

## **SEX DIFFERENCES IN FIELD DEPENDENCE AND SOCIALIZATION IN A GROUP OF PAKISTANI CHILDREN**

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The study examines the influence of socialization practices on psychological differentiation in relation to sex, age and urban-rural differences. The sample consisted of 120 children, 60 girls and 60 boys of three age groups; 8 years, 11 years and 14 years, belonging to both urban and rural areas. Children's Embedded Figures Test (CEFT) was individually administered to the children as a measure of psychological differentiation. The socialization practices were assessed through interview with the children. Data were analyzed to determine the effects of sex, age and area upon CEFT test scores and socialization. The findings indicate that there are no significant sex differences in psychological differentiation, whereas, there is a significant difference between urban and rural children and among children of different age groups. The findings also suggest that different aspects of socialization like encouragement, punishment, restriction and discipline play an important role in the development of psychological differentiation. Lack of sex differences is discussed in terms of socialization practices.

The issue of sex differences in psychological differentiation has received particular attention in literature because of its social, political and biological implications. Sex differences in cognitive style have been observed in a wide variety of groups by now. A number of cross-cultural studies have examined sex differences particularly by means of tests of field-dependence-independence. These studies indicate that sex differences appear less consistently in the cross-cultural data than in the data for western samples. Witkin, Dyk, Faterson, Goodenough and Karp (1962) have reported sex differences in differentiation with males usually exhibiting higher levels than females. Evidence to show that these differences do not always appear cross-culturally was reported by Berry (1966). An interpretation was offered by him based upon the relative evaluation of roles allocated to males and females in different societies. In these cross-cultural data

sex differences are sometimes present and sometimes not. Findings of the studies by Baran (cited in Witkin & Berry, 1975) on Bantu-speaking people; by Berry and Annis (1974) on Tsimshian-Indian people of British Columbia and by Okonji (1969) on Nigerian and Ibusa samples indicate that sex differences seem to be more common in samples from sedentary, agricultural end of the eco-cultural dimension while findings of other studies on Eskimos by Berry (1966), Australian aborigines by Berry (1971) and Cree community by Berry and Annis (1974), indicate that sex differences tend to be absent from samples at the migratory, hunting end of the dimension. Thus, sex differences are not universal, and appear to vary as a function of cultural factors, although there is some evidence that biological (harmonal) factors, interacting with cultural variables, may also play a role.

Intraculturally, psychological differentiation shows a clear developmental sequence. Cross-cultural and longitudinal studies of both field-dependence-independence (Berry, 1966, 1971; MacArthur, 1967; Witkin, Goodenough & Karp, 1967; and Witkin, Price-Williams, Bertini, Christiansen, Oltman, Ramirez & Van Meel, 1974), indicate a progressive increase in differentiation up to around adolescence, followed by a levelling off. According to Witkin (1967), the developmental curve for the period after adolescence is not yet adequately filled in, and the available evidence suggests a continuing plateau up to around the beginning of the fifth decade or fifty years, after which there is a reduction in differentiation.

Urban-rural differences in psychological differentiation have been studied by Park and Gallimore (1975), Witkin and Berry (1975) and Witkin et al., (1974). Findings of these studies indicate a marked difference in differentiation among urban and rural population. The urban people appeared to be more field-independent than the rural.

Socialization practices are key factors in the development of cognitive style. A number of cross-cultural studies have confirmed and extended the earlier western findings on socialization factors contributing to the development of differentiation. It appears to be a consistent phenomenon across cultures that child-rearing practices which encourage obedience in the child and acceptance

of parental authority are associated with the development of less differentiated functioning, whereas practices which encourage autonomy and which are tolerant of the violation of parental authority are associated with the development of a more differentiated functioning (Witkin, 1967).

Sex roles play an important part in the socialization of boys and girls, particularly through the use of encouragement and punishment. The activities for which both the sexes get encouragement differ, as Chandra (cited in Witkin & Berry, 1975), Holtzman, Diaz-Guerrero, Swartz and Lara-Tapia (1975) and Mebane and Johnson (1970) found in their studies. Similarly, there are gender differences in the nature of punishment administered by the parents. Boys are usually punished physically while the girls are punished verbally (Bee, 1974). In another study, Shaffer (1957) found those children whose parents had used severe and aggressive modes of punishment to be field-dependent, whereas those whose parents had encouraged decision-making, had children who were field-independent. A similar study was done by Berry (1966) on Eskimo and Temne subjects who were asked to rate how strict their parents were in treating them while they were being brought up as children. The results showed that the subjects who rated their parents as more strict were relatively more field-dependent than those who rated their parents as less strict.

During the last decade a few studies have been done in Pakistan on sex differences in field dependence by Alvi, Khan, Vegeris & Ansari (1986), Ansari (1986) and Imam (1975). But no significant sex differences appeared in any of these studies. It seems that factors responsible for the absence of sex differences in psychological differentiation in this culture may have been due to the samples used and socialization practices specific to this culture.

On the basis of the review of related literature the present study was undertaken to investigate sex differences in field-dependence and socialization practices, and examine the effect of socialization practices on psychological differentiation among children aged 8 years, 11 years and 14 years. This is the first study of its kind in Pakistan. Previous studies were carried out on older subjects ranging from 13-year-olds to university students. This

study was a downward extension of the work previously done as the sample consisted of younger children aged 8 years through 14 years. The samples in all previous studies were drawn from the urban population whereas the present study included both rural and urban children.

## HYPOTHESES

In the light of foregoing literature review, the following hypotheses were formulated.

1. Boys are more field-independent than the girls.
2. Differences in psychological differentiation are related to differences in age: the older children tending to be more field-independent than the younger ones.
3. The urban children are more field-independent than the rural children.
4. Socialization practices reflected in the kind of activities encouraged and the type of punishment administered are related to differences in sex.
5. Children who receive physical punishment tend to be more field-dependent than children who receive verbal punishment.
6. Children who are encouraged by their parents to aspire for success and achievement are field-independent while those who are not encouraged are field-dependent.
7. Children who are raised under strict discipline are more field-dependent than children who are brought up in a more permissive atmosphere.

## METHODOLOGY

### Sample

The sample consisted of 120 children, 60 boys and 60 girls, belonging to both urban and rural areas. Ten boys and 10

girls representing each age group were selected from urban and rural areas, respectively. The sample was selected randomly for each age group from school admission register by checking the date of birth of the children. Those children were included in the sample whose approximate age was 8 years, 11 years or 14 years during April and May, 1986, the time of data collection. The sample was drawn from seven federal schools of Islamabad, including one primary and two high schools from urban area, and two primary and two high schools from rural area. The rural areas include Mohri, Humak and Hardo Ghaher.

### **Instrument**

The Children's Embedded Figures Test (CEFT), developed by Witkin and his associates (1971) was administered to children as a measure of field dependence-independence. CEFT consists of 25 items based on two series of simple and complex figures, TENT (11) and HOUSE (14). There is no time limit for the test. The manual provides information on the development of CEFT, procedure for administration and scoring, norms, reliability and validity. It presents the norms for 5 – 12 years boys and girls. The reliability estimates for age groups 7 –12 years range from .83 to .90. Validation studies on CEFT indicate that the validity of CEFT when judged against Embedded Figures Test (EFT) and Wechsler's Intelligence Scale for Children (WISC) Block Design, Object Assembly and Picture Completion subtests as the criterion measures were considered to be quite satisfactory for boys and girls of different age groups.

An Interview Schedule was developed for this study to gather information about the socialization practices in Pakistan. The Interview Schedule consists of both biographic informations as well as questions on various aspects of socialization, such as punishment, restrictions, encouragement and discipline. The Interview Schedule consists of both open-ended and multiple-choice items. The nature of questions is such that they can easily show sex differences in socialization practices.

### **Procedure**

The Children's Embedded Figures Test was individually

administered to children. After administering CEFT, each child was interviewed with the help of the Interview Schedule.

Responses to the CEFT items were scored according to the instructions given in the manual. Responses to questions in the Interview Schedule were scored 1 or 0. Responses to the open-ended questions were classified into different categories and children who had given a response for any of the given categories received a score of 1, otherwise 0. Responses to the multiple-choice items were also scored 1 or 0.

## RESULTS

The results are based on an analysis of the data which include total frequencies, mean, standard deviation, *t*-test and two-way analysis of variance. This analysis was carried out to determine the effects of sex, age and area upon CEFT scores and socialization.

### Psychological Differentiation

The mean, standard deviation, *t*-test and two-way ANOVA have been computed for scores on Children's Embedded Figures Test (CEFT).

A comparison of male and female children on CEFT shows that there are no sex differences ( $t = .675$ ,  $df = 118$ ,  $p < .5$ ) in field-dependence-independence.

Age-wise comparison of children on CEFT indicates a clear developmental trend. In other words, the psychological differentiation of older children, aged 14 years is greater ( $Mean = 12.90$ ,  $SD = 3.71$ ) than that of the younger children, aged 8 years ( $Mean = 9.33$ ,  $SD = 3.00$ ). Developmentally, there is a significant difference between 8 years and 11 years old children ( $t = 1.82$ ,  $df = 78$ ,  $p < .025$ ), 8 years and 14 years old children ( $t = 4.67$ ,  $df = 78$ ,  $p < .0005$ ) and between children aged 11 years and 14 years ( $t = 2.59$ ,  $df = 78$ ,  $p < .005$ ).

When the scores of urban and rural children on CEFT are compared, significant difference ( $t = 2.98$ ,  $df = 118$ ,  $p < .01$ )

between the two groups is found in psychological differentiation.

The two-way ANOVA presented in table 1 shows significant differences among the various age groups ( $f = 10.27$ ,  $df = 2$ ,  $p < .01$ ) in psychological differentiation; however, there is neither significant sex difference nor any significant age x sex interaction effect.

Table 1  
Two-way ANOVA by Age and Sex on CEFT Scores

	SS	df	MS	F	P
Between Ages	229.61	2	129.81	10.27	0.1
Between Sex	6.53	1	6.53	0.517	n.s.
Ages and Sex	53.316	2	26.65	2.109	n.s.
Within group	1440.72	114	12.64		
Total	1760.18	119			

Upon closer examination, however, we find that there is a significant difference between 8 years and 11 years males ( $t = 2.77$ ,  $df = 38$ ,  $p < .01$ ) but, surprisingly, no significant difference was found between the females of these two age groups. There is a significant difference between ages 8 and 14 in case of males ( $t = 4.14$ ,  $df = 38$ ,  $p < .001$ ) and between ages 8 and 14 among females ( $t = 2.34$ ,  $df = 38$ ,  $p < .02$ ). There is a significant difference between 11 years and 14 years females ( $t = 2.21$ ,  $df = 38$ ,  $p < .02$ ) but no significant difference was found in cognitive styles between 11 years and 14 years males.

## Socialization

Sex differences have been found in the socialization of the two sexes in such aspects as encouragement, punishment, restrictions, and discipline. Children are usually encouraged by their parents to aim at outstanding performance in any activity. Almost all parents express pleasure when their children perform better.

The findings show that girls are usually encouraged to attend to the household chores and look after the siblings while the boys are often encouraged to undertake outdoor activities. The type of encouragement children usually receive from their parents is in the form of praise.

Children are usually punished by their parents for their wrongdoings. The results of this study indicate that the nature of punishment differs for boys and girls, the former often punished physically and the latter punished verbally. The activities for which both sexes are punished also differ. Boys are usually punished for playing all the time and being naughty whereas girls are often punished for telling back to adults and for not helping parents in the household work.

Parents usually proscribe their children from many activities which involve meeting certain peers or doing certain things. Results indicate that parents usually prohibit the boys from playing and doing mischief, while the girls are often prohibited from quarrelling, abusing, disobeying and going out of the house.

Parents usually want their children to maintain discipline in the house. Discipline here means adherence to a schedule or timing fixed by the parents for conducting certain activities which children must follow regularly, such as studying, sleeping, etc. The findings indicate that parents seem to be more strict with females rather than males in matters of discipline. The timings fixed for both boys and girls have to do with waking and studying hours, with an additional area of regulated activity for girls pertaining to the sleeping schedule. Results also indicate that urban parents strictly follow the fixed schedules, not so the rural parents.

### **Psychological Differentiation and Socialization**

Mean and standard deviations of CEFT scores have been reported in table 2 for children who received different types of punishment, further broken down by sex, age, and area differences.



Table 2

Sex, Area and Age-wise Comparison among Type of Punishment on CEFT Scores

Punishment	Sex		Area		Age			Total N=120
	Male N=60	Female N=60	Urban N=60	Rural N=60	8 N=40	11 N=40	14 N=40	
Verbal	13.12 (5.25)	10.78 (2.92)	12.14 (3.62)	10.00 (3.43)	9.33 (3.80)	10.50 (2.16)	13.53 (3.81)	11.30 (3.70)
Physical	10.50 (1.49)	10.75 (1.63)	11.00 (1.41)	10.33 (1.69)	10.40 (1.62)	—	—	10.66 (1.59)
Psychological	—	—	—	—	—	—	—	—
Physical & Verbal	10.96 (4.17)	11.00 (4.31)	12.23 (4.23)	9.73 (3.79)	9.00 (2.69)	10.93 (4.68)	12.22 (4.07)	10.98 (4.20)
Physical, Verbal & Psychological	9.70 (3.74)	13.14 (2.00)	13.25 (3.66)	9.22 (2.19)	9.75 (3.59)	11.71 (3.28)	14.5 (.5)	11.12 (3.59)
Physical & Psychological	8.16 (1.06)	—	7.66 (1.25)	8.00 (1.22)	8.20 (1.16)	7.00 (1.00)	—	7.86 (1.24)
Verbal & Psychological	—	—	—	—	—	—	—	—
No punishment	—	12.12 (3.29)	—	12.42 (3.42)	—	11.00 (4.00)	13.4 (2.33)	12.12 (3.29)

*Standard Deviation in parenthesis*

An examination of the data on punishment and psychological differentiation for the total sample indicates that children who are not punished have greater psychological differentiation ( $Mean = 12.12$ ,  $SD = 3.29$ ) than children who are punished. Regarding types of punishment, those children who are verbally punished have greater psychological differentiation ( $Mean = 11.30$ ,  $SD = 3.70$ ) than children who are physically and psychologically punish-

ed ( $Mean = 7.86, SD = 1.24$ ). There is a significant difference between the two groups of children who are verbally and physically & psychologically punished ( $t = 3.45, df = 49, p < .001$ ).

A comparison of the use of encouragement in relation to psychological differentiation scores are presented in table 3.

Table 3

Comparison of Encouragement and No-encouragement on CEFT Scores

	N	Mean	SD	t
Encouragement	112	11.16	3.69	3.14
No Encouragement	8	7.00	1.65	
$p < .001$	$df = 118$			<i>One tailed test</i>

The findings indicate that encouragement may have a positive effect on psychological differentiation. In other words, those children who are encouraged by their parents to aspire for success and achievement have greater psychological differentiation ( $Mean = 11.16, SD = 3.69$ ) than those children who are never encouraged ( $Mean = 7.00, SD = 1.65$ ). Significant differences between the two groups are found ( $t = 3.14, df = 118, p < .001$ ).

The sex, area and age-wise comparisons of means and standard deviations of CEFT scores are displayed in table 4 for the two groups of children, firstly those who have to maintain discipline and secondly those who do not have to maintain discipline.

Table 4

Sex, Area and Age-wise Comparison of Discipline and No-discipline on CEFT Scores

	Discipline			No Discipline		
	N	Mean	SD	N	Mean	SD
Male	15	10.4	3.70	45	11.0	4.37
Female	32	11.15	2.86	28	11.28	3.66
Urban	25	10.68	3.24	35	12.91	3.93
Rural	22	11.18	3.06	38	9.45	3.54
8 Years	16	9.56	2.52	24	9.16	3.22
11 Years	17	10.76	3.24	23	10.69	3.96
14 Years	14	12.64	2.94	20	13.26	3.98
Total	47	10.91	3.17	73	11.11	4.11

The results show that children whose parents have not prescribed any schedule for them and who do not have to maintain any rigid discipline, have greater psychological differentiation ( $Mean = 11.11$ ,  $SD = 4.11$ ) than those children who have to follow fixed schedules and maintain discipline ( $Mean = 10.91$ ,  $SD = 3.17$ ). However, no significant differences appear between the two groups ( $t = .28$ ,  $df = 118$ ,  $p < .7$ ).

## DISCUSSION

In the present study, no sex differences in psychological differentiation have been found among urban or rural children. The same is true for children of different age groups from the two areas. These findings support the results of studies done earlier in Pakistan by Alvi et al. (1986); Ansari (1986) and Imam (1975). One of the factors which may have contributed to such a finding has to do with the socialization process. Socialization plays an important role in fostering or hindering psychological differentiation. In the Pakistani culture, socialization is quite harsh as compared to the practice in western cultures.

Parents tend to be very strict with their children and do not allow them to do any thing independently. Children must obey the commands of their parents, or else be severely punished. There are sex differences in socialization practices in Pakistan. This study indicates that boys and girls go through different forms of socialization. Some of the practices do not favour boys while some others do favour girls; boys, for example, are punished physically while girls are punished verbally. However, parents are generally more strict with their girls than the boys. Among the similarities, both groups have to maintain discipline and both are equally encouraged to aim at high achievement. It seems that whatever sex differences in socialization practices exist, they still may not be sufficient to bring about a significant difference between boys and girls in psychological differentiation.

Developmentally, there is a gradual increase in field independence among Pakistani children. This finding supports the studies done by Alvi et al. (1986); Berry (1966); MacArthur (1967) and Witkin et al. (1967). Cross-cultural evidence suggests that the development of psychological differentiation follows a pattern similar to that originally observed in western studies, except that the decrease in differentiation in later life may occur at an earlier point in non-western groups. One basis for this possible earlier return to less differentiated functioning may be that old people in many non-western settings are less exposed to acculturation influences. Another possible interpretation is that aging begins earlier in more traditional communities where life is attended by many physical hardships (Witkin and Berry, 1975).

Urban-rural differences are also in the expected direction. This finding supports the studies done by Park and Gallimore (1975); Witkin and Berry (1975) and Witkin et al. (1974). The rural-urban differences in field independence, as Witkin says, may be attributable to differential importance attached by parents to social conformity. Cross-cultural studies that compared urban and rural societies suggest that pressure for conformity in rural societies is associated with the development of a field-dependent mode among its members in contrast to urban societies whose members are more likely to show a field-independent approach.

To conclude, as Witkin (1967) suggests, whether an indi-

vidual is relatively more or less field-independent depends on his socialization. A more differentiated cognitive style is likely to result if the mother encourages self-differentiation in the child, the way the child internalises methods of controlling impulse and personality characteristics of the parents. In effect, the ability at spatial tasks is intimately related to the personality of the subject.

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