Thomas, R. K. (2012). Galton, F.. In *Encyclopedia of the history of psychological theories* (Vol. 1, pp. 462-464) New York, NY: Springer-Verlag

Galton, F.

Roger K. Thomas[1] ✉

(1) Department of Psychology, University of Georgia, Athens, GA 30602-3013, USA

✉ **Roger K. Thomas**
Email: rkthomas@uga.edu

Without Abstract

Basic Biographical Information

Galton (1822–1911) was born near Birmingham, England, and died in Haslemere, England. He shared a grandfather, Erasmus Darwin, with Charles Darwin, but Charles's grandmother was Erasmus's first wife, Mary, and Galton's was second wife, Elizabeth. After medical apprenticeships in Birmingham, he enrolled for further medical studies at Kings College, London, but interrupted his studies to travel. Galton then enrolled in Trinity College, Cambridge, emphasizing mathematics, but illness prevented him from completing his course, and he took a poll degree (bachelor's degree without honors) in 1844 (Anonymous *1911*; Darwin *1912*). That same year Galton's father died leaving him financially independent, and he abandoned his proposed medical career.

Lewis Terman estimated Galton's IQ to be 200, which well reflects the breadth and depth of his accomplishments. Appendix III in Forrest's (*1974*) biography of Galton consists of a chronological list of more than 300 publications including 17 books. A few examples will suggest that seemingly anything that got Galton's attention might become a subject for study or invention. Articles included "Statistical inquiries into the efficacy of prayer" (1872), "Thoughts without words" (1887), and "Arithmetic by smell" (1894), and inventions included a heliostat (a device for signaling), bicycle speedometer, supersonic whistles, diving spectacles, and a periscope. Other inventions were made to assist in his more concentrated areas of study, such as, geographic exploration, meteorology, behavioral genetics, and mental measurement. Methods and devices for fingerprint identification and composite portraiture aided both his studies of human genetics and the forensic sciences.

After abandoning medical study, Galton traveled extensively, for example, up the Nile to Khartoum and then to Syria, as well as a self-financed exploration trip in equatorial Africa. Reports of his travel and exploration were well regarded by the Royal Geographical Society that made him a Fellow in 1856, and his books *Tropical South Africa* (1853) and *The Art of Travel* (1855) were well received.

Major Accomplishments/Contributions

Galton's importance in the history of psychology resulted from combining interests in anthropometry, genetics, statistical methods, applying Darwin's theory of evolution to human intelligence, and methods of mental measurement. The "spirit" of Galton's legacy was summarized in his obituary in *Nature* (02/02/1911, p. 440).

The unity of those contributions lay largely in the idea that exact quantitative methods could be applied, nay, rather must be applied, to many branches of science, which had been beyond the field of either mathematical or physical treatment.

Genetically, Galton believed that "genius" (a term he later abandoned for "eminence") and other traits, both desirable and undesirable, ran in families (e.g., *Hereditary Genius*, 1869), and he recognized the difference between abilities that were due to "patent" (phenotypic) versus "latent" (genotypic) influences. In conjunction with his interests in genetics and behavior, he collected anthropometric measures both morphological and of sensory, motor, and memorial abilities; the latter three were essential in his conceptualization of intelligence. He was the first to study twins and other familial relationships in the context of human behavioral genetics.

Galton sought effective ways to quantify, interpret, and communicate his findings, favoring graphical presentations and statistical summaries. He was well aware of the such methods being developed to assess variability among astronomers' observations (also known as "error") as well as Adolph Quetelet's use of such methods to summarize large samples of anthropometric measurements (e.g., chest girths of 5,758 Scottish soldiers obtained from tailors' measurements for the soldiers' jackets). Galton also recognized the value of quantifying relationships so that predictions from one set of measures might be based on a set of related measures. To do that he developed the first statistical measure of "co-relation," and he provided the commonly used means of expressing correlation coefficients as two-digit decimal numbers between −1.0 and +1.0. Galton's correlation coefficient was based on quartile distributions; his protégé, Karl Pearson, put it on a sounder basis by using the normal distribution. Pearson and other notable pioneers in statistics such as Sir Ronald Fisher and Charles Spearman benefitted from Galton's influence and from funds left in his will to University College, London. Galton's legacy eventually included the development of the departments of statistics and genetics at UC, London.

Unfortunately, Galton's legacy will be tainted by his association with eugenics, a term he coined in *Inquiries into Human Faculty and Its Development*, (1883, pp. 24, 44). Galton was interested

in identifying youth with high potential for intellectual development and cultivating their development. However, taken to such intolerable extremes as discriminative immigration, sterilization, and miscegenation laws in the USA (and elsewhere) and to the horrifying extremes of genocide represented by Nazi Germany (and elsewhere), eugenics arouses disgust today. Despite that, it should be acknowledged that much of what Galton advocated continues to be represented today as merit scholarships and other means of recognizing and rewarding abilities deemed to be worthy of fostering.

References

Anonymous. (1911). Francis Galton: February 16, 1822–January 17, 1911. *Nature, 85*, 440–445.

Darwin, G.H. (1912). Galton, Sir Francis. In S.S. Lee (Ed.), *The dictionary of national biography* (pp.70–73). London: Oxford University Press.

Forrest, D.W. (1974). *Francis Galton: The life and work of a Victorian genius*. New York: Taplinger.