may vary widely and fall on either side of the polarity.

Table 11 summarizes the analysis of variance performed on these factor scores from teacher Adjective Checklists. Each of the factors was analyzed to determine if the differences between groups were significant. Again, since these were normal subjects, the groups did not vary dramatically. Some trends can be seen from Table 11 in the factors that tend to differentiate the code types. As noted earlier, on Factor 5, dominance versus submissiveness, wide variations may be expected even among normals, and this factor indeed more significantly discriminated the groups, $F(7,92)= 1.87$, $p=.08$. In contrast, on very global dimensions of adjustment with a clear polarity of positive, healthy traits versus a negative or pathological cluster, such as Factor 12, surgent cyclothymia versus paranoia, most of the groups are distributed along the positive side of the polarity and do not differ significantly, $F(7,92)= 1.04$, $p=.41$.

The intercorrelations between the 12 factors for teacher Adjective Checklists are presented on Table 12.

The parent ratings of the code groups on the 12 personality factors analyzed differ in some significant ways from the teacher descriptions. In Figure 3, the group means of the eight code groups obtained from parent descriptions are compared for the 12 personality dimensions.

Table 13 reports the analysis of variance results for parent

TABLE 11

One Way Analysis of Variance of

Code Groups for Teacher Adjective Checklist Factors

	Source (Code groups)	df	MS	F	p
Factor 1	Between	7	1.16	1.74	.11
	Within	92	.67		
Factor 2	Between	7	.05	1.69	.12
	Within	92	.03		
Factor 3	Between	7	.04	1.46	.19
	Within	92	.03		
Factor 4	Between	7	.02	1.09	.37
	Within	92	.02		
Factor 5	Between	7	.03	1.87	.08
	Within	92	.02		
Factor 6	Between	7	.02	.33	.94
	Within	92	.05		
Factor 7	Between	7	.08	1.86	.08
	Within	92	.04		
Factor 8	Between	7	.03	.68	.69
	Within	92	.04		
Factor 9	Between	7	.01	.28	.96
	Within	92	.02		
Factor 10	Between	7	.09	1.67	.13
	Within	92	.05		
Factor 11	Between	7	.01	.49	.84
	Within	92	.01		
Factor 12	Between	7	.04	1.04	.41
	Within	92	.04		

TABLE 12

Correlational Matrix of Teacher Adjective Checklist Factors

Factor	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
1												
2	.06											
3	.08	.66										
4	-.09	-.58	-.82									
5	-.21	-.20	-.48	.66								
6	.18	.19	.14	-.09	-.10							
7	.10	.80	.94	-.78	-.46	.19						
8	.27	.32	.25	-.18	-.34	.76	.32					
9	.05	-.48	-.50	.45	-.12	-.07	-.55	.09				
10	-.08	-.54	-.28	.07	-.17	-.43	-.41	-.55	.41			
11	.11	.39	.25	-.04	-.07	.07	.31	.33	-.27	-.49		
12	.32	.27	.32	-.32	-.57	.62	.34	.76	.20	-.14	.24	

FIGURE 3

Code Group Means on Cattell's 12 Factors

from Parent Adjective Checklists

Key

Groups 1 - 8 Ordered from left to right for each factor

Group 1 = 2-3 code type	Group 5 = 4-6 code type
Group 2 = 2-7 code type	Group 6 = 4-8 code type
Group 3 = 3-5 code type	Group 7 = 5-7 code type
Group 4 = 3-7 code type	Group 8 = 6-8 code type

Group Means = Percentage of adjectives scored in the particular direction noted.

Factor 1 = Cyclothymia vs. Schizothymia

Factor 2 = Intelligence, general mental capacity vs. Mental defect

Factor 3 = Emotionally mature, stable character vs. Demoralized, general emotionality

Factor 4 = Hypersensitive, infantile emotionality vs. Phlegmatic frustration tolerance

Factor 5 = Dominance vs. Submissiveness

Factor 6 = Surgency vs. Agitated, melancholic desurgency

Factor 7 = Positive character integration vs. Immature, dependent character

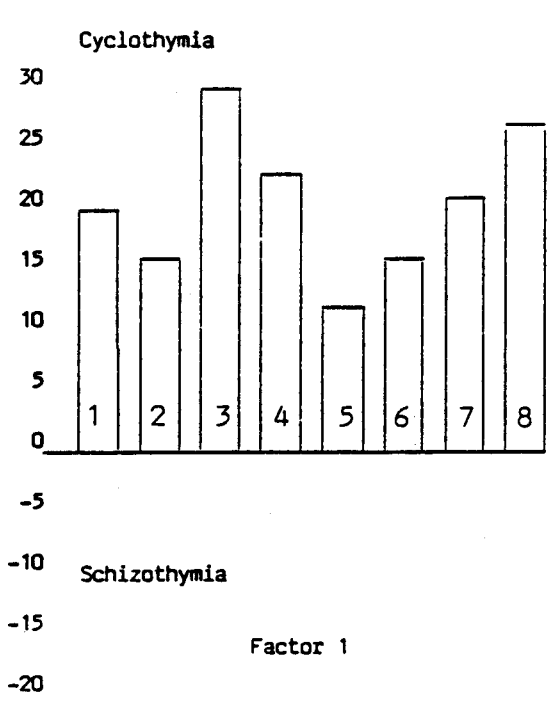
Factor 8 = Charitable, adventurous cyclothymia vs. Obstructive, withdrawn schizothymia

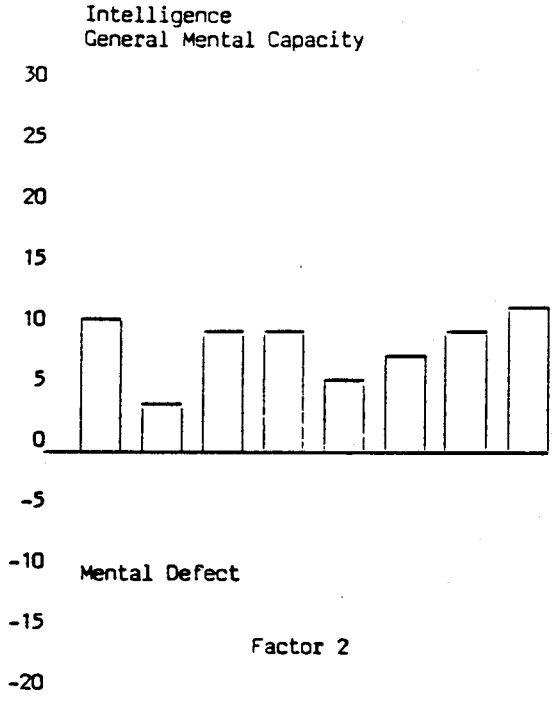
Factor 9 = Sensitive, imaginative, anxious emotionality vs. Rigid, tough poise

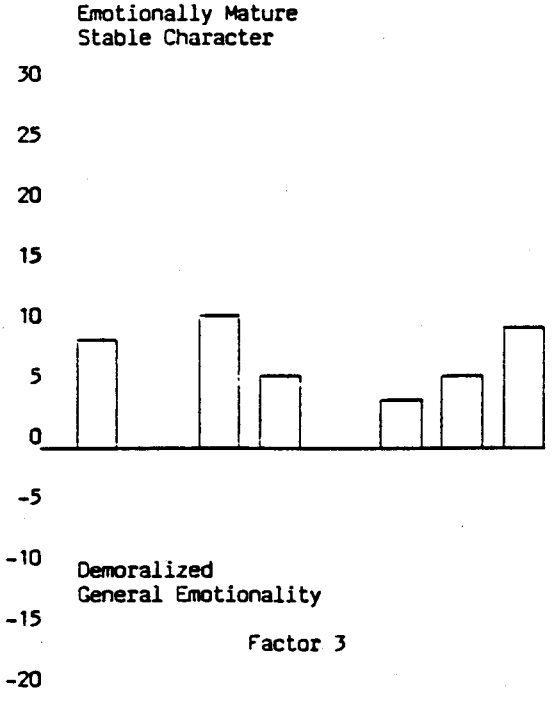
Factor 10 = Neurasthenia vs. Vigorous, obsessionally determined character

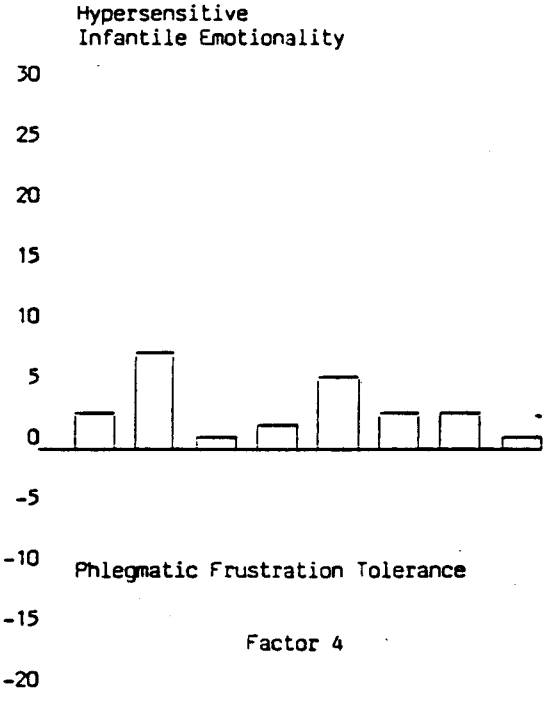
Factor 11 = Trained, socialized, cultured mind vs. Boorishness

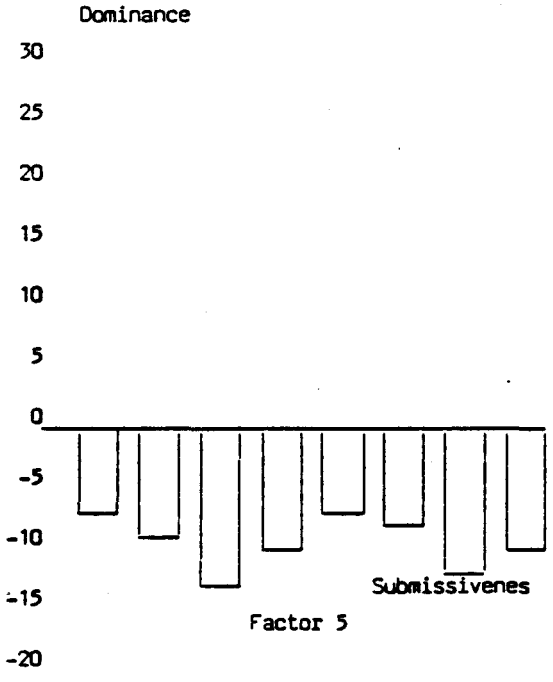
Factor 12 = Surgent cyclothymia vs. Paranoia

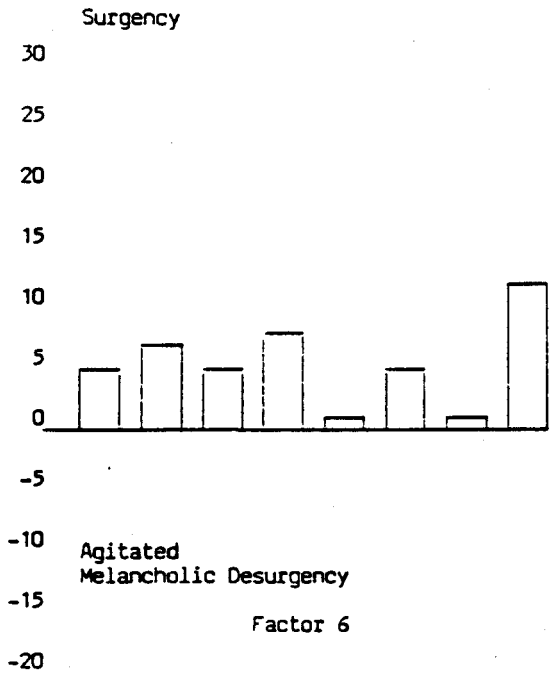

Cyclothymia
30
25
20
15
10
5
0
-5
-10
-15
-20
1
2
3
4
5
6
7
8
Schizothymia
Factor 1

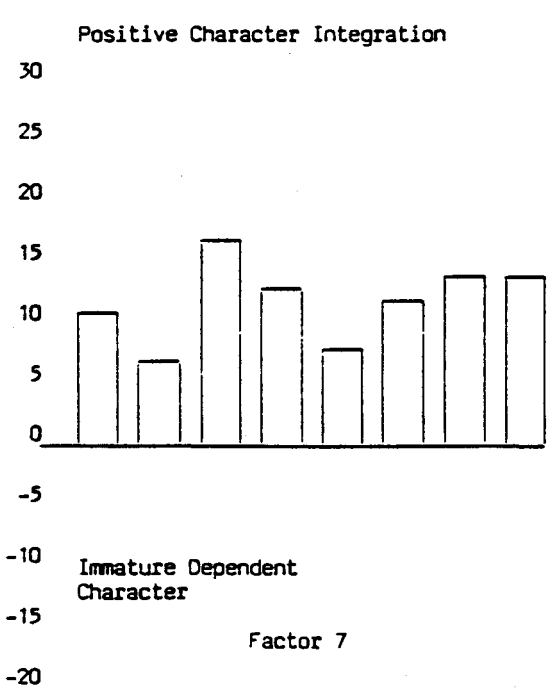

Intelligence
General Mental Capacity
30
25
20
15
10
5
0
-5
-10
-15
-20
Mental Defect
Factor 2

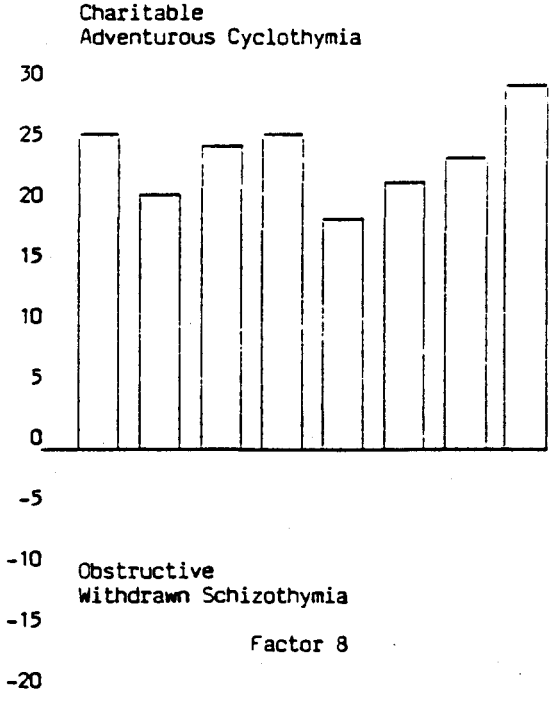

Emotionally Mature
Stable Character
30
25
20
15
10
5
0
-5
-10
-15
-20
Demoralized
General Emotionality
Factor 3


Hypersensitive
Infantile Emotionality
30
25
20
15
10
5
0
-5
-10
-15
-20
Phlegmatic Frustration Tolerance
Factor 4

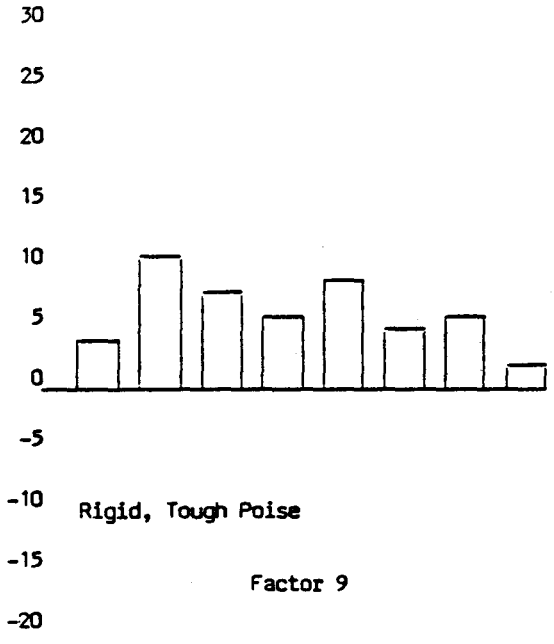

Dominance
30
25
20
15
10
5
0
-5
-10
-15
-20
Submissivenes
Factor 5


Surgency
30
25
20
15
10
5
0
-5
-10
-15
-20
Agitated
Melancholic Desurgency
Factor 6


Positive Character Integration
30
25
20
15
10
5
0
-5
-10
-15
-20
Immature Dependent
Character
Factor 7


Charitable
Adventurous Cyclothymia
30
25
20
15
10
5
0
-5
-10
-15
-20
Obstructive
Withdrawn Schizothymia
Factor 8

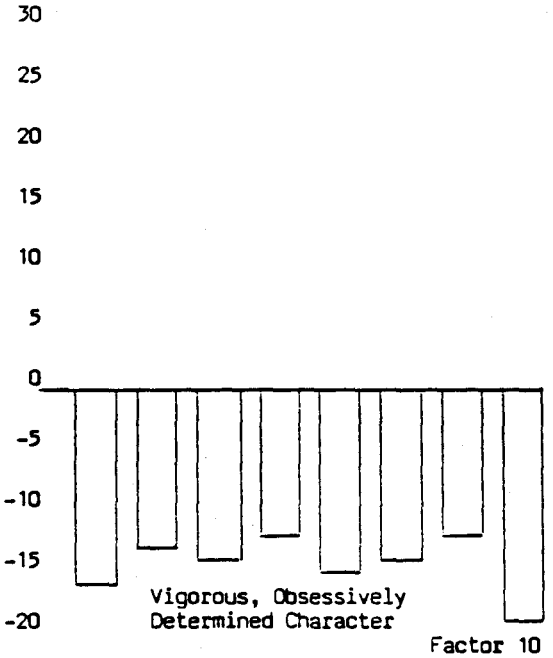
Sensitive, Impatient
Anxious Emotionality



Rigid, Tough Poise

Factor 9

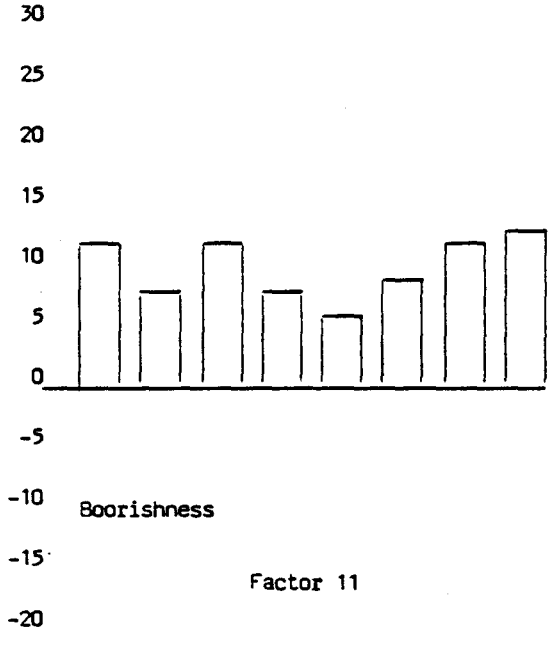
Neurasthenia



Vigorous, Obsessively
Determined Character

Factor 10

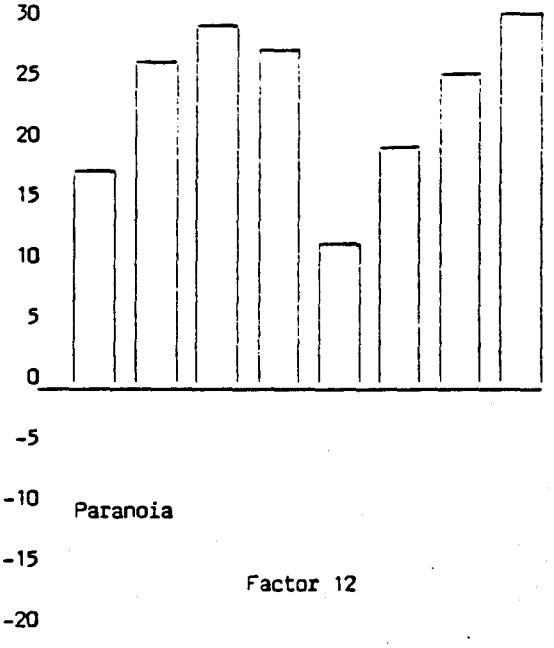
Trained, Socialized
Cultured Mind



Boorishness

Factor 11

Surgent Cyclothymia



Paranoia

Factor 12

TABLE 13

One Way Analysis of Variance of

Code Groups for Parent Adjective Checklist Factors

	Source (Code groups)	df	MS	F	p
Factor 1	Between	7	.02	1.89	.08
	Within	73	.01		
Factor 2	Between	7	.01	.77	.62
	Within	73	.01		
Factor 3	Between	7	.01	.98	.46
	Within	73	.01		
Factor 4	Between	7	.01	.85	.55
	Within	73	.01		
Factor 5	Between	7	.01	.35	.93
	Within	73	.01		
Factor 6	Between	7	.01	1.38	.22
	Within	73	.01		
Factor 7	Between	7	.01	.78	.61
	Within	73	.01		
Factor 8	Between	7	.01	.91	.50
	Within	73	.01		
Factor 9	Between	7	.01	.97	.46
	Within	73	.01		
Factor 10	Between	7	.01	.39	.91
	Within	73	.01		
Factor 11	Between	7	.02	2.33	.03
	Within	73	.01		
Factor 12	Between	7	.04	3.06	.01
	Within	73	.01		

ratings on the 12 factors for the eight code groups. Parents and teachers differed in the personality dimensions on which they differentiated the code types. For example, teachers discriminated highly between code types on Factor 2, a general intelligence dimension, while parent ratings described all the groups as relatively positive and similar (no significant differences, $F(7,73)= .77$, $p=.62$). Unlike teachers, parent ratings also did not show significant differences on Factor 5, $F(7,73)= .35$, $p=.93$, but described all the groups very similarly, as predominantly submissive. Also unlike teachers, parents did discriminate highly, $F(7,73)= 3.06$, $p=.01$, among code types on Factor 12, surgent cyclothymia versus paranoia. It is important to note all the groups were rated on the positive, surgent cyclothymia, side of this polarity yet significantly different in degree along this dimension.

Table 14 presents the intercorrelations on Factors 1 through 12 from parent Adjective Checklists.

Table 15 summarizes the correlations between parent and teacher scores on the 12 factors from the Adjective Checklists. Teacher and parent factor scores correlated significantly, at a level of less than .001, for Factors 2, 3, 4 and 7.

A cluster analysis (McQuitty, 1957) of the teacher and parent styles of responding on the 12 Cattell factors showed them to be quite similar. Teacher responses demonstrated three main clusters, Factors 2, 3 and 7, Factors 6, 8 and 12, and Factors 4 and 5. Parent responses also fell into three clusters, Factors 2, 3 and 7, Factors 4 and 5, and Factors 6, 8, 12 and 1.

TABLE 14

Correlational Matrix of Parent Adjective Checklist Factors

Factor	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
1												
2	.11											
3	.32	.66										
4	-.40	-.59	-.82									
5	-.34	-.18	-.43	.61								
6	.77	.04	.05	-.19	.02							
7	.18	.79	.84	-.67	-.33	.00						
8	.77	.14	.16	-.24	-.07	.70	.02					
9	.00	-.64	-.47	.41	-.09	-.03	-.53	.10				
10	-.19	-.61	-.27	.12	-.27	-.28	-.41	-.38	.45			
11	.19	.48	.33	-.16	-.04	.06	.31	.11	-.35	-.36		
12	.93	.05	.24	-.36	-.42	.73	.11	.66	.11	-.07	.17	

Table 15

Correlation Between Teacher and Parent Adjective Checklist Factors

Factor	Correlation	p
1	.04	.385
2	.41	.001
3	.56	.000
4	.45	.000
5	.23	.049
6	.21	.062
7	.47	.000
8	-.04	.397
9	.13	.171
10	.26	.029
11	.28	.020
12	.18	.099

Temperamental/Developmental Characteristics

The 99 Developmental Questionnaires returned by parents were scored and subjects were classified into one of four temperamental constellations. Table 16 summarizes the distribution of temperamental constellations for this sample.

Of the 99 Developmental Questionnaires returned, 75 corresponded to subjects in the eight major code types analyzed. Table 17 shows the distribution of temperamental constellations across the eight code types.

A one way analysis of variance was performed to determine if differences on temperamental qualities could be identified between code types (Table 18). No significant differences were found between the code types on temperamental constellation, $F(7,67)= 1.36$, $p=.24$.

TABLE 16

Distribution of Temperamental Constellations

Temperament	No. of Subjects	Percent
Easy	23	23
Difficult	16	16
Slow to Warm Up	14	14
Mixed	46	47
	99	100

TABLE 17

Distribution of Temperamental Constellations by Code Groups

Code Group	Easy	Difficult	Slow to Warm up	Mixed	Total
2-3	2	0	0	6	8
2-7	1	1	2	2	6
3-5	2	0	1	4	7
3-7	6	4	4	13	27
4-6	1	3	1	4	9
4-8	1	0	2	0	3
5-7	0	2	1	4	7
6-8	5	1	0	2	8
Totals	18	11	11	35	75

TABLE 18

One Way Analysis of Variance of Temperamental Constellations between Code Groups

Variance	df	MS	F	p
Between Groups	7	2.065	1.36	.24
Within Groups	67	1.517		

CHAPTER V

DISCUSSION

The current study lends support for the use of the MCPS with normal subjects and for the notion of common code types. It was found possible to identify commonly occurring code types and some empirically established personality characteristics corresponding to subjects scoring in these code type groups. In this chapter, the general findings about the instrument itself will be discussed first. Also, a comparison of the populations tested in this study and this author's earlier work will be considered to interpret the significance of the results. Then a summary will be presented of the characteristics associated with each of the major MCPS two point code types identified. Some particularly interesting or significant findings about these code types will be highlighted, including contrasting teacher and parent responses and examining the findings of the temperamental ratings. Finally, some possible directions for future research will be proposed.

General MCPS Test Characteristics and Sample Comparisons

The configurational patterns obtained on the MCPS by these normal school children, when analyzed by the highest two scales, showed that the majority of subjects, or 80%, clustered around eight major two point codes. Very few subjects sored highest on the other 19 possible

two scale combinations. These findings support those of the earlier work by this author which found that a limited number of two point combinations commonly emerged from profiles of normal subjects. In the earlier study, 70% of the 311 subjects tested scored in the same present eight major two point code types plus two additional code types which will be discussed later in comparing the two populations further.

This phenomenon of particular high scale combinations occurring more frequently among normals may perhaps be understood by examining the scales involved. The scale combinations emerging appear consistent with the MCPS authors' findings regarding the interrelationship of the scales (Sines, Pauker & Sines, 1974). The authors had only looked at single scale elevations in their normative study, however, they did compute intercorrelations between the scales for their normal group of subjects. The two scale combinations found to be most common in this sample coincides with the more highly correlated scales in the normative sample. The MCPS scales were constructed separately, with the first three scales providing measures of normal dimensions varying in young children (conformity, masculinity-femininity, and maturity) and the last five scales constructed to differentiate clinical populations of children with typical problems presented for treatment. Also, the various MCPS scales overlap on extremely few items, with each scale having a fairly independent cluster of items. The authors did find that Scale 3, maturity, correlated highly with most of the other scales, sometimes negatively, such as with the aggression and somatization scales (See Appendix B). It is the authors' belief, and

it appears to be supported in the current study, that these intercorrelations between scales are related to the relationship between the personality relevant dimensions being assessed. In this study, the patterns of scales that are found to occur together seem to represent combinations of personality traits that vary within normal subjects.

In comparing further the findings of the two studies and the code types identified, there is some evidence that the dimensions differentiating normal personality style variations may be related to cultural or other population differences. The major code types emerging in the two studies are similar for the two subject samples except for the higher frequency of the 5-6 and 5-8 code types in the earlier study. The most significant difference between the two groups tested was the high proportion of Hispanic subjects (over 50%) in the first study. This comparison suggests that the inhibition level or at least conflicts about this dimension, as reflected by Scale 5 elevations, may be more common among the Hispanic children.

In the current sample, it was found that several scales tended to be one of the high points quite frequently, and at times significantly elevated within this group of normal subjects. The maturity and sleep disturbance scales (3 and 7) were most common, with at least one of these two scales occurring in four of the eight major code types identified. As was noted earlier from the MCPS authors' findings, maturity (Scale 3) seems to be highly correlated with most other personality dimensions. However, Scale 7, or the sleep disturbance

scale, not only occurred frequently as a high point, but also was frequently elevated more than two standard deviations above the mean, or a score of $\underline{T}>70$ (Table 2). This is unusual within a normal population and may indicate a problem with the construction or standardization of this scale. The review of the literature confirmed that this scale was found to be the least valid of the MCPS scales when studied individually. It appears that the criterion for sleep disturbance is not clearly defined and some sleep problems may not be unusual among normal children. An alternate explanation may be that the scale does not really measure the construct it was intended to measure and may be tapping other dimensions. This concern is relevant to the use of the MCPS single scales and as an instrument to assess sleep disturbance. However, the use of the MCPS in the current study did not depend on any particular constructs attached to the individual scales, but rather independently identified characteristics of children obtaining a particular two point code configuration. The validity of any single scale to screen particular clinical groups is not relevant to the instrument's current use here to assess personality characteristics among normals. The construct measured by any particular scale, or what it appears to be tapping, must be explored in the context of the meaning it gives to a particular two point code type, such as the difference of Scale 7 as it occurs in combination with different other scales. In this study, with elevations on Scale 7 being quite common for normal children, frequently occurring in combination with the maturity scale (Scale 3), and given the

descriptions of the code type groups having Scale 7 as one high point, it may be speculated that this scale may be measuring a different dimension than sleep disturbance. Alternative explanations suggested by the results include viewing this scale as an indication of level of tension, awareness or future orientation and associated anxiety.

In data gathered here identifying personality characteristics, some differences in personality style among the code types emerged in both analyzing single descriptive adjectives and also clusters related to more global dimensions of personality. As this was a normal population, it was consistent with expectations that on both the use of single adjectives and Cattell's clusters capturing personality factors or dimensions, the various code types all obtained generally positive, healthy overall descriptions. Subtler, less significant variations are to be expected within a normal realm of stylistic personality differences. The eight code types did indeed demonstrate diversity in their salient characteristics and some trends in global personality dimensions emerged.

Given the relatively even division by sex in this population, it is interesting to note the higher frequency of males in code types which include the masculinity-femininity scale (scale 2). Between the 2-3 and the 2-7 code types there are 17 males and only 10 females. Without necessarily having dramatic elevations, it is not surprising that males may normally score higher on the masculinity scale. It may be hypothesized that the cultural norms against males engaging in "feminine" activities (such as depicted in MCPS pictures of cooking,

cleaning, playing with dolls and other such activities) is yet stronger than that for females doing "masculine" activities (such as MCPS drawings of a child participating in various sports or playing with tools and building things). This would lead to boys choosing the more masculine cards as enjoyable and also not selecting more feminine cards, since the scoring of the test includes both items being designated as enjoyable and others not chosen as such, they would score on a higher number of items on this scale.

MCPS Code Types Summary

Code Type 2-3 :

Children obtaining this code type are described as talkative, enthusiastic, energetic, persevering and curious, and having a wide range of interests. These active, positive qualities are also often associated in this code type with characteristics such as impatience, disorderliness and infantile behaviors. In other situations these children may be affectionate and sensitive. As a group, they are seen as intelligent and having a rather more emotional character than highly stable and mature. They are also perceived as high on the global personality dimensions of surgency and cyclothymia.

Code Type 2-7 :

Children in this code type group were described in quite diverse ways in different settings. Teachers felt they were undependable, easily bored, quitting, apathetic, and showing off, but also dreamy,

friendly and sociable. Parents seemed to identify somewhat similar characteristics, but interpret them more favorably, such as being easy going, soft hearted, argumentative, curious, kind and emotional. In more global descriptions, in comparison to other code types, these children were rated lower in intelligence and cyclothymia. They were characterized as anxious, emotional, immature, dependent and withdrawn. They also tended to be seen as high on dominance, which must be viewed in the environmental context of different settings, with this characteristic being more salient at school and expressed in a more subtle manner at home.

Code Type 3-5 :

These children were seen in very positive, consistent ways across different settings. Qualities such as kindness, honesty, loyalty, cheerfulness, generosity, conscientiousness and cooperativeness were frequently associated with children in this code type group. They seem to be intelligent, very mature and stable, and possess a good deal of frustration tolerance. These children appear to be generally submissive and reflect some obsessive compulsive characteristics in their personality style.

Code Type 3-7 :

Children in this code type group are characterized as good-tempered, kind, sociable, cooperative and reliable. They are also depicted as adaptable and tending to worry. In general, a mature, balanced temperament and some capacity to tolerate frustration and not

become excessively emotional are often attributed to members of this code type group. They are relatively submissive and easy going, but not overly energetic.

Code Type 4-6 :

This code type was described as the most energetic, active, independent group of children. They were also seen as generous, curious, emotional, enthusiastic, sensitive and affectionate. Some argumentativeness, moodiness, hardheadedness and impulsivity were associated with these children. This group was rated as intelligent, dominant, and having a generally positive character integration. Some obsessive compulsive personality characteristics are also typical of this group.

Code Type 4-8 :

Fairminded, cheerful, trustful, disorderly, curious and sociable were some of the characteristics describing this children in this code type group. They also appear to be self confident and enthusiastic, and at times moody, naive, emotional and sentimental. On the personality dimension encompassing qualities identified as surgency, these children were rated highly. Teachers saw children in this group as relatively less intelligent than other groups.

Code Type 5-7 :

Children in this code type group may be seen as easy going, honest, disorderly, sensitive, dreamy and cooperative. They also were described as worrying, individualistic, modest and quiet. Overall,

these children demonstrate an anxious, submissive personality style without a great deal of energy manifested.

Code Type 6-8 :

These children were characterized as talkative, cheerful, sociable, enthusiastic, popular, wise, independent and having a wide range of interests. Self confidence and adventurousness were also often associated with this code type, as were conscientiousness and religiousness. They were rated highly on the global cyclothymia personality dimension and generally seen as intelligent and mature. A poised, socialized personality style and the capacity to tolerate frustration were attributed to children in this group.

Comparison of Teacher and Parent Ratings

Differences between teacher and parent ratings were quite dramatic for several of the code types, and deserve further exploration. Some of the observed differences between teacher and parent ratings will here be highlighted and possible explanations discussed. Also, the relationship between these two sources of data must be considered in order to interpret the meaning of the data as a whole.

Teachers described the 2-7 code type in dramatically negative terms relative to the general positive bias noted with this normal population. In contrast to this, the 3-7 code type was described in very positive ways and this code type encompassed the largest proportion of subjects. Since the two groups are portrayed so differently and both contain scale 7 as one of the high points, the

variation appears to be related to the influence of the combination with a high scale 2 score. The subjects in the 2-7 code type were described as often undependable, quitting, easily bored, fickle, disorderly, absent minded, showing off and talkative. These are usually characteristics that would not be highly valued by teachers. These children may be difficult for the teacher to manage in a classroom group and perhaps may lead to the strongly negative bias.

The 2-3 code group is also described by teachers with some similar, negatively biased characteristics, such as impatient, infantile and disorderly. However, the influence of the combination with a high scale 3 score (maturity) seems to balance the description and make this group also like the 3-5 and 3-7 groups, which are characterized as friendly, sociable and good tempered. These apparent overlaps and differences between the code groups supports the notion that the combination of two scales leads to a personality style unique from that expected by focusing on only a single scale.

Teachers and parents were found to rate the code types somewhat diversely. The parents appeared to have an even more globally positive bias in their descriptions than the teachers. For example, parents rated the 2-7 code type, which was judged so negatively by teachers, in predominantly positive terms. However, when examining the descriptions of parents, it became evident that it was necessary to look closely at the level where the descriptions begin to diverge or acknowledge some less globally positive characteristics. Once this pervasive positive bias of the parents is taken into account, some subtle differences

between groups can be detected. With the 2-7 code type, some of the characteristics noted in the third column of adjectives used by parents (Table 10) began appearing more like the teachers' descriptions, using terms such as talkative, disorderly, unrealistic, moody and impatient.

Another interesting comparison may be drawn between the teacher and parent descriptions of the 4-6 code type. Both saw this code type as energetic, talkative, generous and worrying. However, parents strongly identified this group as sensitive, affectionate, soft hearted and emotional. Parents also often noted some more negative characteristics such as argumentative, jealous, hard headed and impulsive, while teachers observed more independence, maturity and enthusiasm in this code type group. The differences between teacher and parent ratings may reflect a focus on distinct personality dimensions. In the parents' descriptions of the 4-6 code type, there is a strong emphasis on emotional, affective qualities. Possibly parents are more sensitive to this dimension of their children's personalities or they may simply be able to see this side more often than may be evident in a school setting. However, there seem to be other characteristics that teachers pay more attention to or observe more readily in the classroom setting, such as independence-dependence, maturity-immaturity, talkativeness-quietness, cooperation or sociability. Teachers may be more objective in judging some of these dimensions and more accurate, since they have the opportunity to compare individual children with their same age peers.

To further understand the differences between parent and teacher

ratings of the code types, the more global personality dimensions captured with Cattell's factors can be analyzed. A comparison of the teacher and parent ratings can be drawn from the distributions of the code groups along the 12 major personality factors on Figure 2 and Figure 3. Since both sets of ratings represent group means, taking into account number of subjects in the code group and computed from percentages of adjectives selected, they lend themselves to direct comparison. Again here, either due to differences in value or emphasis on certain dimensions, or simply to opportunity to observe particular personality aspects, teachers and parents do not focus on the same factors to describe the code groups. Teachers, who have a greater opportunity for normative comparisons, made varied discriminations between groups on Factor 2, or a global intelligence dimension, whereas parents did not, and described the groups as quite similar in this aspect (Analysis results on Table 11). Teachers also discriminated significantly between groups on Factors 1, 5, 7 and 10. These factors encompass personality dimensions such as general maturity, dominance and submissiveness and obsessive characteristics. Parents in contrast, focus on more global personality dimensions, such as the overall cyclothymia dimension measured by Factor 1 and Factor 12, seeing the groups in a generally positive, less differentiated way on other particular traits (Table 13).

These results are consistent with those found in looking at single adjective descriptions, and support the idea that teachers and parents observe different samples of behavior and also value or emphasize

different characteristics. This does not seem attributable to differences in how the personality dimensions are seen, since teachers and parents agree globally on most of the factor ratings when these are not broken down by code groups (Table 15). This appears to indicate that, for example, teachers and parents agree in seeing most of the children in this populations as generally on the positive, intelligent side of Factor 2, $\underline{r}(54) = .41$, $\underline{p} < .001$, but they do not necessarily agree on the differences between the code groups, since teachers indicated significant differences between groups on this factor whereas parents did not. The cluster analysis also supports this conclusion that teacher and parent response styles are similar in their interpretation of the 12 personality factors. This, again, is related to their interpretation of particular personality factors globally across children, not comparing between code type groups.

In summary, contextual factors seem to influence teacher and parent descriptions. Teachers seem to focus on and differentiate on school related dimensions, such as intelligence, independence and dominance or submissiveness. Parents tend to emphasize distinctions on global adjustment, emotional qualities and affective behaviors.

Given these differences, the best description of each code type may perhaps be obtained combining these apparently complementary aspects of the personality; the more objective performance, achievement, and social dimensions with the emotional, affective and global adjustment dimensions. The summary for the code types presented earlier draws from both of these sources.

The failure of the developmental questionnaire completed by parents to identify differences between the code groups on temperamental qualities may be related to several conditions. The method of administration of the questionnaire in this study, parents completing it independently and returning it to school, did not provide an opportunity to explain the qualities being assessed and clarify items such as is possible in conducting individual interviews to obtain this information. From parents' comments on some returned questionnaires it is possible that they may not have clearly understood the format of the questionnaire or that they were to attempt a global estimate of the temperamental qualities rather than too concretely focus on specific examples.

Also, the procedure followed in sending the questionnaires to parents, requesting their return, creates a self selection bias in that it is unclear how the 50% returned may compare with the other half that were not returned. One may speculate that these two groups may differ in terms of parental personality variables, which certainly has been shown by Thomas and Chess (1984) to impact on the personality development of their children. It may be that parents who are more involved, cooperative and more likely to return the materials may also have an impact on their children and the children may actually be more positively well adjusted. Or it might simply be that these parents will present a more positive bias.

The distribution of temperamental constellations in this group for which questionnaires were available differed from the Thomas and Chess

(1977) sample (See Appendix J) with fewer children in the easy temperamental type and almost half the group in the mixed category as compared to 35% in the Thomas and Chess group. Also, a higher percentage of children in this sample, 16% (Table 16), scored in the difficult temperamental constellation than in the Thomas and Chess group (10%). It is unclear therefore whether the procedural aspects mentioned above affected this distribution or if this sample truly differs from the group studied by Thomas and Chess and which is more representative of a "normal" sample.

In view of the strong comments made on a small proportion of returned questionnaires, with these parents holding very specific opinions about child rearing and how they respond to their children, it seems most likely that the parents returning the questionnaire represent a bipolar group. A large proportion may represent a motivated, cooperative, positive group of parents. A small part of this group returning the questionnaires, however, seem to have very intense feelings, set opinions and wish to make their view known. This factor may be influencing the self selection of those participating and the children rated as to temperamental characteristics in this sample may be reflecting, to some degree, the temperamental styles of their parents.

Within the context of these uncertainties, looking at the distribution of temperamental constellations across the code types (Table 17) shows some interesting trends. The high proportion of easy type in the 6-8 and 3-5 code groups seem to support the positive

descriptions of these groups from the other measures. Similarly the low number of easy types and higher proportion of difficult and slow to warm temperaments in the 2-7, 4-6, 4-8 and 5-7 groups may be related to the more mixed descriptions of these groups. Further study is needed to assess the relationship between temperament and other personality dimensions reflected in these descriptions of personality style.

Directions for Future Research

The findings of this study support continued research configurationally using the MCPS and empirically gathering more information on various personality characteristics differentiating the commonly occurring code group types. This continued study may create a sufficiently established body of data to allow the use of the MCPS for the previously expressed need of assessing normal personality differences in young children.

Further research is also needed to explore if subjects clearly scoring high on a single scale with no other scale scores being close, differ when compared with subjects who have several scales close in scores. In the present study, the two highest scales were selected without differentiating if these two scales were quite close or even several standard deviations apart.

The distinction in elevations or distributions of scaled scores may be especially significant in determining if there is a difference in code types depending on which of the two scales is higher. The current study, as in early MMPI research, did not differentiate two

point code types by which scale was highest but rather treated a 2-3 the same as a 3-2 type. It may be that these can be treated this way usually, but a large disparity in elevation of the two scales may alter this assumption. For example, a subject who scores $\underline{T}$=65 on scale 2 with the next highest score $\underline{T}$=50 on scale 3 and other scales just under 50 may be quite different than a subject who obtains a $\underline{T}$=50 and other scales similarly low. These two subjects may both be classified in the code type 2-3/3-2, however, may be more accurately described by the single highest scale. These types of finer discriminations, as in the history of the development of the MMPI, require a great deal of empirical data and large numbers of subjects analyzed. The accumulation of such data to refine the gross initial groupings possible with a new instrument require time and continued research.

Further research is also needed to study clinical populations using a configurational analysis system with the MCPS. Then, comparing the code types that are found with normals and with clinical populations would provide evidence to determine if these two populations differ on the elevation of the scales or in the two scale combinations that emerge. Such information would continue clarifying the relationship of the scales and the constructs being measured.

The constructs underlying what scale 7, sleep disturbance, need closer analysis. The high incidence of this scale in normal subjects, it's frequent pairing with the maturity scale (scale 3) and the excessive elevations for normal children, seem to highlight that something else is being measured than sleep disturbance. This also

supports calling this scale something other than sleep disturbance.

The lack of scale 1, conformity, to differentiate children and it's notable absence in any of the major two scale combinations emerging, raises interesting questions about this dimension. Some aspects of the scale's construction and norming suggest the possibility of using this scale as more a measure of response style to the test, similarly to some of the validity scales on the MMPI. Therefore, further analysis is needed, considering both extremes, very high scores and very low scores on conformity, and the relationship of this to other scale scores and their interpretation.

As previously noted, the present study begins exploring the usefulness of the MCPS as a global personality inventory for young children. At this stage, such a use of the MCPS must be considered a valuable research tool rather than a clinical instrument. The test, however continues to show promise and future research may help establish its value as a clinical assessment tool.

SUMMARY

This study explores the use of the Missouri Children's Picture Series (MCPS) as a personality inventory for children, using the two highest scale scores, or two point code type. The rationale and methodology for configurational analysis was guided by the early work with the Minnesota Multiphasic Personality Inventory (MMPI) for personality assessment with normal adults. This approach relies on the accumulation of empirical data describing personality characteristics of particular code types.

The MCPS was administered to 194 normal school children between 6 and 12 years old at a midwestern parochial school.

Of all the possible two point combinations of the eight MCPS scales, eight major two point code types were found to identify 85% of the subjects. Descriptions of the subjects were obtained from adjective checklists completed by parents and teachers. These were analyzed utilizing single descriptive adjectives and clusters based on Cattell's (1946, 1967) personality factors. Parents also completed developmental questionnaires developed from the work of Thomas and Chess (1968, 1977, 1984) on temperamental characteristics in children.

Summarizing descriptions of each of the eight code type groups from the parent and teacher checklists, it was found that this configurational approach provided reasonable distinct patterns for

assessing personality style differences in normal children. The developmental questionnaire from parents did not significantly discriminate the code type groups by temperamental constellation. Parent and teacher descriptions were relatively consistent with some differences in the characteristics emphasized. As expected given their context, teachers focused on characteristics such as intelligence, dominance-submissiveness and dependence-independence. Parents tended to emphasize more affective dimensions in their descriptions, such as emotionality and sensitivity. The parent and teacher descriptions were found to be complementary and together form a comprehensive overview of the personality style.

Further work is recommended utilizing this approach to better empirically establish the validity of the MCPS two point code types and expand the instrument's usefulness as a general personality inventory for children.

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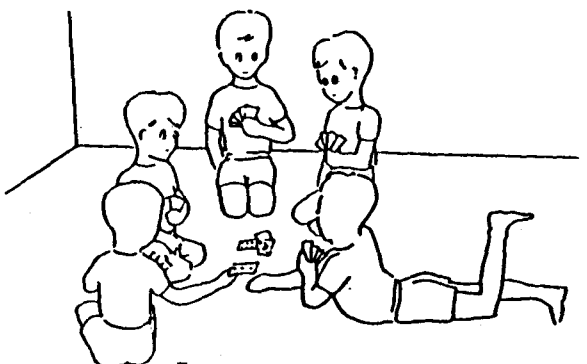
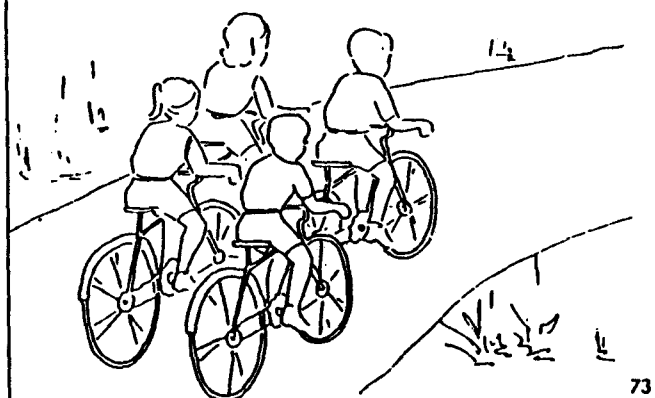
APPENDIX A

SCALE 1 - CONFORMITY

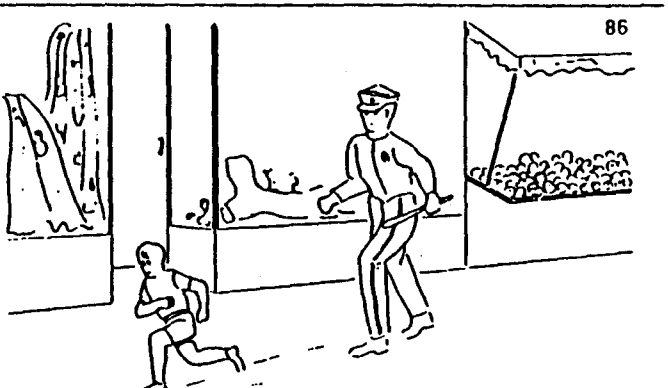


Fun 118



Fun 73

Not Fun 22



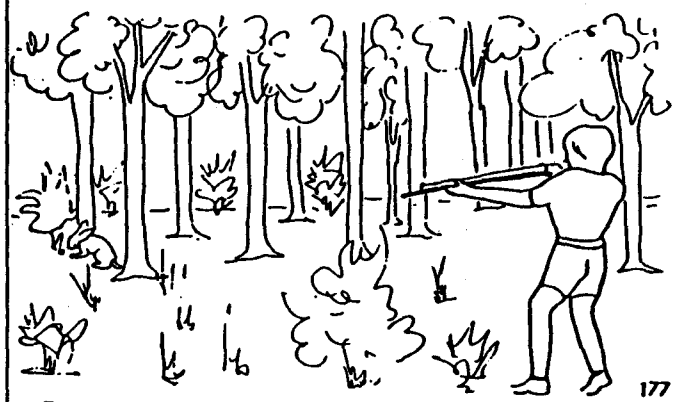
86

Not Fun

SCALE 2 - MASCULINITY- FEMININITY

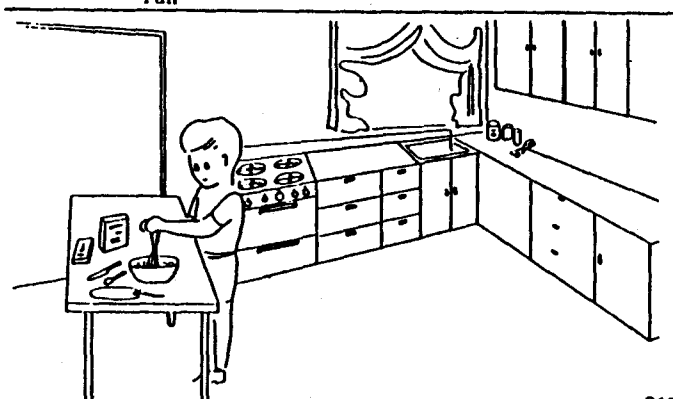
Fun

81



Fun

177



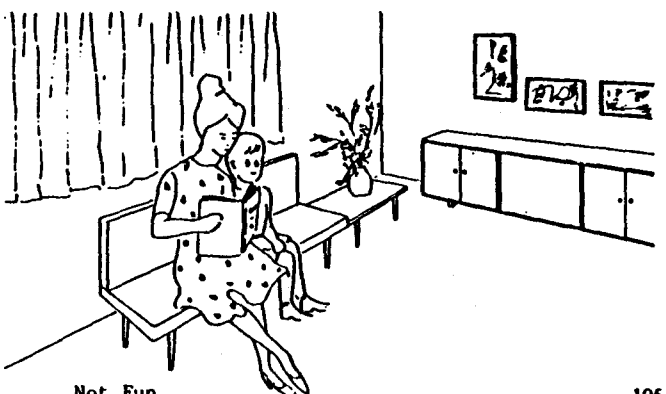
Not Fun

212

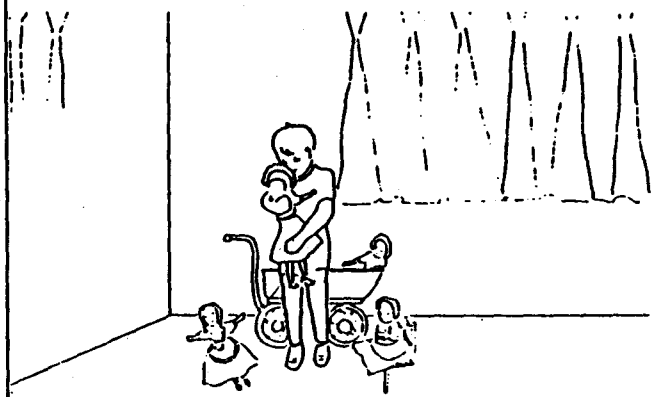
110

Not Fun

SCALE 3 - MATURITY



Not Fun 105



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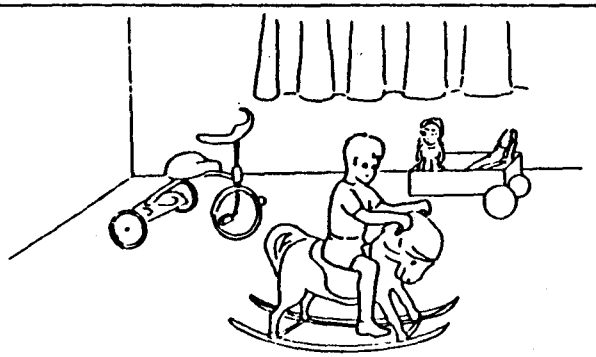

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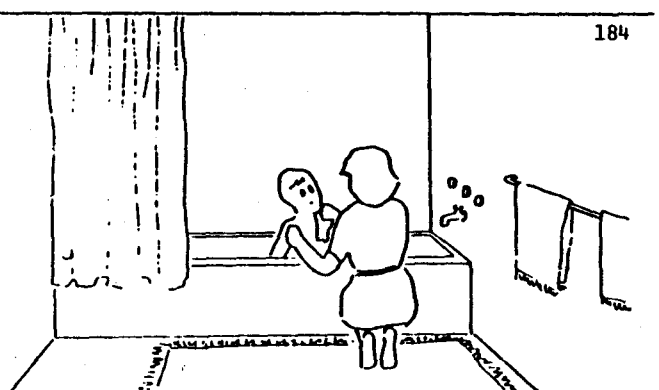
184



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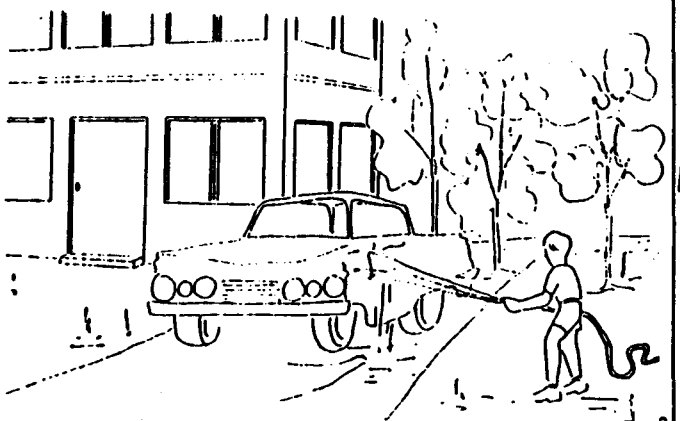
SCALE 4 - AGGRESSION



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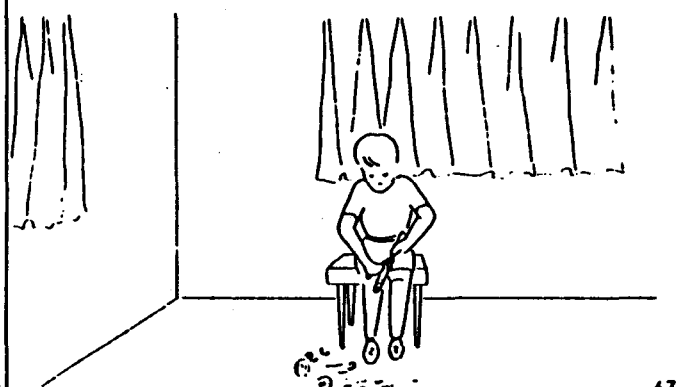

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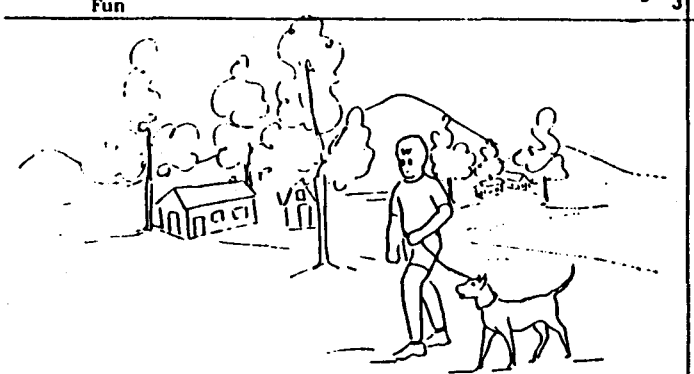

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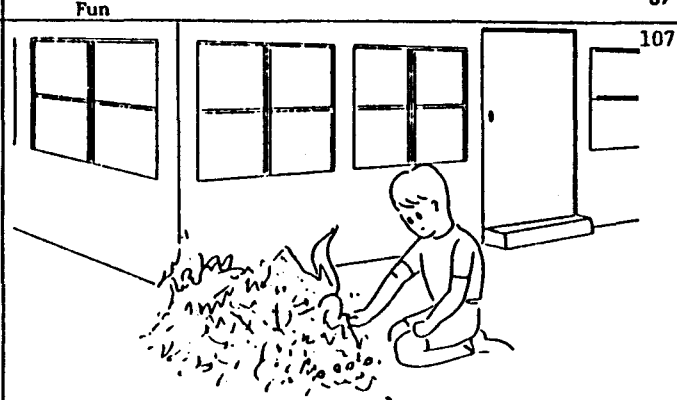
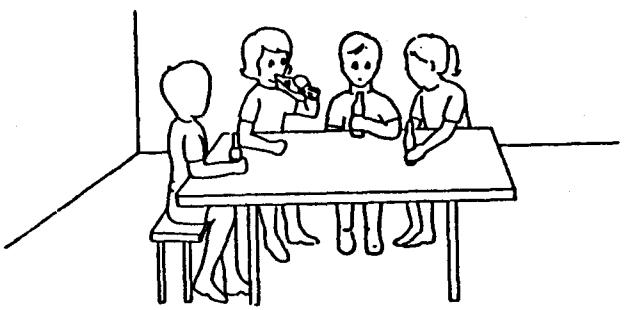


Fun 107

SCALE 5 - INHIBITION



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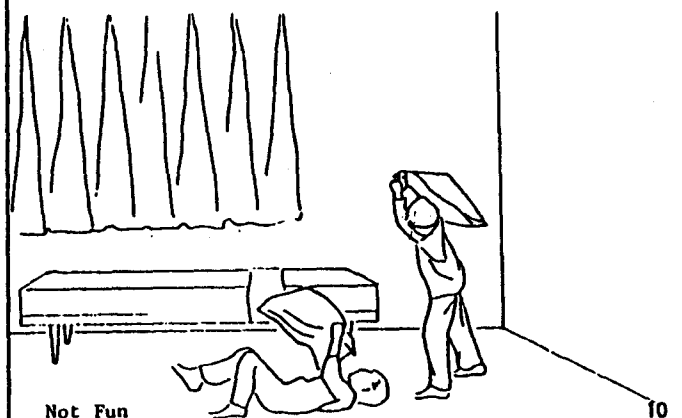

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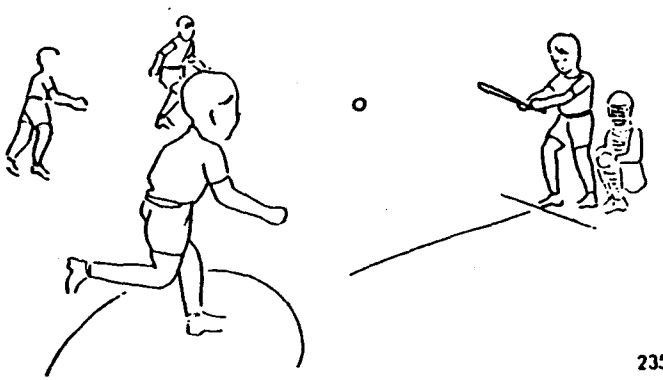

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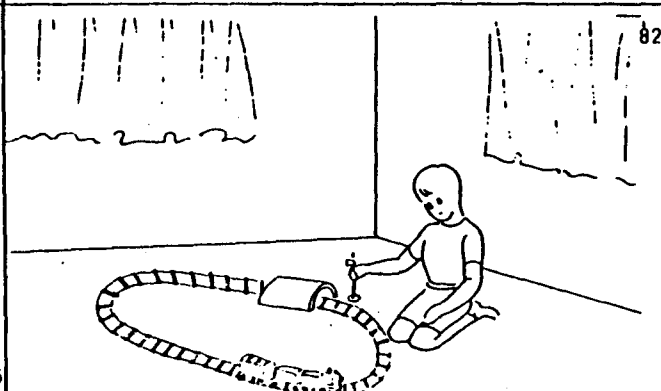
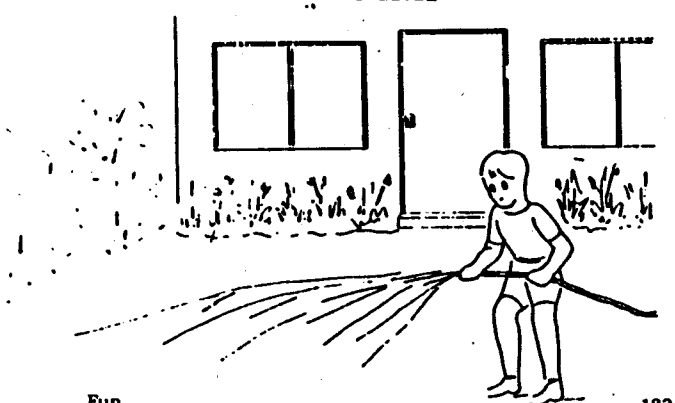


82

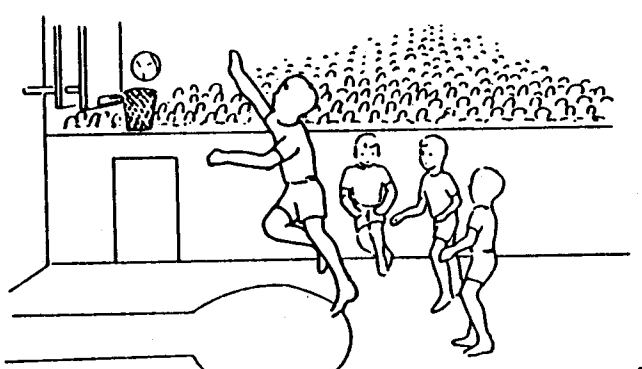
Fun

SCALE 6 - ACTIVITY LEVEL



Fun 182

Fun 106



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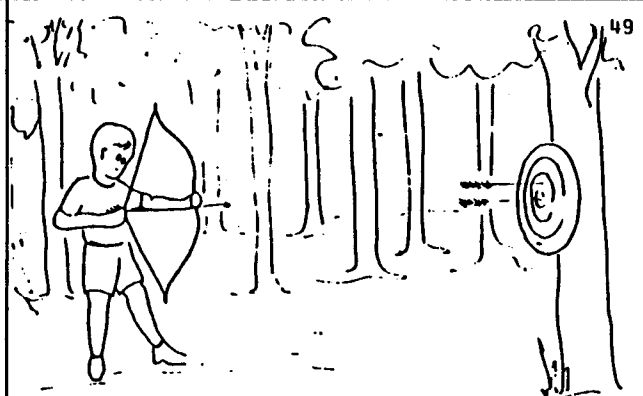

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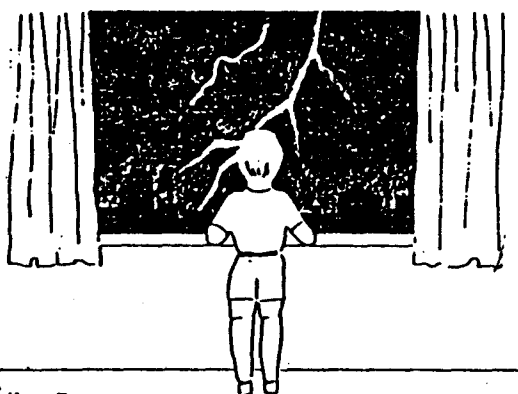
Not Fun

SCALE 7 - SLEEP DISTURBANCE



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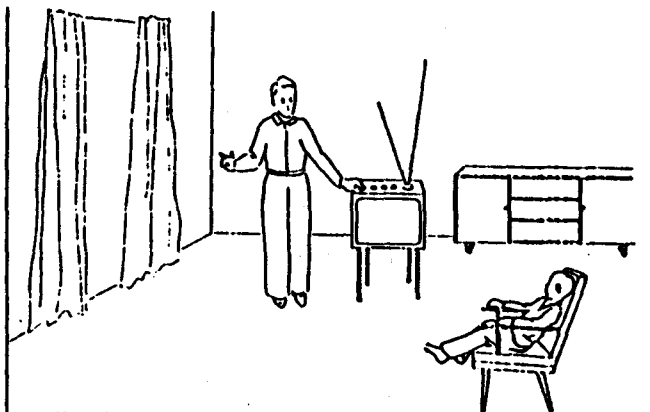

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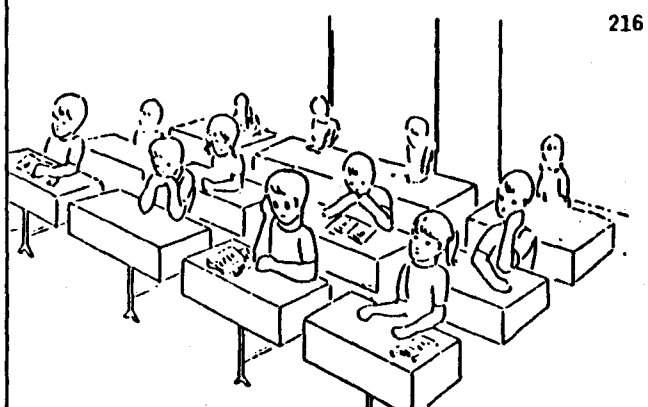
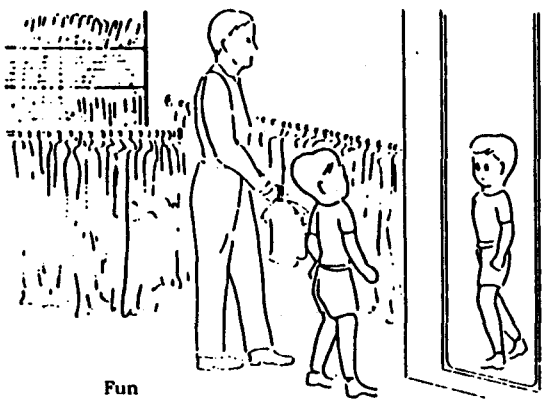


Not Fun 216

SCALE 8 - SOMATIZATION



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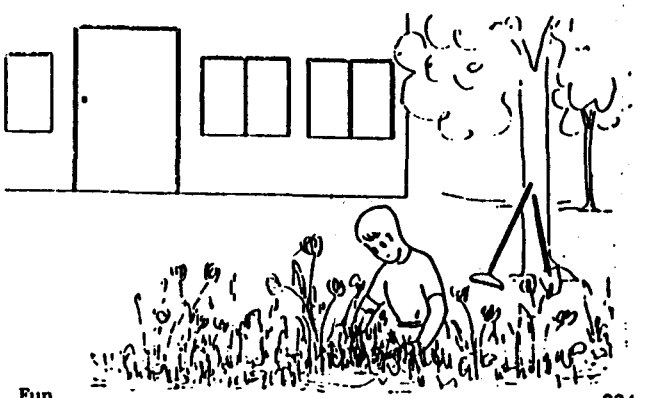

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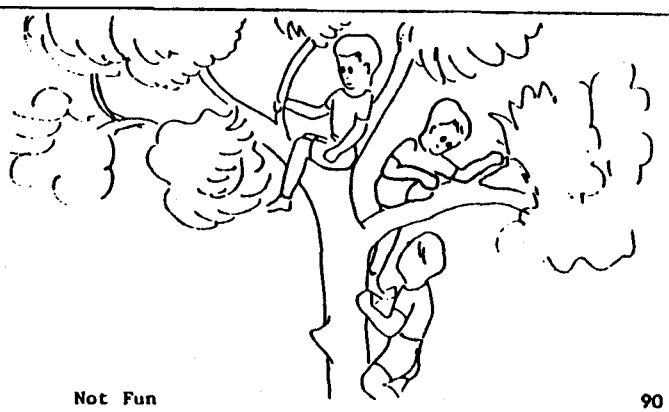

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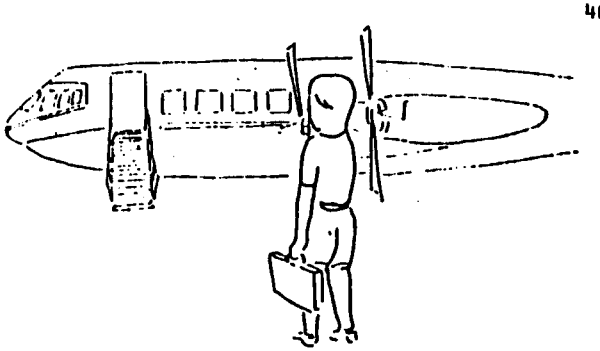
46



Not Fun

APPENDIX B

Intercorrelation of MCPS Scales

Boys T Score Intercorrelation Matrix (N = 1917)

Scale	2	3	4	5	6	7	8
1	.17	-.31	.05	-.40	-.04	-.54	-.12
2		.33	-.33	-.31	-.41	.22	-.48
3			-.64	.18	-.55	.60	-.65
4				-.16	.44	-.38	.35
5					.20	.14	.24
6						-.33	.57
7							-.51

Girls T Score Intercorrelation Matrix (N = 1960)

Scale	2	3	4	5	6	7	8
1	-.04	-.37	.18	-.46	-.04	-.52	.18
2		.05	-.07	-.36	-.28	.08	-.32
3			-.60	.28	-.40	.59	-.56
4				-.18	.38	-.41	.28
5					.30	.21	.18
6						-.28	.49
7							-.47

Scale T-Score Intercorrelations for Clinic Boys (N = 404)

Scale	2	3	4	5	6	7	8
1	.23	-.36	.03	-.47	-.07	-.54	.12
2		.39	-.36	-.26	-.44	.20	-.47
3			-.64	.27	-.50	.59	-.59
4				-.28	.38	-.33	.25
5					.19	.22	.19
6						-.30	.54
7							-.48

APPENDIX C

THE ADJECTIVE CHECKLIST

CIRCLE THE WORDS IN THIS LIST THAT YOU FEEL CHARACTERIZE THE PERSON NAMED ABOVE. DO NOT DEBATE TOO LONG OVER ANY PARTICULAR WORD; YOU MAY CHECK AS FEW OR AS MANY WORDS AS SEEM APPROPRIATE.

HONEST	GENEROUS	ECCENTRIC	GLOOMY
DISHONEST	TIGHT FISTED	FLATTERING	LAUGHTERFUL
SELF DENYING	EASYGOING	SELF CENTERED	FRIVOLOUS
SELFISH	MATURE	LEVELY	SERIOUS
LOYAL	INFANTILE	AGGRESSIVE	HIGH STRUNG
FICKLE	CLEAR THINKING	INFLEXIBLE	RELAXED
FAIR MINDED	INCOHERENT	ADAPTABLE	IMPULSIVE
PARTIAL	INDEPENDENT	HOSTILE	DELIBERATE
RELIABLE	DEPENDENT	FRIENDLY	EMOTIONAL
UNDEPENDABLE	WISE	JEALOUS	UNEMOTIONAL
PERSEVERING	FOOLISH	RUTHLESS	IRRITABLE
QUITTING	POLISHED	KIND	GOOD TEMPERED
ORDERLY	ROUGH	SHREWD	UNSELF CONTROLLED
DISORDERLY	INTERESTS WIDE	NAIVE	SELF CONTROLLED
CONSCIENTIOUS	INTERESTS NAR-ROW	CLEVER	CONTENTED
PRACTICAL		CONCEITED	GRATEFUL
UNREALISTIC	SELF EFFACING	SELF DISSATISFIED	THANKLESS
WORRYING	SHOWS OFF	SELF CONFIDENT	SOFTHEARTED
DECISIVE	ARGUMENTATIVE	SELF DISTRUSTING	HARDHEARTED
INDECISIVE	TALKATIVE	ENERGETIC	CYNICAL
ENTERPRISING	QUIET	APATHETIC	IDEALISTIC
SHIFTLESS	BOASTFUL	ENTHUSIASTIC	POPULAR
MANY PHYSICAL COMPLAINTS	MODEST	VERSATILE	UNPOPULAR
	ARROGANT	SUBMISSIVE	SUSPICIOUS
NEUROTIC	HUMBLE	SENSITIVE	TRUSTFUL
DEPRESSED	PUGNACIOUS	POISED	IMPATIENT
CHEERFUL	PEACEABLE	AWKWARD.	CURIOUS
MOODY	THOUGHTFUL (A THINKER)	SOPHISTICATED	INARTICULATE
BALANCED		SHY	LIKES DRINKING
ABSENT MINDED	REASONABLE	ADVENTUROUS	RELIGIOUS
ALERT	AFFECTED	TIMID	WORDLY
SECLUSIVE	NATURAL	ALOOF	REBELLIOUS
SOCIABLE (MIXES WELL)	LOGICAL	AFFECTIONATE	CONVENTIONAL
	AESTHETIC INTERESTS	SENTIMENTAL	INDIVIDUALISTIC
FRANK	COURAGEOUS	HARDHEADED	DREAMY
SECRETIVE	COWARDLY	COOPERATIVE	EASILY BORED

Comparison of the Present Adjective List with the List Devised by Hathaway and Meehl

Number of items common to both lists	123
Items eliminated from the Hathaway-Meehl list	36

conscienceless	acquisitive	assertive	sensuous
placid	languid	tough	ascetic
facing life	temperate	simple-hearted.	uninquiring
evasive	dissatisfied	sociable (forward)	verbal
emotionally intemperate	intuitive	responsive	habit-bound
	physical strength and endurance	frigid	Libile
exhibitionistic		home and family interests	reverent
tacitum	amorous		political (national interest)
mulish	pious	obstructive	
defensive	settling down	mirthless	wandering

Items appearing only in the present list			15
moody	self-centered	clever	
shows off	dreamy	popular	
quiet	easily bored	unpopular	
thoughtful	lively	impatient	
flattering	aggressive	religious	
Total number of items in the present list			140

APPENDIX D

Adjective Clusters for Cattell's Factors

FACTOR 1:	Cyclothymia (+)	vs.	Schizothymia (-)
	idealistic, cooperative adventurous, easygoing grateful, softhearted natural, friendly,frank adaptable, cheerful enthusiastic, trustful good-tempered, reasonable		cynical, timid, thankless hardhearted, tightfisted hostile, secretive inflexible, apathetic suspicious
FACTOR 2:	Intelligence, general mental capacity (+)	vs.	Mental Defect (-)
	clear-thinking, clever conscientious, persevering thoughful, deliberate self-controlled, wide interests, wise, mature polished, independent reliable		incoherent, impulsive quitting, frivolous unrealistic, unself- controlled, narrow interests, dependent undependable, emotionally immature, infantile
FACTOR 3:	Emotionally mature, stable character (+)	vs.	Demoralized, general emotionality (-)
	practical, persevering self-controlled, self- effacing, unemotional balanced, loyal, honest mature, thoughtful deliberate, content		unrealistic, quitting unself-controlled, emotional, impatient neurotic, irritable fickle, dishonest infantile, self-centered shows off, frivolous impulsive
FACTOR 4:	Hypersensitive, infantile, sthenic emotionality (+)	vs.	Phlegmatic frustration tolerance (-)
	infantile, self-centered shows off, emotional impatient, unrealistic unself-controlled neurotic, boastful hypochondriacal assertive, conceited		mature, self-effacing unemotional, self- controlled, submissive modest, self-dissatisfied

FACTOR 5:	Dominance (+)	vs.	Submissiveness (-)
	boastful, conceited		modest, self-dissatisfied
	shows off, aggressive		self-effacing, submissive
	sophisticated, hostile		sensitive, adaptable
	talkative, inflexible		friendly, easygoing
	thankless, hardhearted		grateful, softhearted
FACTOR 6:	Surgency (+)	vs.	Agitated, melancholic desurgency (-)
	cheerful, enthusiastic		apathetic, worrying
	sociable, talkative		hypochondriacal, shy
	sentimental, trustful		seclusive, aloof, quiet
	good-tempered		sensitive, hostile
	reasonable		suspicious, logical
FACTOR 7:	Positive character integration (+)	vs.	Immature, dependent character (-)
	wise, mature, polished		dependent, incoherent
	independent, reliable		undependable, impulsive
	conscientious, loyal		quitting, unrealistic
	persevering, practical		neurotic, irritable
	balanced, honest		fickle, dishonest
	thoughtful, deliberate		frivolous, infantile
	self-effacing, self-controlled		self-centered, shows off unself-controlled
FACTOR 8:	Charitable, adventurous cyclothymia (+)	vs.	Obstructive, withdrawn schizothymia (-)
	kind, idealistic		cynical, thankless,
	friendly, grateful		hostile, hardhearted
	softhearted, natural		timid, secretive, aloof
	cooperative, adventurous		tight-fisted, suspicious
	frank, sentimental		quiet, narrow interests
	sociable, curious, wide interests, good-tempered		self-distrustful
	trustful, energetic		
	self-confident		

FACTOR 9:	Sensitive, imaginative, anxious emotionality (+)	vs.	Rigid, tough poise (-)
	kind, idealistic		cynical, thankless
	grateful, friendly		hostile, hardhearted
	softhearted, infantile		logical, mature, wise
	self-centered, neurotic		mature, self-effacing
	shows off, dependent		polished, reliable
	hypochondriacal		independent, unemotional
	incoherent, emotional		content
	undependable, self-dissatisfied		
FACTOR 10:	Neurasthenia (+)	vs.	Vigorous, obsessionally determined character (-)
	incoherent, impulsive		conscientious, aggressive
	quitting, submissive		persevering, polished
	dependent, undependable		sophisticated, mature
	immature, absent-minded		wise, indepedent, alert
	unrealistic, timid		reliable, energetic
	quiet, narrow interests		practical, clever, clear-thinking, persevering
	self-distrustful		adventurous, curious
			wide interests, self-confident
FACTOR 11:	Trained, socialized cultured mind (+)	vs.	Boorishness (-)
	thoughtful, persevering		narrow interests
	wide interests, aggressive		incoherent, quitting
	conscientious, independent		submissive, impulsive
	aesthetic interests		cynical, timid
	sophisticated, idealistic		talkative
	cooperative, adventurous		
	sensitive		
FACTOR 12:	Surgent cyclothymia (+)	vs.	Paranoia (-)
	cheerful, enthusiastic		apathetic, thankless
	easygoing, grateful		hardhearted, cynical
	softhearted, idealistic		timid, inflexible
	cooperative, adventurous		hostile, suspicious
	adaptable, good-tempered		aloof
	friendly, trustful, kind		
	reasonable, sociable		
	sentimental		

APPENDIX E

Scale for the Development of Temperamental Qualities

Child's Name _____

AGE _____

DATE _____

Dear Parent,

This questionnaire consists of nine temperamental qualities that are to be ranked on a scale of one to four. Circle the number that best represents your child's behavior at that age. For each of the nine qualities, please start at the first time interval (2 mo.) and continue, circling a number at each age level until you reach your child's current age, answering questions to the best of your memory. Please note there are items on each side of the page.

Thank you for your cooperation.

I. Activity Level

a) 2 months

1	2	3	4
Does not move when being dressed or during sleep			Moves often in sleep. Wriggles when being changed. (diapers)

b) 6 months

1	2	3	4
Passive in bath. Plays quietly in crib and falls asleep.			Tries to stand up in tub and splashes. Bounces in crib. Crawl after dog.

c) 1 year

1	2	3	4
Finishes bottle slowly. Goes to sleep easily. Allows nailcutting w/o fuss.			Walks rapidly. Eats eagerly. Climbs into everything.

d) 2 years

1	2	3	4
Enjoys quiet play with puzzles. Can listen to records for hours.			Climbs furniture. Explores. Gets in and out of bed while being put to sleep.

e) 5 years

1	2	3	4
Takes a long time to dress. Sits quietly on long car rides.			Leaves the table often during meals. Always runs.

f) 10 years

1	2	3	4
Likes chess and reading Eats very slowly.			Plays ball and engages in other sports. Cannot sit still long enough to do homework.

II. Quality of Mood

a) 2 months

1	2	3	4
Fusses after nursing. Cries when carriage is rocked.			Smacks lips when first tasting new food. Smiles at parents.

b) 6 months

1	2	3	4
Cries when taken from tub. Cries when given food he/she doesn't like.			Plays and splashes in bath. Smiles at everyone.

c) 1 year

1	2	3	4
Cries when given injections. Cries when left alone.			Likes bottle; reaches for it and smiles. Laughs loudly when playing peekaboo.

d) 2 years

1	2	3	4
Cries and squirms when given haircut. Cries when mother leaves.			Plays with siblings: laughs and giggles. Smiles when succeeds in putting shoes on.

e) 5 years

1	2	3	4
Objects to putting boots on. Cries when frustrated.			Laughs loudly while watching T.V. cartoons. Smiles at everyone.

f) 10 years

1	2	3	4
Cries when he/she cannot solve a homework problem. Very "weepy" if he/she does not get enough sleep.			Enjoys new accomplishments. Laughs when reading a funny passage aloud.

III. Approach/Withdrawal

a) 2 months

1	2	3	4
Rejected cereal the first time. Cries when strangers appear.			Smiles and likes wash-cloth. Has always liked bottle.

b) 6 months

1	2	3	4
Pushes away new toys. Cried first time at the doctor's office until he got home			Likes new food. Enjoyed first bath in a large tub. Smiles and gurgles.

c) 1 year

1	2	3	4
Stiffened when placed on a sled. Will not sleep in a strange bed.			Approaches strangers easily. Sleeps well in new surroundings.

d) 2 years

1	2	3	4
Avoids strange children in the playground. Whimpers first time at beach. Will not go into the water.			Slept well the first time at grandparents' house.

e) 5 years

1	2	3	4
Hid behind mother when entering school.			Enters school building unhesitantingly. Tries new foods.

f) 10 years

1	2	3	4
Severly homesick at camp during the first days. Does not like new activities.			Went to camp happily. Loved to ski the first time.

IV. Rhythmicity

a) 2 months

1	2	3	4
Awake at a different time each morning. Size of feeding varies.			Has been on 4 hour feeding schedule since birth. Regular bowel movements.

b) 6 months

1	2	3	4
Length of nap varies. Food intake varies.			Is asleep at 6:30 pm every night. Awakes at 7 am. Food intake is constant.

c) 1 year

1	2	3	4
Will not fall asleep for an hour or more. Moves bowels at a different time each day.			Naps after lunch each day. Always drinks bottle before bed.

d) 2 years

1	2	3	4
Nap time changes day to day. Toilet training is difficult because bowel movement is unpredictable.			Eats a big lunch every day. Always has a snack before bed time.

e) 5 years

1	2	3	4
Food intake varies. Time of bowel movement varies.			Falls asleep when put to bed. Bowel movement regular.

f) 10 years

1	2	3	4
Food intake varies. Falls asleep at a different time each night			Eats only at meal times. Sleeps the same amount of time each night.

V. Adaptability

a) 2 months

1	2	3	4
Still startled by sudden, sharp noise. Resists diapering.			Was passive during first bath; now enjoys bath. Smiles at nurse.

b) 6 months

1	2	3	4
Does not cooperate with dressing. Fusses and cries when left with siblings.			Used to dislike new foods; now accepts them well.

c) 1 year

1	2	3	4
Continues to reject new foods each time they are offered.			Was afraid of toy animals at first; now plays with them happily.

d) 2 years

1	2	3	4
Cries and screams each time hair is cut. Disobeys persistently.			Obeys quickly. Stayed contented with grandparents for a week.

e) 5 years

1	2	3	4
Has to be lead into classroom each day. Bounces on bed in spite of spankings.			Hesitated to go to nursery school at first; now goes eagerly. Slept well on camping trip.

f) 10 years

1	2	3	4
Does not adjust well to new shcool or teacher. Comes home late for dinner even when punished.			Likes camp although home-sick first days. Learns enthusiastically.

VI. Threshold of Responsiveness

a) 2 months

1	2	3	4
Is not startled by loud noises. Takes bottle and breast equally well.			Stops sucking on bottle when approached.

b) 6 months

1	2	3	4
Eats everything. Does not object to diapers being wet or soiled.			Refuses vegetables he/she likes when vitamins are added. Hides head from bright lights.

c) 1 year

1	2	3	4
Eats foods he likes even if mixed with disliked foods. Can be left easily with strangers.			Spits out food he does not like. Giggles when tickled.

d) 2 years

1	2	3	4
Can be left with anyone. Falls to sleep easily on either back or stomach.			Runs to door when father comes home. Must be tucked tightly into bed.

e) 5 years

1	2	3	4
Does not hear loud, sudden noises when reading. Does not object to injections			Always notices when mother puts on dress for the first time. Refuses milk if it is not ice cold.

f) 10 years

1	2	3	4
Never complains when sick. Eats all food.			Rejects fatty foods. Adjusts shower until water temp. is exactly right.

VII. Intensity of Reaction

a) 2 months

1	2	3	4
Does not cry when diapers are wet. Whimpers instead of crying when hungry.			Cries when diapers are wet. Rejects food vigorously when satisfied.

b) 6 months

1	2	3	4
Does not kick often in tub. Does not smile. Screams and kicks when temperature is taken.			Cries loudly at the sound of thunder. Makes sucking movements when vitamins are given.

c) 1 year

1	2	3	4
Does not fuss much when clothing is pulled over head.			Laughs hard when father plays roughly. Screamed and kicked when temperature was taken.

d) 2 years

1	2	3	4
When hit by another child he looked surprised, but did not hit back.			Yells if he feels excited or delight. Cries loudly if toy is taken away.

e) 5 years

1	2	3	4
Drops eyes and remains silent when given firm parental "no". Does not laugh much.			Rushes to greet father. Gets hiccups from laughing hard.

f) 10 years

1	2	3	4
When a mistake is made in a model airplane, corrects it quietly. Does not comment when reprimanded.			Tears up an entire page of homework if one mistake is made. Slams door of room when teased by younger sibling.

VIII. Distractibility

a) 2 months

1	2	3	4
Will not stop crying when diaper is changed. Fusses after eating even if rocked.			Will stop crying for food if rocked. Stops fussing if given pacifier when diaper is changed.

b) 6 months

1	2	3	4
Stops crying only after dressing is finished. Cries until given bottle.			Stops crying when mother sings. Will remain still while clothing is changed if given a toy.

c) 1 year

1	2	3	4
Cries when toy is taken away and rejects substitute.			Cries when face is washed unless it is made into a game.

d) 2 years

1	2	3	4
Screams if refused some desired object. Ignores mother calling.			Will stop tantrum if another activity is suggested.

e) 5 years

1	2	3	4
Seems not to hear if involved in a favorite activity. Cries for a long time if hurt.			Can be coaxed out of forbidden activity if being led into something else.

f) 10 years

1	2	3	4
Can read a book while T.V. set is at high volume. Does chores on schedule.			Needs absolute silence for homework. Has a hard time choosing a shirt in a store because they all appeal to him.

IX. Attention Span and Persistence

a) 2 months

1	2	3	4
Cries when awakened but stops almost immediately. Objects only mildly if cereal precedes bottle.			If soiled continues to cry until changed. Repeatedly rejects water if he wants milk.

b) 6 months

1	2	3	4
Sucks pacifier for only a few minutes and spits it out.			Watches toy mobile over crib intently. "Coos" frequently.

c) 1 year

1	2	3	4
Loses interest in a toy after a few minutes. Gives up easily if he falls while trying to walk.			Plays by self in playpen for more than an hour. Listens to singing for long periods

d) 2 years

1	2	3	4
Gives up easily if a toy is hard to use. Asks for help immediately if understanding becomes difficult.			Works on a puzzle until it is completed. Watches when shown how to do something.

e) 5 years

1	2	3	4
Still cannot tie his shoes because he gives up when he is not successful. Fidgets when parents read to him.			Practiced riding a two-wheeled bicycle for hours until he mastered it. Spent over an hour listening to parent read to him.

f) 10 years

1	2	3	4
Gets up frequently from homework for a snack. Never finishes a book.			Reads for two hours before sleeping. Does homework carefully.

APPENDIX F

CONSENT LETTER

Dear Parent:

I am conducting research, through the Psychology Department at Loyola University, with a new instrument to aid in assessing young children. This letter is to notify you, if you have no objections, that your child will have the opportunity of participating in this research which is taking place at your child's school. This unique instrument is important in providing a means to assess personality characteristics in young children without relying primarily on verbal material and also to do this in a quick, inexpensive way. However, the instrument first needs to be used with a normal population to see if it gives helpful information about individual differences in children.

In this study, each child will be sorting a stack of pictures, which show children in many different activities, into piles of those that look like fun and those that do not look like fun. Your child will not be exposed to anything harmful or upsetting; in fact, most children find this activity of sorting pictures to be entertaining. Children will be tested as a group with their classmates and no distinctions or separations will take place. The entire process takes about 15 minutes in total. The results will be coded and each child's identity will be kept confidential. However, if you have any objection to your child's participation in this project, you may contact the school to inform them of your objection and your child will be excluded.

In addition to the testing in the school, I need your assistance in order to see if the information from this instrument is valid. To do this, I am asking all the parents to fill out the enclosed brief questionnaires describing their child. This information is critically important in determining if the test data agrees with what the parents, who know these children best, have observed. Please be aware that this information will also be coded and kept in strict confidence, being seen only by this researcher. If anything in these materials is disturbing to you, please discontinue.

Please seal the materials in the enclosed envelope and return them with your child to the school. Your assistance is greatly appreciated. If you have any questions, please feel free to contact me personally at the following telephone number: Thank you very much.

Sincerely,

Cristina Cox

Cristina Cox, M.A.

APPENDIX G

Developmental Questionnaire Scoring

From the nine questionnaire scales, the following five are used for classifying subjects into temperamental constellations:

Scale 2	Quality of Mood
Scale 3	Approach/Withdrawal to New Stimuli
Scale 4	Rhythmicity
Scale 5	Adaptability
Scale 7	Intensity of Reaction

The cut-off score used is the mean of each of these scales, calculated from this study population.

Difficult Constellation - The following two criteria must be met:

1. 4 of the above 5 scales below the mean.
2. Scale 7 (Intensity) is always above the mean.

Slow to Warm Up Constellation - The following two criteria must be met:

1. 4 of the above 5 scales below the mean.
2. Scale 7 (Intensity) is always below the mean.

Easy Constellation - The following two criteria must be met:

1. 4 of the above 5 scales above the mean.
2. Scale 7 (Intensity) is always below the mean.

Mixed Constellation - Any other combination of scale scores that do not fit into one of the above constellations.

APPENDIX H

Developmental Questionnaire
Mean Scores of Study Sample

Scored on a scale of 1 to 4:

Scale	Mean
2 Quality of Mood	3.17
3 Approach/Withdrawal	3.16
4 Rhythmicity	3.05
5 Adaptability	3.07
7 Intensity of reaction	2.99

APPENDIX I

Connotation of Adjectives

?	+	-	
	54	1	honest
	2	53	dishonest
	8	46	self denying
1	2	53	selfish
	54	1	loyal
1	8	46	fickle
	49	6	fair minded
	33	22	partial
	54	1	reliable
	1	54	undependable
	47	8	persevering
	1	54	quitting
	54	1	orderly
	2	53	disorderly
1	52	2	conscientious
	54	1	practical
	4	51	unrealistic
	4	51	worrying
1	52	2	decisive
1	1	53	indecisive
1	52	2	enterprising
2	1	52	shiftless
	3	52	many physical complaints
	3	52	neurotic
	2	53	depressed
	55	0	cheerful
	4	51	moody
	54	1	balanced
	1	54	absent minded
	55	0	alert
1	13	41	seclusive
	55	0	sociable (mixes well)
	49	6	frank
1	14	50	secretive

?	+	-	
	55	0	generous
2	4	49	tight fisted
	54	1	easygoing
	54	1	mature
	2	53	infantile
	55	0	clear thinking
1	1	53	incoherent
	51	4	independent
	12	43	dependent
	55	0	wise
	1	54	foolish
	51	4	polished
	8	47	rough
	55	0	interests wide
	6	49	interests narrow
15	14	26	self effacing
	4	51	shows off
	20	35	argumentative
	44	11	talkative
	35	20	quiet
	8	47	boastful
	43	12	modest
	6	49	arrogant
	50	5	humble
17	32	6	pugnacious
2	52	1	peaceabl
	55	0	thoughtful (a thinker)
	55	0	reasonable
	31	24	affected
	54	1	natural
	55	0	logical
10	34	11	aesthetic interests
	55	0	courageous
	2	53	cowardly

?	+	-	
	20	30	eccentric
	48	7	flattering
	2	53	self centered
	53	2	lively
	34	21	aggressive
	1	54	inflexible
	55	0	adaptable
	1	54	hostile
	54	1	friendly
	3	52	jealous
	4	51	ruthless
	53	2	kind
	20	35	shrewd
	10	45	naive
	55	0	clever
	2	53	conceited
	4	51	self dissatisfied
	55	0	self confident
	1	54	self distrusting
	55	0	energetic
1	14	40	apathetic
	55	0	enthusiastic
	53	2	versatile
2	6	47	submissive
	51	4	sensitive
1	52	2	poised
	3	52	awkward
	52	3	sophisticated
	24	31	shy
	54	1	adventurous
	14	41	timid
2	9	44	aloof
	55	0	affectionate
	55	0	sentimental
	6	49	hardheaded
	55	0	cooperative

?	+	-	
	0	55	gloomy
	52	3	laughterful
1	21	53	frivolous
	44	11	serious
1	10	44	high strung
	54	1	relaxed
	26	29	impulsive
	23	32	deliberate
	50	5	emotional
	4	51	unemotional
	1	54	irritable
	55	0	good tempered
	0	55	unself controlled
	54	1	self controlled
	52	3	contented
	53	2	grateful
	7	48	thankless
	44	11	soft hearted
	5	50	hardhearted
1	3	51	cynical
	41	14	idealistic
	53	2	popular
	6	49	unpopular
	13	42	suspicious
	53	2	trustful
	4	51	impatient
	51	4	curious
2	6	47	inarticulate
	28	27	likes drinking
	46	9	religious
	49	6	worldly
	12	43	rebellious
	38	17	conventional
	52	3	individualistic
	39	16	dreamy
	10	45	easily bored

APPENDIX J

Distribution of Temperamental Constellations

Thomas and Chess Sample (1974)

Type	Percentage
Easy	40%
Difficult	10%
Slow to Warm Up	15%
Mixed	35%

APPROVAL SHEET

The dissertation submitted by Elida Cristina Cox

has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

3/28/86
Date

Director's Signature