

The Social Use of Intelligence Tests

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This paper seeks to apply historical materialism to an examination of the process whereby psychological tests have such an effect on our lives. In order to do this, I shall employ the method suggested by Les Levidow (1979:15) when he asks,

"What kind of society has IQ science helped to create? This means asking what kind of new relations between people IQ science helped to mediate and therefore what kind of science it is and what kind of truth it is. And as for its ideology, this means asking what kind of 'ability' it defines and reproduces, what kind of social relations it represents as somehow rooted in the nature of things and therefore as natural and eternal".

To tackle these series of questions, it is important to understand what uses psychological tests have in our society and thereby discover in what social situations they appear. Psychological tests have a wide application ranging from their aim to measure individual difference as such, to their use in schools and in work. All these are inextricably linked and provide a partial answer to our search for their social usage. The important point, at this stage, is to realise their focus on individual difference for this has a profound effect on their use in society.

Their supplementary function is measurement and thus we need to investigate what these tests measure when they seek to establish individual difference. If we take intelligence tests as our main concern, then we find that, even after many years of discussion, those who use these tests are unable to say what psychological processes they assess. They will simply state that it is intelligence or educability. The fact that they only measure some vague notion of intelligence in terms of

individual difference is vital, as it is my opinion that these tests are designed more to detect a difference than to detect intelligence. Explanations like "Intelligence is what an intelligence test measures" must provide a pointer in this direction. The results give us a single score on an ordinal scale. They do not tell us how we are different or why, just that we are different.

Binet (Anastasi, 1976:10) actually said that,

"In the measurement of the more complex functions great precision is not necessary, since individual differences are larger in these functions."

Anastasi (1976:7) states also that the change of focus of the early researchers of testing was from an investigation of uniformities to provide a generalized description of human behaviour to the measurement of individual differences.

The second focus is comparative, the tests compare people against each other. Anastasi (1976:26) states the use of the standardization sample which serves to establish norms

"Such norms indicate not only the average performance but also the relative frequency of varying degrees of deviation above and below the average. It is thus possible to evaluate different degrees of superiority and inferiority."

Thus it is these three features that we seek to explain and which distinguish intelligence testing

- i) Its measure of individual difference.
- ii) Its ability to compare (relative rather absolute).
- iii) Some scale of 'intelligence'.

We need to investigate the history of the intelligence testing movement to trace i and ii. During the early stages of capitalism, science sought to shake off activity as idle contemplation and decided to dedicate itself to practical tasks.

"The scientific community now had a goal to aim for, - the mastery and possession of nature, and a set of problems to work on." (Albury et al, 1982:74)

Thus they sought to explain, appropriate and change nature. Newton's theory postulated a universe of solid, massy, hard, and impenetrable particles that only moved or changed when acted upon by an external force. So one investigated observed phenomena and experimented with the mechanism that set an object in motion.

Psychology, in opposition to the Wundtian theory that stressed consciousness, was to be the evolutionary theory of Darwin which emphasised individual variation between members of the species and the transmission of these variations through inheritance. Some of the variant features were assumed to enable their possessors to cope better with their environments. Francis Galton, the cousin of Darwin, founder of mental tests and many of the presently used statistical methods, was prompted by these considerations to embark upon the beginnings of differential psychology. Darwin emphasised behavioural rather than constitutional aspects:

"Darwin was hard put to give any intelligible account of the way in which the natural variations occurred and turned to the argument of biological heritage from one generation to the next." (O'Neill, 1982 : 60)

Galton observed in his maths exam at Cambridge, that he was at the upper end of a statistical distribution (designed by himself). O'Neill adds that Galton gathered data to convince himself that comparable variations were general. He believed human abilities were also inherited and he obtained his data from family trees. They showed that people of outstanding ability were more likely than others to have distinguished parents, distinguished off-spring and distinguished relatives:

"He substituted for the conception of individual differences as discrete qualitative types the conception of them as constituting quantitative continua with a typical form of distribution." (Ibid : 60)

Cattell (O'Neill, 1982 : 72) in his paper "mental tests" sought to give psychology the certainty and exactness of the physical sciences by applying a series of mental tests and measurements to a large number of individuals:

"The results would be of considerable scientific value in discovering the constancy of mental processes, their interdependence and their variation under different circumstances."

And Spearman proceeded to tidy up the mental tests by means of a whole series of statistical techniques. This is how intelligence tests evolved. Thus tests rose from a desperate need to do science, and from a preconceived idea of intelligence based on an evolutionary theory. Since the theorists saw themselves as being 'intelligent' they strove to find tests that would determine this and tests that would differentiate themselves from other people. In manipulating certain statistical data by testing

large quantities of people, they could ascertain that these were the human mental processes and that they were validated by science. They also certainly had definite goals about who were more intelligent, the reason why, and strove to protect this. As Thorndike so neatly put it in 1927,

"In the actual race of life, which is not to get ahead, but to get a head of somebody, the chief determining factor is heredity." (Rose 1976 : 112)

Francis Galton in 1869,

"The natural ability of which this book mainly treats is such as a modern European possesses in a much greater average share than the men of lower races."

And L.M. Terman in 1916 in "The Measurement of Intelligence,"

"If we would preserve our state for a class of people worthy to possess it, we must prevent as far as possible the propagation of mental degenerates" and "moral judgement, like business judgement, social judgement or any other kind of higher thought process, is a function of intelligence." (Matthews, 1980 : 136)

Thus we come to the concept of intelligence. Henderson (1979 : 142) says that we need to direct ourselves to the social basis of the concept, but before we can do this, we need to establish that the concept has a social basis.

Anastasi (1976 : 23) states that firstly

"the test items need not resemble closely the behaviour the test is to predict. It is only necessary that an empirical correspondence be demonstrated between the test and it"

And further

"By studying the validation data, we can objectively determine what the test is measuring" (p.29).

If we then study the validation data of IQ tests, we find them to be people's scholastic achievement or grades and initially the teacher's assessment. Thus the IQ test measures what a person is likely to achieve at school (it is important to note that it does not measure one's actual ability at school). I intend to show later that the school is not a neutral proving ground for individuals but tends to favour a particular social class and that its main emphasis is not only the transmission of certain kinds of knowledge but also the dominant ideology.

Brody and Brody (1976:88-89) are puzzled by the close correspondence between IQ score and scholastic achievement and question its use:

"... the relationship is of little use to the schools since they have the information about grades. A measure that predicts grades with a correlation of .6 is not a useful surrogate for grades. Therefore, the fact that intelligence tests predict school grades is of little practical or theoretical interest."

If they have little practical or theoretical use in schools, what is their function and why despite all the tremendous criticism that they face, do they still remain with us?

Let's turn to some of the items in the test and hopefully, this may reveal more about their nature.

Anastasi (1976:6) describes Seguin's work with the mentally retarded. He experimented for many years with what he termed a physiological method of training. By these methods, severely retarded children are given intensive exercise in sensory discrimination and in the development of motor control. An example of one technique he used was the Seguin Form Board, which is now a non-verbal test of intelligence. The SSAIS Manual (Madge, 1980:27) describes it as such

"It is a test based on the assumption that the synthesis of parts into an organized, integrated whole constitutes a valid criterion of intelligence.

This jump from a training technique of sensory discrimination and motor control to an assumed intelligence can only be a leap of faith. The Manual agrees by stating,

"Its correlation with general intelligence is fairly low to medium."

Mediated learning, like the training technique described, is a social event and all that this test can say is that in comparison to other people, a person can do this task better or worse than the average. I would like to make two points here - a) that it is only one form of measuring this assumed ability and b) the evaluation process itself is a socially defined one (We are measured against each other).

However, let's turn to one of the more "reliable" measures of intelligence - vocabulary. Jensen (1973:74) argues that

".... much of what is tapped by IQ tests is acquired by incidental learning, that is to say, it has never been explicitly taught. Most of the words in a person's vocabulary were never explicitly taught or acquired by studying a dictionary."

He adds (p.75)

"Even after repeated drill, it will quickly fade beyond retrieval"

and concludes

"this is mainly the reason that vocabulary tests are such good measures of general intelligence ... even those that are entirely non-verbal."

In attempting to find a solution as to why even rote learning will not aid vocabulary, he adds (p.75)

"If there was no conceptual slot that needed to be filled, that is to say, no meaning for which the individual has a use and which the word serves to symbolize, it is exceedingly difficult to make the definition of the word stick in the individual's memory."

This tells us three things a) that a person's own activity is closely associated with word meanings and b) the person must have a use for them, i.e. words only become meaningful, when we use them to symbolize something in our daily lives. c) words have social origins. Thus if we examine the SSAIS Test and on one card, there is an item of a person trying to catch a train and people working on a car assembly line. The word "procrastination" for working class people could be more likely applied on the car assembly plant (a hidden form of resistance) than their daily frustrated attempt to rush from work and catch a scarce train. For middle class people, because they have more leisure time at their disposal, the key image is the train.

Strangely, Vygotskii would agree with Jensen but for different reasons. It would certainly not be incidental learning but one's vocabulary would rely on social and historical factors.

Luria (1971: 262) argues,

"In short, we must seek the roots of such higher psychological functions in the mastery of general, human, historically formed experience."

Reality then, is reflected, in the significance of a word and thus assists the process of direct sensory reflection of a world. As Luria and Leontiev (1967: 347) say

"It is an idealized mental form of crystallization of social experience and social practical activity of people."

People master the significances already formed in their lives. A person's personal consciousness is social in nature. According to Vygotskii, the conditions of social life determine specific features of people's psyche and the development of consciousness is directed by people's practical activity in reality. (Vygotskii rejected attempts to simply infer people's consciousness directly from their practical activity). Child development, including the development of specific abilities, is a matter of forming out of history. Marx's thesis was that people do not have a fixed human nature but continually create themselves and their consciousness through productive activity. Peoples' 'natures' change as people work to transform nature. So, in people's productive activity, we not only produce material products but mental products as well (law, religion, science). Therefore, productive activity encompasses both manual and mental labour. As Matthews (1980:86) states

"Consciousness arises out of and is shaped by practice and in turn is judged in and by practice."

It is not a mechanical process, but a dialectical one. It is people working on the world (nature) that develops their consciousness. Marx rejects the notion of society being a collection of isolated, atomistic individuals each having their own private interests to pursue. People are always involved in a set of relationships, primarily those concerned in their productive activity i.e. their mode of production. Consciousness then must be explained, -

"either from the contradictions of material life, from the existing conflict between the social productive forces and the relations of production" (Fischer, quoting Marx, 1978:81)

So in order to understand what has gone on before and what we seek to do! We have established the fact that IQ tests wish to test individuals and compare them, but the items in the test are socially derived and seek to test social phenomena and that they wish to differentiate people on this scale and compare them, in a hierarchial form from superiority to inferiority. However, they did not seek to establish the differences between any people, but it does seem they had particular people as their object of study. Middle class women initially scored low on the test, items were juggled around and this was corrected for, but Anastasi argues

"Insofar as culture affects behaviour, its influence will and should be reflected in the test. Moreover, if we were to rule out cultural determinants from a test, we might therefore lower its validity against the criterion we are trying to predict."

Matthews (1980 : 135) indicated that the disadvantaged groups of society initially scored higher on mental tests. Thorndike had this to say (1980 : 135)

"the apparent mental attainments of children of inferior races may be due to inhibition, and so witness precisely to a deficiency in mental growth"

Subsequently items were dropped from the tests. In tracing the founders' of the IQ tests, let's try to understand their position. Galton's science informed him that the only material to work with was observed data. He noticed in the society people of different social status had different degrees of success and he assumed they were the more "intelligent", so he strove to measure this "intelligence" and the differences that people exhibit. Later when the "inferior" groups scored higher, this did not tally with the observed data, and so tests were rectified accordingly.

Thus, in terms of our previous discussion, if we want to understand why this particular form of consciousness developed (the need to test individuals on an intelligence scale and find the differences), we must trace the history of people's productive activity. It is from this source that we will find why intellectual functioning became so paramountly important as a fact of social life. Henderson (1979 : 142) reports that the concept of intelligence is unknown in non-industrial society.

I would like to state quite clearly that I am not associating or equating intellectual functioning with what intelligence tests measure. It has been shown from less ethnocentric studies, that despite the very real material deprivation which so called "culturally deprived" children suffer, the assumption of cognitive and linguistic deprivation or deficiency has no basis in reality (see Farrant W. (1979), Labov W. (1978), and Cole M. and Scribnew S (1974). Intelligence testing, on the other hand, can claim very little ability to measure intellectual functioning.

So, I am not trying to explain the nature of intellectual functioning but to show why intellectual functioning came to be isolated and given so much value. It became the distinguishing feature of people by which one judged people and by which we still judge them today.

Capitalism is characterized by the private ownership of the means of production, which constructs two basic classes in society that are in conflict with each other. Capital owns the means of production while workers have no access to it, including the products of their labour. Commodities are produced for exchange value and workers are similarly transformed into commodities. Workers have only their labour power, or capacity to work and by the nature of the system, have to sell it to the capitalist, who puts it to work. This is the basis of class division and class rule in the society. The history of capitalism is also the history of class struggle and the movement of capital is directed by this process.

In the formative period of capitalism, when bartering was still a way of exchange, it was difficult to establish a surplus or accumulate. Capital realised that to push costs down one must "buy cheap and sell dear." They needed to master and own natural resources. However, unless nature is worked on, there is no transformation of these resources into products, and so the control and supply of human labour or resources became paramount.

The craftsmen who were involved in the daily chemistry of production, through experience and judgement, occupied a pivotal position of authority and entrepreneurship. They had enormous control over the production process as they had all the skills through their practical training. They also controlled who could enter the job, the hierarchy being linear rather than pyramidal - the apprentice would one day become a journeyman and possibly a master later on.

As long as the control of the production process lay in the hands of the worker, capital's hands were tied. Capital sought to reduce this control by the introduction of machinery that would absorb part of the worker's skill. This is the process usually referred to as "deskilling and re-skilling" and implies the undermining of the craftsmen or skilled worker.

Andrew Uri in 1835 (Berg, 1979: 68) refers to this process,

"It is in fact, the constant aim and tendency of every improvement in machinery to supercede human labour altogether, or to diminish it's cost, by substituting the industry of women and children for that of men, or that of ordinary labourers."

Marglin (1978: 14) stressed the search for a technologically superior organisation of work was secondary to an organization which guaranteed to the entrepreneur, an essential role in the production process, as integrator of the separate efforts of his workers into a marketable product and that in this substitution of the capitalists for the workers control of the work process, the worker's choice became (pg.14):

"from one of how to work, and produce based on his relative preferences, for leisure and goods, to one of whether to work or not to work."

E.A.G. Robinson in 1931 (1958: 17) while arguing for this division of labour, unwittingly refers to the inventiveness of workers.

"By the separation of a single process, and its constituent parts, the task of devising a machine to take over much or all of the labour and skill of the worker is facilitated Many of the small inventions which have done much to simplify machinery to make it more nearly automatic, have been the work of operators who, during the hours of tending a machine have consciously or unconsciously analysed their own part in the rythm of the operation, and have found a way of throwing yet another task on to the machine itself."

Contrast this with Frederick Taylor, the founder of scientific management (Matthews, 1980: 189), who contributed much to the detailed fragmentation of work.

".... the man who is fit to work at any particular trade is unable to understand the science of the trade."

Thus the worker whose control is wide enough to see how each operation fits into the whole is turned into a worker confined to a small number of repetitive tasks. It is out of this particular form of the division of labour, that the separation between conception and execution came about. Sarup (1978: 158) describes this process in which each of the operations are separated from each other, they are assigned to different detail workers who are unable to carry through any complete production process.

Thus (Sarup, 1978 : 158)

"the skill and knowledge of the worker is separated from the labour process. .. Mental labour is separated from manual labour, but mental labour itself is then further subdivided into those who conceptualise, plan for others, and those who execute the work."

Workers now perform simplified jobs but without comprehension of their underlying reasoning. Their output increases but their level of training decreases and knowledge of the process becomes centralised in the hands of a few. This monopoly is used to control the steps of the labour process and its mode of execution. Science has become a part of this monopoly and develops machinery and technology suitable for this process.

Capital, in breaking peoples' skills down, redefines them in its own terms. The knowledge and division of labour are now used as instruments of control over the labour process and what was originally the creation of the worker, is removed from him/her and turned against him/her. This is the process of alienation.

Alienation hastens the process of displacement as more and more people face unemployment and are excluded from any productive activity at all. Knowledge becomes capital as capital seeks to monopolise, define and narrow it according to its interests. A polarization of wealth occurs. At the one end there is vast wealth and at the other, many are paid less than in a living wage. Skill, too, becomes polarized - mastery over the labour process through scientific, technical and engineering knowledge, is dominated by management, while there is a fall in the skills of many.

Thus, in this separation of intellectual and manual labour, between conception and execution, we can discover the need for a consciousness which stresses intellectual functioning. Capital sees intellectual functioning as its own and seeks ways to affirm it. IQ serves as a measure of discrimination whereby a hierarchical scale from non-intellectual functioning (manual labour) to intellectual functioning is created, which in turn functions to control and regulate social life.

IQ tests reaffirm this. "Intelligence" serves as a measure to define persons, judge them and predict their role in society. It becomes a hegemonic definition in that people regard this form of intelligence as

the only one and deny all other forms. As it favours the dominant group in society, it defines intelligence in their interests and can be seen to be serving the same purpose as "deskilling and reskilling." Thus, if a person does badly on a test, Anastasi says (1967:299)

"The cultural differentials that impair an individual's test performance are likely to handicap him in school work, job achievement, or whatever other subsequent achievement we are trying to predict."

and on pg. 300.

"If these differences in present developed abilities are ignored or obscured by any assessment procedure, the individual will be assigned to a job in which he will fail or be exposed to an educational program from which he will not profit."

and finally (1976:37)

"It is certainly not in the best interests of the individual to be admitted to a course of study for which he is not qualified or assigned to a job he cannot perform or that he would find uncongenial."

Thus failure in life is explained to individuals, not in terms of their lack of access to the wealth in our society, but as a consequence of their lack of "intelligence."

Another pointer to the IQ's social discrimination is its validation data i.e. scholastic achievement. Janet Shapiro (1981:104) states that liberal analysis of schools assumes that people are differently equipped, by nature or social origins, to occupy the varied economic and social levels in society and that the role of education is to sort out, on the basis of 'equality of opportunity', just how they are equipped and for what they are best suited. The result is the myth of 'social mobility'.

She states that syllabi, text books, teachers and the language used in the educational system are all based in a middle class ethos. The middle class child has better facilities for studying at home, better libraries, better equipment at school, parents who share a common background with the teachers, and is probably better fed, better taught and more encouraged. Added to this, middle class children have more security in the sense that they have the time and money to study while working class children have to either go to work themselves, or become responsible for much of the domestic life since both parents are at work.

Thus, the function of the school has been to restrict access to 'knowledge' and qualification to those who are socially qualified to exercise authority. Shapiro, 1981 : 101):

"Education functions to feed workers into different levels in the occupational structure; in terms both of skills and expectations. Moreover in so called democratic societies where occupational stratification is supposedly a function of merit rather than birth, educational achievements serve as a justification for the disparity in rewards at the varying occupational levels."

Thus education serves to reproduce this division of labour, and slots people into their suitable places in a fluid and hierarchical division of labour. If IQ tests are validated on these achievements, achievements which are already socially determined, we can reach the following conclusions with Matthews (1980 : 136)

- (i) All intelligence tests begin with the identification in advance of groups that are accepted as intelligent and unintelligent. These then become the groups against which the tests are validated.
- (ii) The raw material of the "science" is an abstraction from the real world, it is a socially produced, theoretical object - the IQ score. This means it has no concrete properties itself but is surmised from certain behavioural tasks.
- (iii) Judgements of intelligence are comparative and relative rather than absolute. (It is oddly strange that the results were validated on middle class people and we get above average, average and below average intelligence.

IQ science examines what is social and treats it as natural. Matthews, (1980 : 118) asserts that

"Ideology is thought which refuses to understand itself as historical."

Marx (Matthews (1980 : 118) says of the classical economists:

"The same men who establish social relations in conformity with their material productivity also produce principles, ideas and categories conforming to their social relations. Hence these ideas, these categories are no more eternal than the relations which they express."

Ideologies are not necessarily true or false but are partial views in the sense that they are limited because they express the view of only one group or class. They are partial aspects of reality which are

imposed as the total or only possible view. They are also "structured systems" in that they are coherent outlooks of particular social groups or classes who share broadly similar material interests. Inherent in this definition, then, is a recognition of social conflict.

How does IQ do this?

It asserts:

i) IQ is hereditary

This is accurate. IQ scores do not change from one generation to the next. However, it is a partial view when it represents these differences as genetic or biological. This implies they are fixed and immutable (this is incorporated within the tests anyway). The social relations that exist today are represented then as natural and resistant to change.

ii) IQ measures intelligence

It is rather a measure of one's class position and one's likely success in the social formation, we either possess it or we do not. It is a quantitative term set on a hierarchy, and as such replicate the hierarchical nature of society. (Ruling class people have more than working class people). It is a continuous scale which implies there is no conflict in society and the test actually measures one's conformity (consider items in vocabulary and comprehension (parliament, trials, money)).

iii) Intelligence is an important determinant of success

As Henderson (1976 : 148) says when he reverts the argument

"due to intelligence, people are in a privileged position," to "due to their privileged position, people are 'intelligent'."

However, it is partially true in that people who score high on IQ generally succeed in life rather than those who do not. This is due rather to the status accorded to ruling class positions which are rewarded by wealth. The assumption here is the meritocratic one, which is, that people with high social status jobs need to be rewarded the most. These people will only work for gain and as their skills and abilities are so needed and are so scarce in society we need to attract them with high wages. Chomsky (1977 : 33) shows that the people who can choose their occupations, choose those that suit their interests and that they find them most fulfilling.

In short, while IQ tests do detect differences between people, they are class differences and not individual differences. They misrepresent the

relationship between classes in society and help to reproduce the status quo. So it is not people's abilities or skills that determine their life chances, but their relationship to the mode of production.

These differences lie within the design and operationalisation of the test. The testing situation is a social situation which simply replicates the situation at school:

- (1) Only certain skills are tested in a uniform manner as in school.
- (2) The control of the test situation lies largely outside the control of the testee, as in schools where the student is subordinate to the teacher.
- (3) Motivations for doing the test are extrinsic to it, - one gets an IQ score, a job as in school where we get marks, grades, certificates, position in class, teacher approval.
- (4) Rewards are unequal, for someone to succeed others have to fail, - we are always compared to someone else.
- (5) Competitiveness rather than co-operation is the basic relationship of people doing the test. Co-operation at school is called "cheating".
- (6) Rule conformity is highly valued.

The SSAIS Manual (Mudge, 1980 : 46) in discussing the role of the tester in the situation, says that the tester can detect the person's personality through the test.

"... the basically matter-of-fact practical, no-nonsense young male examiner who is aware that children are in awe of his manner. When he examines a boy who sits on the edge of the desk, pops up and down with no attempts at self-control, whistles loudly as he works, and accuses the examiner of 'tricking' him, he is able to conclude that this test behaviour was not induced by the examiner's covert acceptance - and could be characteristic of a poorly controlled little boy, who has not accepted authority."

Other evidence to indicate that this is a very social situation include the numerous "extraneous variables" that affect the testing results. These vary from race of examiner, whether examiner is a stranger or someone familiar to the use of desks or chairs with arms or without, and the type of answer sheet. (Anastasi, 1976 : 33)

So, we can see that if we do not answer Les Levidow's questions (pg.1), these tests mediate the relationship between capital and labour in the service of capital. As a science it is atrocious and acts as an ideology to protect these interests.

Psychology in its further service to capital, not only aids it indirectly, but directly and has become its servant. A historian (Matthews, 1980 : 39) said this about scientific management. It

"not only conditioned the industrial climate for the psychologists, it determined to a large degree the direction, scope and nature of psychological research."

Once capital had created a particular division of labour which meant the fragmentation and destruction of skill, it sought to split these even further. E.A.G. Robinson (1958 : 15) states that there were 7,882 jobs in the Ford factory. He explains their advantages.

"A rhythm of work and an economy of motion may be evolved, ... which will make the work less fatiguing, and enable the worker to keep up a high rate of output for a longer period. Less thought and concentration will be necessary to ensure that each movement is that which is next required, until the whole action becomes automatic."

The process of selection, categorization, and elimination fits people into ever changing narrower categories. The person is moulded and adapted according to the needs of the organisation. Psychology has devised tests of selection, motivation, attitudes, intelligence and aptitude to serve this purpose. It addresses itself to the problems of management and focuses mainly on the selection and performance of workers.

NIPR was initially attached to South Africa's Department of Defence, the gold mining industry and the iron and steel industry. (Bulhen, 1981 : 28). He adds.

"Under the initiative and direction of Blesheuvel (the founder of NIPR), a host of psychological instruments were developed to screen black mineworkers, aimed at increasing labour-productivity for white owned industries."

Simon Biesheuvel himself states that one of the objectives of Euro-American psychological research in Africa is to gain an understanding of the behaviour of African peoples, to test it, and to determine the extent to which the African behaviour is modifiable. Bulhen concludes about South Africa

"Nowhere else has a scientific speciality been so uncritically embraced or been obsessed with the pre-conception, ideology and mystifying explanations of the colonial oppressor." (See also Bozzoli (1977) and Webster (1980))

Memmi (1965 : 80-89) portrays the further consequences of categorizing people in terms of traits like mental retardation (stupid) or non-productive (lazy). By devaluing the person's skill, this justifies paying people low wages and

"It is in the colonized's own interest that she/he be excluded from management functions, and those heavy responsibilities be reserved for the colonizer."

He asserts that the mechanism of this remoulding is a series of negotiations, - the colonized is not this, is not that. All the qualities which make a person crumble away, his/her humanity becomes opaque and is collapsed into an anonymous collectivity - they are this, they are all the same. The person's private occurrences in her/his life is never considered. She/he tends rapidly towards becoming an object (they know no better, - they are good for nothing).

At the end, people exist as a function of the colonizer's needs and then one does not have a serious obligation toward an animal or an object. A shot directed into a crowd that kills a leader causes people merely to shrug their shoulders. All action against the colonized is justified. This portrait, is at its worst when it is accepted by and lived with, by the colonized. By agreeing to this ideology, the dominated class practically confirms the role assigned to them. This gives society a semblance of stability. He concludes,

"In order for the legitimacy (of the colonizer) to be complete, it is not enough for the colonized to be a slave, he must also accept this role."

Shaw M (1977 : 23), however, reveals that in the Hawthorne studies (an attempt to improve work performance) showed that output was not determined by intelligence, personality or any other individual characteristics, but by group standards. They suggested to control the collective consciousness of the workers through forms of social interaction.

So, while capital seeks to limit and monopolize knowledge, it is evident that they are only able to appreciate certain forms of con-

sciousness and knowledge, and that other forms exist. Farrent (1979 : 125) points to some of the differences between African childhood and middle class childhood in which such needs as independence, responsibility are fulfilled and opportunity to learn through real life experience is displayed. There is also a high level of social maturity. A small example would be toys which are created by the children themselves, rather than manufactured by adults to meet the developmental needs defined by adults. Paulo Freire in his work on literacy indicates how a different educational system can be a vehicle of liberation rather than domination. (See Mackie, 1980).

In class struggle, workers have developed a consciousness, and have since the beginnings of capitalism, resisted against this dominant form of production. (See Cohen, 1978). Students too have displayed a similar form. In 1980, the 'coloured' school children boycotted their schools and in a pamphlet titled "From the School to the People" they said.

"Our parents have got to understand that we will not be "educated" and "trained" to become slaves in a apartheid-capitalist society so we, together with our parents, must try to work out a new future. A future where there will be no racism or exploitation, no apartheid, no inequality of class or sex".

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