

POVERTY AND COGNITIVE DEVELOPMENT: Oaxaca's Children.¹

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Oaxaca is the poorest region in Mexico. Is located at the southwest coast of the Pacific Ocean and have the third greatest territory in the country. There come together both mountain ranges giving form to the "Mixteca Noodle". We have a picturesque land with splendid views and broad biodiversity of plant and animals. Our history have a close relation with the surround geographical conditions and no matter the presence of great ancient cultures in the past, now days there are only archeology vestiges and several people groups who inherit those dynasty deprived of the opportunity for his development. Cities congregate the broad density of people and are the place were come together and sell the regional products in a traditional way at popular markets. There are few industrialization and one important source for economy are the money coming from tourist endeavors. Foreigners enjoy regional dishes , crafts, folklore and beaches. Present times and old poverty promote fluid emigration of workers. Young mans traveling to U.S.A. looking for opportunities , living behind disintegrated families and small towns were only live ancient people, women and children. American money arriving have turned so important for surviving and kip faith in this places. Nevertheless, great mans have gown in this land like Benito Juárez and the Flores Magon Brothers, ideologues of Mexican Reform and Revolution. Also in art (Tamayo) or culture (Vasconcelos).

Extreme poverty imply hungry and ignorance. Hungry carry on with malnutrition, small stature and limited development of tissues, organs and structures. It is a causal factor of several diseases and lower extend of living in comparison with others locations in the country. Ignorance is related with presence of diverse ethnic groups owners of particular languages (dialects), who doesn't speak Spanish. Even when Mexico have a free and obligatory educational system, poor children don't take class because are working in the country, fishing or selling.

Quality of life is also impaired with middle poverty. Both parents usually have to work living the children alone. Few time for racing and no worm or affective relationship are the constants. No less frequent are the stress full environment given the economic pressure and limited gratifications. Control strategies are based on punishment and threaten. If we added to this picture a deficient educational system, low profile teachers, limited resources and schools located far away from home, is easy to see way Oaxaca shows the lowness academic scores of achievement.

So we have a vicious circle of poverty: economic handicaps coming from unemployment and underemployment, because a educational deficit, are the result for been born and grow in poverty.

This paper point to descriptive data about the effect of poverty on the cognitive development in Oaxaca's children. It is, in a way, a partial replication of the **Meaningful Differences** book by Betty Hart & Todd R. Risley (1995), a model of how environmental factors, like the way toddlers learn

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language from their parents, depending on social class and parental intelligence, affects intelligence and cognitive development on children. A remarkable research.

EXPERIMENT 1.

- Goal : To observe the verbal repertoire of spontaneous language in youths in relation with parents economic level.
- Subjects : 9 children with 2 years and 2 months of age (2 male and 7 female) from a nursery school, were grouped in agreement with the economic income of their parents. We get two groups, one earning less than 10.000 pesos monthly and other earning up that quantity.
- Procedure : We carry on individual sessions with each subject parents and in agreement with the psychology and educational personal in order to determine the number of words each one spell. Data were averaged and plotted.
- Results : As you see in Figure 1, the verbal repertoire in height level children is almost twice the level of economic deprived ones.
- Talk content : much words was nouns (mom, dad, water, milk, soup, shoe, chair, heat, hand, foot, etc.) in less amount verbs (want, eat, play, go, beat, etc).

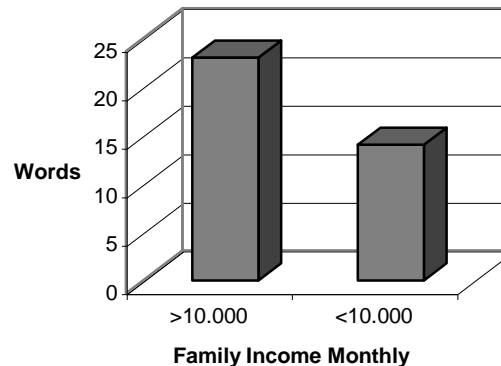


Figure 1. Verbal Repertoire and Economic Level.

EXPERIMENT 2.

- Goal : To obtain the Intelligence Coefficient of children related to the social level of the school they go.
- Subjects : 12 children 8 years old (6 male and 6 female) in the third grade of elementary school in 3 groups with 4 members: low, middle and height class.
- Procedure : The Goodenough Test (for measurement of intelligence by means of drawing the human body) was administered for all subjects on each group in a session. Drawings were scored by the same person and with the same value table for calculating the mental age. Session was carry over at the saloon in the school we visit. Low class subjects came from a school placed in the limits of town. Middle class was students from a official school downtown. Height class province from an expensive particular school.
- Results : Figure 2 shows the distribution of Mean Intellectual Coefficients. Low class children obtain a normal intelligence (CI = 90 to 109) and middle and height class obtain superior intelligence (CI = 110 to 119).

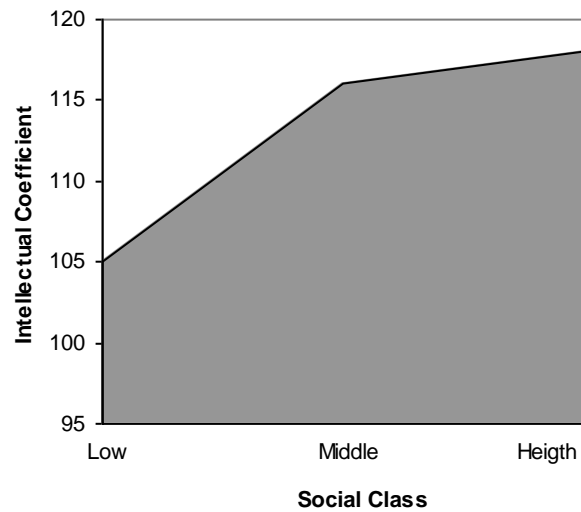


Figure 2. Intellectual Coefficient and Social Class.

EXPERIMENT 3.

- Goal : Get the Intelligence Coefficient of indigent (homeless) children in Oaxaca city and of indigenous children living in small communities inside the state territory (at less three ethnic groups).
- Subjects : There was 4 groups : (1) 4 indigent children who assist to a day care center, 2 male and 2 female, 2 of them 8 years old and 2 other 10 years old, (2) 6 Zapotecos children, 8 years old, three male and 3 female, living in San Miguel Tilquiapam, Ocotlán, (3) 4 Mixtecos children, 8 years old, 2 male and 2 female, living in La Cumbre-Ixtaltepec, Nochixtlan and (4) 4 Mixes children, 8 years old, 3 male and 1 female, living in Santa María Alotepec, Mixe.
- Procedure : As in Experiment 2, Goodenough Test was administered in group sessions at the classroom in school and in the day care center for homeless children. Scores were obtained in the same way already described.
- Results : Figure 3 include Experiment 2 data and mean I. Q. scores of this new 4 groups. In general, children living in the city get a little high score than ethnic groups children (all with normal intelligence). The lower value belongs to indigent children, those living at the street in extreme poverty.

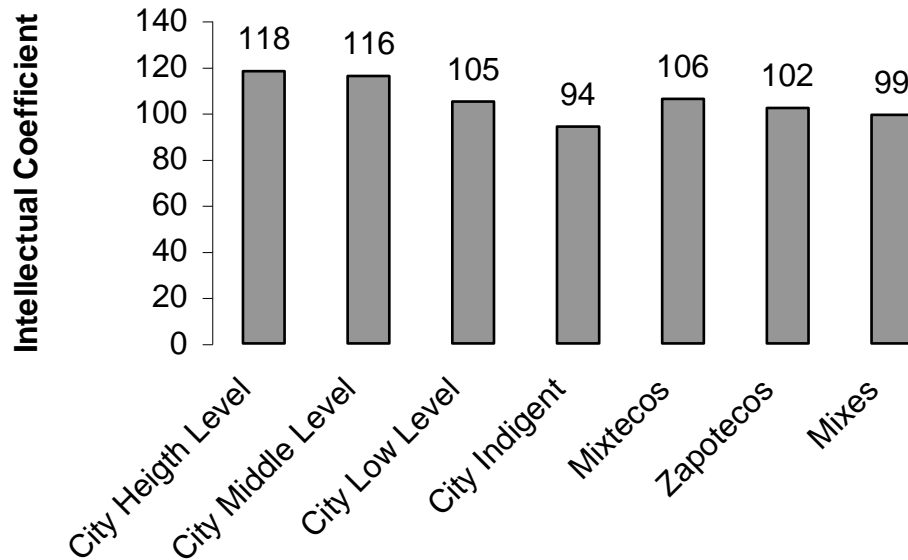


Figure 3. Intelligence Coefficient and group adscription.City, indigents and indigenous children

GENERAL DISCUSSION.

This data about the effect of parents economic level on the verbal repertoire of children (Experiment 1) are congruent with other reports. Pineda, García & Cortes (1985) let us know about higher frequency of verbal and symbolic behavior in middle and high economic class children, in contrast with low class marginal children with illiterate mothers. Alva, Arboleda & Enríquez (1985) scored the amplitude of vocabulary of 5.6 and 6 years old children of high economic class in 1,465 words, meanwhile children of low economic class show 1,242 words. Alva, Escobar & Ibarra (2004) work with 575 children between 5 and 7 years old, measuring they speech production (type and token) and they found a higher production in subjects from high economic income. Other reports have show with 18 and 34 months old children that nouns sentences are more frequent than verb sentences in spontaneous speaking (Ortega & Alva, 2004). Also there are reports pointing that, in this age, girls, first child and sons assisting to private schools obtain a higher acquisitive rate of nouns sentences (Contreras, Torres, Villanueva & Alva, 2004). However, our data most take some reserve because it has been show in low economic level mothers, the tendency to bias in evaluating their children during interviews about their development (Hernández, Navarro & Ortega, 2004).

In the psychological literature one of more confident findings is the relationship between socioeconomic status and intelligence test performance (Experiments 2 and 3). Socioeconomic status have been defined on the basis of parents employment, their income, academic grade,

home and neighborhood characteristics or some combination of this factors. Always getting the same fundamental relation : low status, low intelligence (Reese & Lipsitt, 1980).

Reports of Neff (1938) and Loevinger (1940) comments the early study in this area. In USA on the 50's, a team of researchers named "the Chicago School" believe that the low score from intelligence test with low economic class children was due because item misconstruction. That's way we chose a test with no scholarship content.

In Mexico, some reports points in the same direction. Aguilar, Olmos & Lizárraga (1985) using questionnaire to score vocabulary, observe that means of asserts obtained by students in the 3dh grade of elementary private school were significant higher than students in the same grade on public school.

Explanation of differences in normal children cognitive development by means of vocabulary amplitude or IQ obtained can be found in Hart & Risley (1995) wide longitudinal study with 42 American families. They inform that children from professional parents toke almost the double than children with workers parents. They argument on nurturance quality (verbal and interaction) as a determinant factor. Consequently, if we increase nurturance quality, specially in children between 1 and 4 years old, we can expect a wide vocabulary and a higher IQ as a result .

We add quality in interaction when :

1. Parents speak with children forward from just handling and care.
2. Parents listening to children forward of strictly needed.
3. When parents try hard to be nice, even when correcting their children.
4. When parents avoid criticism and imperative tone and instead ask their children if what they are doing are right.
5. If parent offer extensive information to their children answers.

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