

THE APPRAISAL OF MENTAL GROWTH CAREERS

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TEN years ago the writer published the mental growth curves of thirty-three infants and young children, whose behavior development had been repeatedly appraised by clinical examinations.¹ We have followed the subsequent careers of thirty of these children who are now in their teens or older. By comparing the early with the later findings, we can in retrospect determine the predictiveness of the first appraisals, many of which were made during the first year of life. This venture in self-criticism has cast some interesting light on the developmental diagnosis and prognosis of infant behavior.

The group of thirty cases comprised a wide variety of developmental conditions: normal, retarded, mentally defective, superior, premature and postmature infants, a case of cerebral palsy with approximations to normal mentality, cases of cretinism, mongolism, hemihypertrophy and pubertas praecox.

How consistent over a decade and more

¹ Gesell, Arnold. *Infancy and Human Growth*. New York: Macmillan, 1928. Pp. xvii + 418. For detailed findings of the ten year follow up studies, see Chapters I-IV of a later volume: Gesell, A., et al. *Biographies of Child Development. The Mental Growth Careers of Eighty-four Infants and Children*. New York: P. B. Hoeber, Inc., Medical Book Department of Harper & Bros., 1939. Pp. 228.

have been these mental growth careers? In no instance did the course of growth prove whimsical or erratic. In only one case within the period of ten years was there a marked alteration of trend, namely from a low average to a high average level (Child B.C.). In a few defectives there was a progressive retardation without deterioration. For all others there was a maintenance of the general trend which was ascertained by the early examinations.

Graphs were plotted for D.Q. and I.Q., but the detailed case records also incorporated after each examination our clinical appraisals, which were by no means always identical with the psychometric quotients. These interpretive clinical judgments, we believe, have more significance than the raw quotients in investigating the consistency and stability of mental growth careers.

Our clinical evidence based on normative determinations demonstrates a high degree of consistency in the trends of early and later growth. Take, for example, the six siblings elsewhere reported as Children D.E., E.F., F.G., G.H., H.I., I.J. Three of these children over a period of ten years have clung unmistakably to a normal course of behavior development; the other three, as decisively to a subnor-

mal course. It took no diagnostic subtlety to distinguish between these two kinds of growth potentiality on the basis of one behavior examination in infancy. The point is that these infant behavior pictures were unambiguously prophetic of the later careers. The predictions, therefore, were accurate. And they were safe; because nature is never so whimsical as to mix up sectors of the growth curves of two sets of individuals as differently endowed as D.E. and I.J.

In a similar way the predictive estimates of three distinctively superior children in our group did not miss the mark. The estimates were made before the children could read or write; which means that there was a high degree of indicativeness in the early behavior symptoms.

In less well defined behavior pictures, equally confident predictions are not forthcoming because we do not have the techniques or acumen to identify and assess the indicators; but a comparable latent predictiveness resides in these pictures as well.

When there is a fairly even balance between the endogenous and the sustaining or exogenous factors, the trends of mental growth, whether subnormal, superior, or mediocre, are likely to be most consistent. Developmental diagnosis and prognosis then come nearest to their mark. When, however, the organism is under stress of distortion, because of unfavorable conditions, then its ultimate adjustments as expressed in growth characteristics become least predictable. There are too many variables to appraise. External environment can be estimated with some shrewdness; but not so readily, the internal developmental reserves.

These hidden reserves are the intrinsic insurance factors with which we have had to reckon repeatedly in cases of atypical and irregular behavior development. The concept of insurance factors is not mystical. It is derived from experimental embryology and from clinical observation. The surgical excisions, transplanta-

tions, and other interferences with the growing tissues of laboratory embryos, have demonstrated that the organism is protected with a remarkable fund of reserve mechanisms which promptly or gradually move into every breach and fill it in some way, either through regeneration, or compensatory and substitutive growth. If the lesion is too great, the organism dies. If the lesion is not too severe, and the organism not too old, growth may continue in a more or less normal manner.

In the development of the nervous system and in the ontogenesis of behavior, the human organism displays comparable insurance mechanisms. Locked in inner recesses beyond diagnostic scrutiny are reserve factors which may come to the rescue when development is retarded or impaired. As a poison stimulates the formation of anti-bodies, so certain errors or depressions of development stimulate a regulatory self-correction. These reserve factors, however, are not a single generalized capacity. They are specific biochemical and somatic structures, almost infinite in number and variety; and of many degrees of availability. They are present in defective as well as normal individuals. They are probably most abundant in the most vital and best endowed. Vitality is an index of the plenitude and vigor of these very insurance factors. In spheres of behavior they operate not only during the period of growth, but also in old age; at least in the most "vital" individuals.

If there is a principle of uncertainty in the physiology of development, it is a biological principle which rests upon important individual differences with respect to these insurance factors. Since they vary in amount, it is difficult to ascertain their strength in those inscrutable infants who present an inadequate and yet not decisively defective behavior picture. Here diagnosis must be wary, sometimes for a whole year or more, because sometimes the insurance factors come tardily

and slowly into full force. But if they are present, and if the attendant conditions permit, they will ultimately assert themselves. When there is no counteracting deteriorating process, the tendency of growth will be toward something better and toward an optimal organization of the achieved equipment.

The moral of all this: Diagnosis must be cautious whenever there are strong insurance factors to be reckoned with. In cases of doubt, temper the developmental prognosis favorably or withhold it altogether.

Having strongly urged the need of constant vigilance and prudence in developmental diagnosis, let us conclude on a more affirmative note. Numerous biographic case studies made at the Yale Clinic of Child Development have strengthened the conclusion that the basic trends and tempo of behavior development, as a rule, manifest themselves in infancy. If a child has normal growth potentialities, it is almost certain that they will reveal themselves to clinical perception in the first two years of life. Temporary "irregularities" of development are more frequently encountered throughout the preschool years, because of the nascency and interdependencies of behavior patterns during this formative period. In a few ex-

tremely exceptional instances, bound up with obscure emotional and physical factors, the signs of normality may be delayed as long as three years. On the other hand, virtually every case of primary feeble-mindedness can be diagnosed in the first year of life. In a wide clinical experience we have never seen a case of secondary feeble-mindedness due to educational or environmental deprivation, although we have seen cases in which the I.Q. itself has been pushed down to an apparently defective level. Needless to say a diagnosis of feeble-mindedness should not rest upon a bare intelligence quotient.

The concept of the intelligence quotient has served an important historical function in exposing the wide range of individual differences among children. But we are approaching a time when generalized quotients must be abandoned for a more analytical application of discriminative norms to ascertain the specific symptoms of ability and maturity. Behavior norms will then become critical devices for discovering, delineating, and interpreting the diverse characters of a total complex, and always with special reference to the growth process. By such a system of genetic analysis we can better understand the individuality of growth careers.