

https://dspace.org/

The effect of cultural variables on the Goodenough-Harris Drawing Test and the Standard Progressive Matrices

Freeman, Melvyn Colin

2011-02-23
http://hdl.handle.net/10539/9083

Downloaded from a DSpace repository. https://dspace.org/

variance in the black childrens' IQ scores. When social variables were put in second, they added 15% of the IQ variance. As 24.5 of the 35% of the variance accounted for was shared by biological and social variables, it was impossible to distinguish the effects separately. Using part correlations 3% was contributed by both natural mothers' race and adopted fathers' education, 2% the quality of the childrens preadoptive placements and the remaining 1.4% was contributed by the other biological and social variables.

Scarr and Weinberg made the following conclusions from the data.

(i) IQ scores of children are environmentally malleable. This was shown by the huge increase in the mean IQ of the adopted children compared to parents' IQ, and the finding that placement and adoptive family characteristics account for a substantial portion of the IQ differences in black adopted children.

(ii) Race of mothers accounted for 3% of the childrens' IQ variances. This is established from part correlations. However even this percentage probably includes some other unmeasured environmental differences between

the groups.

(iii) Biological children in adoptive families scored above the mean of the black/interracial adoptees. They point out that biological children had been in their family since birth and their natural parents were much brighter than the biological parents of adoptees regardless of race.

(iv) Biological children scored higher than the black adoptees on school performance measures. This finding is congruent with their higher IQ scores.

(v) A combination of genetic background, placement, and adoptive family characteristics contributed to the IQ differences among the black/ interracial adoptees.

2.4.2 A Critique by Jensen

Jensen (in Scarr 1981) attacks the above study from three perspectives. Firstly he points to a contradiction made by Scarr and Weinberg. He points out that Scarr and Weinberg conclude that from the correlations between education level of natural parent and child's IQ, and from the differences found between

tural children and adopted childrens' IQ that IQs e explicable in genetic terms. However they also nclude that IQ is effected by the intellectually perior white families. Jensen says that this inding must mean that the IQ gains made by the lack/interracial children must be because of the "white" environment rather than SES or anything else.

He comes to the above conclusion as in a study which he conducted in 1974, (Jensen 1974) he found high SES black children scored significantly lower than white children from low SES background. Jensen questions what this "Factor X" is that upper SES black parents are not doing for their children that even low SES white parents are doing. Jensen does not accept this Factor X interpretation and goes on to argue that the effect of "white environment" on "black IQ" has been overdrawn and that 'selective biases' could be an explanation. For example, though 101 families volunteered for the study, 59 technically eligible families did not. Jensen thinks that it is likely that volunteers undertaking mental testing tend to be biased upward. He thinks it also reasonable that agencies would place potentially brighter black and interracial adoptees in the upper-class white homes. He notes too, that the majority of the adoptees were born in Wisconsin. This is important in that the

Armed Forces Qualifcations Test in 1968 showed Wisconsin blacks to be the highest in the country - mean IQ of 97. The 29 black/black adoptees in Scarr and Weinberg's study obtained a mean IQ of 96,8.

The second level of criticism concerns the meaning of an IQ mean score of 109 in the interracial adoptees. Jensen cites a study by Goldhammer (1971) where the black males in interracial matings were well above the average occupational status of black males. As it appears from means and standard deviations of the educational levels of natural parents that quite a few were college students, it is possible that the interracial mean of adoptees would not have been much different if reared by their natural parents.

Thirdly, Jensen criticizes Scarr and Weinberg's use of partial correlations and regressions. He says that "the natural confounding of placement histories and racial admixture unfortunately cannot be unconfounded statistically" (Ibid pg 510). He says that this technique is the same as to argue that dogs and cats, in general, differ in size because they eat different amounts of food. One could then statistically "regress out" food intake amounts and reach the conclusion that cats and dogs are genetically the same.

It is likely that Jensen would also agree with Werner et al (in Scarr 1981) that the fact that IQs are environmentally malleable does not contradict a high heritability of as much as .80. Werner et al say that Scarr and Weinberg's data does not rule out .80 heritability though it does not prove it.

2.4.3 A Critique by Kamin

Taking the other extreme from Jensen's position (in Scarr and Weinberg, 1981) Kamin indicates that Scarr and Weinberg's data can be reanalyzed to suggest a zero or close to zero heritability. Firstly, he points out that though Scarr and Weinberg distinguish between early (placed before 1 year) and late adoptees and though late adoptees were ruled out of the various heritability analyses, comparisons are made with families containing both early and late adoptees. This is important as both parents and natural children have been shown to be different in families containing early and late adoptees. Natural children in families containing late adoptees had a mean IQ of 110,1 (Stanford - Binet) and 113.3 (Wechsler) compared to the 115.6 (S - B) ad 119.8 (W) of natural children containing early adoptees. Mean midparent IQ in early adoptive families was .120 (and 17.4 years of education) compared with the 116 IQ (and 14,6 years education) of the late adoptive families. Thus in

Kamin's analysis of the data (given to him in raw form by Scarr) he excludes late adoptees and the parents and natural children in the families containing them.

Because Scarr and Weinberg did not have IQ scores of the natural parents of the adopted children, they used education level instead, whereas in the case of adoptive parents' IQ scores rather than education level were used in comparisons. From the computer printout Kamin found that mothers' education correlates .17 with natural child IQ and .28 with that of the adopted child. Similarly the fathers' education correlated .24 with the IQ of his natural child and .28 with the adopted child. Thus "the unreported data on adoptive parents' education offer no support at all to a heritability interpretation" (Kamin in Scarr 1981, pg 471). Scarr and Weinberg had themselves found that unrelated sib pairs reared together were just as highly correlated as were biological sibs.

According to Kamin, the mean IQ difference between natural and adopted children need not mean heritability at all. Firstly most of the adopted children were black and thus may not reap the home environment advantages that a white child would. Secondly in this study early 'adoptee' meant placed before one year of age. The late adoptees scored 15

points lower than the early adoptees. But when the 'early adoptees' are divided into those adopted before months and those adopted after this another significant difference occurs. The earlier placed children had a mean IQ of 110, compared to the 103 for those placed between 8 and 12 months. This suggests that some of the differences between the natural child and even the early adopted child may be attributable to the gap before adoption. This would explain the discrepancy between Scarr and Weinberg's study and one by Horn et al (1977) where children (adopted straight from hospital) showed no difference between natural and adopted children of the same parents. This fact, as Horn et at noted, may again suggest zero heritability as the IQs of the biological mothers were significantly lower than those of the adoptive parents.

2.4.4 Conclusion

The results, interpretations and conclusions, drawn by these respected researchers, though contradictory, are not at all surprising. From an examination of each of their earlier writings these are the conclusions one would have expected. Scarr is a self-confessed 'moderate', Kamin is a strong campaigner of zero heritability, and Jensen, as has been seen previously, is the most influential advocator of a high (.80)

heritability. It seems that each is a highly skilled statistician,each has a sharp, critical mind, and each is highly articulate *5 in expounding a point of view. Yet given all this, each has been able to criticize other points of view and fit the data into their own preconceived notion.

In the terminology of Popper (1974) 'debates' such as this one would be termed 'conjectures and refutations.' However, this method in the philosophy of science is meant to take place independently of preconceived ideas and ideology. What each theorist has chosen to report and more importantly what to leave out, the statistics used and the general points made, reflect more than a distanced observation. (See Chapter IV) The resolution of the gene/environment problem seems destined to remain an ideological choice. The mechanisms to answer the questions are not available. From the data gathered up to this point it would seem that no-one is correct, neither Scarr nor Jensen nor Kamin nor anyone else. The question itself, it appears, is an impossible one to study. How environmental variables effect IQ seems a point of more relevant study.

****

CHAPTER III

THE "PROCESS" OF THOUGHT

The emphasis that researchers in the area of intelligence and intelligence tests have placed on 'capacity' rather than thought 'process' has led to the separation of studies dealing with IQ and intelligence and those dealing with the formation of cognition. Whereas research dealing with intelligence has mainly noted phenomena, other research has been concerned with the 'how' of cognition. Thus for example, in IQ research, when culture has been found to effect test scores, one of three things usually occurs. Conclusions are drawn a) that the differences reflect innate capacity, b) that a 'more culture-fair' test should be devised or c) environmental variables are noted. When the last alternative is postulated it is in a linear way. Intelligence is affected by X plus Y plus ..... and not by any 'process.'

On the other hand, outside of the IQ domain there <u>have</u> been attempts to show <u>how</u> culture effects ways of seeing and operating cognitively in the world. The method that seems to deal most effectively with the 'how' question is a 'dialectical materialist' one. In this chapter this method will be briefly outlined. Some cross-cultural research will be examined from a

'process' point of view and some consequences for IQ tests will be extrapolated.

3.1 Dialectical Materialism

The method of analysis which seems to explain most comprehensively how environment acts on cognition, is a dialectical materialist conception. The great advantage that this method has, over say a positivist one, is that thought is seen as a 'process' rather than as static. It is able to explain how effects take place rather than merely stating that "such and such" effects do take place.

Dialectical materialism sees the world as a complex of constantly changing relations between entities, and they are only understood when seen as a totality of inter-connections with everything else. In this method, one is not dealing with abstract ideals and their relations (as was Hegel for instance) but with material entities - "one cannot separate thought from matter which thinks" (Marx 1977 [reprint] pg 152). Thought itself is involved in dialectical relationships with everything around it as well as in its own progression. And the pivot around which all relations take place in the materialist dialectic is economic relations. It is primarily this which determines human consciousness.

> The mode of production of material life conditions the social, political and intellectual life process in general. It is not the consciousness of man that determines their being, but, on the contrary, their social being that determines their consciousness (Moll quoting Marx, 1984, pg. 41)

The 'mode of production' or the particular historically changing economic 'type' is all important.

> The way in which men produce their means of subsistence depends first of all on the nature of the actual means of subsistence they find in existence and have to reproduce. This mode of production must not be considered as being the production of the physical existence of these individuals. Rather it is a definite form of activity of these individuals, a definite form of expressing their life, a definite mode of life on their part. As individuals express their life, so they are (Marx and Engels 1970, pg 47).

Through time and in different places productive activity varies. The demands placed by the mode of production will thus determine the cognitive processes developed by that person, group or class. As material production changes so do thought processes, and so through history patterns of cognition have varied dramatically. But it is fundamentally important not to think that the dialectical materialists are referring to evolutionary development which bears a biological 'structure.' (Such changes would give rise to inference that the genetic changes are bringing

about cognitive changes). But rather as Montague (1975) and Lawler (1978) point out, over the course of millions of years biological evolution has resulted in the grouping of 'homo sapiens', and historical development has thus transformed primitive man into modern man, without any structural or biological change to the brain. The brain has stayed the same, though its function has varied.

Attempts to conceptualize the brain as having 'entities' which correlate directly with behaviourial or cognitive manifestations is outmoded and false. Further, to conceive of cognition in terms of capacities, properties of characteristics "leads to unresolvable ambiguities and paradoxes in the interrelation of experimental data and ..... (lack of) integration with research findings of anthropologists" (Cole and Scribner pg 191). Luria, operating from a dialectical materialist position asserts that complex cognitive processes are organized 'functional systems.' The components are represented in different areas of the brain but operate through a combination of different constellations depending on the task at hand (Luria 1966). He states further that neither the components nor the functional relations into which they enter are already formed at birth. Each individual's development forms through experience of their particular social environment. In his own

words:

> It is now generally accepted that in the process of mental development there takes place a profound quantitive reorganization of human mental activity, and that the basic characteristics of this reorganization is that elementary, direct activity is replaced by complex functional systems, formed on the basis of the childs communication with adults in the process of learning (Luria quoted in Simon pg 20).

Thus a socio-historical or dialectical materialist approach sees cognitions as 'interactive historical processes' and not as 'capacities'. Also, this view does not see environment as 'causing' cognitions of a particular type, rather it is through the persons' activity in that environment, and a child's relations with adults, school, his peers and natural and man-made phenomena that his/her consciousness develops. Some research will now explicate how different cognitions develop cross-culturally.

3.2 Culture and 'Abstract' Thought.

Many studies e.g. (Dasen [1972], Murray [1961], Price-Williams [1961], Moll [1984 - unpublished thesis]) have demonstrated that there is a retardation of cognitive development, particularly in the attainment of 'formal operations,' amongst less Westernized cultural groups. Vygotskii, being a dialectical materialist, argues that this must be seen

a process which takes place within a socio-historical context and is not merely a result of lack of intellectual ability.

Formal operations can be regarded as a form of 'abstract thinking.' Abstract or conceptual thinking is used by psychologists to mean the ability to classify or to group things together at various levels of "abstracted" difficulty. The development of abstract thinking as espoused by Vygotskii may well be contrasted with IQ theorists Jensen and Cattell's conception. Jensen (1969) differentiated two 'kinds' of intelligence which, as has been seen, he contested were innate capacities. His 'Level 1' intelligence involved associative type rote learning whereas his 'Level 2' involved higher level intellectual functions associated with "abstract thinking." One was either born with only level 1 or with both. These levels are very similar to Cattell's 'fluid' and 'crystalized' intelligence:

> Fluid intelligence is the capacity for new conceptual learning and problem solving, a general 'brightness' and adaptability, relatively independent of education and experience, which can be invested in the particular opportunities for learning (encountered) by the individual in accord with his motivations and interests
>
> and
>
> crystalized intelligence, in contrast, is a precipitate out of experience, consisting of acquired knowledge and developed intellectual skills
> (in Lawler pg 70 - 71).

Contrary to the 'innate ability' conclusions reached by Jensen and Cattell, when Vygotskii (in Luria 1976) discovered that some people had not moved beyond concrete operations (level 1 or crystalized intelligence) to more abstract formal operations (level 2 or fluid intelligence) he argued that historical circumstances determined that they did not move beyond practical cognition. The lifestyle representative of peasants, and most people from poor urban communities, necessitated only manual labour, thus not needing, and hence not developing more abstract cognitive processes.

There have been a number of substantial studies which indicate that Cattell's notion that abstract cognition develops 'relatively independent of education and experience' is untrue.

A Western individual usually develops cognitively in the following way. Classifications first take a 'perceptual' form such as colour, size, shape and position. This is followed by 'functional' classification in what things can <u>do</u> or what can be done with things - and finally to the groupings of these together under a common class name (Bruner et al 1966). This development does not move beyond the first or second classification amongst most

non-industrialised people. Contrary to Jensen and Cattell, Western schooling has been claimed to be the crucial factor.

In a study by Greenfield 1966 (quoted in Cole and Scribner, 1974), it was found that children of the Wolof tribe in rural Senegal who had attended school, be it in a city or at a "bush school" performed very similarly to a Western child. Colour preference decreased with age in favour of form and functional groupings. The children who did not attend school rarely used super-ordinate language needed for 'higher' classification and in fact showed greater preference for perceptual classification as age increased. It would appear that a certain 'type' of cognition is shaped by Western schooling.

However, the simplistic notion that schooling was the only factor in determining the development of abstract cognitions was challenged by Scribner (in Cole and Scribner, 1974). She showed that not only schooling, but contact with Westernization increased abstracting processes. She got various groups to sort cards into similar categories to those Greenfield had used. However she extended her groups to include high school students (adult), non-literate adults from a transitional-type village holding 'cash jobs,' nonliterate farmers from a traditional village near a

road and nonliterate farmers from a traditional village five hours from the nearest road. Also there were matched groups of children in the 10 to 14 year age group and in the 6 - 8 year age group.

Most high schoolers formed groups into 'taxonomic' categories (e.g. needle, scissors, pins) 'cash workers' and road villagers used category groupings (though usually functional ones of this type: needle, scissors, shirt) although they were illiterate. However the bush village grouping dropped off sharply, showing much more jumble though there were indications of adhering to some other category influence. The children (6 - 8 years old) could not categorize at all - whether at school or not. The 10 - 14 years old non-school subjects could not categorize while their schooled counterparts made some taxonomic categorization.

One cannot here attribute 'abstraction' abilities only to schooling, as the adult village group, though they had no schooling at all, performed on a par with, or above, the 10 - 14 year old school group. Thus it would seem that some influence which leads to abstraction processes takes place through minimal contact with Westernization, other than through Western schooling. It would seem that the tasks required in schooling as well as tasks which are

Western influenced appear to bring adaptation to cognition in the form of more abstract thinking.

Further, a study by Irwin and McLaughin (1970) has shown that inability to abstract in rural populations - certainly in the population of Mano rice farmers with whom they worked - is exaggerated by the type of test material. These researches gave the same cards as used in previous experiments to detect abstraction processes to their rice farmer subjects, but in addition, they devised a task which was identical in principle but containing objects (rice, bowls) known in the culture. The adult subjects scored substantially higher using objects familiar to them than when playing with the unfamiliar cards. This has vast implications for so-called 'culture-fair tests!'

The claim that 'abstract', 'fluid' or 'level 2' thinking is innate and not bound up with Westernized schooling, tasks and materials appears to be false. In fact the level of abstraction needed seems to be the main determinant.

3. Culture and Perception

Definitions of 'intelligence' (pg 14) seem to vary as to whether intelligence includes the capacity involved

at the sensory level - most seem not to. Yet differences at this level are bound to effect "intelligence" at any other level. Perception is usually regarded in psychology as "processes by which people organize and experience information that is primarily of sensory origin .... also .... perception involves active operations and information and is not a passively received 'direct copy' of the external world" (Cole and Scribner, 61 - 62).

The first perceptual difference found is at the level of representation on a two-dimensional surface. Herskowits (in Cole and Scribner, 1974) found that when he presented photographs to a group of people with no Western contact, not only was there no recognition of the representation (even though this may have been a picture of a close relative) but the people didn't know what to <u>do</u> with the paper.

Other studies such as those by Hudson in South Africa (Hudson 1962) and Mundy-Castle (1966) in Ghana showed that there was recognition of the objects represented, however 'perspective' or 3-dimensionality were not recognized. Hudson (ibid) has also shown that African children perceived a man ascending stairs as maimed - one leg shorter than the other and that African children, when asked to draw a cow in profile, showed all four cloven hooves, two horns and two ears,

indicating a combination of profile and frontal views. Perception amongst non-Western groups appears to be "matter-of-fact" whereas perception in Western people involves greater conceptualization.

Berry (1971) has argued that ecological necessity determines perceptual processes. To test this hypothesis, he gave four groups, the Temne of Sierra Leonne, New Guinea Natives, Australian aborigines and Eskimos, a test of ability to make fine discriminations and three 'tests of spatial skill.' The four groups were ranked according to the importance of hunting. He hypothesized that hunting requirements would necessitate the ability to discriminate well, as well as astute spatial perception. Results showed that improvements on all four tests paralleled the increase in hunting requirements. This led Berry to conclude that "the psychological underpinning of technological development, often isolated as spatial ability, are shown to develop in relation to an ecology, which by way of technological change is open to change itself" (1971 pg 335).

3.4 Culture and Logical Processes

One of the central components seen by most IQ theorists as indicative of 'intelligence' is the

capacity to reason logically. However, Luria (1971) has found that responding to even simple verbal syllogisms is a learned convention. In a study in Central Asia in the early 1930's, he presented two kinds of syllogisms to collectivized and uncollectivized peasants in this area. The one kind consisted of content related to the practical experience of the villages, whereas the other kind bore no relation to familiar practical life. An example of the practical problem was the following:- "Cotton grows where it is hot and humid. In the village it is hot and humid. Does cotton grow there or not?" A syllogism needing exactly the same logical cognitive process, but which was not connected with practical experience was, for example:- "In the north, where there is snow all year, the bears are white. Town X is in the North. Are the bears white in that town or not?" Both collectivized and uncollectivized groups had no difficulty handling the first type of problem. Yet though the correct conclusion was drawn, support for their answers amongst the uncollectivized group, was through appealing to the facts of experience, "and that's the way it is. I know myself!" In the second kind of syllogism, almost all the uncollectivized, nonschool peasants replied in a similar way, "how should I know what colour the bear was? It was your friend that saw him, ask your friend." They were unable, or refused,

to use a purely symbolistic conception. On the other hand, where people had had even a small amount of schooling or who were engaged in a collective planning of farm production were able to see the syllogistic assumptions in order to drawn conclusions. The same finding was recorded by Scribner (in Cole and Scribner, 1974) using a variation of Luria's syllogism in a different population sample.

It would seem that as with abstraction, 'logical reasoning' as conceived from a western perspective is not <u>needed</u> to operate effectively within the practical environs of a peasant economy - and <u>hence</u> not developed, as biologically both groups are the same.

3.5 <u>Summary</u>

It appears that cross-cultural research dealing with the acquisition of cognitions has been almost totally neglected by IQ theorists. Abstraction, perception and logical reasoning are often quoted as being aspects of 'intelligence,' (see pg 14), yet the fact that socio-historical variables have been shown to affect their attainment, has been ignored. The fact that <u>activity</u> within a <u>production mode</u> has time and again been illustrated to be fundamental in forming cognitive 'style,' seems to have had no impact

on IQ theory.

This type of research has been neglected in favour of positivist studies such as those in Chapter II where debate and research seems to be no nearer reaching a conclusion than it was at the beginning of the century, and where 'facts' are interpreted in line with one's preconceived ideas.

It would seem that the reason that IQ research has limited itself to positivist inquiry while neglecting all else, is because of the ideological gain which this research has been able to offer capital.

****

CHAPTER IV

IQ AND IDEOLOGY

A case shall now be made for the notion that IQ tests have maintained their prominent position in Western society not because of the objectivity of the facts (as has been seen the facts are not objective) but largely because of the political use that is made of them. It shall be argued that the interests of the bourgeoisie have been central in determining mainstream opinion and use made of IQ tests.

First a small aside: If the reader is still convinced that the 'science' of intelligence operates outside the researcher's political position even after Kamin, Jensen and Scarr and Weinbergs' position in relation to the black/white adoption study, a study by Pastore (1949) should throw more light on the issue. He studied the political attitudes of a random sample of twenty-four scientists active in the nature/nurture debate and found that of the twelve hereditarians, eleven were conservatives, and of the twelve environmentalists, eleven were either liberal or radical!

4.1 'Innate Superiority' before the IQ Test

Throughout history, or at least post 'primitive communism,' the idea that some people are 'entitled' to social and economic privileges due to their 'natural superiority' has very often been at the ideological centre of the division of society into classes. Because of the importance it has held, it has also, paradoxically, been one of the primary motivators in the dialectical 'movement' of history. For example, the feudal aristocracy's belief in their own inborn superiority over the 'scum' peasantry and labouring poor in France in the 1700's, was a major motivation which led the peasantry to revolt and stage the French Revolution. The revolutionaries called for "Liberty, Equality and Fraternity." It is now historical fact that equality was not achieved. The reason for this was that the revolution was carried out by a peasant/bourgeoisie coalition against the aristocrats. The bourgeoisie carried the flag of egalitarianism not because that was what they envisaged, but because they needed an alliance with the peasantry in order to overthrow the feudal lords and to take power themselves. They could not, even in principle, have adhered to the motto as they needed the same peasantry to work as labour to create profit for themselves.

Of necessity, while the bourgeoisie were entrenching themselves in the social and economic positions of power, the 'innate superiority' theory was dormant. However, moving into the second half of the nineteenth century the working class in Europe had realized that the 'equality' they had revolted for, was not forthcoming. They began to make demands for education for all and for extended franchise. In Britain the franchise was extended in 1867 and universal elementary education was imposed in 1870. It seems that the ruling class during this period had begun to feel unsure of their privileged position and they again needed a theory to legitimize the existing hierarchy. In 1869 (in the period between the extention of the franchise and the imposition of universal elementary education) Sir Francis Galton published his book entitled 'Hereditary Genius' in which he fell back on the idea of 'innate superiority.' The aim of the book, he said, was -

> to show .... that a man's natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the organic world (in Simon; 1980, pg 14).

Whereas theories of innate superiority, prior to Galton's had been 'mere philosophies,' he embedded his theory within the 'zeitgeist' at the time, which was 'science.'

His theory gained rapid acceptance for two reasons. Firstly, research in the social sciences at the time was so unsophisticated (see pg 7) that almost anything measured took the name of science. And secondly what he was saying was what the bourgeoisie wanted to hear.

The fact that clearly biased data was collected in a sloppy manner, that excessively bold inferences were drawn from very ambiguous evidence, and were supported by either persistent refusal to consider plausible alternative hypotheses or 'straw-man' theories to dismiss alternative hypothesis prematurely and unfairly (Blum 1974), did not deter Galton and associates from drawing the conclusions they wanted to draw. Nor did it deter widespread acceptance of his theory. He was writing what the ruling class needed for their future policies, and it was the ruling class who were in a position to declare what was and what was not 'correct' science. They had the power and the means to spread the information. The rhetoric of equality exposed by the bourgeoisie had now found a scientific justification to revoke it.

From this period onward mental tests (predominantly the intelligence test) have been used in most Western countries as scientific backups to policy. Through this period, at different times, capital has had different needs, and the intelligence test with a

different emphasis placed on it to suit different needs, has been used to justify the want of the power-elite.

4.2 The Prominence of Intelligence

Before it is demonstrated just how policy influences intelligence tests and how it benefits capital, it is imperative to see why intellectual activity - rather than say physical strength - has taken on such importance under capitalism.

Herrnstein (1973) asserts that high or low intelligence is the main factor determining success in a capitalist country. In a 'meritocracy,' with the provisor of all opportunity being equal, social and economic success would be paralleled by intellectual ability (see introduction pg 3). Herrnstein regarded this as the most fair system in that what one is born with, rather than what one is born into will determine ones position in society. Inequality between individuals is seen to be natural and hence desirable. In sum, one is born with a certain amount of intelligence which is unevenly distributed in a population and it is this innate capacity which would, and should, determine one's position in society.

There have been various criticisms of this theory.

Two of the more important are firstly that stratification in any known society is based more upon social class background and amount of years in school, than on IQ scores per se. (Caxon and Jones 1975). 'Equal opportunity' seems to be a fallacious concept in itself, in that one is always born into a specific environment which determines ones life. And secondly there is far from adequate evidence to say that IQ tests assess all round ability which makes for social and economic progress (see Chapter II).

An opposing view as to why intelligence holds such great importance under capitalism is a dialectical materialist one. This theory asserts:-

Control of the natural resources which people need to survive is central to capitalists. But 'nature' must be transformed into products, and in order to do this human labour is needed. People are thus forced to sell themselves as labour in order to survive. With the growth of capitalism and technology, with increased mechanization, the production line and increased 'consumerism,' the proletariat has been forced primarily into jobs requiring their physical strength or into productive activity which requires very little in terms of 'intellectual' skills. Work on a production line is usually one-dimensional and methodical without variation and requiring little

'thought' as such.

This is particularly important in view of Marx's (1977) and Vygotskii's (1972) assertion that consciousness develops through 'activity.' Work not requiring abstraction or logical reasoning does simply not produce abstract or logical thinking. On the other hand the conceptualization in the factories, the abstractions and the logical deductions are carried out by the factory management. And as mechanization increases on the one side the work becomes more menial and on the other it requires greater 'intellectual' activity. Though it is true that monopoly capitalism requires more semi-skilled labour this still does not require 'high intelligence.' This domain is reserved for the bourgeoisie and a class of petit-bourgeois scientists, doctors, lawyers and like professionals.

In this way 'intellectual labour' has become associated with wealth and status. It is the 'ability' which most people wished they 'had.' 'High intelligence' has been accepted in its association with privilege and the IQ test has provided a scientific 'rationalization' for the contradictions in bourgeois society. 'Intelligence' has become one of the most important factors in determining a persons 'justified' future.