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THE DEVELOPMENT OF AFRICAN ABILITIES

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FOREWORD

Any country's most vital asset is its people. With the will and the skill they make deserts blossom as the rose; without it, they turn gardens into deserts. Over more than a century the people of Africa have proved that, given the opportunity, they are capable of producing the modern teachers and ministers, authors and doctors, mathematicians and businessmen who are the catalysts of progress.

This address by Africa's leading authority on the mind and motivation of modern Africans, delivered as a Faculty of Education lecture in the University College of Rhodesia, is therefore of vital significance not only to Rhodesia but to every country concerned to free rural communities caught in the mesh of hand-to-mouth subsistence, and move them out into the productivity and prosperity of the modern world.

Professor H. J. Rousseau,
Dean, Faculty of Education,
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THE DEVELOPMENT OF AFRICAN ABILITIES

By Dr. S. Biesheuvel, M.B.E.

1. With the exception of the Republic of South Africa, the countries of Africa south of the Sahara are all in the under-developed category. Within the limitations imposed by their natural resources, the stage of economic well-being they are capable of reaching will depend very largely on their manpower resources. The development of their human potentialities for achievement, for production and for harmonious social relations should therefore take precedence over everything else in these developing nations. This of course implies a particular value judgment. It is assumed that African nations, like the nations of the west, will strive for the material advancements that are the fruits of industrialisation and that they will seek to safeguard themselves against want and disease by gaining control over the physical environment through science and technology. It is further assumed that the philosophy of "negritude" which extols the virtues of the natural life and rejects the materialism of the west will find little response outside the group of poets and intellectuals who enunciated it, particularly in the former French West African countries.

2. The task that confronts these countries in removing the back-log in human development is a most formidable one. The life expectancy at birth remains very low. Whereas it is 71 years for males in the Netherlands, 68 in England, 60.7 in Portugal and 64.6 for white in South Africa, it is 40 for Basutoland and Zambia, 37 for Senegal, 35 for Ivory Coast, 32 for Gabon and 27 for Mali. Recent statistics on world education place the literacy figure for Malawi and Zambia as high as 40-50%, but thereafter there is a sharp drop to 25% for Kenya and Uganda, 23.4% for Ghana, 17.4% for the Congo, 14.2% for Gabon, 13.3% for the Sudan, 12.5% for Nigeria, 8.1% for Sierra Leone, 7½% for Tanzania, 5% for Liberia and 4½% for Upper Volta. These are but two of the major causes of the waste of human potential which afflict Africa.

3. There are a number of other reasons why Africans have not so far achieved full effectiveness in their adjustment to western requirements.

(1) They experience difficulty in acquiring the visual perceptual skills that are a major means of communication in western culture. The interpretation of pictorial and diagrammatic material does not come easily to them and hence they are at a disadvantage in the spatial thinking involved in the pursuit of science and technology. Visual displays may be a handicap rather than an aid to them. The cause of this deficiency must be sought in lack of appropriate visual stimulation during early childhood. There is some evidence that when the necessary basic habits are not established during the early maturation period, training at a later stage is only partially effective.

(2) Very much the same applies to the acquisition of movement skills, the manual dexterities required for mechanical operations and high precision tasks. That Africans are not basically lacking in psycho-motor skills is evident from certain of their traditional activities; but these generally do not include the fine eye-hand co-ordination involved in all kinds of everyday activities demanded by the western cultural environment. The earlier these habits are acquired, the more effectively they function at a later stage and the greater the degree of elaboration of which they are capable.

(3) There is a vast difference between western and traditional modes of thought, which relates to the nature of African cosmoligies and the characteristics of their languages. Spirituality pervades African worlds, and leads to a different appreciation of casuality. Meaning is less a matter of naturalistic or objective reality, than of personal intent. Languages are relatively deficient in abstract concepts and those that there are tend to be categories of a different order from our own. Hence African thinking tends to be illogical by our standards, though it is entirely orderly and consequential in terms of its own world view. The process of adaptation to our analytic, molecular and abstract thinking is difficult until our linguistic habits and concepts of casuality have been thoroughly assimilated. Learning will inevitably be slower, and insight into what has been learned may be lacking.

(4) Productivity is not only a matter of skill and understanding, but also of drive and motivation. Work of the traditional kind, being very closely related to physical needs, had an obvious, self-evident significance which is lacking in the wage earning activities that are displacing subsistence economies throughout Africa. New needs and values must therefore develop, for security, achievement, conformity, social status, self expression and the like—related to different

cultural requirements. Until acculturation has reached a fairly advanced level and these new needs have made their appearance through people getting involved as employees or entrepreneurs in a variety of work situations, work motivation is bound to be lacking in thrust and capacity for sustained effort. The role of urbanisation in this evolutionary process is particularly important.

4. Acculturation is a process of extended social learning, involving all aspects of the personality, the intellectual as well as the emotional, the habitual as well as the attitudinal, concepts as well as values. Its successful accomplishment depends on the mental acuity and flexibility and the energy resources of those exposed to the stresses of change.

(1) Mental growth is greatly influenced by nutrition, and there is evidence that interaction between genetic potential and nutritional influences may occur even in the pre-natal and certainly in the immediately post-natal stage. It has been shown that vitamin B complex deficiencies in the maternal diet during pregnancy and lactation may adversely affect the intelligence of their offspring. Experiments involving the breeding of successive generations of rats on a protein-deficient diet have demonstrated a falling off in learning ability, as well as changes in emotional reactivity. Studies of the protein-deficiency disease of kwashiorkor which is rife throughout Africa and which attacks children mainly between the ages of one and four years, have disclosed significant disturbances in brain function, as observed by means of the electroencephalogram. Apart from a slowing down of the development of bioelectric rhythms, there is also evidence of permanent brain damage, particularly in the temporal lobe which is the area of highest neural integration. This could impair not only the intellectual capacity, but also the emotional development of the individual and give rise to psychopathic tendencies. The destruction of cerebral tissue can never be made good and any damage that is done during early childhood is therefore of a permanent nature. For every child suffering from kwashiorkor there are many others where malnutrition does not proceed beyond the sub-clinical stage, but where some neural impairment may nevertheless occur. The aggregate effect of nutritional deficiencies and dietary malpractices on the average level of intellectual effectiveness of entire populations exposed to these conditions can therefore be very considerable.

(2) Tropical diseases, particularly hookworm, bilharzia, malaria and other conditions inducing high fevers also play their

part in inhibiting the full deployment of intellectual potentialities. Because of difficulties of experimental control, the precise effects are not known. But it is not unreasonable to assume that the lassitude and debility brought about by most of these conditions render a child less responsive to environmental stimulation, on which the growth of intelligence greatly depends. Furthermore, though the capacity to learn may be there, the child may often be disinclined to make the necessary effort. Finally, brain damage may again be assumed to occur. Brain cells are destroyed by high body temperatures, and it is significant that a high proportion of healthy adults in West Africa had abnormalities in their EEG's, indicative of such brain damage.

(3) The cultural environment, as represented by the family and the community, is also a major factor in enhancing or depressing the growth of mental power. Its influence is exercised through the stimuli that emanate from the material environment and from the actions and attitudes of the people with whom the child comes into contact. Weaning, toilet training, methods of disciplining, responsiveness to curiosity, expression of solicitude and affection, community roles and the predominance of relaxation or anxiety in the mental atmosphere of the community are all highly significant. African cultures differ very greatly in their child rearing practices, in parental attitudes towards their children, and in the formative influences that emanate from them. No generalisations can therefore be made; but by and large the stimuli for intellectual growth are less favourable than in middle class western groups. In transitional communities, such as one finds in most urban areas, particularly those of Southern Africa, where ties with traditional ways of living have been broken and the family and kinship relations in particular have undergone marked changes, the conditions are generally adverse. This is unfortunate, as it is at this stage that demands on the capacity to readjust are greatest and the loss of intellectual effectiveness or stability or character will therefore make themselves most seriously felt.

(4) A subtle, but nevertheless not insignificant environmental factor is the sense of security which the individual experiences in his social life. Insecurity is rife in African communities today, and anxiety levels are rising. The causes are numerous. They have to do with the disturbance of traditional ways of life, the disruption of tribal bonds and value systems, the weakening of the old moral codes, and difficulties in assimilating the new, doubts about ability to meet the demands of the new society, economic insecurities and fear of scholastic failure. Anxiety and in-

tellectual efficiency do not go well together, except that mild anxiety may actually provide an incentive to effort. There are indications that in many individuals the stress of anxiety has moved well beyond this beneficial intensity level.

(5) In a discussion of environmental handicaps imposed on behavioural effectiveness, the climatic factor cannot be ignored. Its effects on human efficiency have frequently been stressed, though scientific evidence in any domain other than that of hard physical labour, is almost entirely lacking. Research on scholastic efficiency in tropical areas has produced negative results, but difficulties of experimental control precluded decisive conclusions. It is a reasonable hypothesis that climate will affect effort rather than intellectual acuity, though this in itself may set a circular interaction process into motion whereby intellectual growth will eventually be retarded. In so far as the process of readjustment to meet the demands of western culture and to achieve productivity requires sustained effort, climate may cause the generation of this effort to be less adequate than it could have been. The point must also be made that there is no evidence that evolution has caused the black races to be better adapted to effort in hot climates than whites. Black labourers have to undergo an acclimatisation procedure before they can work in the deep, hot sections of the South African gold mines without the risk of incurring heat stroke. Their physiological responses to heat are not markedly dissimilar from those displayed by whites. It is not unlikely that their evolutionary adaptation to life in hot climates has occurred through a modification of habitual movement tempo, which might in fact be a handicap in adjusting to the demands of high-speed industrial work.

5. What kind of action programme can one put forward to remove these handicaps and to ensure that the potentialities of Africans can be fully deployed in the process of adaptation to change and in the achievement of maximum productivity? It is obvious that many of the adverse influences are beyond our effective control, or can only be very gradually manipulated on a long term basis. A relatively modest level of effectiveness must therefore be accepted as inevitable for some time to come. But this should not deter us from formulating solutions for the problems and initiating remedial programmes wherever it is feasible to do so.

(1) Improvement in the nutritional status and physical health conditions of African communities should be given a very high priority. Climate, soil, and agricultural resources are all limiting factors, the former more so than the latter. Out-moded methods of farming are another obstacle, which

with the right effort, can be removed. The direction of national effort towards food production should be the first concern of the state, unless it can be shown, of course, that productive effort in other sectors can be more economical and will enable food importation to take place. Subsidisation of food for the poor, supplementary school feeding, the establishment of maternal and child care clinics, dietary training, and the production of cheap protein foods of which there are now a number available, would all be valuable steps. A general improvement in the standards of public health, accompanied by health education are other priorities. A proper sense of values in the communities concerned might well induce them to spend their substance on these objectives, rather than on bureaucrats and embassies abroad.

(2) Whilst changes in parental attitudes and child rearing practices will generally prove to be desirable, there is no direct and straightforward way in which this can be accomplished. There is comparatively little one can do until new cultural patterns emerge. The development of properly planned urban communities, which provide scope for family life, is a first essential. Within such communities, the family can be stabilised. Nothing can be achieved without this stability. Thereafter community centres can be used to arouse interest in problems of social adjustment and for the diffusion of information on child rearing.

(3) The pre-school child requires particular attention, because at this stage, effective training in basic perceptual and psycho-motor skills can still be reasonably effective. Here too the stimulation of intellectual curiosity and the satisfaction of the impulse to learn and to establish mastery over the environment can be provided, to make up for deficiencies in the home environment. A good case can be built up for allocating scarce educational funds to this type of schooling rather than to more advanced education, in view of the critical importance of this developmental stage.

(4) School education remains a vexed problem throughout Africa, because of the chronically scarce resources. "Investment in Education", the report of a Commission under the chairmanship of Sir Eric Ashby which enquired into the educational needs of Nigeria, provided a startling insight into the magnitude of the task of meeting high level manpower needs through the provision of new educational facilities. Within a ten year period, Nigeria was required to create 130,000 more secondary school places, nearly 5,000 more teachers, and a sevenfold increase in the capacity

of the Universities. Difficult decisions have to be made regarding the relative importance of primary, secondary, vocational and higher education. But in addition, a critical look has to be taken at the content of education, and the methods to be employed, particularly in view of the special intellectual difficulties that confront Africans, which were discussed in the earlier part of this paper.

(5) The fullest use should be made of the work situation as a means of developing not only the skills, but also the personality attributes of Africans. Here certain objective requirements have to be met which have an immediate relevance to standard of living, through productivity. They therefore have an imperative quality about them, in so far as the regulation of behaviour is concerned, which general social situations lack. The importance of the time factor, of punctuality, of meeting certain standards of performance, of accepting responsibility, of new kinds of inter-personal relations based on ability, can all be brought home in a meaningful way. In the work situation we have the microcosm where the new cultural patterns related to an industrial, more affluent and possibly more stable way of life can be tried out and can evolve. From there they can diffuse into the community at large, establishing a way of life, cultural values, and personality make-up in keeping with the new economic realities of the times.

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