It has already been discussed in the foregoing chapter as to how the various psychological functions are affected by deprivation. Before dealing with the methodological or technical aspects of the study, it would be desirable to arrive at the semantic classification of the concepts involved in the study, viz., deprivation, locus of control, achievement motivation, and Verbal IQ - Performance IQ discrepancy.

DEPRIVATION

The word "deprivation" is etymologically derived from the verb "to deprive" which means to dispossess or strip (a person or an object), and it implies a "felt loss". It literally refers to dispossessing or loss of privileges, opportunities, material goods and the like. Deprivation is considered as a multi-dimensional and quantifiable variable operating over long periods. The term encompasses a broad range of human conditions that are below par. In psychological studies it has been equated with "failure to provide opportunity to have experience" (Gordon, 1965); "lack in environmental inputs" (Jensen, 1968); "insufficient satisfaction of basic psychological needs" (Keith & Kraft, 1968); "Social..."
disadvantage cultural alienation" (Wight et al., 1970, p.78); "insufficient satisfaction of basic needs for a prolonged period" (Langmeier, 1972); "a condition in which particular external and internal factors merge to narrow a person's behaviour or alternatives for achieving self-fulfilment" (Sinha, 1976); and "deficiencies in experiences and conditions of learning" (Tripathi & Misra, 1976).

Deficiencies in educational experiences, and the pervasive results of discrimination and socio-economic deprivation characteristically mark the disadvantaged youth who are handicapped, not due to endogenous, but due to exogenous causes. As DeCecco (1968) puts it that the disadvantaged child is one who is reared in a pre-school environment which fails to develop the entering behaviour necessary for beginning his formal education in the schools. Their home environment lacks necessary qualitative stimulations for the adequate development and functioning of cognitive abilities. Their adverse home conditions which are related to depressed intellectual and social functioning include such things as economic privation, history of court intervention, negative parental attitude towards the child, inadequate and over crowded housing, sub-standard nutrition, low parental educational attainment, poor household management, social and economic deprivation, etc. (Miller, 1968). Thus, by
the time a child comes from such adverse home conditions to profit out of formal education impaired in primary schools, his cognitive growth is already depressed.

Numerous characteristics have been mentioned as being peculiar to the disadvantaged child: negative self-concept, low language level, poor utilization and interpretation of feelings with abstract symbols, difficulty in transition from concrete to abstract modes of thought, concrete and inflexible intellectual functioning, unique dialect of spoken language, low intellectual quotient, insufficient motivation, little respect for the public school authority, defeatist attitude, no compassion for the less fortunate, distinctive style of learning, poor acceptance of criticism, and inability to see advantages of education.

In contemporary psychology, the term "deprivation" has been employed as an explanatory construct as well as an empirical variable to account for a variety of behaviour characteristics in controlled laboratory studies and studies in natural settings. In the studies of deprivational effects in natural settings, psychologists and behavioural scientists have subjectively conceptualized the term "deprivation" and have arbitrarily separated the deprived from the non-deprived. Owing to differences in theoretical framework and procedural variation in deprivation studies, the term has come to acquire a variety of connotations. Some of the terms used
are: effective deprivation (Gewirtz, 1961); parental or maternal deprivation (Yarrow, 1961); cultural deprivation (Riessman, 1962; Kogan & Kogan, 1970; Wight, Gloniger & Keene, 1970; and Das, 1973); social and cultural disadvantage (Havighurst, 1964; Gordon, 1968; Uzgiris, 1968; Singh, 1976; and Sinha, 1977); environmental deprivation (Deutsch, 1965); cognitive deprivation (Green, Hofmann & Morgan, 1967); economic deprivation (Symmonds, 1968); educational deprivation (Getzels, 1969); social deprivation (Rankin, 1970; Tulkin, 1972); emotional deprivation (Stott, 1974); and prolonged deprivation (Tripathi & Misra, 1975, 1976; Misra & Tripathi, 1977a).

This terminological sample enables one to understand the difficulties that are likely to arise in devising means for quantifying and assessing the nature and extent of deprivation to which an individual has been subjected in his life.

One of the most frequently employed criteria of deprivation is membership to some specified group. Individuals have been considered as deprived on the grounds of belonging to a minority community (Goff, 1954); being Negro (Green & Williams, 1965); of low socio-economic status (Gordon, 1968); belonging to an aboriginal tribe (Nurcombe, 1970); and in the Indian context, to a particular caste (Das, Jachuck & Panda, 1970; Rath & Dash, 1972; and Sinha, 1977). Due to the traditional social
structure and paucity of resources, a considerable section of our society lives below the subsistence level. Most of them belong to the backward, and scheduled castes and tribes, who perpetually suffer from economic insufficiency, social disadvantages and so called cultural deprivation. They are the victims of malnutrition, paucity of basic health services and educational facilities. Backwardness, thus, is manifested in the form of low socio-economic level, low position in the socio-cultural hierarchy in the form of caste and class, illiteracy, absence of strong family ties, inadequate housing and schooling facilities, urban slum dwelling/remote rural background. Malnutrition, poverty and illiteracy contribute to disadvantages in the intellectual and social development of the growing child. However, deprivation cannot be considered as a fixed category but as a dimension or a set of several dimensions along which quantitative differences may exist. Such categorical criteria fail to provide quantitative discrimination among the people of the so called deprived categories.

Having realized the inadequacy of treating deprivation as a nominal variable, a number of investigators made serious attempts at quantifying deprivation. Davis (1968) used a set of seven point rating scales for assessment of deprivational background, though these rating scales covered only a restricted range. Whiteman & Deutsch (1968) were of the view that "the
association between social grouping and specific environmental factors is not directly causal but is mediated by some more basic societal conditions, such as unemployment, poverty and inequality of opportunity in various areas. With the removal of such conditions the association between social grouping and disadvantaging factors may vanish" (p.91). They included six criterion variables so combined in a measuring device as to yield a composite score known as "deprivation index". A more refined scale was developed by Munsey (1971) in which he developed a Cultural Deprivation Index independent of ethnic group membership and included education, income, and area of residence. On similar lines, Rath & Samant (1975) have developed a cultural deprivation index suitable for Indian setting.

A global construct of prolonged deprivation has also been conceptualized which refers to the varied multidimensional experiences of an individual (Tripathi & Misra, 1976). In the Prolonged Deprivation Scale (PDS), deprivation has been taken as a more refined, comprehensive and experience-oriented concept. The concept of prolonged deprivation is based on a wide range of environmental and interactional variables constituting the basic sources of experiences to the living organism. It is evident that members of a particular social group or community get varying degrees of opportunities to acquire
experience, particularly in their formative years. The extent to which an individual comes to acquire cognitive competence may be determined by these experiential variations. On the one end of the scale are those members of the community whose biogenic and sociogenic needs are adequately fulfilled leading to maximum amount of varied experiences in life, while on the other end, are those who suffer from an inadequate fulfilment of their needs and acquisition of diverse experiences. It is a multi-dimensional phenomenon manifest over a time duration. Therefore, it is important that the temporal aspect of deprivation and the sources of deprivation be specified in the measurement of deprivation. The PDS utilizes the techniques of interview, observation and rating for measurement of deprivation. It includes all important aspects of deprivation such as physical, social, economic, educational, cultural and psychological, etc. and is universally applicable.


1. MateriaIlly Disadvantaged

All children normal or abnormal, have certain basic physical and psychological needs without which life itself cannot be smooth. The seven essentials for
existence are food, shelter and protective care, clothing, prevention of illness and injury, fresh air and sunlight, activity and rest, and training in habits and skills necessary for the maintenance of life. There is almost unanimous agreement that prior satisfaction of the basic needs is necessary before human beings can become concerned with and perform higher level functions. The deficiencies in basic needs operate in influencing school learning in a number of ways. Much of the child's energy and attention is directed to his immediate needs and he is less able to attend to learning and school tasks which appear to him as less urgent and relevant to his present state. Furthermore, the satisfaction of immediate goals becomes so imminent for these children and their parents that less energy is available for distant goals. Present time orientation and much of education and learning is largely for some future time.

When children learn that their basic needs cannot be adequately met, they adopt a fatalistic attitude, characterized by passivity and defeatism (and, probably hostility), which alters their life style. This the child learns from both the realities of living and from their parents who, through their daily behaviour, communicate a general attitude orientation. This general attitude orientation can do much to give the child a self-fulfilling prophecy in which he expects to be frustrated in meeting his basic needs and, in turn, his environment.
This prophecy, which is repeatedly verified, has basic consequences on personality and character.

The materially disadvantaged children grow up amidst poverty which denies them their basic needs. Income of the family determines the level of food, medical care, special education and similar gratifications. Poor children due to their limited economic facilities are bound to face difficulties in their adjustments in different aspects of life in comparison to the privileged. Poor socio-economic conditions put a lot of strain on the person with respect to satisfaction of some important basic needs (Shukla & Misra, 1980).

Economic hardship is known to be associated with a variety of physical and psychological health problems in children, adolescents and adults (Angell, 1965; Elder, 1974; Nelson & Skidmore, 1983; Horwitz, 1984; Kelvin & Jarrett, 1985; Baldwin & Revenson, 1986). Economic deprivation during the Great Depression, resulted in a decreased respect for the father and an increased dependence on peer group for adolescent boys, while, for adolescent girls, effects were lowered feelings of self-adequacy and reduced goal aspirations (Elder, Van Nguyen, & Caspi, 1985).

As with other stressful life events, economic hardship does not always affect its victims in the same ways. Personal variables such as age, sex, temperament and
intelligence are important determinants of a person's response to stressful events (Block & Block, 1980; Bowlby, 1980; Werner & Smith, 1982; Rutter, 1983).

2. Psychologically Disadvantaged

The children 'who starve amidst affluence' can be found in any society—even in the advantaged and privileged homes. These children have been denied affection and continuity of individual care, security rooted in belongingness, a sense of personal identity, stable personal relationships and self-respect derived from knowledge of being valued as an individual.

3. Culturally Disadvantaged

In studies conducted in natural settings, the term 'deprivation' has been used interchangeably with terms such as cultural deprivation (Riessman, 1962; Wight, Gloniger & Keene, 1970; Das, 1973) and social and cultural disadvantage (Havighurst, 1964; Sinha, 1977).

According to Hunt (1964), cultural deprivation is "failure to provide an opportunity to have the experiences required for adequate development of the semi-autonomous, central processes demanded for acquiring skill in cognitive processes".

The following three groups are included here:

(i) the culturally different,
(ii) the culturally deprived, and
(iii) the culturally disorganized or disoriented.
An important criterion of disadvantage is cultural isolation - lack of exposure to museums, trips, news media, libraries, parks and other community offerings. The range of experiences of the youth thus isolated is more limited than that of the average middle-class child. Examples of the culturally isolated youth include those growing up in rural slums, urban slums or an American Indian reservation. They miss contact with a wider and more complex cultural community that is a part of the normal mode of life of most people (Amos & Grambs, 1968). Krugman (1961) studied the effects of cultural deprivation by noting the deficit in IQ and reading test scores for 3rd and 8th graders, in a large low socio-economic district, and found that the deficit was seen to be cumulative. A review of the various experimental programs led to the conclusion that schools can compensate for the inadequate backgrounds that children from deprived homes bring to the classroom. The programs produced changed self-concepts by giving the children "the feeling that the school cared" and by having the children succeed. Moreover classroom activities were supplemented with opportunities for cultural experiences, e.g., trips to museums, theatres, libraries, scientific laboratories and the like which led to higher levels of aspiration and better adjustment.

Riessman (1962) has brought out certain
significant conclusions about 'The culturally deprived child'.

(1) The culturally deprived are usually interested in education for vocational reasons, to get along in the modern world.

(2) The weaknesses and strengths of the culturally deprived child were listed as follows:
Weaknesses: "narrowness of traditionalism, pragmatism, anti-intellectualism; limited development of individualism and creativity; alienation; political apathy, suggestibility and naivete; boring occupation tasks; crowded homes".
Strengths. "cooperativeness and mutual aid of extended families; lack of strain accompanying competition and individualism; equalitarianism, informality and humor; freedom from self-blame and parental overprotection; lessened sibling rivalry, security found in the extended family and in a traditional outlook".

(3) Characteristics of the deprived child's styles (a) "physical and visual rather than aural, (b) content-centered rather than form-centered, (c) externally oriented rather than introspective, (d) problem-centered rather than abstract-centered, (e) inductive rather than deductive, (f) spatial rather than temporal, (g) slow, careful, persevering (in areas of importance), rather than quick, facile,
flexible, (h) definite lack of formal language skills, but high development of informal language and gestures".

Characteristics of the culturally deprived environment, however, is a restricted range and a less adequate and systematic ordering of stimulation sequences (Deutsch, 1963). The effects of this restricted environment include poor perceptual discrimination skills; inability to use adults as sources of information, correction, and reality testing, and as instruments of satisfying curiosity; an impoverished language-symbolic system; and a paucity of information, concepts, and relational propositions (Deutsch, 1963).

Ausubel (1964), in his assessment of the consequences of cultural deprivation on the development of verbal and abstract intelligence, as well as on motivation for academic achievement, implicates the "critical periods" hypothesis - the idea that there are optimal periods of readiness for all kinds of cognitive development. He argues that the theory does not proclaim that a person cannot acquire these intellectual skills or subject matter content at times other than the critical period. Rather, he stresses, there is considerable loss of "years of opportunity when reasonably economical learning could have occurred if attempted, but did not". The consequence is a learning deficit which hampers both
current and future intellectual development.

Metfessel & Foster (1965) conducted several researches on the disadvantaged children and concluded that these children have several problems in the classroom learning:

2. As compared with the middle-class children, they are unable to learn from being told.
3. Culturally disadvantaged children are often unable to make simple symbolic interpretation.
4. They tend to have a short attention span and as a result have difficulty in following directions.
5. They are unable to use language in a flexible way.
6. They lack the concept of relative size.
7. These children are less likely to perceive adults as people whom they can approach for help.
8. They seem to have a low level of curiosity about things.
9. These children have very narrow range of experiences.

According to Das (1968), in India, in addition to economic status, caste is also an important factor in defining cultural deprivation. Das & Pivato (1970) have identified the culturally deprived as the one with poor
intellectual capacities in lower socio-economic class. Thus, a number of studies conducted in India and abroad have demonstrated the impact of socio-cultural and economic deprivation on perceptual and cognitive growth (Das, Jachuck & Panda, 1970; Das, 1973; Bronfenbrenner, 1974; Sinha, 1974; cf. Sandeep & Pushpa, 1981).

(4) Intellectually Disadvantaged

These children have been denied the opportunity to develop mentally at their own natural rate due to lack of stimulation, or over-stimulation, or unsuitable stimulation.

The development of intelligence of the child takes place according to the environment at home, in the family, in the school, and in the community. If the environment is healthy and conducive, the development shall be good, but if bad then the development shall be adversely affected. Ideally, the early intellectual development of the child should take place in the home. All later learning is likely to be influenced by the very basic learning which has taken place by the age 5 or 6 years. If adequate basic learning cannot be provided in the home, due to the total syndrome of poverty, broken homes, slum living, large families and illiteracy, which all conspire against the intellectual development of the child, it is the responsibility of the schools to ensure that the deprived children have as good a set of initial
skills and intellectual development as children from the more advantaged homes (Bloom et al., 1965). With Hunt's (1961) and Bloom's (1964) seminal works, researchers came to believe that early experiences have an enduring perhaps irreversible effect on intellectual development, so it followed that early years should be full of intellectual stimulation. If, as a result of a consistently deprived environment during the early formative years, superior intellectual endowment is not actualized, the attained deficit in functional capacity significantly limits the extent to which later environmental stimulation, even if normal in quantity and quality, can increase the rate of cognitive growth. Even studies conducted under artificially produced sensory deprivation and isolation (Bexton, 1953; Brownfield, 1964) indicated that deprivation of stimulation causes disorganization of a number of cognitive processes.

There are instances where poor children have environments that are richly endowed with social, cultural and linguistic experiences. For a slum child, an "impoverished environment is not necessarily one that lacks stimulation. On the contrary, it "seems to be one of overwhelming but undifferentiated stimuli: too many people in too little space, T.V. sets blaring indiscriminately, lack of organized and orderly meal times, lack of opportunity to converse in depth or variety with either brothers, sisters, parents, or other adults, cluttered
homes,... and other such factors (McCandless, 1967, p.161). However, poor children seem to suffer from insufficient adult help in taking advantage of their otherwise rich environments.

A notable feature of the deprived children is that the environment of these children depresses their intellectual functioning, and that the provision of a more adequate environment through preschool and other experiences results in considerable increase in IQ of nearly 10 to 15 points and more successful school learning. Thus, levels of intellectual functioning have been found to be quite changeable for the deprived and greatly affected by environmental experiences. The measured intelligence of the deprived children does not indicate a ceiling level of their learning ability, however, their full learning ability will be realized only under adequate environmental conditions in the home and the school.

(5) Educationally Disadvantaged

Children who get inadequate opportunities for schooling or education, those who get inadequate or poor schooling, and those who evade schooling belong to this category.

The elementary and secondary school curricula and programs developed by the schools are successfully completed by only one-half of those entering it if
financial and other obstacles do not hinder their progress. These educational programs are increasingly the determiners of status and economic opportunity, and completion of these programs is rapidly becoming the minimal requirement for successful entry into the larger society. Numerous studies have found that dropout rates are higher for students from families of low socio-economic status, no matter what particular factors are used to measure socio-economic status (Rumberger, 1983; Kolstad & Owings, 1986). Particularly family-related factors associated with dropping out include low educational and occupational attainment levels of parents, low family income, speaking a language other than English in the home, single-parent families, and the absence of learning materials and opportunities in the home (Rumberger, 1983; Steinberg, Blinde & Chan, 1984; Ekstrom et al., 1986). Many dropouts attend schools with very poor facilities and inadequate teaching staffs (Krishnan, 1977), condition that could affect their performance in school and ultimately their decision to leave (Fine, 1986).

Although parents of disadvantaged children are increasingly becoming interested in seeing their children succeed in school, they lack the intellectual and material resources, that the middle-class parents have, to enable them to adequately prepare their children for the school
experience. The deprived children, then, come to school with a set of preschool experiences which are different from those of children from middle-class homes, and the expectations of the school do not take into consideration these differences in preschool experiences.

Mills (1992) indicated that educationally disadvantaged students need more time in school, more individual attention, and more specialized programs to provide the experiences necessary for the full development of their abilities.

(6) Socially Disadvantaged

Whiteman & Deutsch (1968) have considered social deprivation as "a relative term referring exclusively to specific types of environmental factors". According to them, any environmental factor may be considered deprivational when that factor is associated with certain social groups such as, socio-economic status or race, and when the environmental variable is associated with impaired performance. According to Tannenbaum (1969) "social deprivation may be characterized as a condition in which particular behavioural alternatives for achieving self-fulfilment are absent". Social deprivation refers to a dispossession or loss of privileges, opportunities, material goods and the like. It may occur with reference to three interrelated sets of basic needs: physical, psychological and socio-cultural (Nurcombe, 1970).
Social deprivation is especially damaging in a culture that puts high value on popularity because it deprives the person of opportunities to learn, to behave in a socially approved way and weakens his motivation to take advantage of any learning opportunity that occurs. Regardless of when social deprivation occurs, it affects personality unfavourably though the effects are most serious in the early years of life and among the elderly because of the greater dependency on others at these ages. Social deprivation makes the person selfish and self-centered and encourages him to believe that he is a martyr (Geschwender, 1968; Mussen, Conger & Kagan, 1969). Too many social contacts are also damaging because they deprive the person of opportunities to learn to be self-dependent and self-reliant.

Bronfrenbrenner (1974) and more recently Bryant & Ramey (1987) have identified socially disadvantaged families with low educational level and single parenthood. It is becoming increasingly clear beyond doubt that social conditions play a decisive role in the development and functioning of intelligence and social skills (Casler, 1961; Lewis, 1965; Mulligan, 1974; Davis, 1975; Sahu & Mohanta, 1976). Poor social conditions are mainly responsible for lower intellectual abilities in the members of various groups of the lower strata of society. Singh (1976) reported that even if intelligence was matched, social deprivation negatively influenced the
educational achievement. The author found that social advantage was related to achievement directly, as well as indirectly, through its association with intelligence.

**Parental Deprivation**

Since the publication of the WHO Monograph (Bowlby, 1951) and his paper on the child's tie to his mother (1953), Bowlby's concept of attachment and his views on the pathogenic potential of separation experiences from the attachment object have aroused considerable interest and controversy. The concept of attachment (Bowlby, 1969, 1973, 1974) concerns the development and maintenance of certain relationships between specific people that are ongoing and evoke deep feelings.

Attachment theorists, Bowlby (1969) and Ainsworth (1973) have both suggested that infants are born with a biological propensity to behave in ways which promote proximity and contact with their mother figure. "An attachment is an affectional tie that one person forms to another specific person, binding them together in space and enduring over time" (Ainsworth, 1973). Observational studies of infant-mother and infant-father interactions have demonstrated convincingly that infants form attachments to both of their parents by the middle of the first year of life, even when their mothers are primary caretakers and their fathers spend relatively little time
with them (Abraham, 1924; Klein, 1935; Spitz, 1945; Bowlby, 1961; Schaffer & Emerson, 1964; Cohen & Campos, 1974; Kotelchuck, 1976; Lamb, 1976a, 1977, 1979). Thus infants preferentially seeks proximity to and contact with their parents, react with distress to separation from either, and are comforted by the presence of either. When they are distressed, infants turn to which ever parent is present for comfort, although distressed 12- and 18-month old infants seek out their mothers in relation to their fathers when they have a choice (Lamb, 1976b).

Attachment, however, is a two-way affair which various pediatricians have termed "bonding". The concept of bonding implies selective attachment (Cohen, 1974), which persists over time and even during a period of no contact with the person with whom the bond exists. The difference between human attachment behaviour and bonding has been shown by the findings of Tizard & Rees (1975) on institutional children. Four-year old institutionalized children showed more clinging and following behaviour than family-reared children, but they were less likely to show selective bonding or deep relationships. This finding indicates that the nature of the attachment objects' response to the infant will influence the quality of relationship formed and hence its function in relation to later development.

Certain critical issues have been unanimously endorsed by theorists. These are:
The process of bonding involves a reciprocal interaction between infant and parents in which both play an active role (Bowlby, 1969; Gewirtz & Boyd, 1976; Cairns, 1977).

Malnutrition and environmental factors are important in determining when bonding occurs (Cairns, 1972, 1977).

Attachment develops as a result of social learning and differential reinforcement plays an important role in determining the patterning of social interactions (Hinde & Stevenson-Hinde, 1976).

However, the quality of mother-infant attachment becomes evident when the child is separated from the mother. Starting with the work of Spitz (1945), Spitz & Wolf (1946), Goldfarb (1945b) and others summarized by Bowlby (1952), attention began to be focused on the effects on children of separation from their parents, chiefly the mother. Spitz (1945), and Spitz & Wolf (1946), noticed that infants who had had a good relationship with their mother up to the age of about 6 months, and then were separated from her showed symptoms similar to adult mourning, and termed these symptoms "anaclitic depression". He pointed out that if the separations lasted longer than 3 months, the infants usually did not recover their previous personalities. Bowlby (1956, 1960) extended these observations and emphasized that losses in older as
well as very young children are likely to lead to pathological outcomes. He argued that there is a universal response to separation from an attachment object. This response is that of protest, despair, and detachment (Bowlby, 1973). Studies on maternal separation further indicate that the intensity of impact is governed by such factors as the age at which the separation occurs, the kind of mother-child relationship preceding the separation and the character of substitute mothering after separation. Yarrow and his associates (Yarrow, 1965; Yarrow & Goodwin, 1973; Yarrow, Goodwin, Manheimer & Milowe, 1973) reported that all infants separated after 6-7 months from their biological parents showed evidence of social and emotional maladjustment.

A few authors (Holman, 1959; Nash, 1965; Brown, 1966) have also stressed the importance of paternal as well as maternal deprivation. Research literature has greatly emphasized upon the maternal and paternal interactional styles which ensures that mothers and fathers have distinct and independent influences on their infants' development.

Ainsworth (1962) has pointed out that the term "maternal deprivation" has been used to describe various undesirable conditions among which are:

(a) insufficiencies or distortions in interaction between parent and child when the parent is physically present,
discontinuities in relations between mother and child brought about by separations, and
deprivations which occur when a child is brought up in an institution where he receives insufficient maternal care.

The concept of maternal deprivation according to Yarrow (1964) included four patterns of deprivation from a hypothetical mode of maternal care:

(i) institutionalization,
(ii) separation from mother or mother substitute,
(iii) multiple mothering, and
(iv) distortions in quality of mothering such as rejection, overprotection and ambivalence.

The four patterns or conditions are seldom obtained in pure form; they are mostly found simultaneously or sequentially in complex interaction.

Research has demonstrated that mothers and fathers perform essential functions for children, but that, under some circumstances, other people can perform these functions as well when the child is institutionalized. However, several studies (Harlow, 1958; Caldwell, 1970; Rutter, 1972; Roberts, 1974; Somen, 1985; Srivastava, Kumar & Singh, 1986) have shown that deprivation of affection leads to delay in motor, speech, intellectual, social, personality, and emotional development. The cause of psychological difficulties in
such children is attributed to "maternal rejection" and prevention is conceived solely in terms of maternal love and affection.

In the present study, parental deprivation has been treated as an important concept having far reaching implications. For this purpose, a group of children reared in institutions have been selected to study the impact of parental deprivation on intelligence, motivation, locus of control, and academic achievement. The Prolonged Deprivation Scale (PDS) has been used to select the home-reared deprived, which mainly stresses on the physico-economic and cultural aspects.

**LOCUS OF CONTROL**

Under various rubrics, and from diverse orientations, investigators have repeatedly concerned themselves with man's ability to control his personal environment. Adler's concept of "striving for superiority" as a basic motive; Riessman's (1959) "inner" and "other" directed man; Angyal's (1941) trend towards autonomy; Piaget's notion of causality and other concepts such as self-confidence, ego-strength, mastery, etc., and White's (1959) constructs of "competence" and "effectance" have all been used to denote the "degree to which man is able and believes himself to be capable of controlling the important events in his lifespace" (Lefcourt, 1966).

Many situations in the laboratory or in natural
life, contain cues defining the degree to which reinforcements are contingent on the subject’s instrumental acts. Similarly, individuals have been found to differ in the degree to which they believe that they are usually able to influence the outcome of their situations. They may believe that their actions produce the reinforcements which follow their efforts, or they may feel that the rewards and punishments meted out to them are at the discretion of powerful others or are in the hands of luck, or fate. In fact, the same reinforcement in the same situation may be perceived by one individual as within his own control and by another as outside his own influence. These personal beliefs could be important determiners of the reinforcing effects of many experiences. If, for example, the individual is convinced that he has little control over the rewards and punishments he receives, then he has little reason to modify his behaviour in an attempt to alter the possibility that those events will occur. Rewards and punishments, then will have lost much of their reinforcing value, since they will not be as effective in strengthening or weakening the subject’s response (Crandall et al., 1965).

The concept of locus of control dates far back to 1899 when the social scientists were more concerned with differences among groups or societies rather than individual differences. Interest in this construct grew
out of the problems encountered in psychotherapy, where it was observed that no matter what experiences one has, if they are not perceived as the result of one's own actions, they are not effective for altering the ways in which one sees things and consequently functions (Lefcourt, 1976).

Early empirical investigations of the "belief in personal control" has stemmed primarily from Rotter's (1966) concept of "perceived locus of control" which grew out of Rotter's Social Learning Theory (Rotter, 1954). The most important characteristic of Rotter's theory is that it focusses upon the relationship between the individual and his environment. The environment is viewed as a meaningful situation containing appropriate cues to which the individual is responsive. In this theory, the control construct is considered a generalized expectancy, operating across a large number of situations, which relates to whether or not the individual possesses or lacks power over what happens to him. It is an expectancy variable rather than a motivational one. It is a generalized expectancy as opposed to specific expectancy, being an abstraction developed from a host of experiences in which expectancies have met with varying degrees of validation. It is but one element of the behavioural prediction formula which also includes the reinforcement value and situational determinants. The behavioural prediction formula reads:
i.e. the potential for the behaviour x to occur in situation 1, in relation to reinforcement a, is a function of the expectancy of the occurrence of reinforcement a, in situation 1.

Besides the importance of the situation, Rotter (1954) and Rotter et al. (1972) recognize three important features of the individual, i.e., the person's expectancies, reinforcement values, and behavior potential.

Reinforcement has long been recognized as a major determinant of behavior; however, as Rotter (1966) noted, the effect of reinforcement is not a simple stamping in process but "...depends on whether or not the person perceives a causal relationship between his own behavior and the reward" (p.1). The development of a belief in behavior-reinforcement contingencies is a particularly important influence as a growing child learns appropriate social and personal behavior.

According to Rotter (1966): "In the Social Learning Theory a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by the reinforcement in future. Once the expectancy for such a behavior-reinforcement sequence is built up, the failure of the reinforcement to occur will reduce or extinguish the expectancy. As an infant
develops and acquires more experience he differentiates events which are causally related to preceding events and those which are not. It follows as a general hypothesis that when the reinforcement is seen as not contingent upon the subjects own behaviour, its occurrence will not increase an expectancy as much as when it is seen as contingent. Conversely, its non-occurrence will not reduce any expectancy so much as when it is seen as contingent. It seems likely that depending on the individual's history of reinforcement, individuals would differ in the degree to which they attributed reinforcements to their own actions" (p.2).

Expectancy of success has played a central role in cognitive approaches to motivation. Rotter (1954) defined expectancy as the "probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on his part in a specific situation" (p.107). In a particular situation, the individual, though desirous of an available goal, may believe that there is no behaviour in his repertoire that will allow him to be effective in securing the goal. Within this specific situation, the person may be described as anticipating no contingency between any effort on his part and the end result in the situation.

Rotter (1966) states that "Expectancies generalize from a specific situation to a series of
situations perceived as related or similar. Consequently, a generalized expectancy for a class of related events has functional properties and makes up one of the most important classes of variables in personality description - a generalized attitude, belief or expectancy regarding the nature of causal relationship between one's own behaviour and its consequences. Such generalized expectancies in combination with specific expectancies and the value of potential reinforcement, act to determine choice of behaviour in a situation culturally categorized as chance - determined versus skill - determined, and they may act to produce individual differences within a specific condition" (p.2).

Social learning theorists suggest that a person's expectations concerning the functional relationships between behavioural events and reinforcing events are a product of that person's previous experiences with reinforcing events. Behaviour potential refers to the potentiality of any behaviour occurring in any given situation as a function of its relationship to any single reinforcement or set of reinforcements. Rotter asserted that the potential for any behaviour to occur in a given situation is a function of the person's expectancy that the given behaviour will secure the available reinforcement and the value of the available reinforcements for that person.
Perception of the causal relationship need not be all or none, but can vary in degree from individual to individual and from situation to situation.

In most research on the control construct, perceived locus of control has been regarded as an unidimensional bi-polar construct; that is, an individual's general expectancy for reinforcement has been defined as internal or external. In the first expository paper dealing with the control dimension, (Rotter, Seeman & Liverant, 1962), the construct was described as distinguishing individual's according to the degree to which they accept personal responsibility for what happens to them, in contrast to attributing the responsibility to forces outside their control.

According to them, "...internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control. Whereas external control refers to the perception of positive and/or negative events as being unrelated to one's own behaviours in certain situations and therefore beyond personal control" (p.499).

The external scorers view environmental situation, luck, chance and manipulation by others as determining their destiny while internal scorers perceive the consequences of their lives as resulting from their own actions (Rotter, 1966).
On the subject of internal LOC, such phrases are found as, "are usually able to influence the outcome of situations" (Crandall, Katkovsky & Crandall, 1965, p.92), "possesses power... over what happens to him" (Lefcourt, 1966, p.207), "views the outcome to events as the consequences of his own control" (Cromwell, 1967, p.350), "beliefs about their ability to influence their environment and exert control over it" (Gemmill & Heisler, 1972, p.214), "expectation that one's actions generally make a difference... to increase the subjective probability that any desired outcome can be secured by a particular behaviour" (Abramowitz, 1973, p.196), "a general expectancy that people can control events" (Coan, Fairchild, & Dobyns, 1973, p.53), "believe they are skilled in manipulating the environment to get what they want" (Collins, Martin, Ashmore, & Ross, 1973, p.476), "the subject's expectancy that his own behaviour would change the probability that reinforcement might occur" (Stephens & Delys, 1973, p.56), "has power over what happens to him" (Mischel, Zeiss & Zeiss, 1974, p.265), and "feels in control of the things which happen to him" (Broedling, 1975, p.65).

As far as the external LOC is concerned, the expressions are: "lacks power over what happens to him" (Lefcourt, 1966, p.207), "they feel that they have little control over their environment" (Tesser & Grossman, 1969, p.75), "has no power over what happens to him" (Mischel et
"believes that the events in his life are for the most part beyond his influence" (Broedling, 1975, p.65), "feel their destinies are beyond their own control" (Levenson, 1975, p.343), "a perceived lack of control - an awareness that one's efforts to cope with the world are not effective" (Phares, 1976, p.36).

In order to explain achievement related behaviour, Weiner et al. (1971) and Weiner (1974) have proposed an attributional model based on the assumption that causal perceptions of success and failure mediate between the antecedents of causal perception and achievement performance. They classified the beliefs regarding the causes of success and failure on two dimensions, i.e., locus of control and stability. They regarded these two dimensions as important in understanding the affective reactions of pride and shame to success and failure, and the changes in perceived probability of success for future outcomes (Weiner, 1974).

Locus of control is primarily learned through social experiences, is well established during childhood and increase little from the 3rd through the 12th grades (Crandall et al., 1965). Therefore, some antecedents of control orientations are found in parent-child relationships. Becker (1964) suggested that parents show differences in their child-rearing practices primarily in terms of two dimensions, namely, parental control and
parental warmth. Parental control reflects variations in restrictions placed on their child's behaviour by parents, while parental warmth refers to the affectional aspect of parent-child interactions. As compared with the individuals coming from families they experienced as controlling, the individuals who did experience relative autonomy within the family, would have sufficient opportunity to test the consequences of their behaviour and would have developed the belief that they exert control over events (internal LOC). However, Lefcourt (1982) and De Man, McKelvey & Van Der Riet (1987) suggested that parental control is not a major correlate of LOC. Davis & Phares (1969), MacDonald (1971), Nowicki & Segal (1974), and Rohner, Chaille & Rohner (1980) found LOC to be related to the affectional dimension of parent-child relationship. While Cromwell (1963) reported that adult normal males who perceived their mothers as protective were externally controlled, Chance (1965) and Katkovsky et al. (1967) using the IAR questionnaire, reported that internal beliefs are associated with parental warmth.

Studies suggest that reinforcement-responsibility beliefs hold promise of being predictive of individual differences in reinforcement sensitivity, attitudes, social behaviours and academic situations. The original questionnaire constructed to assess this variable was devised by Phares (1955) and revised by James (1957).
Other measures that followed suit were devised by Dean (1961), Graves (1961), Battle & Rotter (1963), Crandall et al. (1962), Crandall et al. (1965), Lefcourt (1966), Rotter (1966), and Nowicki & Strickland (1973).

In the present study, Crandall et al.'s (1965) Intellectual Achievement Responsibility (IAR) Questionnaire was used to assess the children's beliefs in reinforcement responsibility exclusively in intellectual-academic achievement situations. It was believed that children's faith in the instrumentality of their own actions as compared with that of extraneous factors in their immediate environment would determine their success or failure in their academic sphere. The concept of LOC is of considerable importance in the present investigation. For a child who believes that his personal effort and ability are responsible for his success and failure will tend to exert effort to maximize his abilities to gain success as compared with the one who believes that his fate is in the hands of external factors. This relationship is very important because it helps to account for individual variations in academic performance and provides direction for potential remediation should they show substandard scholastic performance by enhancing rather than inhibiting the developmental trends to internalize locus of control.
ACHIEVEMENT MOTIVATION

The study of motivation centers on the question of why people initiate, terminate, and persist in specific actions in particular circumstances. The answer given to this question usually involves some type of internal, individually rooted need or motive - the motive to enhance one's self-esteem, the motive to achieve, the motive to affiliate, the motive to avoid cognitive conflict, or the motive to self-actualize. These motives are assumed to be part of the unique, internal core of a person's self system. The term 'motivation', as defined by various psychologists refers to the causes for initiation, continuation (or cessation) and direction of behaviour. It is needless to mention that every human behaviour is motivated and begins, continues, and is directed towards some goal. In psychological theorization, the concept of motivation is used to explain the dynamic properties of behaviour, such as, arousal, persistence, vigour and goal-orientation. This has led to the conceptualization of 'need' which is conceived basically as a deficiency of something vital to the organism and which impels the individual to initiate some action to reduce the deficiency. Apart from the biological needs, a set of psychological needs derived from viscerogenic needs have been identified which though not crucial to human existence have long-range implications. Cross-cultural comparisons of need pattern
as well as studies on social learning and child rearing, indicate that as compared to biological needs, psychological needs are more susceptible to learning influences resulting in greater amount of inter-individual and inter-group variations in their strength (Hunt, 1960).

In seeking the answers to the basic driving forces in human nature, the ancient Greek philosophers favoured a humoral, or bodily, basis for motivation. The most influential of all the classical theories of human motivation was Hippocrates' fourfold typology. Psychological hedonism, first formulated by the Philosopher, Benthan, was another motivational doctrine that has played an important role in both ancient and modern accounts of human motivation. Hedonism is now regarded as an emotional accompaniment of motivated behaviour. The instinct school of motivation which was given support by the theory of evolution and the science of genetics gained eminence, but in course of time lost its importance. The next historical development of importance in motivational psychology was the rise of psychoanalysis and their emphasis on sexuality (libido). However, the post-Freudians rejected the general emphasis on sexuality, and instead stressed upon affectionate family relationships, and cultural and social influences in child development. Lewin's field theory developed as a separate system, favoured an idiographic psychology in
which the focus is on the individual. He reduces his thesis to the following formula:

\[ B = f(PE) \]

where, \( B \) represents behaviour, \( f \) is the function, \( P \) is the person, and \( E \) is the total environmental situation. The recent motivational theorists align themselves according to the traditional systematic orientations and many seek to establish miniature theories around the intensive study of a certain motive or class of motives (Murray, 1959; Atkinson, 1964; Weiner, 1972).

Research on the academic study of achievement motivation has been traced back by Heckhausen (1967) to Narziss Ach (1910) and Kurt Lewin (1926). The former utilized the concept of 'determining tendency' and the latter that of 'quasi need'.

Murray (1938) played a significant role in the history of achievement research. He included need for achievement (or an achievement attitude) among his list of 20 manifest urgent needs. According to Murray (1938), the desires and effects of achievement needs are: "To accomplish something difficult. To master, manipulate or organize physical objects, human beings, or ideas. To do this as rapidly and as independently as possible. To overcome obstacles and attain a high standard. To excel one's self. To rival and surpass others. To increase
self-regard by the successful exercise of talent." (p.164).

The following actions accompany these desires, states Murray (1938): "To make intense, prolonged and repeated efforts to accomplish something difficult. To work with singleness of purpose towards a high and distant goal. To have the determination to win. To try to do everything well. To be stimulated to excel by the presence of others, to enjoy competition. To exert will power; to overcome boredom and fatigue." (p.164).

Murray developed an instrument, the Thematic Apperception Test (TAT), that reveals "covert and unconscious complexes" (Murray, 1938, p.530). The TAT was almost universally adopted by subsequent investigators to assess achievement needs. Of those motives assumed by Murray (1938) to be universally significant, the achievement motive is the most well documented example. Variously defined as the desire to overcome obstacles, to exert power, to do something as well as possible, or to master, manipulate, or organize physical objects, human beings, or ideas (Hall & Lindzey, 1957; and Hilgard, 1987), the achievement motive is thought to be a fundamental human characteristic.

It is, however, McClelland, who is most credited for his work on need for achievement (nAch) or need mastery. He was dissatisfied with the then-prevalent
deficit or survival theories of motivation, and the theory of motivation first formulated by him was influenced by Hebb and the notion of an optimal level of stimulation (McClelland et al., 1953).

Using a refinement of the TAT, McClelland and his coworkers (1953), conducted a systematic study of achievement motivation. His choice of the projective test, TAT, as a medium of expression was governed by the "...acceptance of the Freudian hypothesis that a good place to look for the effects of motivation is in fantasy" (McClelland et al., 1953, p.107).

According to McClelland, all motives are learned. McClelland (1951), in an earlier definition, stated that a motive is "a strong affective association, characterized by an anticipatory goal reaction and based on past association of certain cues with pleasure or pain." (p.466). Later, McClelland et al. (1953), defined a motive as "the redintegration by a cue of a change in an affective situation." (p.28).

In his formulation of achievement motivation, motivation involves performance in the context of standards of excellence and is a desire to have the performance stand well in evaluation against such standards. In 1964, McClelland emphasized the point that nAch is a desire for excellence not so much for the sake of social recognition as to attain an inner feeling of personal accomplishment.
Heckhausen (1967) describes achievement motivation as "the striving to increase or keep as high as possible one's own capability in all activities in which a standard of excellence is thought to apply and where the execution of such activities can therefore either succeed or fail."

Alschuler (1968) states that achievement motivation implies "the excitement of challenge, the joy of working hard for a goal, often frenzy of trying to meet a deadline, the pride of innovating, the fear of failure and disappointment at not succeeding".

Mehta (1970) defines achievement motivation "as dissatisfaction with the present state of affairs and an urge to improve the life conditions for oneself."

The achievement motivation theory (McClelland et al., 1953; Atkinson, 1957) is a detailed and analytical model that attempts to quantify the contribution of several factors towards achievement-oriented activity. This theory was influenced by the earlier works of Tolman, decision theorists, Lewin, and by the level of aspiration model proposed by Festinger and Escalona. In differentiating between a motive (meaning potential motivation) and motivation or 'tendency' (meaning actual motivation), Atkinson (1958, p.181), defined achievement motive as "the disposition to strive for satisfaction derived from success in competition with a standard of
excellence." The nAch involves an interest in attaining or maintaining a high quality of performance, regardless of the social status, difficulty, or renumeration associated with the endeavour.

Achievement-oriented behaviour is viewed by Atkinson (1957, 1964) as a resultant of a conflict between approach and avoidance tendencies. Every achievement-related action is associated with the possibility of success that leads to the emotion of pride, and the possibility of failure, that leads to the emotion of shame. The strengths of these anticipated emotions determine whether an individual will approach or avoid achievement-related activities. His theory (Atkinson & Feather, 1966) thus asserts that "a person's motive to achieve, his motive to avoid failure and his expectation of success in some venture, strongly influence the character of his motivation as it is expressed in level of aspiration, preference for risk, willingness to put forth effort, and to persist in an activity." He has also expressed in an equation the actual strength of motivation as the multiplicative function of motive, expectancy and incentive.

Subsequently, two concepts, viz., persisting motivational tendencies (Atkinson & Cartwright, 1964; Weiner, 1965, 1970) and future goal orientation (Raynor, 1969; Atkinson & Raynor, 1974), were added to Atkinson's theory. It was suggested that "a goal directed tendency,
once aroused, persists until it is satisfied" (Atkinson, 1964, p.310) and was called "inertial tendency". There is evidence to suggest that in the face of failures, individuals highly motivated to achieve perform better and are more likely to persist in their attempts than after success. On the other hand, fear of failure leads individuals to react positively to encouragement or success and show a decrease in performance intensity after a setback (Weiner, 1965, 1970).

Highly achievement-oriented individuals are highly motivated by and should select tasks of intermediate difficulty. Conversely, individuals showing fear of failure, exhibit the greatest intensity of performance should they choose tasks that are either very easy or very difficult. Heightened concern with success leads individuals high in nAch to assume responsibility for success, even when that success was just as likely the result of chance or the ease of the task (Kukla, 1972). This greater concern for success also explains why high need achievers are more likely than low need achievers to overestimate their grade point averages (Johnson, 1975) and cheat more than the latter.

McClelland (1960), Hermans (1970) and Pottas, et al.‘s (1980) studies have shown that achievement motivation comprises the two dimensions of goal directedness and personal excellence. Goal-directedness
refers to a strong desire to accomplish important goals. It consists of the individual’s skills for

(a) overcoming obstacles and persevering in seeking solutions to problems despite adverse circumstances (Persistence),

(b) planning ahead, taking future considerations into account, and preparing well in advance for eventualities (Planning Ability),

(c) working according to a time schedule and feeling uneasy when deviating from one’s schedule (Time-table), and

(d) using time efficiently, remaining active, energetic and avoiding idleness (Action Orientation).

Personal excellence is the need to excel, the need to obtain a high standard of performance. The following domains are included in it:

(a) an inclination to embark on demanding and challenging levels (Aspiration Level),

(b) a propensity to prefer some risks over the certainty of success (Risk Taking), and

(c) a belief that control can be exerted on the various life events, and that individual’s initiatives can affect unfavourable circumstances (Locus of Control).

Although Locus of Control has been treated as a separate construct by many investigators (Phares, 1976; Spector, 1982), it is believed to be a part of achieve-
Achievement motivation through goal-directedness and personal excellence, is related to a variety of students' college behaviour and such outcome measures as involvement, academic performance and accomplishment, evaluation of the college experience, and commitment to the college.

According to Jerath (1981), since McClelland's nAch is a composite index, it needs to be split into a more meaningful and simple measure. Two such components, viz., I-nAch and E-nAch, having entirely different correlates were identified. These represent concern over standards of excellence for its own sake, and concern over success in competition with others and social recognition respectively.

Like McClelland, many other investigators were also concerned about finding the antecedents of achievement needs. McClelland (1951) contended that "affective associations formed in early childhood are apt to be strong and very resistant to unlearning or forgetting" (p.257). His findings on a sample of 30 men, on whom nAch scores were readily available, revealed that severity of upbringing correlated significantly ($r = .40$) with achievement scores. These findings, however, were observed only for male high-school students. Winterbottom (1958) found evidence of a strong relationship between
nAch and independence training. Rosen & D'Andrade (1959) concluded that achievement training (doing something well) rather than independence training (doing something by oneself) is the important antecedent of the development of achievement needs. Subsequent research, however, produced conflicting results regarding the relationship of nAch and/or independence training on the development of achievement needs (Chance, 1961; Callard, 1964). As a result of this conflicting data and some cross-cultural discrepancies, McClelland (1961) proposed an 'optimal level' theory, suggesting that independence training, if too early, would be just as inhibitory on the development of achievement needs as overly protective parental behaviour. Again, however, there is no clear support for this contention (Bartlett & Smith, 1966; Smith, 1969). Zelina's (1983) findings on 1055 University students and Barton, Dielman & Cattell's (1986) findings on mothers and fathers of 310 junior high school children support the hypothesis that both fathers and mothers child-rearing practices can be specifically related to the unique aspects of children's motivation structure.

Several studies by Yang and his associates (Yang & Liang, 1973; Yang, 1982, 1985) have distinguished between two types of achievement motivation, viz., individually oriented and socially oriented achievement motivation. Individually oriented achievement motivation is viewed as a functionally autonomous desire in which the
individual strives to achieve some internalized standards of excellence. In contrast, socially oriented achievement motivation is not functionally autonomous; rather, individuals persevere to fulfil the expectations of significant others, typically the family (Bond, 1986). With socially oriented achievement, when the specific achievement goal is met, the intense achievement motivation previously evident may appear to disappear. Once a new goal is established, the socially oriented achievement motive may be easily re-engaged by any figure who can serve as a symbolic substitute for the family members (Hayashi, 1988).

Investigators have expected to find a positive relationship between achievement motivation and performance on the grounds that an individual’s motivation to achieve comes into play whenever he or she is challenged to perform to some criterion of excellence, no matter what the task entails. "Academic motivation is a concept that has been introduced to explain some of the differences in the school attainment of children with similar measured abilities" (Entwistle, 1968).

It appears from a few research studies that belonging to disadvantaged backgrounds lowers down performance though it is not related to fundamental differences in ability. Identifying the factor that attenuate performance and fostering motives, will enable
them to reach and settle on a more adequate goal in life should they display poor academic attainments. For the present investigation, Mehta's (1975) Achievement Values and Anxiety Inventory was used to assess the achievement motivation of advantaged and disadvantaged children.

The driving momentum of motivation is the inherent pride of excellence in work itself in each individual. The pride of excellence is invoked by commitment to work. Commitment to work/job is fostered when, having clarified his distinctive functional role (better make him a participant in this exercise also to secure his further commitment), he is given freedom and the job, as a whole is left to him with accountability for results only, instead of breathing down his neck every now and then, so that he on his own approaches you for any guidance that he may need. As a result, he will 'own' his job as much as the owner of the organization in which he works 'owns' the organization.

The achievement motivation pattern of the school going children has the same driving force behind it. If the real purpose of education and how it is beneficial to the child for his own happiness in later life is truly brought home to him and education itself is related to life, instead of being divorced from it as often happens in our present education system, the child will become self-motivator and truly 'own his job', as it were and be fully committed to it. The major external
help required would be providing the right academic environment, e.g., good general reading books, journals and magazines.

VERBAL IQ - PERFORMANCE IQ DISCREPANCY

Before presenting in details the concept of Verbal IQ - Performance IQ (VIQ - PIQ) discrepancy, it is imperative that a brief description of the Wechsler scales be made.

Wechsler adopted the general factor theory (g) of intelligence to serve as a framework within which the verbal and non-verbal materials were fitted. The Wechsler scales (Wechsler - Bellevue Intelligence Scale, 1939; WAIS, 1955, WISC-R, 1974), though administered as individual tests, and designed for the same purpose as the Stanford-Binet, differed from it in a number of ways. All items were grouped into subtests and arranged in increasing order of difficulty within each subtest, thus following the pattern akin to that of group tests. Another characteristic feature of these scales is the inclusion of Verbal and Performance subtests, that yield separate Verbal and Performance IQs.

The scale has been constructed in this form on the principle that intelligence involves not only the ability to deal with symbols, abstractions, and concepts, but also the ability to deal with situations and problems
in which concrete objects, rather than words and numbers, are utilized. While the verbal scale makes use of language, in the performance tests, the use of language is eliminated and individual’s responses depend upon manipulations, visual perceptions, and interpretations that are implied by what he does rather than by anything he says. As in the other Wechsler scales, the subtests grouping into Verbal and Performance scale for the WISC-R is as follows:

<table>
<thead>
<tr>
<th>Verbal Scale</th>
<th>Performance Scale</th>
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<tbody>
<tr>
<td>1. Information</td>
<td>2. Picture Completion</td>
</tr>
<tr>
<td>3. Similarities</td>
<td>4. Picture Arrangement</td>
</tr>
<tr>
<td>5. Arithmetic</td>
<td>6. Block Design</td>
</tr>
<tr>
<td>7. Vocabulary</td>
<td>8. Object Assembly</td>
</tr>
<tr>
<td>9. Comprehension</td>
<td>10. Coding or (Mazes)</td>
</tr>
<tr>
<td>(Digit Span)</td>
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The numbers correspond to the order in which the subtests were administered and for the WISC-R, they were administered in alternating order. With regard to the content, the only subtest that does not appear in the adult scale is Mazes; and for the Indian adaptation of the WISC (MISIC), (Malin, 1969), the Picture Arrangement subtest was eliminated since it proved to be culturally biased. For the WISC-R, special efforts were made to replace or modify adult-oriented items so as to bring their content closer to common childhood experiences. The WISC provides the testee with greater opportunities for
flexibility and versatility of mental activity, and the examiner with more sources of qualitative interpretation of responses and behaviour.

Factorial analyses of the Wechsler Scales have been conducted with a variety of subjects ranging from 8th grade pupils to the old-age standardization sample (aged 60 to 75+) and including both normal and abnormal groups. That all subtests have much in common was demonstrated by Cohen's (1957a, 1957b) study by the presence of a single general factor (g), referred to as "eductive" or general reasoning. Wechsler (1958) reported that g accounted for 50 per cent of total variance of the battery (pp. 121 - 122). In addition, three major group factors were identified. A verbal factor or verbal comprehension factor with large weights in the Vocabulary, Information, Comprehension and Similarities subtests; a non-verbal perceptual organization factor, variously named "non-verbal", "space" or "visual-motor organization". This factor represented a combination of perceptual speed and spatial visualization factor and was found principally in Block Design and Object Assembly subtests; and the third major factor identified by Cohen was described as a memory factor found chiefly in Arithmetic and Digit Span. It includes both immediate rote memory for new material and recall of previously learned material. Ability to concentrate and resist distraction may also be involved in
Cole & Hunter (1971) analyzed the WISC profile for culturally disadvantaged children. There was no evidence to suggest that cultural deprivation has less detrimental effect on performance than verbal or abstract skills. The same findings had also been obtained by Davidson (1950) and Young & Bright (1954) who found no differences between the verbal and performance abilities of socially and economically deprived children. Silverstein (1973), in the factor analysis of the WISC subtests in groups of White, Black and Mexican-American children, found similar factors with a major finding being the similarity of factor structure across the three ethnic groups, suggesting that the tests measure the same abilities in these groups. Factor analysis of WISC-R scores of the standardization sample at 11 age levels yielded clear evidence of three major factors at each level between 6 ½ - 16 ½ years (Kaufman, 1975), viz., verbal comprehension, perceptual organization, and freedom from distractibility.

Although Cohen (1959) and Kaufman (1975) had shown the factor structure of the WISC and WISC-R to be highly consistent across age groups, Kaufman (1979) found that age may influence test results in certain ways. High and low scores on subtests heavily influenced by speed may have different meanings for older and younger children.
Byrd, Buckhalt, and Byrd (1981) concluded that chronological age may differentiate subtest profile patterns more powerfully than level of intelligence for children who experience academic difficulties.

The dichotomy of the Wechsler scales into Verbal and Performance subtests has led the clinicians to interpret the meaning of differences between the Verbal and Performance IQs obtained by an individual on Wechsler scale. The basic idea behind this dichotomy was that either through habit training, or endowment, some individuals are able to perform better with objects than with words. Although the subtests showed considerable overlap (correlation between Verbal IQ and Performance IQ to the extent of $r = .77$ to $r = 0.81$) factorial analysis revealed that the grouping may deal with a more fundamental dichotomy (cf. Cronbach, 1960).

An inferior performance on the verbal test as compared with that of the performance test is indicative of either a language handicap, belonging to a bilingual home, difficulty in learning to read, limited education, or dropping out of school at an early age. Since performance tests rely less on schooling and the directions use simple language, verbal handicaps reduce the score only marginally. A person who is judged on a verbal comprehension test alone may be regarded as defective, but may be able to perform non-verbal tests at an average level. The underlying assumption behind this
interpretation is that a person who has developed a normal performance ability would do equally well on a verbal test if they had had normal experiences (i.e. factors in the person's past history be taken into account). Emotional blocking can account for cases where performance IQ is below verbal IQ.

However, many persons show Verbal IQ-Performance IQ difference, even when no handicap is evident. Since there is no single interpretation of any pattern of verbal-performance differences, such a difference is merely a signal to the examiner that further investigation into the case is needed.

Wechsler (1944) observed a characteristically higher performance than verbal IQ in the adolescent psychopath, and many others (Zimmerman & Woo-Sam, 1972, pp.25-36; Sattler, 1974) attempted to identify typical patterns of Verbal-Performance IQ differences for various ethnic and exceptional groups. Matarazzo (1972, Chapter 12) has further pointed out that consistent results are evident when the group under study is homogeneous on pertinent variables.

Administration of the Wechsler Adult Intelligence Scale-Revised (WAIS-R; Wechsler, 1981) and the Wechsler Intelligence Scale Revised for Children (WISC-R; Wechsler, 1974) in the context of neuropsychological assessment and as an indicator of
cognitive pathology was established by a number of investigators (Reitan, 1955; Klove & Reitan, 1958; Klove, 1959). Guertin et al. (1966) reviewed a number of studies suggesting that lower performance IQ scores are indicative of right hemisphere pathology, whereas lower verbal IQ scores of damage to the left hemisphere, findings that are similar to those obtained by Reitan (1955), Klove & Reitan (1958), Satz (1966), Satz, Richard & Daniels (1967), Parsons, Vega & Burns (1969), Vega & Parsons (1969), Zimmerman, Whitmyre & Fields (1970), and Simpson & Vega (1971). The WISC VIQ-PIQ discrepancy has been associated specifically with a variety of verbal, motor, perinatal, and neurological problems (Holroyd, 1968; Rutter, Graham, & Yule, 1970; Black, 1974; Dennis et al., 1981). But the validity of VIQ-PIQ score use as an indicator of cognitive dysfunction is controversial.

In addition to providing information about brain pathology, it provides the clinicians and educators with valuable information about the subject's strengths and weaknesses, and has been helpful to the psychologists in analyzing the significance of observed discrepancies and their frequency in the normal population and in making decisions about remediation and diagnosis of special populations within the educational settings. The data are also useful to the clinical and school psychologists in their understanding of these unusual intellectual profiles.
In appraising the significance of the difference between verbal and performance scores, variability among normal individuals must be taken into account. Since the standard deviation of the mean difference between the subscales for the normal population is 10.02, it implies that a VIQ-PIQ difference greater than 10 points would be encountered in less than 32 cases in 100, of 20 points two times in 100, and so on. As Seashore (1951) has pointed out that such differences should be carefully interpreted as they may fall within the standard error of the subscales.

Wechsler (1958, p.160) has advised that "in most instances a difference of 15 or more IQ points may be interpreted as diagnostically significant" and Cronbach (1961) found that the VIQ-PIQ score has an estimated reliability of .74 (at the 99% level of confidence) "high enough to justify drawing conclusions about the person whose verbal and performance IQs differ by 15 points or so" (p.198). However, Kaufman (1980) has limited the diagnostic interpretation to wider discrepancies and has cautioned the clinicians to use a "statistical abnormality" criterion of VIQ-PIQ = ± 19 (i.e., less than 15% prevalence) or of VIQ-PIQ = ± 22 (i.e., less than 10% prevalence) for diagnostic or educational purposes.

Since the introduction of WAIS-R in 1981, studies have found that the incidence of VIQ-PIQ
discrepancies does not appear to be influenced by age (Matarazzo & Herman, 1985) or sex (Matarazzo, Bornstein, McDermott, & Noonan, 1986). A few studies have reported on the relationship of various variables to the discrepancies between verbal IQ and performance IQ.

A striking relationship between culture and test performance was illustrated by Levinson (1959). He found that both elementary school children and college students from traditional Jewish homes evidenced higher verbal IQ (M = 125/126) as compared with the performance IQ (M = 105) and attributed this to the cumulative effect of the Jewish cultural values which stressed upon verbal abilities.

The analysis of the Wechsler-Bellevue standardization data revealed that the intellectual level of the subjects appeared to be an important factor in determining both the direction and degree of differences found between the verbal and the performance scales. Subjects of superior intelligence performed better on the verbal scale, and subjects of inferior intelligence performed better on the performance scale.

Classification of children in the 1949 WISC standardization sample according to father’s occupational level, the usual hierarchy of mean IQ were found (Seashore, 1951) with children of parents in better vocations scoring higher. Unskilled labourers tend to score higher on performance IQ than on verbal IQ, while...
The white-collar groups evidenced the opposite pattern. The difference tended to be slightly larger in verbal than in performance IQ, and to decrease with age, possibly because of exposure to education (Estes, 1953).

Kaufman (1976) too studied the relationship between discrepancy scores (Verbal> Performance and Performance> Verbal) and parental occupation (five occupational groups, viz., Professionals, Managerial, Craftsman, Operators and Labourers). He found that children of professionals tended to be "verbal minded", while the opposite seemed to be true for children of semi-skilled and unskilled workers. He also found that the percentage of children of professional parents having significant Verbal> Performance differences was approximately twice as large as the corresponding percentage for children of unskilled labourers.

The educational history of the individual also plays an important role. Some preliminary data (Matarazzo et al., 1986) suggest that the patterns of VIQ-PIQ discrepancy is related to education. For both the sexes, the mean VIQ-PIQ discrepancy was negative (i.e., VIQ<PIQ) in subjects with fewer years of education and positive (VIQ>PIQ) in those with more years of education. Bornstein, Suga & Prifitera (1987) examined the incidence of VIQ-PIQ discrepancies in subgroups of WAIS-R standardization sample of 1880 subjects (Wechsler, 1981).
In the subgroups with fewer years of education, the incidence of discrepancies with higher performance IQs was twice as common as that with higher verbal IQs. The opposite pattern was observed in the subgroups with higher educational levels.

It thus appears that the significant difference between a subject's verbal and performance score cannot be interpreted carte blanche, but only after due consideration is given to the various factors that may contribute to it.

Examiners frequently have difficulty interpreting WISC scores for a child who comes from a socially and economically deprived background. When testing this type of a child, the examiner may show hesitation in classifying the child as retarded or borderline simply on the basis of the obtained IQ or scores from several intelligence tests. One often comes across statements in psychological reports that read that the large subtest-scatter tended to indicate that the child had greater potential than could be evident from the actual earned score. It may be interpreted that the child's cultural situation or emotional factors have impaired his performance on various subtests. Telford & Sawrey (1967) stated that WISC Performance scores were a more useful index of intellectual potential since language
was supposedly the area most affected by the many factors associated with experiential deprivation or cultural disadvantage (p.451). On the basis of such a reasoning, psychologists have arbitrarily interpreted high performance and low verbal scores as suggesting that the child had more intellectual potential than the full scale score indicated at the time of testing.

In general, cross-cultural studies have revealed that language handicap produces relatively lower Verbal IQ even when the sample has confounded characteristics such as age, sex, and psychiatric status. Verbal IQ is lower than performance IQ whenever education (especially reading) has been poor.

It is not so much whether VIQ-PIQ differences are significant, but rather what such differences signify. Differences in verbal IQ and performance IQ must be regarded as an important clue, whenever the subjects tested deviate from normal expectancy on academic performance, behaviour, and motor-skill status. The significance of the deviation can be established only after taking into account the more specific and differentiating clues.