Heredity in Nervous Disease and Its Social Bearings

C. B. Davenport, M.D.
Cold Spring Harbor, N. Y.

Reprinted from The Journal of the American Medical Association
December 14, 1912, Vol. LIX, pp. 2141-2142

Copyright, 1912
American Medical Association
Five Hundred and Thirty-Five Dearborn Avenue
Chicago
HEREDITY IN NERVOUS DISEASE AND ITS SOCIAL BEARINGS

C. B. DAVERPORT, M.D.
COLD SPRING HARBOR, N. Y.

My theme is old; yet every topic into which heredity enters can now, in view of the recent advances in this study, be viewed in a new light. So possibly I may be able to present ideas in a new way.

Mental abnormality may be divided into two sorts: lack of development and weakness. Let us consider the origin of each sort. The development of an individual is a complex of processes which work individually to the production of specific organs, and collectively to the development of the individual as a whole. Modern studies in heredity indicate that, typically, each part develops to a certain extent independently of every other, at least in the early stages. Later the secretions of thyroid and thymus, testis and ovary, and doubtless other organs, exert a general or a specific influence on development. Finally, insufficient nutrition of the embryo or the presence of certain poisons may exert a wide-spread inhibiting effect on developmental processes. Even starvation exerts a somewhat selective influence since all organs are not equally retarded; and there is reason for concluding that malnutrition and poisons have a different effect on different persons, retarding those in whom the internal impulses to development are weakest. Consequently, it is difficult to draw inferences as to the influence of alcohol on the development of man from its influence on the development of guinea-pigs. It is stated that when guinea-pigs and rabbits are subjected to alcohol their young develop imperfectly. There are many detailed family histories in which both parents have been alcoholic sots during the reproductive period, and yet they have produced children without spina bifida, harelip, cyclopia or other marked teratologic conditions.

*Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.
Failure of mental development may, on the classification adopted, be regarded as of four sorts:

1. Intrinsic and general, producing idiots and cretins.
2. Intrinsic and specific, producing the feeble-minded.
3. Extrinsic and general, resulting (it is alleged) in abortions, miscarriages, etc.
4. Extrinsic and specific, causing (perhaps) some cases of harelip, eunuchoidism and some other defects.

Of the four classes, the second is the commonest. From my point of view feeble-mindedness is the failure of development of specific mental traits, the determiners for which are not present in and have never been acquired by the germ-plasm. The defects are a direct inheritance from our remote ape-like ancestors in which the trait had not yet been acquired. The feeble-minded have gained most human traits, but not all the mental ones.

The group of the mentally weak includes those persons who, under the influence of stress, break down mentally. The stress reveals the hidden weakness but does not cause it. Studies of the families of epileptics, dementia praecoxes and manic-depressives reveal the fact that they belong to strains with mental weakness. If we inquire whence these strains arose, no final answer can be given; but the suggestion may be made. Every person has a weakest part; we are not like the "one-hoss shay." And there is evidence that there are human strains that are not resistant to attacks on the respiratory tract; others whose weakness is in the circulatory system; others whose alimentary tract is the first to give way; and others whose nervous mechanism cannot stand great stress. And those persons who go insane belong, for the most part, to this last set.

The origin of these insane families may well go back to their animal ancestors, for animals are characterized by precisely these same strains. Or we may say that the mentally weak include those mental adjustments which have not kept pace with the increasing demands of our civilization. Neural weakness in man is probably a direct transmission from neural weakness in lower animals.

From this point of view, the origin of a feeble-minded child, which seems so like the visitation of an offended God, is merely the necessary cropping out of inherited animal traits, and the origin of a functionally insane person is, within limits, determined by a fortuitous combination of weak determiners.

Leaving for a moment the matter of the origin of neuropathic strains, let us consider their relation to society. Society is an organization of a gregarious species for development of common interests through cooperation and division of labor. Social progress implies mutual understanding, ability to cooperate and to play one's part well, while regarding the good of others. Society is built on human behavior, and the behavior of an individual at any time is his reaction to the stimuli that fall on him. The reaction is determined not only by the stimulus but also by the individual's make-up, both that part which comes through heredity, and that which comes through training (which, in turn, is largely influenced by heredity). Society has decided that certain kinds of behavior—reactions—are, on the whole, good for the development of society, and that certain others are bad. The inability to learn to count, to read, to distinguish colors, the lack of ambition, of foresight, of industry, of inhibition to drink, of sex control and control over other emotions, such as anger, fear, hatred, suspicion and revenge, the strong desire to take the property of others, to realize excitement by confagurations or by false tales, the tendency to exclusiveness, to shyness, to conceit, to periods of depression, to hyperexcitation and exaltation, to expansive ideas, to loss of memory, to loss of orientation, to cruel treatment of animals and children—all of these reactions are "inheritable" and are bad for society, which has labeled them "bad behavior." The persons who behave this way are incompatible with a safe and progressive social organization, and they should, in the worst cases, be segregated to protect society, and above all that they may not reproduce their kind.

Society's method of dealing with those who exhibit antisocial behavior is often inadequate. The theory of treatment is: (1) to avenge the misdemeanor; (2) to give pain, so as to supply a deterrent to the individual; and (3) to set an example of consequences which shall act as a deterrent to others. The first motive is clearly illogical, as the persons who act antisocially cannot properly be held responsible in this behavior in the sense of deserving pain. The occurrence of recidivists who form a large part of all
"criminals" indicates the inadequacy of the second aim. As for the third aim, if the punishment of the individual is of little effect on him, it is clear that it must be of much less effect on another. As a matter of fact, there is little evidence that punishment has any effect except in minor antisocial behavior. Since punishment is inadequate in the case of the grosser breaches of conduct the whole system should be abandoned and replaced by lifelong restraint like that afforded the imbecile and permanently insane.

Finally, since most if not all kinds of nervous disease have the hereditary element, it is clearly desirable that such disease should not be perpetuated by unfit matings such as between two strains containing nervous weakness. In order that such marriages may not occur, the fact of neural weakness in a family strain should be known to one contemplating marriage into that strain. It is the duty of a physician in the exercise of his broad function as eugenist, to warn young people who are contemplating a choice that is clearly unfit. The rule of secrecy in family affairs enjoined on physicians should not apply to prevent a physician from speaking in such cases, even as the laws in some states are requiring him to report venereal disease. Any rule of secrecy which acts against the progress of society, and especially against fitness for marriage is a grossly antisocial, immoral law, and should be repealed. Not infrequently the student of the heredity of a characteristic has to ask the physician concerning the occurrence of a characteristic in a given person, A. B., whom the student knows only as the name appears in some pedigree with which he is working; occasionally the physician, usually a young man, declines to assist on the ground that he is not at liberty to give the desired information. Knowledge that might well lead to conclusions of great import to humanity is withheld in the blind following of a rule whose main motive is praiseworthy, but whose application is too broad. Inheritable traits are not personal property. They come to the individual from down the ages out of the society of the past; they will be disseminated, if the person or his fraternity have children, into the society of the future. What right has the momentary possessor of the trait to claim it as his private and personal affair? A knowledge of his traits belongs to society; is it not wrong for the medical profession to maintain these false ideals of the private nature of inheritable traits?

If the defense is that physicians must protect those by whom they are paid even at the expense of society, then the sooner the state takes over the whole matter of private as well as public sanitation, the better. A relation that was satisfactory when disease was regarded as a personal and private matter is inadequate now that health and disease are properly regarded as public and social affairs. I do not see any logical outcome of the development of medical science but this: that the health of the individual shall be regarded as one of the principal interests of the state, and that eugenics, as determining liability for disease or for imperfect development, shall be recognized as one of the principal divisions of state sanitation.