Genius

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Genius (plural geniuses) is something or someone embodying exceptional intellectual ability, creativity, or originality, typically to a degree that is associated with the achievement of unprecedented insight. There is no scientifically precise definition of genius, and indeed the question of whether the notion itself has any real meaning is a subject of current debate. The term is used in various ways: to refer to a particular aspect of an individual, or the individual in their entirety; to a scholar in many subjects (e.g. Leonardo da Vinci) or a scholar in a single subject (e.g. Albert Einstein or Nikola Tesla). Research into what causes genius and mastery is still in its early stages, but psychology already offers relevant insights.

Origin of the word

In ancient Rome, the genius (plural genii) was the guiding spirit or tutelary deity of a person, family (gens), or place (genius loci). The noun is related to the Latin verb gigno, genui, genitus, "to bring into being, create, produce." Because the achievements of exceptional individuals seemed to indicate the presence of a particularly powerful genius, by the time of Augustus the word began to acquire its secondary meaning of "inspiration, talent."

Historical development

The assessing of intelligence was initiated by Francis Galton and James McKeen Cattell. They had advocated the analysing of reaction time and sensory acuity as measures of "neurophysiological efficiency" and the analysing of sensory acuity as a measure of intelligence. By intelligence, they meant a heritable trait, which was a general intelligence factor.

Galton is regarded as the founder of psychometry (among other kinds of assessing, such as fingerprinting). He studied the work of Charles Darwin. Charles Darwin showed that traits must be inherited before evolution can occur. Reasoning that eminence is caused by genetic traits he did a study of their heritability, publishing it in 1869 as Hereditary Genius. His method was to count and assess the eminent relatives of eminent men. He found that the number of eminent relatives is greater with closer degree of kinship, indicating to him that a genetic trait is present in an eminent line of descent that is not present in other lines.

Galton's theories were elaborated from the work of two early 19th-century pioneers in statistics: Karl Friedrich Gauss and Adolphe Quetelet. Gauss discovered the normal distribution (bell-shaped curve): Given a large number of measurements of the same variable under the same conditions, they vary at random from a most frequent value, the "average," to two least frequent values at maximum differences greater and less than the most frequent value. Quetelet discovered that the bell-shaped curve applied to social statistics gathered by the French government in the course of its normal processes on large numbers of people passing through the courts and the military. His initial work in criminology led him to observe "the greater the number of individuals observed the

more do peculiarities become effaced..." This ideal from which the peculiarities were effaced became "the average man."

Himself a child prodigy, Galton was inspired by Quetelet to define the average man as "an entire normal scheme"; that is, if one combines the normal curves of every measurable human characteristic, one will in theory perceive a syndrome straddled by "the average man" and flanked by persons that are different. In contrast to Quetelet, Galton's average man was not statistical, but was theoretical only. There was no measure of general averageness, only a large number of very specific averages. Setting out to discover a general measure of the average, Galton looked at educational statistics and found bell-curves in test results of all sorts; initially in mathematics grades for the final honors examination and in entrance examination scores for Sandhurst.

Galton now departed from Gauss in a way that became crucially significant to the history of the 20th century AD. The bell-shaped curve was not random, he concluded. The differences between the average and the upper end were due to a non-random factor, "natural ability," which he defined as "those qualities of intellect and disposition, which urge and qualify men to perform acts that lead to reputation ... a nature which, when left to itself, will, urged by an inherent stimulus, climb the path that leads to eminence." The apparent randomness of the scores were due to the randomness of this natural ability in the population as a whole, in theory.

Galton was looking for a combination of differences that would reveal "the existence of grand human animals, of natures preeminently noble, of individuals born to be kings of men." Galton's selection of terms influenced Binet: geniuses for those born to be kings of men and "idiots and imbeciles", two English pejoratives, for those at the other extreme of the "normal scheme." Darwin read and espoused Galton's work. Galton went on to develop the field of eugenics.

Psychology

Genius is expressed in a variety of forms (e.g. mathematical, literary, performance) Genius may show itself in early childhood, as a prodigy with particular gifts (e.g. understanding), or later in life. Geniuses are often deemed as such after demonstrating great originality. They tend to have strong intuitions about their domains, and they build on these insights with tremendous energy. There is also cited link between creativity of genius and genetic mutations linked to psychosis.

A hypothesis called multiple intelligences put forth by Harvard University professor Howard Gardner in his 1983 book Frames of Mind states there are at least seven types of intelligences, each with its own type of genius.

Malcolm Gladwell's book Outliers popularized a great deal of research into geniuses and mastery. Gladwell mentions the work of psychologist Anders Ericsson, who is an expert on expertise. As a result of his research, Ericsson suggests that it takes approximately 10,000 hours of deliberate

practice to master something - what he calls the "10,000 rule". The book, Outliers, spends a great deal of time discussing various other elements of chance that play a role in the creation of a genius, including Robert K. Merton's "Mathew Effect" (e.g. the rich get richer).

According to Ericsson, mentors play an important role in attaining mastery. Only so much can be taught, however, since many of a genius' skills may be implicit, meaning it is difficult for them to explain in words (i.e. make explicit) how they do what they do.

The book of Character Strengths and Virtues is an attempt by psychologists to propose values for humans to live by. One of the inspirations for this list of values is child prodigies and the characteristics they exhibit.

IQ tests

One usage of the noun "genius" is closely related to the general concept of intelligence. One currently accepted way of attempting to measure one's intelligence is with an IQ test. The label of "genius" for persons of high IQ was popularized by Lewis Terman. He and his colleague Leta Hollingworth suggested different scores as a cut-off for genius in psychometric terms. Terman considered it to be an IQ of 140, while Hollingworth put it at an IQ of 180.

In addition to the fundamental criticism that intelligence measured in this way is an example of reification and ranking fallacies, the IQ test has also been criticized as having a "cultural bias" in its interpretation despite assurances that these tests are designed to eliminate test bias.

Anders Ericsson argues that generally (with highly demanding fields like theoretical physics as the exception), after a person's IQ surpasses 120, their success is determined more by other qualities. In other words, there may be general decreasing return on raw mental power. Ericsson proposes social skills as an example of other qualities that are then more relevant to success. He also warns that IQ does not measure what many would consider "creativity" - sometimes measured by looking at an individual's Latent inhibition instead of IQ.

Philosophy

Various philosophers have proposed definitions of what genius is and what that implies in the context of their philosophical theories. In the philosophy of Arthur Schopenhauer, a genius is someone in whom intellect predominates over "will" much more than within the average person. In Schopenhauer's aesthetics, this predominance of the intellect over the will allows the genius to create artistic or academic works that are objects of pure, disinterested contemplation, the chief criterion of the aesthetic experience for Schopenhauer. Their remoteness from mundane concerns means that Schopenhauer's geniuses often display maladaptive traits in more mundane concerns;

in Schopenhauer's words, they fall into the mire while gazing at the stars, an allusion to Plato's dialogue Theætetus, in which Socrates tells of Thales (the first philosopher) being ridiculed for falling in such circumstances.

" Talent hits a target no one else can hit; Genius hits a target no one else can see. "

--Arthur Schopenhauer

In the philosophy of Immanuel Kant, genius is the ability to independently arrive at and understand concepts that would normally have to be taught by another person. For Kant, originality was the essential character of genius. This genius is a talent for producing ideas which can be described as non-imitative. Kant's discussion of the characteristics of genius is largely contained within the Critique of Judgement and was well received by the Romantics of the early 19th century.

In the philosophy of David Hume, the way society perceives genius is similar to the way society perceives the ignorant. Hume states that a person with the characteristics of a genius is looked at as a person disconnected from society, as well as a person who works remotely, at a distance, away from the rest of the world. "On the other hand, the mere ignorant is still more despised; nor is any thing deemed a surer sign of an illiberal genius in an age and nation where the sciences flourish, than to be entirely destitute of all relish for those noble entertainments. The most perfect character is supposed to lie between those extremes; retaining an equal ability and taste for books, company, and business; preserving in conversation that discernment and delicacy which arise from polite letters; and in business, that probity and accuracy which are the natural result of a just philosophy."

In the philosophy of Nietzsche, genius is merely the context which leads us to consider someone a genius. In Twilight of the Idols, Nietzsche writes, "Great men, like great epochs, are explosive material in whom tremendous energy has been accumulated; their prerequisite has always been, historically and physiologically, that a protracted assembling, accumulating, economizing and preserving has preceded them - that there has been no explosion for a long time." In this way, Nietzsche follows in the line of German Idealism.

In the philosophy of Bertrand Russell, genius entails that an individual possesses unique qualities and talents that make the genius especially valuable to the society in which he or she operates. However, Russell's philosophy further maintains that it's possible for such a genius to be crushed by an unsympathetic environment during his or her youth. Russell rejected the notion he believed was popular during his lifetime that, "genius will out."