TEMPERAMENT AS DETERMINANT OF PHENOMENOLOGY OF CHILDHOOD PSYCHIATRIC DISORDERS*  
SAVITA MALHOTRA¹  
V. K. VARMA²  
S. K. VERMA³  

SUMMARY  
The study was carried out with the main aim of finding the relationship between the temperament of children and the phenomenology of the psychiatric disorders exhibited by them. Temperament was taken as the independent variable, phenomenology of the psychiatric disorders in children as the dependent variable and parental handling methods as the intervening variable. Instruments for the measurement of temperament, childhood psychopathology and parental handling were developed and standardized for use in the context of the Indian culture and in Hindi language as the preliminary work for the main study. A group of 100 children suffering from various types of emotional disorders and a control group of 100 normal children were studied with regard to the three variables mentioned earlier. Data on the two groups were separately analysed through univariate and multivariate (factor analysis and hierarchical multiple regression) statistics. The results revealed that the phenomenological categories of Low Intelligence with behaviour Problems, conduct Disorders and Somatization were significantly related to the temperament variables of Emotionality, Energy and Attention respectively. The syndromes of Anxiety, Depression, Psychotic symptoms, Special symptoms and Physical illness with Emotional problems did not have relationship with the temperament or parental handling. Thus, temperament has been found to be specific risk factor leading to specific psychopathologies.

Introduction  
Study of the temperament of children has received considerable attention during the recent years. Most of the work relates to the demonstration of temperamental individuality of children and the bearing it has on the developmental psychopathology on one hand and the child rearing practices on the other. Relationship between temperament and psychopathology in the childhood is analogous to the relationship between personality and psychiatric disorders in adults where it reflects upon the vulnerability to develop disorder as well as the pathoplastic influence personality has on the illness. Temperament theory being very recent in the scientific literature has not yet achieved a comparable status. Though evidence exists for its risk potential leading to the vulnerability hypothesis, possibility of its pathoplastic affect on the phenomenology of childhood psychiatric disorders remains a theoretical issue which has not been examined so far.

Review of Literature  
Major credit in temperament research goes to the pioneering work of Alexander Thomas and Stella Chess who launched the famous New York Longitudinal Study (NYLS) in 1956, in order to explore in a systematic manner, the individual differences in children and their significance for the developmental process. Thomas and Chess (1968) studied longitudinally a group of 136 children, measuring their temperament, serially at each of the first five years of life. The quantitative scores of the nine temperament categories were subjected to factor analysis for each of the five years data yielding the three factors. The cluster of characteristics comprising factor A corre-
ponded closely to the cluster developed by quantitative analysis identifying the Easy Child and the Difficult Child. The 'Easy Child' who is easier to manage and better adjusted corresponded to high Factor A plus regularity. The 'Difficult Child' scored low on Factor A plus high irregularity. Such a child was at greater risk for developing a disorder.

In the next 3 decades there has been a steady outpouring of research in this area. Carey (1970, 1972); Carey & McDevitt (1978); Persson Blemnow & McNeil (1979, 1980); Graham et al. (1973); Garside et al. (1975); Malhotra and Randhawa (1982a); have devised temperament measurement instruments based primarily on the 9 dimensions of Thomas and Chess, which have been found to be reliable, valid as well as economical to administer and score.

Malhotra and Randhawa (1982a, 1983b, c) developed and standardized a temperament measurement schedule for children in India in Hindi and English languages keeping its cultural and linguistic applicability in mind.

The major thrust of temperament research has been in showing a relationship between temperament and psychiatric disorder. Several prospective studies, (Thomas & Chess 1968; Rutter et al. 1964; Graham et al. 1973; Carey 1970, 1972, 1974; Scholam et al. 1979, Malhotra and Randhawa 1983c) have demonstrated this association. However, the relationship between the temperament and the nature of psychopathological symptoms has not been studied by any worker systematically.

The present study was undertaken to examine the contribution of temperament, both qualitatively and quantitatively, towards various types of psychopathologies in children. However, the role of parental handling as the determining or the mediating variable was considered while analysing the main relationship.

Aim

To study the relationship of the temperamental characteristics of children to the type of psychiatric symptomatology exhibited by them.

The main hypothesis was that there is no relationship between the temperament as the independent variable and the phenomenology of childhood psychiatric disorders as the dependent variable, considering the parental handling as the intervening variable.

Material & Methods

This study involved the measurement of temperament, phenomenology of childhood psychiatric disorders, and parental handling. Tools for all the three main variables had to be devised because none such instrument existed which could be directly applied to our population. The following instruments were developed and standardized as reported elsewhere (Malhotra 1984) before the actual study was launched.

1) Temperament Measurement Schedule (TMS): measures 4 temperament dimensions.

2) Childhood Psychopathology Measurement Schedule (CPMS): measures 8 psychopathology factors.

3) Parental Handling Questionnaire (PHQ). Brief description of the three instruments is appended (Appendix-I).

Sample

100 consecutive children in the age of 5-10 years and of both sexes who attended the Child Guidance Clinic of the department of psychiatry, of Post-graduate
Institute of Medical Education and Research, Chandigarh and were diagnosed variously as neurosis, adjustment reaction, conduct disorder, emotional disorder specific to childhood and adolescence, hyperkinetic syndrome and special symptoms, according to International Classification of Diseases 9th revision (ICD-9) were studied. Cases suffering from moderate, severe and profound mental retardation; functional and organic psychosis; and epilepsy were excluded.

A control group of 100 normal children in the same age range (5-10 years) from the Pediatrics Department of the Post-graduate Institute of Medical Education and Research, Chandigarh was taken. These were either suffering from minor physical illnesses or were completely healthy. Children were screened using the Reporting Questionnaire for Children (RQC) of Giel et al. (1981). Any child scoring positive on any of the items was excluded. Children with any physical disability or any major physical illness were also excluded.

Three major variables were studied. Temperament as the independent variable, psychopathology as the dependent variable, and parental handling as the intervening variable. In addition, the socio-demographic characteristics and clinical diagnosis in the sick group were also recorded.

Mothers of the children included in the study were contacted and interviewed with regard to the questions included in the three study instruments (TMS, CPMS and PHQ). The questions were asked mainly in Hindi and additional probes and minor elaborations were used wherever necessary.

Regarding the temperament assessment in the experimental group the information pertaining to the temperament before the onset of illness was enquired. In the control group, they were enquired about the temperament of the child when he has been his most usual self. For CPMS, in the experimental group the questions regarding the presence of psychopathological symptoms any time during the illness were enquired into. On the other hand, in the control group, psychopathological symptoms present any time during the past one year were rated. Parental handling was assessed using PHQ, as it applied generally at the time of interview, in both the groups.

**Results**

Tables 1 and 2 give the descriptions of the sample with regard to age, sex and socio-demographic characteristics in both the groups and diagnostic breakdown in the sick group.

| Table 1 |
| --- |
| Socio-demographic characteristics of the experimental and control group |

|                  | Emotionally Disturbed (EID) | Normal Control (NC) | X²   | p   |
|------------------|-----------------------------|---------------------|------|-----|
| **Age**          |                             |                     |      |     |
| 5 - 6 years      | 23                          | 34                  | 4.50 | NS  |
| 7 - 8 years      | 41                          | 45                  |      |     |
| 9 - 10 years     | 36                          | 21                  |      |     |
| **Sex**          |                             |                     |      |     |
| Male             | 72                          | 57                  | 4.91 | .05 |
| Female           | 28                          | 43                  |      |     |
| **Residence**    |                             |                     |      |     |
| Urban            | 68                          | 78                  | 2.54 | NS  |
| Rural            | 32                          | 22                  |      |     |
| **Socio-Economic Status** |                 |                     |      |     |
| Low              | 25                          | 22                  |      |     |
| Middle           | 55                          | 38                  | 9.97 | .001|
| Upper            | 20                          | 40                  |      |     |

The disturbed had overrepresentation of males and children from middle socio-economic status.
Emotionally disturbed children had significantly lower scores compared to the normal children on the dimension of emotionality, indicating negative mood (being unhappy, irritable and discontented).

Scores on the eight psychopathology variables were found out from the 75 item CPMS. The means and standard deviations in the two groups and the 't' ratio comparing the two are given in the table 4. Table 5 shows scores on the two parental handling variables of care and control for the subjects.

The two groups differed significantly on both the parental handling variables.

### Table 2
Diagnostic breakdown of the children in the emotionally disturbed group

| Diagnosis                                      | Number (N = 100) |
|-----------------------------------------------|------------------|
| 1. Conduct disorder                           | 24               |
| 2. Mental retardation with behaviour problems | 20               |
| 3. Disturbance of emotion specific to childhood and adolescence | 19               |
| 4. Hyperactivity                              | 16               |
| 5. Special symptoms                           | 13               |
| 6. Hypertonia syndrome                        | 8                |

Given below are the mean scores and standard deviations of each of the four temperament dimensions in the two groups.

### Table 3
Comparison of the TMS scores in the two groups

|                     | Emotionally Disturbed | Normal control |
|---------------------|-----------------------|----------------|
|                     | Range | Mean  | S.D. | Range | Mean  | S.D. | t' Ratio | X' |
| Sociability         | 5-14  | 11.254| 2.140| 5-14  | 11.635| 2.262| 1.23     | 0.52 |
| Emotionality        | 3.8   | 5.848 | 1.188| 3.9   | 6.724 | 0.93 | 5.88*    | 27.92*|
| Energy              | 3.9   | 6.632 | 1.139| 4.8   | 6.679 | 0.856| 0.28     | 1.62 |
| Activity            | 1.5   | 3.323 | 0.723| 1.4   | 3.278 | 0.607| 0.42     | 4.17 |

(X with cut off point at mean)

### Table 4
Comparison of CPMS scores in the two groups

| Psychopathology Factors                              | Range | ED | Mean  | S.D. | NC | Mean  | S.D. | t' Ratio | X' |
|-----------------------------------------------------|-------|----|-------|------|----|-------|------|----------|----|
| 1. Low intelligence with behaviour problems         | 0-14  | 4.78| 3.48  | 0-7  | 4.13| 1.50  |      | 9.61**   |    |
| 2. Conduct disorder                                 | 0-16  | 6.27| 3.99  | 0-9  | 2.34| 2.42  |      | 9.68**   |    |
| 3. Anxiety                                          | 0-5   | 1.39| 1.36  | 0-3  | 0.30| 0.66  |      | 7.17**   |    |
| 4. Depression                                       | 0-10  | 2.62| 2.16  | 0-4  | 0.64| 0.90  |      | 8.43**   |    |
| 5. Psychotic symptoms                               | 0-6   | 0.87| 1.19  | 0-3  | 0.16| 0.49  |      | 5.20**   |    |
| 6. Special symptoms & neurotic traits               | 0-3   | 0.46| 0.80  | 0-1  | 0.09| 0.29  |      | 4.35**   |    |
| 7. Physical illness with emotional problems         | 0-3   | 0.84| 0.85  | 0-3  | 0.31| 0.60  |      | 5.10**   |    |
| 8. Somatization                                     | 0-6   | 1.74| 1.45  | 0-4  | 0.49| 0.89  |      | 7.35**   |    |

** p < .01
Emotionally disturbed group was characterised by low care and high control in contrast to the normal group (both the variables are inversely scored).

Exploratory factor analysis was performed in order to generate hypothesis about relationships between the temperament and psychopathology. Data on the four temperament variables, eight psychopathology variables and two parental handling variables taken together were subjected to factor analysis varimax rotation. Factors with eigen value greater than one were extracted. Factor loadings of ± .4 or greater were taken as significant.

Tables 6 and 7 show the results of the factor analysis. In the emotionally disturbed group, five factors emerged accounting for a total variance of 58.63%.

Table 6
Factor Matrix (Emotionally Disturbed Group)

| Variables               | Factors 1 | Factors 2 | Factors 3 | Factors 4 | Factors 5 |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| TMS (Sociability)       | -0.05     | 0.32      | 0.29      | 0.26      | 0.36      |
| TMS (Emotionality)      | 0.00      | -0.14     | 0.03      | -0.19     | 0.09      |
| TMS (Energy)            | -0.05     | 0.06      | 0.01      | 0.90      | 0.09      |
| TMS (Attention)         | -0.10     | -0.01     | 0.06      | -0.04     | -0.12     |

CPMS
1. Low intelligence with behaviour problem -0.22 -0.24 -0.02 0.05 -0.06 0.74
2. Conduct Disorder -0.34 -0.29 -0.31 0.62 -0.21 0.73
3. Anxiety 0.01 -0.72 0.11 -0.13 2.11 0.56
4. Depression -0.19 -0.30 -0.35 -0.18 0.02 0.53
5. Psychotic Symptoms -0.04 -0.05 -0.08 0.21 0.01 0.47
6. Special Symptoms -0.12 0.22 0.02 0.03 0.69 0.54
7. Physical illness with emotional problems 0.07 -0.45 -0.19 0.14 -0.26 0.33
8. Somatisation -0.20 -0.20 -0.62 -0.01 0.22 0.31

PHQ
1. Care -0.44 0.14 -0.08 -0.15 0.50 0.48
2. Control 0.52 0.03 0.02 -0.14 -0.35 0.39

| Eigen value | Variance |
|-------------|----------|
| 2.00        | 1.86     |
| 1.65        | 1.50     |
| 1.45        | 1.45     |
| 1.39        | 1.39     |
| 14.25       | 13.34    |
| 10.75       | 10.34    |
| 9.95        |          |

Total variance = 58.63%, Significant loadings are in bold.
Factor - I shows that high score on Emotionality i.e. persistently positive mood is associated with low scores on CPMS - I and vice versa. Contribution of parental handling variables of Care and Control is low though significant. Factor - II comprises of parental handling. Loadings on Factor - III indicate that Attention dimension (means high distractibility) is associated with Somatization. Factor - IV is constituted by the temperament variable of Energy (i.e., high activity and intense responses) and Conduct disorders. In Factor - V the loading of sociability variable is rather low, though significant, and it cannot be taken as the marker variable. Thus, it is seen that special symptoms factor of the CPMS does not have a strong temperamental correlate. Therefore, it has not been interpreted separately, though it would seem to complement Factor - II. Thus it leaves four main factors that have been interpreted and discussed.

In the normal group, four factors emerged, using the statistical criteria described above, accounting for 59.85% of the total variance.

**Table 7**

| Variables                          | Factors |
|-----------------------------------|---------|
|                                   | I       | II      | III     | IV      |
| TMS                               |         |         |         |         |
| 1. Sociability                    | .14     | .64     | -.54    | .17     | .76     |
| 2. Emotionality                   | -.03    | -.25    | -.69    | .36     | .66     |
| 3. Energy                         | -.02    | .74     | .01     | -.05    | .55     |
| 4. Attention                      | .08     | .60     | .04     | .01     | .36     |
| CPMS                              |         |         |         |         |
| 1. Low Intelligence with behaviour problems | -.51    | .09     | .34     | .14     | .58     |
| 2. Conduct disorder               | -.42    | .60     | .41     | .11     | .72     |
| 3. Anxiety                        | -.75    | .00     | .12     | -.09    | .58     |
| 4. Depression                     | -.66    | .04     | .06     | .06     | .44     |
| 5. Psychotic symptoms             | -.66    | -.12    | .08     | -.20    | .49     |
| 6. Special symptoms               | -.76    | .03     | .07     | -.13    | .59     |
| 7. Physical illness               | -.75    | -.04    | .18     | .04     | .59     |
| 8. Somatization                   | -.41    | -.18    | .67     | .13     | .66     |
| PHQ                               |         |         |         |         |
| 1. Care                           | .13     | .12     | -.06    | .82     | .71     |
| 2. Control                        | .05     | -.55    | .02     | .37     | .63     |
| Eigen value                       | 3.23    | 2.12    | 1.74    | 1.29    |
| Variance                          | 23.06   | 15.13   | 12.42   | 9.24    |
| Total variance = 59.85%           |         |         |         |         |
| Significant loadings are **bold** |         |         |         |         |
In the normal group the striking finding is the Factor I that consists of all the CPMS factors alone without any contribution from the temperament or the parental handling. Factor II and III seem to be interdependent and complimentary to each other due to the overlap of two loading variables (Sociability and Conduct Disorder). Factor IV comprises only of the two parental handling variables and is meaningless in the present analysis. Thus there are mainly two significant factors in the normal group. Factor analysis revealed that there are certain unifying variables underlying the temperament and psychopathology.

Hierarchical multiple regression was used to know the importance of the temperament variables (IV) in predicting the psychopathology (DV). Since parental handling was considered to be the intervening variable, hierarchical regression would allow us to examine the proportion of variance attributable to parental handling variables, after the temperament variables have been accounted for.

Those temperament variables (IV) that constellate on a factor were forced into regression first for each of the DVs, followed by the other temperament variables. Parental handling variables entered the regression solution after all the four temperament variables had entered. Taking one dependent variable at a time, eight sets of hierarchical multiple regression were computed for each of the two data sets. Tables 8 and 9 display the results of hierarchical multiple regression.

Each table shows $R^2$ values i.e., the predicted variance of each of the IVs for the DV's value for the significance of increase in the $R^2$; and the sequence of entry of IVs into the regression.

In table 8, emotionality explained 30% of variance in low intelligence with emotional problems. Other temperament variables did not increase the predicted variance significantly. However, addition of control enhanced the variance significantly.

All the temperament variables made significant contribution to the prediction of variance in Conduct disorder. Parental handling did not increase the variance. Looking at the bivariate correlation values only energy and emotionality were significantly correlated with conduct disorder. Activity and sociability may have increased the variance while acting through their correlation with energy and emotionality.

On the CPMS 3, 4, 5, 6 and 7, the ratio of predicted variance by temperament as well as parental handling was about 2:12 total which was not significant.

In somatization, activity explained about 7% of variance and sociability added significantly to the predicted variance.

In normal subjects (Table 9) conduct disorder and somatization were the only two variables in which temperament and parental handling explained significant amount of variance, 24% and 20% respectively. Of all other CPMS variables neither the temperament nor parental handling made any significant contributions.

Discussion

In the present study, the emotionally disturbed children differed temperamentally from the normal children only on the variable of emotionality using parametric statistics. The sick children were generally less happy, discontented, showing persistent negative mood before the onset of illness which corroborates the earlier finds by Thomas and Chess (1968), Carey (1974), Kim et al. (1980), Malhotra and Randhawa, (1983c).

Bates et al. (1979) developed an alternative definition of "difficult-easy" dimension by adding variables concerning soothableness.
### Table 8

Hierarchical multiple regression on CPMS variables in the emotionally disturbed group

| IVs          | Sequence of entry of IVs | R² Values for the DVs (CPMS 1-8) | Steps of Reg. |
|--------------|--------------------------|----------------------------------|---------------|
|              |                          | Low Intel. with Beh. Prob. | Conduct Dis | Anxiety | Dep | Psychotic sympt. | Special sympt. | Physical illness emotional prob. | Somatization |
|              |                          | 2,1,3,4,5,6 | 3,2,4,1,6,5 | 1,2,3,4,5,6 | 1,2,3,4,5,6 | 1,2,3,4,5,6 | 1,2,3,4,5,6 | 1,2,3,4,5,6 | 1,2,3,4,5,6 |
| Sociability  | 1                        | .1 | .30 | .15 | .00 | .04 | .04 | .01 | .08 | .08 |
| Emotionality | 2                        | .1 | .31 | .24* | .01 | .08 | .05 | .01 | .08 | .11* |
| Energy       | 3                        | .3 | .31 | .27** | .02 | .08 | .06 | .01 | .08 | .13 |
| Attentivity  | 4                        | .4 | .31 | .31*** | .02 | .10 | .09 | .01 | .09 | .13 |
| Care         | 5                        | .5 | .33* | .31 | .02 | .10 | .10 | .03 | .09 | .14 |
| Control      | 6                        | .6 | .35 | .32 | .03 | .13 | .10 | .04 | .09 | .14 |

Significant F values: * 4.27, P < .05  
** 11.48 P < .01  
*** 3.94 P < .05  
**** 5.51 P < .05
Table 9
Hierarchical multiple regression on CPMS variables in the normal group

| IVs | Steps of Reg. | Low Intell with Beh. Prob. | Conduct Dis | Anxiety | Dep | Psychotic symp. | Special symp. | Physical illness emotion prob. | Somatization |
|-----|---------------|---------------------------|-------------|---------|-----|----------------|--------------|-------------------------------|--------------|
| 1.  | Sociability   | 1                         | .03         | .03     | .01 | .05            | .03          | .06                           | .00          |
| 2.  | Emotionality  | 2                         | .07         | .23*    | .05 | .05            | .05          | .05                           | .19*         |
| 3.  | Energy        | 3                         | .08         | .24     | .05 | .05            | .06          | .07                           | .20          |
| 4.  | Activity      | 4                         | .09         | .24     | .05 | .05            | .06          | .07                           | .20          |
| 5.  | Care          | 5                         | .09         | .24     | .05 | .03            | .08          | .06                           | .08          |
| 6.  | Control       | 6                         | .09         | .24     | .06 | .03            | .08          | .07                           | .21          |

Sequence of entry of IVs: 2,1,3,4,6,5

Significant F values: 8.04, P < 0.01

22.71 P < .01
sociability and activity. They obtained a factor named fussy-difficult to describe the degree of difficultness. The fussy-difficult factor corresponds to the mood and intensity part of Thomas et al's difficultness definition, to negative emotionality factors found by Buss and Plomin (1975) and Rowe and Plomin (1977); and the emotionality factor in the present study.

According to Bates (1980), although there is no clear preferable definition of difficultness, the central feature of the perception of an infant as difficult appears to be frequent fussing and crying. Thus emotionality factor has been found to be highly discriminative between the disturbed and the healthy children.

Emotionally disturbed children received low emotional care and high psychological control from their parents. In the literature it has been reported that the interaction of the temperament and parenting best predicted the course of development. Since all the children who were identified as temperamentally difficult (Thomas et al 1968) did not develop psychiatric disorder they proposed interactionist concept of “Goodness of fit” between the temperament and parenting.

The study group differed from the control group on all psychopathology variables with significantly higher scores in the sick group but the distribution of scores within the emotionally disturbed group varied for various psychopathology factors (Table 4).

On factor analysis the factors that have emerged form coherent subgroups, relatively independent of one another, and represent certain unobserved hypothetical constructs by using the observed variables.

In the emotionally disturbed group four factors of significance emerged which are defined and interpreted as follows.

Factor - I:

*Emotionality/Cheerfulness dimension*

On examination of the constituent variables it can be stated that children with low average intelligence or mild mental retardation associated with emotional disorders show persistently negative mood along with low parental care and high control. This factor has been termed as “emotionality dimension” where the quality of mood whether positive or negative determines the quality of parental handling on one hand and emergence of behaviour disorder on the other.

Factor - II:

*General/ Core psychopathology factor*

Anxiety, Depression, Psychotic symptoms and Physical illness with emotional disorder do not have any relationship either with temperament or with parental handling according to the structure of this factor, that explains the name given to it. It is highly significant because it clarifies the basic question before us i.e., that certain specific psychopathologies in children do not have any temperamental correlate.

Factor - III:

*Attention/Distractibility dimension*

This factor signifies that distractibility is related to somatization disorders which is a composite variable including neurological or pseudoneurological (hysterical) symptoms. Association of these symptoms with high distractibility may indicate an underlying minimal brain damage and the lack of association will favour hysteria. This factor has been named as attention/distractibility dimension with neurological disorder on one end of the pole and hysteria on the other. Here hysteria has been conceptualized totally on the phenomenological plane.

Factor - IV:

*Energy channelization dimension*

According to this factor it can be stated
that higher the energy level in the child’s temperament (high activity and intensity) greater are the chances of his developing symptoms indicative of conduct disorder. This relationship is not mediated through either of the parental handling variables.

In the normal group of subjects Factor I named as general care psychopathology factor, had the loadings of all the psychopathology variables and none of the temperament or parental handling variables. It denotes that most of the symptoms distributed among the normal children have no relationship either with temperament or parental handling.

It suggests that for understanding the symptoms not amounting to emotional disorder that is seen normally in all the children, one has to look for causes other than the temperament or parental handling. These may be the other social environmental processes without any specific etiological implications.

Factors II & III in the normal group can be considered complimentary to each other and have been jointly labelled as easy vs difficult child dimension, having similarity to the ‘easy’ and ‘difficult’ child descriptions of Thomas and Chess (1968).

Accordingly sociability, high emotionality, high energy and distractibility have been found to be related to the three psychopathological variables CPMS 1, 2 & 8 (low intelligence with behaviour problems, conduct disorder and somatization). Parental control also has been found to contribute towards the relationship. temperamentally withdrawing and unadaptable child with persistently negative mood is more likely to develop the above mentioned psychopathological patterns. These results are similar to those found in the emotionally disturbed group where these three psychopathology variables only have temperamental correlates.

It appears that in normal children psychopathology in general is unrelated to temperament or parental handling.

Summarizing the results of factor analysis in both the groups, it can be said that three phenomenological types of psychopathologies i.e., Low Intelligence with Behaviour Problems, Conduct Disorder and Somatization were related to three traits of temperaments namely Emotionality, Energy and Attentivity, respectively with little contribution of parental control.

The results of regression analysis (Table 8) indicate that Emotionality and Control predict significant amount of variance in Low Intelligence with Emotional problems, indicating that children with mild or low average IQ exhibit persistently negative mood and high parental control. Since intelligence as well as temperament are both considered to be innate ‘a priori’ characteristics, it is likely that the both have common substrate which if superadded with high parental control may lead to emotional disorder in low intelligence children. Not ascertaining the relationship between negative emotionality and low intelligence any further, it can be said from the findings that if one knows the scores on temperament i.e., Emotionality and Parental control of a low IQ-Child, we can predict the occurrence of emotional disorder.

Now examining the predictability of conduct disorder it was found that Energy accounts for 15% of the variance. Attentivity and Sociability although bring about significant increment in the predicted variance, their unique contribution was found to be low. Parental handling did not add significantly to R² and hence did not improve upon the prediction. Thus child with high activity and intense emotional reactions are more likely to develop conduct disorder later on.

Attentivity is the most important variable along with little contribution from sociability for prediction of somatization.
Since somatization comprises of neurological and pseudoneurological (hysterical) syndromes, it appears that high distractibility is associated with disorders indicating minimal brain damage. On the other hand in the absence of brain damage i.e., the same symptoms being considered as hysterical, the temperamental mediation is through low Sociability (withdrawal and unadaptable).

The rest of the psychopathology variables i.e., Anxiety, Depression, Psychotic Symptoms, Special Symptoms and Physical Illness with Emotional Problems, found no predictive correlation with the temperament or the parental handling. These may either be the core syndromes or may be related to factors other than those studied.

In the normal group of subjects temperament and parental handling variables do not contribute to most types of psychopathology by way of prediction, except for the two categories i.e., of Conduct Disorder and Somatization (Table 9).

Sociability is the single most important temperament variable related to Somatization in normals. In the absence of high distractibility possibly associated with minimal brain damage or neurological disorder, Somatization consists of hysterical symptoms which have been found to be negatively related to sociability.

It emerges that from the knowledge of the temperamental characteristics of the child and of the parental control, prediction can be made with certain degree of confidence, about the phenomenological subtypes of the disorder if they develop emotional disturbances. The children with predominantly negative mood are more vulnerable to develop all kinds of emotional disorders in general. On the other hand, once they develop disorder, the other temperamental dimensions, to some extent, determine the nature of it. Temperament explains about 31% of variance each in CPMS 1 and 2. This is one of the attempts where determinants of phenomenology have been examined.

**Conclusions**

It has been found that three phenomenological types of the psychopathology in children have significant contribution of temperament.

The basic premise which initiated the study that temperamental vulnerability may be applicable to certain specific types of disorders has found strong support. A large variety of phenomenological types like anxiety, depression, psychotic symptoms, special symptoms, and physical illness with emotional problems do not have any relationship with the child's temperament. Therefore, temperament cannot be viewed as a general risk factor as suggested by the work of various researchers reviewed earlier.

The relationships that have emerged between the temperament and psychopathology cannot be fully viewed in terms of the cause and effect relationship. These are at best associations rather than the causal mechanisms, although there are important causal implications which can be further examined.

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Appendix

1. Temperament Measurement Schedule (TMS): It comprises of 45 items measuring 9 temperament variables (5 items in each) to be rated on a five point scale (Appendix-1). These were reduced to four functionally significant independent dimensions described below on the basis of factor analysis. The mean scores of the constituting temperament variables are to be added to arrive at the factor scores.

Factor - I: (Sociability): it comprises of three variables Approach-withdrawal, adaptability and threshold of responsiveness.

Factor - II: (Emotionality): variable consists of mood and persistence.

Factor - III: (Energy): constituted by two variables i.e. Activity and Intensity.

Factor - IV: (Attentivity): comprises of only one variable i.e. of Distractibility.

2. Childhood Psychopathology Measurement Schedule (CPMS): It consists of 75 items (Appendix-II) to be rated on a two point scale and measures factorially derived syndromes, consisting of varying number of items (4-17). These psychopathological factors have been named as Low Intelligence with Emotions; Conduct Disorder; Anxiety; Depression; Psychotic Symptoms; Special symptoms; Physical illness with Emotional problems and Somatization including Hysteria in that order of CPMS I through VIII.

3. Parental Handling Questionnaire (PHQ): It consists of 14 items (Appendix-III), measuring two variables of parental care/warmth Vs
lack of care (10 items) and parental control
Vs autonomy (4 items) to be rated on a three
point scale. High scores depict low levels of
care as well as control.

Executive checks on the reliability, validity and
standardization of all the three instruments
were exercised which have been reported el­
sewhere (Malhotra, 1984).