In Byron's view, "To be original, one must think much and read little and this is impossible, for one must have read before one has learnt to think".

So there is no way of judging the future but by the past. The past is structured by the few pioneers who had earlier sensed the problem and made attempt to solve it in the common interest of humanity. When the present is based on the past, no one can boast of originality and none of the researchers can claim a pioneering position in the real sense. This chapter presents a review of studies concerning relationship of sex, birth order, socio-economic status and adjustment with creative talent of subjects.

Sex and Creativity

Torrance (1965) found that boys constantly excelled girls in most verbal measures of creative thinking. Kelley (1965) found that boys scored significantly higher on non-verbal creativity measure than girls. Parkash (1966), studying fourth grade Indian children, found boys to be significantly more creative than the girls. Middents (1968)
found males superior in non-verbal elaboration. Straus and Straus (1968) making a wider cross cultural study, observed clear cut sex differences in the creative potential of American and Indian student population. In both the societies boys were significantly more creative than girls. They further explored that the gaps were wider in Indians than Americans and it may be due to the larger degree of cultural and social uplift in America. Raina (1968) and Gagneja (1972) also opined that the Indian girls face many restrictions in family and society and find no opportunity for free expression of their ideas and views. Rawat and Aggarwal (1977) also concluded that the boys significantly outperformed girls in creativity. Sharma (1977) conducted a study on 400 high school students and concluded that male were superior in creativity to females. Dharmangaden (1981) found that the male students scored significantly higher than female students in all measures of verbal and figural creativity. Sharma (1982) found that boys were more creative as compared to girls.

However, certain researchers found girls to be superior than boys on creativity task. Yamamoto (1960) found that girls were higher on creativity scores than boys inspite of the fact that boys boys were a little higher on their IQ scores than girls. Neufeld (1964), Dauw (1966),
Little John (1967) and Fletcher (1968) reported that high school girls excelled boys in creative thinking abilities. Solomon (1968) studied creativity of elementary school girls and boys and found that girls showed markedly higher creativity than the boys. Ogletree (1968) studied a large sample of 1165 sixth grade girls and boys from England, Scotland and Germany and observed that English and German girls were significantly higher than boys on both verbal and non-verbal creativity measures. The creativity scores of Scotland girls were not significantly higher than boys though their mean on figural creativity was higher.

Bowers (1971) studied 36 males and 35 females undergraduates and found that women had higher scores on creativity than men. Cacha (1971) studying fifth grade children, and Burgess (1971), studying elementary students, reported girls' superiority over boys on certain measures of creativity. Goyal (1973) found that females were significantly superior to males only on fluency and flexibility dimensions of creativity. Hussain (1974) and Pandit (1976) reported that females were significantly superior to males on fluency, flexibility and originality dimensions of creativity.

Singh (1978) reported that female students were superior to male students in fluency and originality
dimensions of creativity. Passi (1971), Bedi (1974), Singh (1975), Rawat and Agarwal (1977), Arora (1978) and Jairial (1981) found that female students were significantly superior to male students on verbal creativity. Studies by Hussain and Hussain (1975), Jairial and Sharma (1981) revealed that female students were also found to be superior to male students in originality dimension of creativity.

Also, there are many studies in India and abroad which showed that there is no sex difference with respect either to total creativity or most of the creative measures. Pathak (1962), Pague (1964), Olshin (1964), Castle (1965), Mayhon (1966), Kartsen (1968), Jackson (1968), Burns (1969), Helsen (1970), Cheek (1970), Phillips and Torrance (1971), Kloss (1972), Ward and Cox (1974), Hussain and Hussain (1975) did not find significant difference with respect to fluency, flexibility and elaboration measures of creativity between the means of both male and female school children. Raina (1971) found no significant difference in the verbal creativity of male and female teachers. However, they differed significantly in originality aspect of non-verbal creativity, whereas in the remaining measures of non-verbal creativity, no significant differences were found in the scores of male and female teachers. Lal (1977) found no significant differences in the creativity scores of male and
female teacher trainees. Sharma (1981) found that sex did not cause variation in students performance in verbal creativity. Panday (1981) and Dhaliwal (1988) also concluded that there is no significant difference between the mean creativity scores of boys and girls.

Chaudhary (1983), Desai (1987) and Kumar (1992) found that male and female students did not show any significant difference in their creative thinking ability. Shukla and Sharma (1986) concluded that boys and girls do not differ significantly in either of the measures of scientific creativity.

Krishnan (1993) found that sex does not show to exert any influence on scores of all the three types of creativity mean scores.

Thus we find that the findings of various studies concerning creativity-sex relationship are contradictory and this aspect requires more investigations.

CREATIVITY AND BIRTH ORDER

Among the sociological factors influencing the creative abilities of the subjects, their birth order is the one which appeals the most. There is a scarcity of research work concerning the effect of birth order on creative thinking abilities and also, there is confusion and
inconsistency in the findings of various researchers although there are several reasons for the superiority of first borns in comparison to later borns over creativity test. Guilford and Worcester (1930) believe that the only child are intelligent due to adult orientations; they have more ability of conversation and so their traits are more developed and they are more creative. Helson (1968), Taylor and Eisenman (1968), Roserberg and Suttonsmith (1969), Looft and Barantowski (1971), Jarial (1979) and Srivastava (1993) reported the superiority of the first born males over their last born counterparts with respect to their creative achievements, but they also observed that the same findings do not persist in case of females. Jarial (1981) found that second borns were superior to fourth and fifth borns in verbal fluency, and to fifth borns in verbal flexibility, originality and total creativity. The third borns were superior to fifth borns in originality and total creativity and the seventh borns were superior to fifth borns in flexibility. Bliss (1970), Kumar (1992) reported that last born were definitely superior in creative thinking ability when compared to middle born and first born children. Datta (1968) and Srivastava (1977) did not observe any significant differences among the subjects of the first and the last birth orders with respect to their creative achievement.
Srivastava (1978) and Badrinath and Satyanarayan (1979) reported no significant differences in the verbal creativity of students of different birth orders. Krishnan (1993) found subjects of different birth orders differ significantly among themselves in their creative achievement of all the birth orders; the only borns secured maximum mean scores and the middle borns got minimum mean scores.

CREATIVITY AND ADJUSTMENT

The investigator made an effort to acquaint himself with formerly available information concerning the relationship between creativity and adjustments and found the results to be quite contradictory and confusing.

Cattell (1965) reported positive relationship between creativity and personal, social and emotional adjustments. Singh (1975) conducted a study with X grade students employing the TTCT and the Bell's Adjustment Inventory respectively and reported that components of creativity were positively and significantly related to social adjustment of the subjects.

Gupta (1976) also reported that creativity was positively related to student's adjustment in social, emotional and educational areas.

Pandit (1976) employed the Mehdi's test of creativity
and the Sinha and Singh's Adjustment Inventory to the IX grade students and observed that the different aspects of creativity, namely fluency, flexibility and originality were positively and significantly related to the students' adjustment in different areas.

Sharma (1977) found that high and low creative males were significantly differentiated on emotional adjustment scores.

Singh (1977) found creatives to be better adjusted. Sinha and Sharma (1978) employed the Wallach and Kogan's battery of creativity tests and the Mohsin-Samshad adjustment inventory to measure the creativity and adjustment of XI grade subjects respectively. They observed that in the case of male subjects, creativity was positively and significantly related to adjustment in the area of home, health and emotional dimensions.

Singh (1982) conducted a study on 600 male students of high school classes and found low positive relationship between creativity and different areas of adjustment except in the case of emotional adjustment. High creative group was found to be better adjusted than average and low creative groups.

Kaile and Kaur (1987) found that creativity had significant positive association with educational, emotional
and total adjustment but not with the social adjustment.

Pathak (1990) found that high creative tribals were well adjusted than the low creative tribals. High creative tribals had better adjustment in their home, society and education in comparison to low creative tribals.

Certain researchers have also reported a negative relationship between creativity and adjustment. Kaur (1980) found that the creative individual experiences some universal problems of adjustment, as he involves independent mind, nonconformity to group pressures and breaking out of the mold.

Mackinnon (1962) examined the life history of creative individuals and observed that not all of them had happy homes and favourable life circumstances and some underwent brutal treatment at the hands of radical fathers.

Foster (1968) investigated human relationship of creative individuals and found that they may experience some problems in relation to other persons, Singh (1975) found that fluency aspect of creativity of X grade subjects on the TTCT was negatively related to their adjustment in family and social areas on the Bell's adjustment inventory and social adjustment was negatively related to the flexibility aspects of creativity.

Zargar and Neelam (1988) observed that creative boys
differ from non-creative ones. They have more adjustment problems. Creative girls face a lot of problems in their adjustment as compared to non-creative girls. Here creative girls have more problems in the social and emotional adjustments. As far as their total adjustment is concerned, they differ significantly from boys.

Sharma and Sinha (1988) concluded that high and low creative male students were significantly differentiated in home, health, emotional and overall adjustment and significant negative correlations were although observed in those fields, signifying that male students were better adjusted in the fields of home, health and total adjustment. No consistent result was found in case of female students.

A few researchers (Mishra, 1969; Kumari, 1975; Jarial and Sharma, 1981) have also reported that no significant relationship exists between creativity and adjustment.

Singh (1981) reported that creativity was not found related to either adjustment, frustration and level of aspiration.

Gupta (1982) also observed no significant correlation between creativity and various dimensions of adjustment.

Asha (1984) conducted a study on 1100 boys and girls and concluded that highly creative group of boys differed significantly from moderately creative group of boys in
emotional adjustment and no significant difference was observed between the highly creative and less creative boys and girls.

Randhawa (1992) found that creativity had significant positive relationship with only social adjustment and also, no significant difference existed in the social, emotional and educational adjustment among high, average and low creative students.

CREATIVITY AND SOCIO-ECONOMIC STATUS

The impact of variable of socio-economic status upon creative talent of subjects has attracted the attention of a large number of research workers.

Rossman (1931), who first studied the biographies of recognised inventors, concluded that creative scientists and engineers were likely to come from middle class families. Some researchers in the area of creativity have arrived at the conclusion that socio-economic status does not influence creative behaviour to the same extent as it does in the field of intellectual development (Das, 1957; Lalitha, 1957; Torrance, 1963; Smith, 1965; Badrinath and Satyanarayan, 1979; Seetharam and Vedanayagam, 1979 and Chadha and Sen, 1981). Foster (1971) could find no evidence of creative thinking ability, as measured by variety of tests and
ratings, being significantly related to the social class of patents.

Many studies (Raina, 1968; Solomon, 1968; McDaniel, 1973; Vohra, 1975; Gupta, 1976; Singh, 1977; Rawat and Agrawal, 1977; Srivastava, 1978; Bhargava, 1979; Jarial, 1979; Sekhar, 1980; Sharma, 1980, Ahmed, 1980; Sharma and Jarial, 1980; Vijaylakshmi, 1980; Singh, 1982; Srivastava, 1982) have also reported that creatives come from high socio-economic status. With respect to fluency component of creativity, Sharma and Jarial (1980) observed that the students of high socio-economic status were superior to those of low socio-economic status. Studies by Rivlen (1959), Nuss (1962) and Hudson (1966) reveal that high creatives generally came from higher socio-economic status class group. Wylie (1963), attributes differences in creative behaviour to sex, race and socio-economic status. Although Wallach and Kogan (1965) obtained similar results, yet they themselves doubted the validity of their findings on the ground that their sample almost entirely represented upper social class group.

Pandey (1981) found that though creativity and socio-economic status were not related, a positive trend was noted in the case of upper socio-economic status groups with creativity while a negative trend appeared in groups with
lower socio-economic status.

Zargar and Dhar (1988) found that students belonging to high socio-economic status have better creative potential when compared to those belonging to low socio-economic status group.

Pathak and Ali (1991) stated that impact of socio-economic condition upon creativity index turned out to be statistically significant beyond chance. The socio-economic status of the subjects significantly contribute to the creativity index of the subject.

Kumar (1992) observed a moderately high positive linear relationship between the variables of creativity and socio-economic status. The students from high socio-economic status background were definitely superior to those from lower strata in their creative thinking ability.

Krishnan (1993) found that subjects belonging to six different groups based on the educational qualifications of parents do differ among themselves in creativity. The subjects of the parents who have had education upto graduation level secured maximum mean scores and those of illiterate parents obtained minimum mean scores. Subjects of parents of different occupations differed significantly among themselves in their creative performance. Those belonging to higher categories obtained maximum mean scores
in all the three types of creativity. Subjects of parents of
different income groups differed significantly among
themselves in their creative achievements and those
belonging to the highest income group secured maximum mean
scores.

Contrary to the above mentioned findings, Karston
(1967) revealed that creativity was independent of socio-
economic status and there existed no relationship between
the two.

Holland (1968) compared the socio-economic status of
less creative and high creative elementary school children.
The mean scores of more creatives were compared with the
less creative group and no significant differences were
obtained between the groups in their socio-economic status
scores.

Gupta (1980) found that creativity, whether verbal or
non-verbal, was independent of socio-economic status and
there was no evidence of common factor between socio-
economic status and creativity which were independent
domains.

Jarial (1981) found that the students of small
families were significantly superior to the students of
average and large families in fluency, flexibility and
composite creativity, whereas they did not differ with
respect to originality component of creativity.

Agarwal (1982) concluded that socio-economic conditions of the home played no role or very insignificant role in fostering creativity of both sexes.

Dutt (1988) studied relationship of creativity and socio-economic status of 120 Xth grade students and found that total verbal creativity was not found to be related significantly to socio-economic status.

Kaile and Kaur (1993) also studied the relationship between creativity and socio-economic status of 160 girls and found non-significant relationship between creativity and socio-economic status.

A review of the research studies presented in this chapter indicates that no definite conclusion can be drawn regarding the impact of selected socio-psychological variables—sex, birth order, socio-economic status and adjustment—upon the creative talent of subjects. Moreover, the earlier researchers worked on total samples and did not compare the creative talent of intellectually gifted and average children in relation to certain socio-psychological variables and, thus, no study exactly relevant to the present investigation was available.

HYPOTHESES:

Directed towards the objectives of the study and
based upon empirical evidence presented in this chapter, the following hypotheses were formulated for verification:

(1) Significant differences does not exist in the creative talent among intellectually gifted and average children.

(2a) There is no significant difference in the creative talent among intellectually gifted boys and girls.

(2b) There is no significant difference in the creative talent among intellectually average boys and girls.

(2c) There is no significant difference in the creative talent among intellectually gifted and average boys.

(2d) There is no significant difference in the creative talent among intellectually gifted and average girls.

(3a) No significant difference exists in the creative talent among first born, second born and third born intellectually gifted children.

(3b) No significant difference exists in the creative talent among first born, second born and third born intellectually average children.

(3c) No significant difference exists in the creative talent among first born intellectually gifted and average children.

(3d) No significant difference exists in the creative
talent among second born intellectually gifted and average children.

(3e) No significant difference exists in the creative talent among third born intellectually gifted and average children.

(4a) A significant positive relationship exists between creativity and socio-economic status of intellectually gifted children.

(4b) A significant positive relationship exists between creativity and socio-economic status of intellectually average children.

(4c) There is no significant difference in the relationship between creativity and socio-economic status of intellectually gifted and average children.

(5a) There is a significant positive relationship between creativity and social adjustment of the intellectually gifted and average children.

(5b) There is a significant positive relationship between creativity and emotional adjustment of the intellectually gifted and average children.

(5c) There is a significant positive relationship between creativity and educational adjustment of the intellectually gifted and average children.

(6a) No significant difference exists in the relationship
between creativity and social adjustment of the intellectually gifted and average children.

(6b) No significant difference exists in the relationship between creativity and emotional adjustment of the intellectually gifted and average children.

(6c) No significant difference exists in the relationship between creativity and educational adjustment of the intellectually gifted and average children.