CHAPTER II

REVIEW OF LITERATURE
EXTRAVERSION

Eysenck (1947, 1960; 1977) had stressed that Extraversion should be considered as a type concept built up of several correlated traits, such as sociability and impulsivity. Using the M.P.I., Callard and Goodfellow (1962) found younger children to be more Extraverted than older children. Gray (1972) found the correlation between self rating and Eysenck Personality Inventory (E.P.I.) to be 0.48 for Extraversion. Using the P.E.N. Inventory, Singh (1976) obtained .91 validity and .84 reliability for the Extraversion dimension. Jerosâva (1977) supported the E dimension of the E.P.I. Using the Spanish version of E.P.I., Sevilla; Jorge and Adolf (1979) on university students found high validity but its reliability was lower than the English version.

Friedman, et al. (1976) used the Eysenck Personality Questionnaire and reported 13.90 mean and 4.69 S.D. Wakefield et al. (1976) supported the validation of Extraversion in the Eysenck Personality Questionnaire. Ippel and Feij (1973) opined that Extraversion scale of Eysenck mainly measured sociability and was unrelated to behavior level scales of impulsiveness, excitability and activity. Eysenck and Eysenck (1978) suggested that the Eysenck Personality Questionnaire is not inferior to any
other published personality test. The results obtained are quite favorable, the test-retest reliabilities (with one month intervening) ranged from .80 to .90 for males and females respectively on Extraversion dimension. Jegede (1979) found Nigerian students to score lower on Extraversion than British subjects of the same age. Plug (1979) reported similar results, as that of British students, with Afrikaans speaking subjects. Iwawaki, Eysenck and Eysenck (1980) found Japanese scoring lower on Extraversion. Ahmed (1981) confirmed H.J. Eysenck's (1969, 1970) theory of E as basic personality dimension in Eastern countries. Thomas and William (1981) reported that the Eysenck's Personality Questionnaire E-Scale was purely a measure of Sociability. Eysenck (1981) reported that identical factors emerged for analysis of scores for Sicilian & British Ss. According to Irfani (1977) recent years have seen a growing number of cross cultural studies making use of various personality inventories developed by Eysenck e.g. Eysenck Personality Inventory and Extraversion, Neuroticism and Psychoticism Inventory, (Kline, 1967; Mehryar, 1970; Orpen 1972; Hosseini, et al., 1973). Eysenck's Inventories have been standardized on Indian population too. Cita Das (1961) standardized the Maudsley Personality Inventory translated in Oriya language and found test retest reliability for E-Scale to be .49.
Similarly Abrahim and George (1960) found reliability coefficients for Extraversion to be .60 for Malyalam pupils. Dutta (1967) found the odd-even reliability for E-Scale as .70. Bhushan (1969) adapted the E.P.I. in Hindi and found the split-half reliability of E-scale as .78 and test-retest reliability as .73. Using the P.E.N. inventory, Singh (1976) found the test-retest reliability of E-scale to be .85 and its validity (with its Punjabi version) was .91; its mean was found to be 9.6. Chattopadhyay; Biswas and Chattoraj (1981) administered Eysenck's P.I. on Bengalee Neurotic patients and found significant split-half reliability coefficient for Extraversion.

**Extraversion and Neuroticism:**

Bartholomew (1959); Hamilton (1959); Child (1964); Madan (1967); Colston (1969) using the Eysenck Personality Inventory found a significantly negative correlation between Extraversion and Neuroticism. Mohan and Rajinder (1973) also report a negative correlation between these. Farley and Soper (1976) found that the personality dimension of Extraversion and Neuroticism, as measured by the P.E.N. inventory correlated significantly for the university students (Irfani, 1977). Eysenck and Eysenck (1973) using the Eysenck Personality Questionnaire found significant intercorrelations between Extraversion and Neuroticism i.e.
-.16 for males and -.14 for females. Sudhakar (1978); Tapasak et al. (1978); Verma and Upadhyay (1980); Meena (1981) found a negative correlation between Extraversion and Neuroticism. Gupta and Poddar (1979) administered the Hindi version of the E.P.I. and found a negative correlation between Extraversion and Neuroticism. Similar results were reported by Gulati (1982) using the Eysenck's Personality Questionnaire.

**EXTRAVERSION AND PSYCHOTICISM:**

Akhtar and Kafiluddin (1971) found that Extraversion is related to manifest hostility. Singh (1976) reported .18 intercorrelation between Extraversion and Psychoticism. Irfani (1977) using P.E.N. Inventory and Eysenck and Eysenck (1978) using the Eysenck Personality questionnaire found an insignificant intercorrelation between Extraversion and Psychoticism. Heather and Robert (1979) found -.01 intercorrelation for males, which was insignificant, for females they found a significant intercorrelation i.e. .20 (Significant at .05 level).

**EXTRAVERSION AND SOCIAL DESIRABILITY:**

Eysenck and Eysenck (1963) stated that an increased tendency to Lie is associated with Introversion. Lie scores of zero have high Extraversion scores. Gorman (1968) found mean
desirability rating of Extraversion items was higher than mean rating for all items. Palsane and Lodhi (1979) administered the E.P.I. on college students and found a positive correlation between Extraversion and social desirability. Dunnett, Koun and Barber (1981) found a significant correlation between Extraversion and Lie for the 'fake good' group.

However, Farley (1966) reported a negative relation between Extraversion and social desirability for a group of British apprentice mechanics. Eysenck and Eysenck (1978) reported insignificant intercorrelation between Extraversion and Social Desirability i.e. -.10 for males and -.09 for females. Similar results were found by Heather and Robert (1979) i.e. -.11 for males and .08 for females.

**EXTRAVERSION AND AGE**

Mohan (1976) found Extraversion to be negatively related for 20-22 year olds (significant at .05 level). Eysenck and Eysenck (1978) stated that age is a most important variable that must be taken into account. They reported the mean and SD for Extraversion in the 16-19 year olds-

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<tr>
<td>Females</td>
<td>13.31</td>
<td>4.61</td>
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Iwawaki, Eysenck and Eysenck (1980) found that with the mean ages 18.2 and 21.1 Japanese scored lower on Extraversion than English. On the basis of study conducted on Engineering students, Long (1975) concluded that age showed little effect upon E scores.

**EXTROVERSION AND SUBJECTS**

Bendig (1963) found that Introverts tend to prefer theoretical and scientific professions such as architecture, journalism and teaching of mathematics, while Extraverts tend to be suited to people oriented jobs. Kanekar and Sehu (1970) found that there were no significant differences on Extraversion among Medical, Law, Engineering and Commerce students. Wankoushi (1973) found that Introverts gravitate towards the 'Hard' Sciences while Extraverts seem more at home in the arts and Social Sciences. Seddon (1977) reported a significant interaction between Extraversion and Knowledge of Chemistry. MBA students have been found to be more Extraverted (Dubey 1975; Mohan and Kapoor, 1977). However, Mohan (1977) found MBA students scoring lower on Extraversion than university students.

Using the MMPI, Kokosh (1976) found that Physics and Zoology majors were more introverted than those following social sciences, such as Sociology and History. Eysenck and Eysenck (1973) found that professional students scored higher
on Extraversion than Arts students. Gohani and Moore (1978) found science students to be high on Introversion. Malhotra (1981) did not find any significant differences on Extraversion/Introversion of the students studying different subjects. Similarly, Gulati (1992) reported subject of study to be an insignificant determiner of Extraversion.

NEUROTICISM

Eysenck (1965) defines Neuroticism as “an over-reaction on the part of the individual to a variety of stimuli; this over-reaction takes the form of very strong emotions being experienced under conditions where most people feel only weak emotions, if any, at all....” Neuroticism has been regarded as a “propensity, inborn or acquired, to have maladjusted pattern of behavior during times of stress” (Wig and Verma, 1973a).

Gray (1977) found the correlation between the self rating and E.P.I. to be .21 on Neuroticism. Honness and Kline (1974) tested the internal consistency of the E.P.I. and found the N-Scale to be satisfactory. Friedman, et al. (1976) found 9.10 mean and 5.67 SD on N of Eysenck’s Personality Questionnaire. Using the P.E.N. Inventory, Singh (1976) found the validity of N to be .99 and the test-retest reliability as .84. Irfani (1977) reported 8.44 mean and 3.47 SD on Neuroticism. Eysenck and Eysenck (1978) found the
test-retest reliability of the (Eysenck's Personality Questionnaire) Neuroticism dimension as .89 for males and .74 for females; its internal consistency being .84 for males and .85 for females. Dacheneder and Wittkowski (1981) found the split-half reliability of the M.P.I. satisfactory and found N to be superior to E-scale. Jegede (1981) found the mean of Neuroticism scale to be 10.03 and SD 4.04.

Japanese have been found to score higher on N- than English (Iwawaki, Eysenck and Eysenck, 1977). Similarly, Ibrahim (1979) using the E.P.I. found Egyptian University students higher on Neuroticism whereas, no significant difference was found on Neuroticism of British and American subjects. Seth and Srivastava (1979) found that the tribal subjects were less neurotic than non-tribal Ss. Chattopadhyay; Biswas and Chattoraj (1981) found significant split half reliability on Neuroticism Scale, they also found English Ss to score higher on Neuroticism than the Bengalee Ss.


NEUROTICISM AND PSYCHOTICISM:

Lykken (1957) found that neurotics score significantly higher on TMAS. Akhtar and Kafiluddin (1971) found that neuroticism and manifest hostility are directly related to each other. Burgess (1972) feels that the dimension of Neuroticism is more important and relevant to Personality. Factors of Psychoticism may act as a moderator variable
mediating the relationship between Neuroticism, Sociability and impulsiveness. According to Mehryar and Hosseini (1973) high Psychoticism scorers had high level of Neuroticism. Singh (1976) found Neuroticism to be correlated with Psychoticism (i.e. .47). Irfani (1977) found significant correlation (i.e. .40 at .01 level) between Neuroticism and Psychoticism. Similar results were reported by Eysenck & Eysenck (1978) for males. Gulati (1982) found positive correlation between Neuroticism and Psychoticism.

NEUROTICISM AND SOCIAL DESIRABILITY:

Williams (1969) using the E.P.I. opined that N-scores should not be interpreted without reference to L-scores. Wretmar K. et al. (1970) report a higher risk of not resuming work after the initial lay off in cases of high Lie Score. Neurotics have been found to score higher particularly hysterics than normals (Verma, 1975). Presence of Neuroticism was a prerequisite for development of a socially desirable response set indicated by a raised Lie Score (Bond, 1971). Verma (1975) obtained a range of correlations from .05 to .79 (irrespective of signs) with the help of M.P.I; E.P.I. and P.E.N. Inventory. Farley and Goh (1976) suggested that social desirability had effects of Neuroticism and Lie scores. Irfani (1977) for significant correlation between Neuroticism and Lie scores.

However, Gibson (1962b), Edwards (1964); Braun and
Gomez (1966); Braun and Lafaro (1968); Farley (1968), Eysenck and Cookson (1969); McKerracher; Loughnane; Watson (1968); Power & O'Donovan (1969); Gupta (1971); Rump and Court (1971); Bennett (1972); Dunnett; Koun and Barber (1981) found that Neuroticism was not significantly correlated with Lie score. Eysenck and Eysenck (1978); Heather (1977); Pahuane and Lodhi (1979) found a negative correlation between social desirability and Neuroticism.

Williams (1971) failed to support predictions arising from the assumption that Lie scores are associated with more reliable or more consistent Neuroticism score.

**NEUROTICISM AND SUBJECTS:**

Eysenck (1971); Ubersai and Chakravorty (1974); Mohan and Kapoor (1977) found that MBA students scored higher on Neuroticism. Dubey (1975) reported 8.89 mean and 3.80 SD for MBA students. Similarly, Mohan (1977) found 9.53 mean for MBA students.

Horn et al. (1975) found that as compared with Engineering students, social scientists scored higher on Neuroticism scale. According to him, high Neuroticism score is a female characteristic and social sciences are more often chosen by females than males. Bachtoldt (1976) opined that scientists were reserved, serious and tough-minded. Seddon (1977) reported that interaction with Neuroticism was not significant with knowledge of chemistry. Eysenck and
and Eysenck (1978) found that Arts students scored the highest on Neuroticism and professional students the least. Gulati (1982) found subject to be a significant determiner of Neuroticism; Science Ss scored higher on Neuroticism.

According to Anderson (1974) female preference for artistic occupations seems to increase among low anxiety groups. Gover (1975) found Architecture Ss to score higher on Neuroticism.

**NEUROTICISM AND AGE:**

Nita (1965) found no relation between anxiety and age. With maturation there is more confidence and less anxiety, which lowers score on Neuroticism (Eysenck, 1965; Bledsoe, 1973; Brezina, 1974, Pandey, 1973 and Meena, 1981). With the age group of 16-19 years Eysenck and Eysenck (1973) found following results:

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<th>SD</th>
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<td>5.08</td>
</tr>
<tr>
<td>Females</td>
<td>3.28</td>
<td>5.22</td>
</tr>
</tbody>
</table>

Satyarthi (1979) found age to be significantly related to anxiety.

**PSYCHOTICISM**

The work of Eysenck (1952, 1955, 1959) and in particular Eysenck (1956), Davidson (1964) strongly argue for a separate dimension of Psychoticism on the basis of laboratory experiments. More recent studies by Eysenck have demonstrated the possibility
of embodying this concept of Psychoticism in the forms of Personality inventory. Friedman; Wakefield; Edgar and Surman (1976) supported the validity of P-Sca$h of the Eysenck Personality Questionnaire, and suggests that it is probably not overloaded with paranoid content. Eysenck (1977) concluded that there is evidence for the viability of concept of the questionnaire measurement of Psychoticism. The test-retest reliability of the Psychoticism dimension has been stated as .76 for males and .51 for females on university students (Eysenck & Eysenck, 1978). They also reported its internal consistency as .74 for males and .63 for females. Singh and Sehgal (1979) used the Eysenck Personality Questionnaire and revealed that Ss with high scores on Psychoticism tended to be emotionally unstable, suspicious, anxious, frustrated, tense and over-wrought. Significant loadings on Psychoticism appeared on two factors identified as Psychoticism and tender-mindedness suggesting that the Psychoticism scale of the Eysenck's P.Q. is a composite measure. Baumann & Roster (1981) tested the Psychometric quality of Psychoticism scale of the Eysenck's P.Q. with university students, they didn't find the personality trait of Psychoticism similar to those of Neuroticism or Extraversion. Jegede (1981) found 4.42 mean and 2.77 SD for Psychoticism dimension. Bristow (1981) concluded that there appears a relationship between Psychoticism and hostility; and also with stress (Evans, 1981). Rushton and
Chrisjohn (1931) found Ss scoring high on Psychoticism also were higher on delinquency (Eysenck and McGurk, 1980). Misra and Misra (1980); Wessel (1981); Williams (1981) report Psychoticism to have a sufficient distribution of scores among men.

Irfani (1977) found Turkish students to score higher on Psychoticism. Similarly, Jwawaki, Eysenck & Eysenck (1977) found that Japanese scored higher on Psychoticism. According to them, these differences may be because of genetic and cultural influences.

PSYCHOTICISM AND SOCIAL DESIRABILITY:

Singh (1976) administered the P.E.N. Inventory on Indian population and found negative intercorrelation between Psychoticism and Lie-score (-.03). Eysenck and Eysenck (1978) found a negative but significant intercorrelation between P and L i.e. -.23 (P < .01 level) for males and -.19 (P < .01) for females. Similarly a negative intercorrelation was found by Heather and Robert (1977) i.e. -.12 (insignificant) for females and -.31 (P < .05 level) for males. Gulati (1982) and Williams (1982) found negative correlation between Psychoticism and Lie-score.

PSYCHOTICISM AND AGE:

Eysenck and Eysenck (1978) have reported the means and for 16-19 years old: females → 2.99 mean, 2.56 SD; males → 4.63 mean and 3.27 SD.
Eysenck and Eysenck (1978) found that Arts students scored highest on Psychoticism followed by Medical, Engineering and Athletic students.

**SOCIAL-DESIRABILITY**

Social desirability has been variously described as "a desire to conform to social norms" (Edwards, 1959; Edwards and Heather's, 1962) "to appear in a favourable light", "ideal responses" (Chowdhury, 1966; Rosenthal, 1965, 1966; Sigall et al. 1970); "overly perfectionist view" (Butcher, 1969), "nice personality" (Skinner et al. 1970); "ideal self (Michaelis and Eysenck, 1971), etc.

Lack of insight (Michaelis & Eysenck, 1961); Social adjustment in terms of present adjustment or potential for good adjustment (Canter, 1963) and a tendency to protect self-esteem or ego defence mechanism (Mosher, 1965; Burish and Houston, 1976) results in high Lie or Social desirability Scale. Deliberate faking in order to deceive the tester in getting a different picture of himself called "Motivational Distortion" (Cattell, 1965) can be experimentally induced (Cattell, 1965; Michaelis and Eysenck, 1971). Heilbrum (1965) stated that high social desirability responders provided more valid and reliable records. Krishnan (1966) called it validity scale. Massey (1980) made a tentative interpretation of Lie Scale as a measure of conformism.

Social desirability values have been found to be same...
for different national groups (Edwards, 1964b; Tripathi, 1973). However, Wen, Shih-Sung (1976) assessed item validity of nine item lie scale of E.P.I. and stated that social desirability may vary from one ethnic group to another, from one race sex-combination to another. Eysenck, Adelja and Eysenck (1977) found Nigerian students to score higher on Lie than English students. Similarly, Irfani (1977) found Turkish to be higher on Lie Scale.

Singh (1976) studied the validity of Lie dimension of P.E.N. Inventory, to be .99 and its test-re-test reliability to be .92. Eysenck and Eysenck (1978) obtained .90 test-retest reliability on Lie for males and .61 for females; its internal-consistency was .81 for males and .79 for females. Heather and Robert (1979) obtained following results:

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<td>Females</td>
<td>6.86</td>
<td>3.27</td>
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The result on Lie obtained by Jegede (1981) are 10.24 mean and 4.03 SD.

Parkes (1980) found Nurses to be very high on Social desirability.

SOCIAL DESIRABILITY AND AGE:

Negligible correlations have been found between Lie and age (Gynther and Shinkuman; Gupta, 1971; Verma, 1975). Indians have been reported to score higher on Lie as compared to
British (Verma and Wig, 1972; Verma, 1975). Eysenck and Eysenck (1973) found following scores for 16-19 age group -

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<td>3.80</td>
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<tr>
<td>Female</td>
<td>6.78</td>
<td>3.92</td>
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Verma (1978) obtained +.03 correlation for males and +.10 for females. No age related effects on Lie Scale have been reported on Nurses (Pryke & Harper, 1977).

Gulati (1982) found subject to be insignificant determiner of Lie.

**SOCIO-ECONOMIC STATUS**

One of the features of the family that has been frequently investigated is its general socio-economic-status. Chapin (1928) has defined socio-economic-status as "the position that an individual or family occupies with reference to the prevailing average standards of cultural possessions, affective income, material possessions and participation in group activity of the community". In fact the term refers to a cluster of factors e.g. caste, occupation, income, education and cultural features of the home environment of the individual. However, Brübacher (1950) has stated that "socio-economic-status is something more than the objective surrounding which encompass the student more exactly, it is made up of everything which concerns him, which is continuous with his
own purpose and interest".

Negligible correlations have been reported by Crandell and Crandell (1965) between socio-economic-status and Lie scores. Nita (1965) found no relation between anxiety and socio-economic-status. Anderson (1974) found significant differences among different anxiety levels, and opined that an inverse relationship seems to occur between anxiety and degree of socio-economic class. Upper socio-economic class females prefer intellectual occupations and those from lower group tend to inflate female preference for conventional occupation. Phillips (1976) found a close association between musicality and social status. George (1978) considered personality and social status factors of significant importance. Satyarthi (1979) found that subjects low on socio-economic status had high Neuroticism scores. Srivastava; Singh and Thakur (1980) found that anxiety was negatively correlated with socio-economic status.

Mehryar and Hosseini (1973) found that high Psychoticism scorers tended to come from lower class families. It was found significant for females.

Eysenck (1979) stated that the correlation between socio-economic-status and personality factors was very small. This was assessed on the basis of E.P.Q. administered on English adults.
Shah and Bhayana (1978) opined that Socio-economic Status may be a factor in language acquisition. Children from higher class perform better in English.

**VIGILANCE**

Research in the field of Vigilance has assumed greater importance and emphasis considering its practical implications in performance of many tasks. Vigilance has been described variously: as performance on monitoring tasks; as attention over extended periods of time; as a state of organism — a readiness to respond to infrequent, low intensity signals occurring at unpredictable temporal intervals; it is required for successful performance in a variety of situations and jobs.

The term "Vigilance" appears to have been first used in a technical sense by Henry Head (1926). He referred to Vigilance as that state of Central Nervous System in which maximum physiological efficiency exists. He said, "when vigilance is high-mind and body are poised in readiness to respond to any event-external or internal". Bakan (1952) regarded Vigilance as a form of sustained attention. Mackworth (1957) defined vigilance as a "state of readiness to detect and respond to certain specified small changes occurring at random time intervals in the environment".
Since attention processes undoubtedly play a considerable role in Vigilance, the term may also be applied to the central processes which may be characterized as long term or extended attention (Haider, 1963). Gereb (1973) stated that vigilance varies both quantitatively and qualitatively according to living circumstances and task loading.

**EXTRAVERSION AND VIGILANCE**

Griew and Lynn (1960) opined that Extraverted Ss would be inferior to Introverted because they generate $t_R$ faster and dissipate it more slowly. Bakan (1963); Bakan; Belton and Toth (1963) found support for the hypothesis that Extraverts showed more decrement than Introverts in a vigilance task. Broadbent (1963); Buckner & McGrath (1963) reported greater vigilance decrement in Extraverts over time than Introverts. Paramesh (1963) found Extraverts to be significantly inferior in auditory vigilance performance than Introverts. Hogan (1966) found that Extraverts made significantly fewer correct detections than Introverts. Tune (1966) posits that it is so because Extraverts are inherently less cautious. Eysenck (1967); Mackworth (1968, 1969) and Carr (1969, 1971) also found significantly poor performance of extraverts on vigilance tasks. Krupski, Baskin and Bakan (1971) found that commission errors (associated with decrement in a detection task) were positively related to Extraversion. Lynn (1972) reported correlations
between vigilance task and Extraversion. Purohit (1972) also found support for Eysenck's inhibitory-excitatory potential hypothesis that performance of Introverts on vigilance task was found superior to that of Extraverts in a signal detection task. Thackery et al. (1974) found that Extraverts showed increasing lapses of attention in comparison to Introverted Ss. They also reported that of the two Extraversion components (impulsivity and sociability), impulsivity was the component responsible for obtained vigilance decrement. Harkins and Green (1975) found Introverts better on signal detection task than Extraverts. Hill (1975) reported poorer performance by Extraverts than Introverts on monotonous tasks. Saksena and Helode (1977) administered JPI and found Extraverted Ss showed more lapses of attention than Introverts. Colquhoun (1979) stated that Introverts tended to perform better at tasks of prolonged monitoring than Extraverts. Frigon and Granger (1978); Gill (1979); and Mohan & Gill (1979) reported Extraverts to be inferior in Vigilance than Introverts.

Kishimoto (1977); Meena (1981) found Extraversion to be positively correlated with vigilance.

Das (1961); Tune (1966); Cohen & Horn (1974); Tong et al. (1977) failed to find any relation between Extraversion and Vigilance.
NEUROTICISM AND VIGILANCE

In vigilance tasks labiles detected more signals than stabiles (Crider, 1972; Gale and Lynn, 1972; Siddle, 1972; Crider & Augenbraun, 1975 and Sostek, 1976). Bakan (1959), Krupski, Raskin & Bakan (1971), Averill and Yosem (1972), Gale et al. (1972); Tong et al. (1977) found Neuroticism to be unrelated to vigilance. Saksena and Helode (1977) found Ss high on Neuroticism to exhibit more fluctuations of attention than Ss low on Neuroticism. Katsikitis and Brebner (1981) found high Neuroticism scorers missed more signals. Meena (1981); Mohan and Malhotra (1981) found Neuroticism to be unrelated to vigilance.

Hashemian (1977) concluded on the basis of his study that because of the complicated relationship between vigilance, anxiety and Task Complexity, further experimental work is required.

High Psychoticism scores have negative correlation with vigilance and low scores have positive correlation (Eysenck & Eysenck 1978).

REMINISCENCE

Psychomotor performance has been a much researched area. More recently reminiscence received vigorous scholarly attention because of its demonstrability, measurability,
theoretical relevance & practical implications. Formally christened by Ballard (1913), the term reminiscence in simple words, can be defined as improvement in learning or performance occurring after the rest period. Hovland (1951) defined it in terms of increments in learning which occur during a rest period, he warned that before reminiscence can be considered a fundamental learning phenomenon, explanations of it in terms of fatigue, motivation and artifacts of measurement must be eliminated. Osgood (1953) defined reminiscence as "a temporary improvement in performance without practice". According to Eysenck & Frith (1977) reminiscence is the improvement in performance of a partially learned act that occurs while the subject is resting i.e. not performing the act in question.

EXTRAVERSION AND REMINISCENCE:

Eysenck (1956) was the first to explicitly recognize personality variables to play important part in determining the size of the reminiscence effect. He obtained a positive correlation of .29 between Extraversion and Reminiscence. According to him, massed practice produces $1_R$, which is generated more quickly in extraverts. Reminiscence is produced by the dissipation of the accumulated $1_R$ during rest period as extraverts have accumulated more $1_R$, therefore, they will have more $1_R$ to dissipate and will consequently show greater reminiscence effects. A positive
correlation between Extraversion and reminiscence has been found by Eysenck (1960a, b; 1962); Eysenck and Eysenck (1960); Claridge (1960), Becker (1960); Lynn (1960) and Star (1963).

Child (1964, 1966) reported a positive correlation between Extraversion and reminiscence in school children on the inverted alphabet test. Eysenck (1964) found that extraverts had a significantly higher reminiscence score than introverts on the pursuit rotor. Mohan (1966, 1968) found Extraversion to be a major determinant of reminiscence. Mohan & Neelam (1969) found extraverted university students to show greater reminiscence than introverts in inverted alphabet writing. Similar results have been reported by Shamberg et al. (1969); Mohan and Shashi (1972); Horn (1975a). Farley (1971) found the reminiscence score of extraverts to be 16 percent higher than that of introverts. Shroeder & Koenig (1978) obtained a positive relationship between Extraversion and reminiscence in a paired associate task. Bhandari (1991) found extraverts to be significantly related to reminiscence in backward figure writing. Mohan & Jain (1983) reported a negative correlation between Extraversion and Backward Alphabet writing.

However, Rechtschaffen (1958) and Ray (1959) did not find a significant relationship between Extraversion and reminiscence. Peters (1972, 1973) proposed that there are no individual differences in reminiscence. He found evidence
for a relationship between motor performance and extraversion as a basis for interpreting the reported relationship between Extraversion and reminiscence as an artifact. Mohan & Rajinder (1973) and Mohan & Mujal (1979) obtained an insignificant correlation between Extraversion and reminiscence in inverted alphabet writing and substitution task respectively. Mohan et al. (1981a) and Bhandari (1981) also found Extraversion to be an insignificant determiner of reminiscence in children or substitution and backward figure writing tasks.

NEUROTICISM AND REMINISCENCE:

In general, research on Neuroticism and reminiscence does not support a consistent pattern of relationship. Eysenck (1956) obtained a significant positive correlation of .40 between Neuroticism and reminiscence. He regarded Neuroticism as a drive and suggested that higher the drive one worked under, greater the amount of $I_R$ he should be able to tolerate and accumulate. Thus, two groups equal in Extraversion but differing in Neuroticism would be expected to differ in reminiscence with the high on Neuroticism group showing greater reminiscence. Lynn (1960) found a positive correlation between Neuroticism and reminiscence on inverted alphabet printing task. Child (1966) also reported Neuroticism to be related to increase in reminiscence scores
though no significant results were obtained. Mohan (1963); Mohan & Neelam (1969) found Neuroticism to be a significant determiner of reminiscence. Shamberg et al. found a positive relationship between Neuroticism and reminiscence at lower level and medium level of Neuroticism. Mohan and Shashi (1977) obtained a positive correlated on substitution and inverted alphabet writing. Kumar (1973) found neurotic-extroverts to have better reminiscence scores. On the perceptual motor tasks, Born (1975a) found Neuroticism related significantly to reminiscence. Mohan and Jain (1980) reported a positive correlation between Neuroticism and backward alphabet writing. Similar results were found by Bhandari (1981) on substitution and backward figure writing.

Eysenck (1962) pointed out that "it seems that Neuroticism as a personality variable presents some special complexities and difficulties to the investigator attempting to link it with personality measures of an objective kind". These problems arise as a result of the curvilinear relation between drive and performance (Yerkes-Dodson law, 1908); thus it is possible that in two groups of S's fairly low on Neuroticism a positive correlation of Neuroticism with reminiscence may be observed while in groups of S's who are extremely high on Neuroticism a negative correlation may be found. Mohan (1966, 1978, 1979); Mohan & Rajinder (1973); Mohan & Munjal (1979) obtained a negative correlation between Neuroticism and reminiscence.
However, studies by Ray (1959); Becker (1960); Claridge (1960); Eysenck & Eysenck (1960); Farley (1971) failed to find a relationship between Neuroticism and reminiscence.

MEASUREMENT OF REMINISCENCE

As far as the response measures of reminiscence are concerned, the most common measure used in the studies of reminiscence is the difference between the last pre-rest trial and the first post-rest trial. The said method has been successfully used by Eysenck and Eysenck (1960), Eysenck and Maxwell (1961); Eysenck and Willett (1961, 1962, a, b); Feldman (1964); Rachman & Grassi (1965); Mohan (1966, 1970, 1974, 1978, 1980), Mohan & Neelam (1969); Mohan & Shashi (1972), Jain (1976); Kumar (1976); Mohan et al. (1974, 1981a).

Several experiments have been conducted to study reminiscence in relation to individual differences. Numerous studies have been conducted with personality as a determiner of reminiscence by Eysenck (1956, 1957, 1960a, b, 1962, 1964, 1973); Treadwell (1956), Star (1957, 1963); Das (1957); Rechtschaffen (1958), Ray (1959); Becker (1960), Claridge (1960); Eysenck & Eysenck (1960); Lynn (1960); Bendig & Eigenbrode (1961); Meier (1961); Costello & Feldman (1962); Germain and Pinnillos (1962); Child (1964, 1966), Mohan (1966,

Sex as a determiner of reminiscence has been investigated by Amrons et al. (1955); Patel & Grant (1964), Davol et al. (1965); Mohan & Mohan (1967); Mohan & Neelam (1969); Mohan & Shashi (1972); Geblewiczowa (1973), Horn (1975, b, 1976), McCaffrey & Payne (1977), Payne & Huang (1977), Resick & Payne (1978), Mohan (1980) and Mohan et al. (1981a), Bhandari (1981).

Age as a determiner of reminiscence has been


**PERSISTENCE**

Persistence is one of the objective features of purposive behavior (McDougall, 1908). "The success or failure
of individuals depends largely on the ability to endure and to continue to strive for the achievement, inspite of fatigue and discouragement" (Fenald, 1912). Persistence is continuation in voluntarily undertaken and directed activities; a special aspect of achievement motivation including readiness to bear discomfort or pain in the pursuit of one's own or one's adopted goals (French, 1948). English & English (1953) refer persistence as the continuance of a line of behavior against opposing incentives and motives". Kethlingshafer (1963) regards that man to be highly persistent who is likely to continue any task once started", who will endure difficulties, fatigue, pain and boredom even fear and rising anxieties.

On the basis of factor analytic studies (MacArthur (1955 ; and Eysenck, 1960), Eysenck concluded that persistence constitutes an important trait and that this trait is of a relatively unitary nature and can be measured to the extent indicated by a validity of 0.9. The factor of persistence is subdivided into persistence in physical tasks and persistence in ideational tasks.

PHYSICAL PERSISTENCE:

Physical persistence according to Ryans (1938) is persistence against boredom in some manual task which is
not in itself painful or creative of discomfort but which is of any intrinsic interest. It is a general factor characterized by a specific type of persistence and is independent of the other non-general factor called "ideational persistence" (Eysenck, 1960). But Eysenck & Costello (1961) regard persistence against boredom as characteristic of "ideational factor".

The second category measures persistence against pain, discomfort and fatigue (Ryan, 1938; Rethlingshafer, 1942; Solomon, 1960; Eysenck & Costello, 1961; Eysenck & Lynn, 1961; Feldman, 1964).

Gupta (1971) found personality to be significant at .001 level on physical persistence. Langova (1976) personality and environmental variables interacted in determining persistence.

**EXTRAVERSION/INTROVERSION & PERSISTENCE:**

The review of literature discloses confusion in relating objective measures of this trait to personality. Theoretically, we may subdivide persistence tests according to the negative drive which opposes continuation i.e. "pain" in the case of physical tests (Thornton, 1939; Rethlingshafer, 1942; MacArthur, 1955) and "boredom" in the case of ideational tests and according to the positive drive which motivates continuation.
i.e. "group prestige" or "self motivation" (Kremer, 1942; MacArthur, 1955). It may be predicted from the general theory of Eysenck (1961) that these positive sources of motivation will apply more strongly to extraverts and introverts respectively; it may similarly be predicted that pain will be a stronger negative drive for introverts, who would be expected to be less persistent on physical tasks, while boredom will be a stronger negative drive in extraverts who would be expected to be less persistent on mental tasks. Costello & Eysenck (1961) reported that the more Extraverted were found to be significantly (30%) more persistent.

Beecher (1959) contends that physiological pain sensations are always accompanied by the apprehension of future pain which may be conceived as a conditioned fear response which summates with the physiological pain. Extraverts are postulated to condition less well and would therefore not develop this component of the total pain to the same extent as introverts. Extraverted Ss are postulated to develop inhibition satiation more quickly and dissipate it more slowly; prolonged pain sensation should thus be inhibited more quickly and strongly in extraverts, leading to diminished pain sensation (Eysenck, 1961). This has been confirmed by Petrie (1960) and Eysenck & Lynn (1961).
Extraversion was found to be an important determiner of physical persistence (Singh, 1962; Singh & Gupta, 1962; Mohan & Menon, 1968, 1969). Using the E.P.I. Mohan and Virdi (1970, 1972) found extraverts to be more persistent than introverts. Sex played an important role at higher level and not at lower level of persistence. Similar results were reported by Mohan and Nijjer (1972). Mohan, Kumar and Mohan (1973) found better persistence by extraverted Ss than by introverted Ss.

No correlation was found between Extraversion and leg persistence by Himmelweit and Petrie (1951); Eysenck (1955).

**NEUROTICISM AND PERSISTENCE:**

Neuroticism is one of the major dimensions of personality as posited by Eysenck in his theory of Personality (1957, 1960). Neuroticism refers to emotional lability or over-responsiveness of a person (Eysenck, 1952). Eysenck's theory holds that Neuroticism is related to the strength of the autonomic reaction to pain stimulation. Lynn & Gordon (1961) reviewed the relation of persistence to Neuroticism and to educational success.

Lynn and Eysenck (1961) demonstrated that Ss high on Neuroticism persisted less on the hand dynamometer task than those low on Neuroticism on the same task. Eysenck (1955)
and Himmelweit and Petrie (1951) using children found
normale to be more persistent than neurotics.

But the results of Eysenck & Costello (1961) failed
to show any significance regarding neuroticism, which shows
that the pain tolerance is negatively related to neuroticism.
Similar results have been obtained by Lynn & Eysenck, 1961;
Singh, 1962; Singh et al. 1966; Mohan & Nijjer, 1972; Mohan
& Kumar, 1973.

One of the explanations for this lies in the fact
that due to the high drive in the neurotic Ss, the disrupting
effects of drive would produce more distractibility in the
Ss especially when tasks are more complex (Alderman et al.,
1964; Mohan & Kumar, 1973a).

**MEASUREMENT OF PERSISTENCE:**

Persistence may be measured by the total trials which
the person works at the task before he turns to the
alternative activity. The former measure is sometimes
referred to in the literature as temporal persistence,
the later measure is analogous to resistance to extinction
(Feather, 1962).

For measurement of persistence a wide variety of tasks
are used some of which are administered individually, others
in a group setting. Various types of tasks are story
resistance, puzzle mastery, fatigue and boredom in mental work, hunting for hidden objects, continued standing on the right foot, eating crackers and solving toy puzzles. The reliability coefficients of these tests were found to range from .40 to .85. Validity coefficients obtained by comparing test results with teachers rating of persistence were from 0 to .33. The correlation between various test results of persistence to increase with age where the age range was nine to sixteen years (May & Miller, 1929).

The adequate measures of physical persistence as employed by Howell (1933), Ryan (1938), Thornton (1930), Rethlingshafer (1942) and MacArthur (1955) include holding one's breath as long as possible, length of time is endured, holding one's foot against opposite chair as long as possible, to keep extending an arm as long as possible.

Rethlingshafer (1942) found breath holding test giving negative loading on the physical factor. Eysenck (1960) criticised her results mentioning that they were based on small number of Ss, so no certain conclusions could be drawn from her data.

Research in the area of persistence falls into three fairly distinct classes.

The first approach is in the constancy with behaviour
where persistence is considered as a trait or uniformity in behavior. Typically these study the correlational technique relationships between persistence scores (usually in terms of time) for a variety of different types of tasks, will a person who persists at one task also tend to persist at another. The role of situational factors in determining behavior tends to be ignored since emphasis on personality structure or traits which transcends the situation to the extent that momentary situational influences are included from consideration, the trait approach commits the organism error (MacKinnon, 1944).

The second class of studies comprises those which are concerned with the problem of resistance to extinction although they are not commonly discussed as persistence studies but the structure of the situation to some extent is similar to that employed in studies where persistence is conceived as a trait (MacKinnon, 1944).

The third class of studies comprised those in which persistence is conceived as a motivational phenomenon. On one hand the theory may consider persistence mainly in terms of situational parameters leaving personality variables relatively unspecified. Lewinian field theory appears to come close to this approach in its detailed analysis of factors in the psychological environment such as valence and barriers (Atkinson 1957 & 1960).
The three classes of studies may be seen as falling on the continuum with personality oriented trait studies on the other end and studies which consider the interaction of personality and situation between the two extremes (Feather 1962).

The investigation falls into two categories. Non factorial trait studies as exemplified by the classical research of May and Miller (1929); second is the factorial trait studies.

The transition from one to two exemplifies the initial steps in evolution towards the scientific explanation. There is progression in the concept of persistence as property of persons, some possessing it more than others to attempt to classify different types of persistence. Factor analytic studies fail to provide an adequate conceptualization why people differ in persistence between situations.

The present study is an attempt to standardize Eysenck's Personality Questionnaire on Indian population.