

The Balance Between Nature and Nurture

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The mind, consciousness, the most important aspect of our existence, which is an entirely symbolic phenomenon, is the product of stimulation. In short, nurturing is the sole influence on our intellectual development.

The most common case against equality in intellectual gifts is an analogy to physical gifts—if people have clearly differing physical gifts, then surely they have differing mental gifts—but the analogy is simply flawed. A more realistic analogy to mind, an intangible entity, is a sense like vision. Sight develops after birth by feedback from the environment, and sight is remarkable for the relative lack of variation in its quality between individuals having no observable defect in the eyes. People consistently learn to see in the same way. How is vision different from intellect? Visual feedback is continuous from birth and of more or less uniform quality between individuals, but intellectual stimulation varies widely from one person to another.

The second common case against equality in intellectual gifts is a crude appeal to biological determinism through genetics. Proponents of the idea of genetically determined gifts fail to recognize the low survival value of the highest orders of symbolic thought in which we engage and the consequent low probability that enough time has passed in the evolution of the human species to account for selection of something as specific as mathematical talent. If a higher order of intelligence of a general kind existed in our genetic makeup, we would expect examples of higher orders of intelligence highly skilled in all symbolic activity, but there are no examples of world-class physicists who are also world-class writers or great painters who are also great mathematicians. Finally, a genetic predisposition to genius would have one of two manifestations, a visible structure, a genius bump or other measurable property of the brain, or an especially fit, trainable initial configuration of neurons around which ability grows. The first possibility seems so far to be false; no one has found an anatomical seat of genius despite careful searching. The second possibility is absurd on its face. Genetics controls gross metabolic processes and not the placement of individual neurons. The gross effect of genetics is evident when considering twins. Twins have different fingerprints, different arrangements of hair follicles on the skin and head, different arrangements of blood vessels in the retina, different arrangements of pores on the skin. You might say that from the ants point of view, there are no such things as twins. The idea of twins is a perceptual

phenomenon resulting from the amazing ability of our brains to see similarities, so genetics seems unable to control microscopic formations in the brain or anywhere else.

Despite the febleness of arguments for any determining contribution to our intellectual constitution greater than temperament by genetics and in the face of overwhelming evidence for the efficacy of education—we witness the miracle of learning on an almost daily basis—people continue to believe in silly notions like genius that carry with them the pernicious idea of innate inferiority. I believe that by education with an eye to accomodating the differing temperaments of different learners we can all attain the greatest level of intellectual accomplishment, and education should strive for nothing less than the goal of producing a world full of people with the intellectual skill of Gauss.