

# A COMPARISON OF EMOTIONAL INDICATORS ON HUMAN FIGURE DRAWINGS OF CHILDREN FROM MEXICO AND FROM THE UNITED STATES

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Children's behavior and attitudes are inevitably influenced by the culture they live in. Differences in child-rearing practices and in the values held in each society create basic differences in the life styles of various peoples. There are basic value orientations which all people in all times have had to work out as a basis for their beliefs, which are defined as ideas held without proof but commanding deep commitments, the "unwritten laws" or implicit assumptions of which the people in that culture may be quite unconscious (Hall, 1963). The interaction of the child with the expectations and demands which are common in his social group will produce in him some traits or reaction patterns which will characterize most of the members of that group. He may also display differences in his performance on psychological tests which are typical of his group (Johnson, Johnson, and Price-Williams, 1967).

The marked differences between the behavior of Mexican and Anglo-American children reflects to a large extent the differences in the social and cultural background of such youngsters. As a group, Mexican children tend to be somewhat shy and reserved, especially with strangers, but more poised and less aggressive and anxious than Anglo-American children (Moreau, 1967). The purpose of this study is to determine whether such differences in behavior and attitudes would also be reflected on Human Figure Drawings (HFDs).

The HFD, which is almost the same as the Draw-A-Man of Goodenough, has long been scored as a measure of intellectual ability (Goodenough, 1926), was published in Spanish (Goodenough, 1951; Bernstein, 1951), and has recently been revised by Harris (1963). Another scoring system has now been devised which measures emotional stability by the absence or incidence of Emotional Indicators (EIs). Thirty of these EIs were found which differentiate between the drawings of children in the United States who were well-adjusted, outstanding pupils and those who were psychiatric patients (Kop-

pitz, 1966 a). Later studies found these EIs to be associated with specific types of behaviors and attitudes in children aged 5 to 12 (Koppitz, 1966 b, 1966 c. 1967).

#### PROCEDURE

The subjects (Ss) for this study were two groups of public school children age 5 to 11 years. The two groups were matched for age, sex and mental maturity. One group of Ss consisted of 276 lower class Mexican children from Guadalajara who were part of the larger group studied by the public health department (Salubridad). The second group of Ss was made up of 276 lower class children from a small industrial town in New York State. The mental maturity of all Ss was determined by means of the HFD scores derived from the Expected and Exceptional items present on each drawing (Koppitz, 1967 a; Moreau and Koppitz, 1968). The 276 matched pairs of Ss included 176 pairs of boys and 100 pairs of girls.

The HFD Test was administered to all Ss in large groups in school by the teachers with the assistance of the psychologists. All drawings were then checked by one of the writers for the presence of the 30 EIs. All of the EIs are considered valid for boys and girls age 5 to 12 unless it is otherwise indicated. The presence of a single EI on a drawing merely suggests a tendency on the part of a child but cannot be regarded as a sign of a serious emotional disturbance. The presence of two or more EIs on a drawing should be regarded as an indication of emotional problems.

The following is a list of the 30 EIs:

1. *Poor integration of parts*, one or more parts not joined to rest of figure, part barely touching or connected only by single line (B 7-12, G 6-12).
2. *Shading of face*, deliberate shading of whole face or part of it, including "freckles," "measles," etc.; a light even shading of face and hands to indicate skin color in a non-defensive way is not scored.
3. *Shading of body and/or limbs*, shading arms or legs (B 9-12, G 8-12).
4. *Shading of hands and/or neck* (B 8-12, G 7-12).
5. *Gross asymmetry of limbs*, one arm or leg differs markedly in shape from other arm or leg. This item is not scored if limbs are uneven in size only.
6. *Slanting figure*, vertical axis of figure tilted by 15° or more from the perpendicular.
7. *Tiny figure*, figure two inches or less in height. (5 cm. or less)
8. *Big figure*, figure nine inches or more in height. (23 cm. or more)
9. *Transparencies* involving major portions of body or limbs; sin-

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- gle line or lines of arms across body *not* scored, nor line of hat across head.
10. *Tiny head*, height of head less than one-tenth of total figure.
  11. *Crossed eyes*, both eyes turned in or out; sideways glance of eyes *not* scored.
  12. *Teeth*; any representation of one or more teeth.
  13. *Short arms*, stubs for arms, arms not long enough to reach waist.
  14. *Long arms*, arms long enough to reach below knee or where knee should be.
  15. *Arms clinging to body*, no space between body and arms.
  16. *Big hands*, hands as big as face of the figure.
  17. *Hands cut off*, arms with neither hands nor fingers; hands hidden behind back of figure or in pocket *not* scored.
  18. *Legs pressed together*, no space between legs; only one leg shown in profile.
  19. *Genitals*, realistically or unmistakably symbolic presentation of genitals.
  20. *Monster or grotesque figure, deliberate* drawing of non-human, degraded or ridiculous figure (clown, hobo, devil, monster, etc.); immature or confused figure resulting from lack of drawing skill *not* scored.
  21. *Three or more figures spontaneously drawn*, several figures not interrelated, repeated drawing of figures when only a figure was requested; the drawing of a boy and a girl, or a man and a woman, or a family drawing *not* scored.
  22. *Clouds, rain, snow, black birds flying*.
  23. *No eyes*, complete absence of eyes; closed eyes or vacant circles for eyes *not* scored.
  24. *No nose* (B 6-12, G 5-12).
  25. *No mouth*.
  26. *No body*.
  27. *No arms* (B 6-12, G 5-12).
  28. *No legs*, not scored if legs are covered by long skirt.
  29. *No feet* (B 9-12, G 7-12).
  30. *No neck* (B 10-12, G 9-12).

The Ss were divided into two groups by their age level. The younger group of Ss was made up of all youngsters between 5 and 7 years, while the older group consisted of the 8 to 11-year-old children. Then the HFDs of the Guadalajara and New York Ss in the two age groups were compared for the presence of the EIs. Chi-squares were computed for the number of Ss in each group who showed each given EI on their drawings.

### RESULTS AND DISCUSSION

Table 1 shows the results obtained by comparing the HFDs of

the Mexican and United States children. Six of the EIs occurred

TABLE 1  
COMPARISON OF EMOTIONAL INDICATORS ON HFDS OF MEXICAN  
AND UNITED STATES CHILDREN

Emotional indicator*	Age 5 to 7 yrs. (N 125 prs)				Age 8 to 11 (151 prs)			
	Mex.	U.S.	X <sup>2</sup>	P	Mex.	U.S.	X <sup>2</sup>	P
Poor integration (B 7-12, G 6-12)	16	19			17	11		
Shading body/limbs (B 9-12, G 8-12)	—	—			7	17	3.66	.05
Shading hands/neck (B 8-12, G 7-12)	0	6	4.44	.05	3	23	15.28	.001
Gross asymmetry	3	4			0	0		
Slanting figure	29	3	22.39	.001	21	10	3.59	.05
Tiny figure	59	5	58.98	.001	41	8	19.82	.001
Big figure (B & G 8-12)	—	—			0	8	6.29	.02
Transparencies	10	4			10	2	4.25	.05
Teeth	4	11	4.44	.05	6	16	3.97	.05
Short arms	6	23	9.98	.01	3	19	11.03	.01
Long arms	9	10			4	7		
Arms clinging	1	1			2	6		
Hands cut off	11	9			12	12		
Legs together	0	0			4	8		
Monster, grotesque	0	0			0	6	4.25	.05
Three figures	3	9			0	2		
Clouds, rain	0	7	5.29	.05	0	4	2.24	.10
No nose (B 6-12, G 5-12)	10	18			9	11		
No mouth	8	3			2	6		
No body	4	7			2	1		
No arms (B 6-12, G 5-12)	13	12			3	5		
No legs	1	5			0	3		
No feet (B 9-12, G 7-12)	2	2			2	14	8.11	.01
No neck (B 10-12, G 9-12)	—	—			16	19		

\*All emotional indicators are valid for boys and girls age 5 to 12 unless otherwise indicated.

so seldom on any of the drawings that they were omitted from Table 1. These six items were: Shading of face, tiny head, omission of eyes, crossed eyes, big hands, and genitals. Of the remaining 24 EIs, six differentiated significantly between the HFDS of the younger Mexican and United States Ss, while 11 EIs differentiated between the drawings of the two groups of older subjects. Five to seven-year-old Mexican children showed a high incidence of tiny figures and slanting figures on their HFDS, and they also drew transparen-

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cies more often. These same three EIs also occurred significantly more often on the drawings of the 8 to 11-year-old Mexican Ss.

The younger United States Ss drew significantly more often shading of hands, short arms, teeth and clouds. Indicators found more often on the HFDs of the older United States children were: shading of body and/or limbs, shading of hands and/or neck, short arms, omission of feet, monster or grotesque figure, clouds, teeth, and big figure. The first four of these reflect acute anxiety and feelings of inadequacy. A poor self-concept is also revealed by the drawing of monsters. Clouds are usually drawn by anxious children who feel they are under pressure for achievement from authority figures; the drawing of teeth and big figure indicates anger, aggressiveness and impulsivity. These eight EIs did not, of course, occur all on a single drawing, but if they are taken together as a composite they would reveal an extremely insecure child who perceives himself as unable to stand up to the pressure from authority figures, i.e., parents or teachers; he is angry and resentful and may either act out his frustration in aggression or he may respond by anxious withdrawal. Thus the findings support the hypothesis that United States children tend to be more aggressive than Mexican children.

The EIs found most often on the HFDs of the Mexican Ss are of great interest. Tiny figures are thought to reflect timidity, shyness, and possibly depression. A slanting figure has been associated with instability and lack of balance. Transparencies, such as were exhibited by the HFDs of the Mexican Ss are above all a sign of immaturity and concretistic thinking. The Ss in this study usually drew stick men or skeleton figures which they literally clothed by drawing clothes around the figures. This type of transparency differs markedly from the transparency of a specific area on the drawing which reveals primarily anxiety (Koppitz, 1967 b). Taken together, the three EIs found on the HFDs of the Mexican Ss suggest that the children were more immature, concretistic, timid and lacking in self-confidence and stability than the United States Ss.

Two other EIs were found quite frequently on the drawings of the Mexican Ss: poor integration of parts and cut-off hands. These two items did not, however, differentiate significantly between the HFDs of the Mexican and United States Ss. Yet it seems noteworthy that all the five EIs which occurred most frequently on the drawings of the Mexican Ss were also among the items which were best able to differentiate between the HFDs of United States public school children with and without minimal brain injury (Koppitz, 1967 f, 169 ff). It may be no mere coincidence that the drawings of the Mexican Ss show such a high incidence of "organic signs" (poor integration of parts, slanting figure, transparencies, tiny figure, cut

off hands). The children who served as Ss in this study came from an area in Guadalajara which was known to suffer from gross dietary deficiencies; 40 per cent of the population there was reported to suffer from malfunctioning of the thyroid. Randal (1966) describes studies by Dr. Cravioto of Mexico City who demonstrated the relationship between varying levels of undernourishment and a child's ability to learn. Considerable evidence has been accumulated to show that dietary deficiencies in infancy may lead to retardation in physical and mental growth and to brain damage.

It is not known whether the Ss in this study showed additional evidence of neurological malfunctioning or not, but the possibility of brain injury among many of these Ss cannot be ruled out and should be further investigated. It must be strongly emphasized that brain injury *cannot* be diagnosed solely by means of a HFD, and the so-called "organic signs" do not occur exclusively on drawings, either HFDs or Bender Gestalt drawings, of brain-injured children. Drawings can merely be used to suggest hypotheses or to provide supportive data for such a diagnosis. If one hypothesizes that the Ss in this study did have a high occurrence of brain injury due to dietary deficiencies, then it would follow that the EIs revealed on their HFDs would reflect above all the children's reaction to their cortical malfunctioning and only to a lesser extent the influence of cultural factors. In that case, the poor integration of parts on the drawings would suggest the impulsivity and immaturity which are so characteristic of many or most brain injured children. The same is true of transparencies on HFDs. This sign reveals immaturity and also a concretistic approach to problems. The latter is typical of neurologically impaired children, who tend to have difficulty with more abstract ways of thinking. It has also been noted that one of the cultural orientations of the Spanish-speaking is a particularistic view of things, tending to concentrate on parts rather than wholes (Moreau, 1967). A slanting figure may reflect the children's actual instability or their feeling of being poorly integrated and incoordinated. That is, the slanting figure may depict the child's organization within himself as well as his inability to cope with the environment. The drawing of tiny figures and of cut off hands is not believed to be related to brain injury as such but rather shows how inadequate and insecure neurologically impaired children feel. They tend to respond to the world about them with timidity and withdrawal.

The present findings support the hypothesis that HFDs of Mexican children differ from those of United States children in the kind of EIs they reveal. The drawings of the Mexican children indicate that they are more immature, insecure, and timid but less aggressive

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and anxious. However, the results of this study do not indicate whether the EIs found most often on the HFDs of the Mexican Ss reflect primarily emotional attitudes learned from interpersonal experiences and cultural influences, or if they are primarily the children's response to neurological impairment which they might have suffered as a result of severe early malnutrition. Further studies are needed to determine the factors and influences which are mainly responsible for the children's attitudes and behavior that are reflected on the HFDs. It would be of interest to compare the HFDs of Mexican children from similar social-cultural background, some of whom had been exposed to serious malnutrition in early childhood and some of whom did not suffer from dietary deficiency in infancy.

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### SUMMARY

Comparison of Human Figure Drawings of 276 pairs of Mexican and North American lower class children matched for age, sex, and mental maturity showed significant differences in the types of Koppitz Emotional Indicators (EIs) found on the drawings. The United States children included EIs which indicate anxiety, inadequacy, poor self-concept, resentment and aggression. The Mexican children showed timidity, immaturity, and concretist types of thinking, but these and other EIs found are those often found in the drawings of brain-injured children, so that it is unclear whether these

traits are culturally based or produced by neurological deficits stemming from dietary deficiencies.

RESUMEN

Una comparación de Dibujos de Figura Humana (Human Figure Drawings) de 276 pares de niños mexicanos y norteamericanos de la clase baja, pareados en cuanto a edad, sexo y madurez mental, indicó diferencias significativas en los tipos de Indicadores Emocionales Koppitz (EIs—Koppitz Emotional Indicators) encontrados en los dibujos. Los niños norteamericanos incluyeron EIs, lo que indicó ansiedad, insuficiencia, un pobre concepto propio, resentimiento y agresión. Los niños mexicanos mostraron timidez, falta de madurez, y ciertos modos de pensar concretista; pero estos y otros EIs que se encontraron son los mismos que frecuentemente aparecen en los dibujos de niños con cerebros dañados, por lo que no resulta claro si estas características son de base cultural o si son productos de un déficit neurológico causado por deficiencias dietéticas.

RESUMO

A comparação de traçados da figura humana de 276 pares de crianças da classe baixa, equivalentes em relação ao sexo, idade e maturidade mental, no México e nos E.E.U.U., mostrou diferenças significativas nas variedades de Indicadores Emocionais de Koppitz (IEs) encontradas nos traçados. As crianças nos E.E.U.U. incluíram IEs que indicam ansiedade, sentimento de inferioridade, baixo conceito próprio, ressentimento e agressão. As crianças mexicanas revelaram timidez, imaturidade e modos de pensar mais concretos, mas estes e outros IEs encontrados são aqueles frequentemente revelados nos traçados de crianças com dano cerebral; por isso, não é claro se estes traços são baseados na cultura ou produzidos por deficiências neurológicas resultantes de deficiências alimentares (dietéticas).

