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Evidence Links Poor Diet To Forever-Stunted Minds

"NEW EVIDENCE" suggesting a relationship between malnutrition and mental retardation should be cause for major policy concern in a number of world capitals. The recognition that malnourished children may emerge from childhood lacking the ability to reach their full genetic intellectual potential introduces a new and perhaps frightening note into theories of national development." The quotation introduces an article on "Malnutrition and National Development" which appeared recently in *Foreign Affairs* magazine. It was written by Alan D. Berg of the U.S. Agency for International Development. He is stationed in New Delhi.

The geopolitical impact of this facet of nutritional science comes from the vicious cycle of malnutrition, mental retardation, indolence and unemployability—a vicious cycle that afflicts depressed peoples throughout the world, be they have-not nations or have-not ghettos.

IT HAS BEEN KNOWN for a long time that stunted growth due to malnutrition in childhood is beyond the reach of an adequate diet in later life. A number of population studies in Latin America, reviewed in *Pediatrics* magazine by Dr. Joaquin Cravioto of Mexico City, indicate that the same might be true of mental development.

In reviewing his own and other investigators' observations, Dr. Cravioto attributes I.Q. score deficits of 18 to 22 points to nutritional deprivations. These deficits could sometimes be remedied—if the undernourishment was not of too long standing and the child not too old when brought under care.

There are of course great difficulties in seeking rigorous proofs of such effects in man. First, we do not ordinarily condone experiments in human malnutrition, least of all those that might irreversibly damage children. Second, malnutrition is usually associated with social disruption, poverty, superstition, illiteracy, crowding and poor sanitation. Underfed children are likely to be neglected in many other ways, exposed to infectious disease and parasites and weakened so as to be more vulnerable to them.

It is hardly possible from these, or any other easily imaginable observations, to isolate malnutrition as the crucial factor for the psychological disabilities of the children.

THERE IS, however, plenty of indirect evidence that the pre-school years are a critical period for brain development, and animal studies corroborate the view that nutritional imbalance can impair the development of cellular structures in the growing brain. The evidence for a crucial impact of good early nutrition on intellectual development is at least as strong as it is for the importance of early intellectual stimulation and emotional rapport.

The political question is the priority that should be afforded to investment in nutrition—particularly child nutrition—compared to the capitalization of agricultural, light and heavy industry, and education. Fortunately the technical costs of improving child nutrition are relatively low, but it remains extraordinarily difficult to teach good dietary habits to an unschooled population.

The question is not confined to Latin America, Africa and India. Many physicians believe that the most important benefits of the Head Start program in the U.S. urban slums is its incidental exposure of the children to higher standards of health care and nutrition.

IT IS HARD to convey how little we really know about the most important scientific questions in this field. Even if "malnutrition" is accepted as a proven source of mental lag, we still have no evidence of

specifically how it has this effect. Just which amino acids are crucial, and in what circumstances?

There is some theoretical reason to believe that a specific imbalance in one amino acid is more damaging than a general lack of nutrient. General malnutrition may give rise to an over-all depression of growth, but lack of a specific amino acid may produce an unbalanced growth with some tissues maturing out of phase with others and result in a more distorted pattern. (We have been doing just such experiments recently in the laboratory with bacteria.) Cells deprived of the amino tryptophane die rapidly, but only if the remaining diet is adequate; if the over-all diet is less adequate, oddly enough, these same cells simply go into suspended animation.

ABOVE ALL, we really do not know how to define the best diet. It is, after all, quite possible that a pattern of child nutrition that has been designed to the criterion of fastest physical growth is irrelevant to the maturation of the brain. Both foreign and domestic policy are in urgent need of much more penetrating research on these homely topics.

Nevertheless, we surely do know enough to say that children must be fed if they are to grow up. Very little of our foreign policy follows such simple logic, judging from the contradictions in Congress's appropriations for technical assistance versus military action as our vehicles of support for the aspirations of the people of Southeast Asia.

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