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## Childhood and Eminence

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"The childhood shows the man, as morning shows the day," wrote John Milton in 1667. Our research on childhood traits of highly eminent people confirms the poet's wisdom. Outstanding traits and conditions of childhood can be identified that foreshadow the degree and the kind of eminence that history records. But, as rainy afternoons sometime follow sunny mornings contrary to expectations, the childhood traits and conditions are *possible* clues or indications of adult eminence rather than *certain* predictors.

Systematic research on the highly eminent originated in Francis Galton's analysis of outstanding English families. In *Hereditary Genius*, published more than a century ago, Galton argued that heredity largely determines eminence since the families he studied produced several generations of outstanding doctors, scientists, politicians, and other leaders (1869). Subsequently, however, psychologists pointed out that such families may provide more stimulating environments, and that it is far from easy to estimate the separate effects of heredity and environment. Moreover, parents, educators, and psychologists are usually more interested in discovering or enhancing traits that make for outstanding adult performance than finding out whether they are more determined by heredity than environment.

The sample of persons for our research traces back to the work of James McKean Cattell, founder of the biographical volumes *American Men of Science* (now called *American Men and Women of Science*). In 1903, Cattell listed in rank order of imputed eminence the 1,000 most eminent people

according to the number of words that had been written about each in American, English, French, and German biographical dictionaries. The list included political and religious leaders, revolutionaries and militarists, scientists and philosophers, writers and artists, and aristocracy and nobility.

Soon after Cattell's publication, Catherine Cox and Frederick Terman, developer of the Stanford-Binet Intelligence Test, began a fascinating psychological study of part of Cattell's sample (Cox, 1926). They eliminated the least eminent half of the sample, persons who had apparently been included only because of aristocratic or noble birth, and those born before 1450. Cox and several associates combed more than 3,000 sources including encyclopedias, biographies, and collections of letters in the Stanford and Harvard University libraries for information on the mental development of each of the remaining 282 persons (including three women). From this information, Cox and two associates each independently estimated the IQ of each person. Cox's analysis and our own re-analysis of Cox's data show that the reliability of these careful estimates compares reasonably with that of group IQ tests now given to children in school classes.

**INTELLIGENCE  
AND EMINENCE**

The mean estimated IQ for the total group, 158.9, is far higher than the mean of about 100 which is found in unselected samples. The group ranges from Goethe, Leibnitz, and Grotius with estimated IQs between 195 and 200 to Massena, Grant, and Drake, between 120 and 125. Our analyses show philosophers to be significantly higher and militarists to be significantly lower in estimated IQ than the other groups: political and religious leaders, revolutionaries, scientists, writers, and artists.

For additional estimates of eminence, we counted the number of words in the primary biographical articles on each of the 282 persons in the 1935 *New International Encyclopedia* and the 1974 *Encyclopedia Britannica* and the number of citations to other articles mentioning the person at the end of the primary article in *Britannica*. The indexes of eminence are in substantial agreement from one period to the next, but there are some interesting changes. For example, philosophers lost and musicians and artists gained in estimated eminence from 1903 to 1935; philosophers gained from 1935 to 1974. Individuals also shifted in estimated eminence: for example, starting with the most eminent, the top ten on the 1903 estimates are Napoleon, Voltaire, Bacon, Goethe, Luther, Burke, Newton, Milton, Pitt,

and Washington; on the 1974 word counts, the top ten in order are Samuel Johnson, Luther, Rembrandt, Da Vinci, Napoleon, Washington, Lincoln, Goethe, Beethoven, and Dickens; on the 1974 citations, the top ten are Descartes, Napoleon, Newton, Leibnitz, Luther, Hegel, Kant, Darwin, Galileo, and Da Vinci.

Confirming Cox's analysis, we found that persons with the highest average of the four indexes of eminence had slightly higher estimated IQs (the correlation is +0.33). There is no doubt that IQ and eminence are linked, but the linkage is by no means tight. Research on recent samples of writers, scientists, and adolescents who have won awards and prizes suggests that outstanding performance in various fields require minimal levels of intelligence. Intelligence higher than these levels, however, is less important than the presence of other psychological traits and conditions (Walberg, 1971).

CHILDHOOD  
TRAITS AND  
CONDITIONS

Our prior research concerns the traits of more than 2,000 American adolescents who won competitive awards and prizes in graphic and performing arts, music, writing, science, and social leadership (Walberg, 1971). A number of traits were identified that characterize outstanding adolescents or that distinguish those who are outstanding in different fields. This research and that of other investigators on traits of recent samples of prize-winning adult artists, writers, scientists, and other groups helped us to formulate a list of 82 traits and conditions that appeared promising for the psychological study of Cox's sample.

But how can the incidence of the traits be estimated for a sample that lived between the years 1450 and 1850? Because *Encyclopedia Britannica* employs highly-screened historians and other scholars from throughout the world to write its biographical and other major articles, they constitute a group that may be as knowledgeable as can be found. For this reason, we asked biographers from the 1974 edition of *Britannica* to rate the presence or absence of the traits in the person from Cox's sample that he or she had written about. They were also asked to indicate the degree of confidence in their ratings.

A total of 76 rating forms with a reasonable degree of confidence were returned, and this sample was increased to 96 in two ways: Three graduate students, Eugenia Siepka, Jennifer Rautmen, and Barbara Fricke, made ratings of several eminent persons on Cox's list on the basis of the best available book-length biographies; and ratings were obtained from *Britannica* biographers of persons in the upper part

of Cattell's second set of 500, for example, Kierkegaard, Nietzsche, and Turgenev. History not only continues to feature the adult accomplishments of persons in the sample but also has accumulated sufficient information to permit reasonably confident ratings of their childhood traits.

Four traits were very common in the sample: more than 90 percent were rated intelligent, questioning, curious, and having a strong desire to excel. The character of these attributes is also reflected in other common traits (possessed by 75 percent or more of the sample): precocious, scholarly, ethical, critical, forthright, and serious as well as persuasive and skillful in writing, speaking, and schoolwork. Nearly 90 percent were rated as persistent, strong-willed, and as having a strong need to achieve; other common traits of will possessed by at least 75 percent are hard-working, self-sufficient, and firm. Yet they commonly took joy in their work, were expressive and open to inner life and fantasy, made analogies, noted similarities, and were commonly rated healthy, wholesome, loving, and liked by siblings and peers. While commonly rated versatile, they usually showed an early competence in their adult field of interest, strove for distant goals, and concentrated their energies on a few goals at a time.

Other traits proved uncharacteristic of this eminent sample. Less than a third were rated as being frustrated, sickly, shy, or inhibited. Less than a quarter had feelings of inferiority or serious school problems.

The following are the incidence of family and social conditions in which the eminent people lived:

- exposed to many adults at an early age 82 percent
- permitted to explore environment 82 percent
- had clear parental expectation of conduct 82 percent
- cultural stimuli or materials related to field of eminence available 80 percent
- strict social class structure with little social mobility 73 percent
- presence of significant adults working in field of adult eminence 68 percent
- cultural media in field of eminence restricted to privileged classes 65 percent
- strong external incentives and support for work in field of eminence 64 percent
- early exposure to eminent persons 63 percent

- encouraged by teacher 63 percent
- encouraged by father 60 percent
- encouraged by mother 55 percent
- early loss of father 32 percent
- cultural emphasis on immediate gratification 28 percent
- persecuted 24 percent

There seems to be little mystery why cultural and social encouragement can enhance success. Nor is it puzzling why a careful balance of clear parental expectations and permission to explore the environment may lead to eminence. But the direction of causality is by no means one way. Children with great potential may create or seek out their own stimulation; or parents and other adults may recognize their potential and encourage them.

While the exact balance of causality cannot be determined, these conditions, with the exceptions of the infrequent ones and rigid class structure and social privilege which were more common before 1850 than today, deserve consideration by parents, educators, and others who wish to encourage children for whom they are responsible. Childhood traits and conditions that differentiate those that attain eminence in politics, science, writing, and other fields from one another should also be considered as our other analysis suggests.

**DIFFERENTIATING  
CHARACTERISTICS**

Political leaders in the sample, for example, Disraeli, Jefferson, Lincoln, and Raleigh, in contrast to other eminent groups, were significantly more often rated as versatile, well-rounded, tolerant, magnetic, optimistic, expressive, skillful in speaking, and well-liked by siblings and peers. They were less often rated critical, single-minded, and solitary. While exposed to many adults, these adults were less often eminent; and politicians less often received early incentives and support in their field than did the other groups.

Religious leaders such as Calvin, Erasmus, Luther, and Jonathan Edwards were more often rated scholarly, striving for distant goals, and having a strong need to achieve. They were less often rated as masculine, playful, and tolerant. They more often had clear parental expectations of conduct and encouragement by both their fathers and mothers.

Militarists such as Bolivar, Cortez, and Drake were often rated self-sufficient and single-minded and less often rated questioning, ethical, scholarly, successful in school, popular, expressive, open to fantasy and inner life, and striving for distant goals. They were less often liked by siblings and peers,

exposed to many adults at an early age, or had clear parental expectations and encouragement by their fathers.

Revolutionaries such as Kropotkin, Marat, and Robespierre were more often rated rebellious, persecuted, and forthright and less often rated optimistic and open to inner life and fantasy. They more often had serious school problems and were less often first-born children.

Philosophers, for example, Descartes, Hume, and Kierkegaard were more often rated ethical, critical, argumentative, and successful in school. Cultural stimuli and materials were less often available to philosophers than to other groups.

Scientists, for example, Newton, D'Alembert, and Leibig were rated more well-rounded, and this finding clearly contradicts our research on prize winning adolescent scientists and other studies of outstanding adult scientists. Science today requires more specialization. However, the other traits, distinguished by their absence in the present sample, conform to research on contemporary scientists; they are less often rated magnetic, economically-motivated, playful, loving or liked by siblings and peers.

The artists in the sample such as Michelangelo, David, and Turner were more often rated as brooding and less often rated wholesome and skillful in speaking and writing than the other groups. They more often lived in a cultural environment that emphasized immediate gratification.

The fiction writers, for example, Coleridge, Racine, and Turgenev, were more often rated as expressive, prone to make analogies, open to inner life and fantasy, loving, and liked by others. They were less often persistent, strong-willed, hard-working, self-sufficient, forthright, or apt to concentrate their energies on a few goals at a time. They more often had access to cultural stimuli and materials and lived in a strict social-class structure.

Nonfiction writers such as Samuel Johnson, Macaulay, and Montaigne were more often rated as precocious, popular with peers, first born, and impatient with school routine and less often rated handsome, tall, or economically motivated.

Many of the traits that characterize eminent persons in the different fields conform to popular notions held about people who attain eminence in these fields. And there are realistic generalizations in these notions revealed in the present sample, our previous work on outstanding adolescents, and other investigations of contemporary samples of outstanding adults. There are, of course, exceptions to these generalizations.

More important than how eminent people in various fields differ are the childhood traits and conditions they often share. Generally these are intellectual competence and motivation, communication skills, openness to inner experience and other children, concentration, and early indications of success in their adult field of eminence. Many of them were stimulated and encouraged by their cultural environment and by parents, teachers, and other adults. While most had clear expectations of parental conduct, they also had the opportunity for exploration on their own. Sartre may exaggerate in saying without qualification that "childhood decides," but it is often decisive.

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