

SIR CYRIL BURT, Professor Psychology at the University of London has drawn considerable attention to himself, because of his claim that working-class people are, on the whole, less intelligent than their middle-class counterparts.

Sir Cyril is regarded by many as one of the world's most eminent psychologists and he is one of the few to receive a Knighthood.

He maintains that intelligence is largely the result of inheritance—that it is passed on from father to son—with environmental experiences contributing little.

Sir Cyril's views naturally provide great ammunition for right-wing Tory educationists who, in their notorious 'Black Paper Two', have demanded a drastic cut-back in educational facilities for working-class children. (See 'Crisis in Education', Workers Press, October 17, 1969.)

The Black Paper says, 'what is the use of trying to develop children's intelligence by educational methods, if intelligence is largely inherited?'

In case anyone thinks Sir Cyril's views have been distorted or misquoted, it would be useful to see precisely what he has said:

... differences in intelligence ... result from differences in genetic constitution (and) they are to a large and measurable extent transmitted from father to son. Moreover ... there has been ... a natural tendency for individuals of high intelligence to rise in the social scale and for those of low intelligence to drift downwards; and their children tend usually to inherit the high or low intelligence of their parents. The cumulative effect is a marked difference in the average intelligence of the different social classes.

Hereditarianism is a process by which physical characteristics are transmitted from parents to offspring.

The actual mechanism of heredity is the function of genes, minute particles of biological matter thousands of which exist in long strands called chromosomes.

These chromosomes exist in every one of the millions of cells in our bodies and in the normal human cell number 46.

Genes play the role of biological blueprints, determining the way in which cells multiply and differentiate from the first multiplication process of the ovum (fertilized female sex cell) to the development of the mature organism.

It is these genes that determine, in a process of interaction both with their environments and among themselves, most aspects of our biological structure and functioning, including the structure and functioning of our brains.

Non-hereditary constitutional factors that affect intelligence include damage to the brain in early life or during the mother's pregnancy.

This can be caused by direct mechanical damage such as blows on the head or difficult delivery at birth. It can also be caused by infection or poisoning either of the child after birth or of the mother during pregnancy.

complex situations). A number of experiments have shown that we do in fact 'learn'. Perhaps the best known of these experiments were conducted by Professor Harlow of Wisconsin University and his wife, who used young monkeys (as well as some young humans) in their

When the monkeys faced their first few tests they learned to solve problems by a very slow and laborious 'fumble-and-find' process.

But as each monkey gained experience in solving the problems, a dramatic change in behaviour would take place at some definite point.

The monkey would immediately solve a problem of which it had no direct experience. In other words it had acquired, through experience, the capacity for 'insight' or, if we like to call it such 'intelligent behaviour'.

The Harlows themselves sum up the results of this experiment:

'All our studies indicate that the ability to solve problems without fumbling is not inborn but is acquired gradually.' (Ibid.)

Having trained their monkeys to solve relatively simple problems the Harlows developed their experiments further.

Hierarchies of skills

The type of problems they set their monkeys became progressively more difficult. Eventually they were able to get them to perform different tasks when presented with abstract symbols.

For example, they trained the monkeys to move all red objects, but leave all blue objects untouched when they were shown a triangle and to move all blue objects but to leave all red objects when they were shown a circle.

The Harlows say: 'All these data indicate that animals human and subhuman, must learn to think. Thinking does not develop spontaneously as an expression of innate abilities: it is the end result of a long learning process.' (Ibid.)

Since, by any definition of intelligence, thinking is involved in intelligent behaviour, the relevance of this work to our consideration of intelligence is obvious.

'general mental ability'. Such a factor undoubtedly exists. To illustrate this, let us contrast such able persons as Marx, Shakespeare, Einstein and Newton with the inhabitants of a colony for mental defectives.

While we can see great differences in the personalities and behaviour of the four eminent men, they all share something in common which they do not share with the mental defectives—a high level of general mental ability or of intelligence.

An individual's intelligence level depends on both constitutional and environmental factors and also the complex interaction which takes place among these factors.

Consider constitutional factors. It is obvious that an individual's level of intelligence depends, in part at least, on the physical condition of the brain.

Processes

The number of brain cells, the connections between them and the various metabolic processes all play a role in determining an individual's level of mental ability.

This has long been recognized by leading neurologists, who have many times described the inferior brain structures often found in mental defectives.

It is convenient to place those constitutional factors that affect intelligence into two categories, namely, hereditary and non hereditary.

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IN TWO PARTS INTELLIGENCE AND CLASS

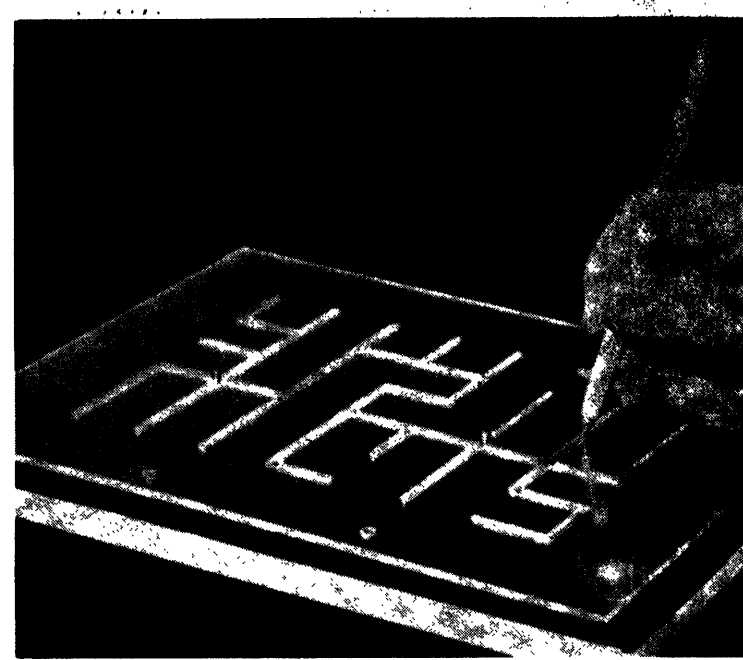
FROM A SPECIAL CORRESPONDENT



PART TWO TOMORROW

A criticism of Sir Cyril Burt

brain in early life or during the mother's pregnancy. This can be caused by direct mechanical damage such as blows on the head or difficult delivery at birth. It can also be caused by infection or poisoning either of the child after birth or of the mother during pregnancy.



Maze learning: Subjects using this 'pencil maze' are blinded—their attempts are recorded on paper placed below the perspex maze.

Apart from damage of this sort, a child's brain can fail to develop fully if the mother lacks an adequate diet during pregnancy or if the child itself is inadequately fed during its early life.

Long recognized

However, since Sir Cyril Burt is concerned with the hereditary aspects of intelligence rather than with the non-hereditary constitutional aspects, the latter really need not concern us further.

It has long been recognized that the development of intelligence is affected not only by constitutional factors but also by experience, particularly during early childhood.

Professor Hebb of McGill University goes so far as to identify two separate kinds of intelligence, namely Intelligence A, which reflects the physical condition of the brain at the time of birth and Intelligence B, which reflects the individual's experience and learning.

General mental ability or intelligence necessarily implies the ability to learn.

In fact some psychologists go so far as to define intelligence as 'the ability to learn' (the term learning is here used in the broadest sense, implying not just rote memorization such as learning a piece of poetry, but the ability to learn to solve problems, including problems of self-orientation in

learning of those of a less complex nature. In the past the question has often been asked: 'Which is more important in the development of intelligence—the individual's heredity and constitution or his environment?' However, it is now being increasingly recognized that this question is virtually meaningless.

If a child is born with a defective brain, he will never develop a high level of intelligence no matter how favourable the environment in which he is brought up.

On the other hand a child who is born with a healthy and well-developed brain will not become intelligent if he is kept in a very dull and restricted environment.

To ask if constitution is more important than environment in the determination of intelligence is rather like asking if length is more important than width in the determination of area.

In point of fact intelligence results from the interaction of environment and constitution (or heredity) and the effects of constitution and environment are multiplicative rather than additive.

It is important to realize that the same environment that will develop intelligence of a person possessing a certain type of constitution (or heredity) may well retard the intelligence of another person possessing a different constitution (or heredity). As the old saying puts it: 'The same fire

that melts the butter hardens the egg.'

What, therefore, we should be asking is not whether environment is more important than constitution but rather questions like: 'What specific environments will interact with specific constitutional factors in such a way as to produce the maximum level of intelligence in the individual?'

We will return to this important point later.

Mention should be made that it has been found that when young rats are given learning tasks these result in a definite growth in brain structure.

If this occurs in many rats it may well also occur in human beings.

However, since no conclusive evidence has been produced to prove this, we are not yet entitled to draw any definite conclusions.

Continued tomorrow.

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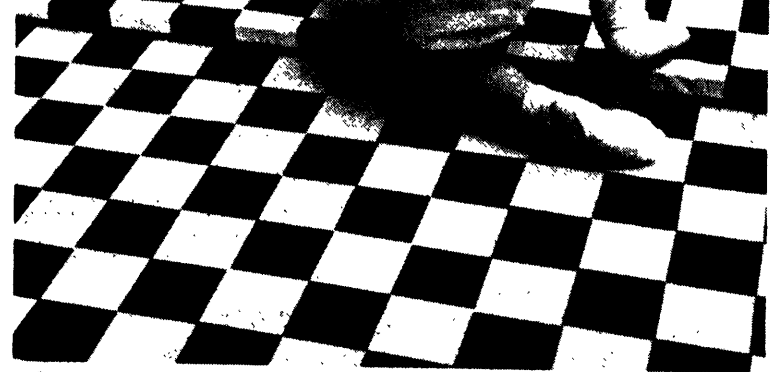
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The child is being called by his mother from the 'deep' side of the visual cliff. His reluctance to move from the central bridge indicates that depth perception is developed sufficiently at this age for the deep side to appear threatening.

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HENRIK IBSEN'S

HEDDA GABLER at the OLD VIC

DIRECTOR: INGMAR BERGMAN

INGMAR BERGMAN'S production of 'Hedda Gabler', which has just moved from the Cambridge Theatre to the Old Vic, is a refreshing departure from the usual English interpretation of the Scandinavian playwright Henrik Ibsen.

Well known for such films as 'The Seventh Seal' and 'The Silence', Bergman has avoided saturating the play with that sense of imminent doom that is usually found lingering in every heavy black drape and long-faced actor, so often a reflection of that mystique the English feel about those strange ice-bound lands.

With the help of a very capable designer, Mago, Bergman has stripped away cumbersome settings, stage ornaments, unnecessary furniture, leaving merely the essentials.

These are placed economically within a stage area painted entirely in red.

In contrast to this his players are dressed simply in a way in which they are no longer dwarfed by their surroundings, but are, in fact, enlarged and projected forward by it.

At the same time this red surround can seem to reflect many things: plush and rich, yet sticky and claustrophobic; raw, like a large open wound revealing what is going on inside.

In this way we are able to concern ourselves with the actions of the players within this context. We can now clearly recognize the heroes of Ibsen's play to be what they are—the petty bourgeois: the same whatever the language or the country; lost, confused and utterly pessimistic.

The play is set in the fashionable end of a provincial conservative town where scandals, seductions and grime seem to be the life-blood.

Here Ibsen unpeels the complex and contradictory processes to be found in the relationships of his characters.

George Tesman and Ejlert Loevborg are both research scholars in history.

Limitations

The former is a dry academic, whose cowardice forces him to capitulate to the limitations of the society he finds himself in and use his brain solely as an instrument to better his position as a respectable academic.

The latter is a creative intellectual whose despair with society forces him to retreat into the consolation of drink and Bohemianism.

Both characters are the two sides of the same coin, and, although their actions and instincts differ greatly, they are both incapable of engaging in reality.

Loevborg was formerly Hedda's spiritual lover; whilst denying any physical contact he was drawn by her into confessing his debauchery with other women, so satiating her desire for knowledge of the 'forbidden'.

Eventually Loevborg tires of the frigid Hedda and continual denial and runs away into the arms of Mrs Elvsted.

Ironically Hedda married the safe and naive George Tesman. His sole object in life is to further his career by filing obscure manuscripts and creating a pedestal for the ideal Hedda.

Mrs Elvsted is the rational crutch to Loevborg and transforms him from his former wildness into a self-respecting writer.

Between them they create a manuscript of some importance which, to them, symbolizes a baby.

Hedda Gabler is the central

character, in as much as the conflicts and processes of the play manifest themselves in and around her.

She is the femme fatale of the town, the daughter of a late General from whom she has inherited arrogance, authority, a sense of destiny, perhaps, and his 'matching' pistols.

She, like all the characters, is a frustrated coward, unable to make love to Loevborg, unable to shoot him when he leaves her, unable to take on any responsibility or face any reality that detracts from her morbid obsession with 'the purposelessness of life'.

She sees herself as the centre of her universe, and yet impotent in all her relationships with other people. So she becomes utterly destructive to anything around her.

When the reformed Loevborg re-enters her life with his new manuscript she sets in motion the process by which he will destroy his reason and return to the bottle.

In a state of drunkenness he loses the manuscript, which finds its way back to Hedda.

Twisted

Utterly twisted by the knowledge that she now carries Tesman's child, she destroys Loevborg's manuscript—something inspired in Loevborg by another woman; their 'child'.

Unable to be a life-giving inspiration, she reverses everything and hopes that Loevborg will now destroy himself in a 'beautiful' suicide for the sake of the lost manuscript and her.

When he discovers the manuscript gone, she hands him a pistol. We later hear that this has gone off in his pocket, wounding him in the groin and he bleeds to death.

Cheated of this last dream, and fearing a dreadful scandal, Hedda shoots her brains out.

Another character who floats through this complex of lies, deceit and illusions is Judge Brack, whom Ibsen calls the representative of bourgeois society.

A slimy character, he sees Hedda as desirable, but unattainable, and Tesman as a blind fool.

Posing as a friend of the family, he wheedles himself into a position where he can make passes at Hedda with no risk of any kind of involvement.

To protect his position within this triangle, he is indirectly instrumental in the destruction of the intruder Loevborg.

Bergman has succeeded in bringing this company together to unfold the intricacies and changes that take place underneath the surface in this superb play.

He has revealed the seediness of society where people eavesdrop, where they hustle for more advantageous positions from which to operate power, be it on other people or on society in general.

All the characters deal in illusions and substitute concrete relationships for fantasies.

John Moffat as Brack and Jeremy Brett as Tesman give extremely well-observed performances, relying on the text and the direction to express their talents and never putting these before the play itself. Maggie Smith plays the title role and Robert Stevens' Loevborg sometimes verged on a 'spiv' representation.

What Bergman has achieved is to reveal Ibsen's idealism.

Ibsen felt himself a suppressed writer who had to rebel 'against convention'.

We see the failure of this form of protest expressed in the despair and pessimism of the play, resulting in the deaths of Loevborg and Gabler.

Press reaction to the first English performance in 1891 is interesting in that they found it ludicrous, horrible, tedious, 'a crawl with the foulest passions of humanity'.

This is a violent and self-righteous reaction to what was no doubt the mirror image to their own society.

For all Ibsen's limitations and pessimism, he created very profound pictures of the perversion of human relationships within bourgeois society.



MAGGIE SMITH as Hedda and JEREMY BRETT as George Tesman.

JEANNE WATTS as Miss Tesman



JEREMY BRETT as George Tesman

THEATRE



The rush behind THE NEWS to build more 'Pacific Glorys'

'PACIFIC GLORY', the giant oil carrier which hit the headlines last week, came from one of the many Japanese shipyards now hurrying to supply part of the world demand for such ships.

One company, the Ishikawajima-Harima Heavy Industries (IHI), has estimated that with the declining oil output in places like Libya and with the Middle East fighting interfering with supplies—not to mention the lengthy closure of the Suez Canal—western nations will be compelled to import bulk oil from distant sources.

Japanese yards, says IHI, had grossly under-estimated demand for the ships to carry these supplies and were now desperately trying to correct this mistake.

The Japan Shipbuilding Association estimates world demand for ships will increase by some 50 per cent to 30,500,000 tons by 1975 and that Japan would be required to supply at least half of this tonnage.

IHI believes even this to be too conservative a figure in view of an acute shortage of shipping in the world freight market.

The sharp rise in imports of crude oil, for the reasons already mentioned, has resulted in many vessels intended as bulk or ore carriers being used as tankers.

Several smaller Japanese companies are now planning new yards for the construction of 60,000-ton 'Panamatype' bulk carriers—the largest type of ship that can pass through the Panama Canal.



The Japanese-built 'Pacific Glory', refloated over the weekend, was towed to Lyme Bay.

They anticipate a big demand for these ships as Japanese steel mills expand and coal is transported from the United States to achieve Japan's goal of 150 million tons of crude steel by 1975.

ORANGE PEEL

THE LOWER HOUSE, of the Dutch parliament has decided that Queen Juliana, reigning head of the House of Orange, will have to pay the wealth and income tax that fall on common citizens.

The proposed change in the law must still be approved by the upper house.

Motive for the change is the rapid inflation which threatens a balance-of-payments crisis for the Netherlands economy. At the time of the Rotterdam dock strikes this autumn Prime Minister de Jong warned of a severe budget to come.

Even then, IHI says, Japanese ships will still be carrying less than half the nation's foreign trade and the remainder will have to be carried by chartering foreign vessels. Two of the biggest ship-

yards, Mitsubishi Heavy Industries and Hitachi Shipbuilding and Engineering, have announced plans for huge dry docks capable of building million-ton tankers.

IHI has also decided to enlarge its present dry dock in Kure, western Japan, to a capacity of 800,000 tons. At present it can accept 500,000 tons.

The expansion programmes are mainly to meet soaring demand for 250,000-ton tankers. Mitsubishi's projected dock near Nagasaki in southern Japan will use a triple tandem system allowing three tankers of this type to be built simultaneously.

One British company is said to have already ordered a 477,000-ton tanker from IHI, while a Japanese company is considering plans for a million-ton ship.

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