Part I
Perspectives

1

The Genius in History
Historiographic Explorations

Laura C. Ball

The History of the world is but the Biography of great men. (Carlyle, 1841, p. 34)

Geniuses throughout history have fascinated academic and pop-culture authors alike. We consume autobiographies, biographies, films, histories, and academic theories of the outliers, the heroes, the Great Men, the geniuses. They are historical celebrities. We are captivated by them, their lives, and their work, but also their stories provide readers with a source of affiliation and inspiration. Yet, despite the attention given to their seemingly inevitable greatness, these celebratory histories tell us little about why they are considered to be great.

In this chapter, I explore the kinds of geniuses who have captured our attention over time, the ways in which they have been depicted, and the methods used to tell their stories. First, I outline who have been labeled as geniuses, and how these "great men" have been identified. As most historiography of genius flows from Thomas Carlyle's (1841) classic text *On Heroes, Hero-Worship and the Heroic in History*, his distinction between "heroes" and "geniuses" will be discussed specifically. Particular attention will also be paid to how psychologists entered the dialogue and their contributions to the narrative. Next, I review the different historiographic and psychological methods employed to study the life stories and achievements of identified geniuses. Finally, I question what qualities, characteristics, and events are privileged by authors using each of these historical methods, and therefore how they reveal the genius in history.

The Relationship between History and Genius

Thomas Carlyle's (1841) *On Heroes, Hero-Worship and the Heroic in History* is a classic text on historiography, which is now seen by historians as representative of an outdated form of historical argumentation and analysis. Carlylian – or Great Man – history is gendered, celebratory, whiggish, and presentist. Carlyle expressly believed that history is – and should be – an exercise in hero-worship. The first lecture in the text, "The Hero as Divinity," encapsulates his perspective on historical subjects. To begin the lecture, Carlyle says:

The Wiley Handbook of Genius, First Edition. Edited by Dean Keith Simonton.

> We have undertaken to discourse here for a little on Great Men, their manner of appearance in our world's business, how they have shaped themselves in the world's history, what ideas men formed of them, what work they did; – on Heroes, namely and on their reception and performance; what I call Hero-worship and the Heroic in human affairs. (1841, p. 3)

To current historians and scholars interested in genius, Carlyle's perspective seems foreign. He describes the genius and the hero as "divine" and "God-inspired." Yet, while this perspective is certainly out of step with current historical and psychological sensibilities, it did not arise in a vacuum. To further explore how the "Great Man" came to enter the world of historiography (historical methods), we must first examine the etymology of the word "genius."

From a historical perspective, the term "genius" is problematic: it has had a long history of use, and has acquired multiple meanings over time, each describing vastly different phenomena. It is not uncommon to see genius referring to eminence (e.g., Galton, 1865, 1869/1892), giftedness (e.g., Terman, 1916, 1925), or the character or *zeitgeist* of a time period or geographical region (e.g., Alaya, 1977).

The first known instance of the term genius being used is during the Roman Empire, where it referred to a male spiritual protector or guardian spirit (Murray, 1989; Simonton, 2009a). Typically, the protection offered by a genius was applied to individuals, families, and physical spaces. Every person, family, city, body of water, or other important physical structure had its own genius. In addition, a genius could also refer to the character of a society, and the "spirit of the times" or *zeitgeist*.

Over time, genius began to be more intimately connected with individuals, and ultimately came to bear directly upon their personalities. However, it was not until the Enlightenment when the connotations of the word took on its present implications: genius referring to the superior or unique abilities of an individual person (Albert, 1969; Murray 1989; Simonton, 2009a). During the Enlightenment

> a striking and fundamental change occurs in the meaning of the word: up till this time, genius as personal, protective spirit had been something every man possessed, now genius as an extraordinary creative power becomes the prerogative of a highly selected and privileged few. (Murray, 1989, p. 3)

However, despite this shift, the older connotations had not yet faded away. Samuel Johnson's (1755) *A Dictionary of the English Language* reflects this transition, where he provides the following definitions of genius: (1) the protecting or ruling power of men, places, or things; (2) a man endowed with superior faculties; (3) mental power or faculties; (4) disposition of nature by which any one is qualified for some peculiar employment; and (5) nature, disposition. Clearly, only the first definition is consistent with the original Roman meaning. This is probably because another similar word had also been transported from Latin into the English language – *ingenium*.

Ingenium referred to both a natural disposition and an innate ability. It is a quality that cannot be developed through time and education, and only a rare few are lucky enough to be born with this kind of talent (Murray, 1989). When translated into English,[1] *ingenium* became genius as well, therefore adding to the complexity of the original definition. As a result, the original spiritually linked term survived and became entangled with the notion of natural ability (Derrida, 2003/2006;

Murray, 1989). This way of thinking about genius remained popular throughout the 19th century.

Looking at Carlyle's work through this lens, his vision of history as hero-worship was completely commensurate with academic thinking at the time: talent was linked to divine inspiration. Even though the hero differed from the genius – the former seen in myth, religion, politics, and the military, and the latter in the arts and sciences – both were to be celebrated for their divine gifts. In this way, Carlyle was able to advance a unique perspective on history that was driven by the divinely inspired genius and the mythical hero, forming a historiographic approach that is expressly a celebration of these "Great Men."

History and the Psychology of Genius

Two decades after Carlyle's famous lectures on heroes and hero-worship, Darwin's (1859) *On the Origin of Species* was published. Not only did this classic text come to revolutionize the study of biology, but also it transformed the then-burgeoning discipline of psychology. Darwin's cousin, Francis Galton, was a devout follower[2] of this new theory of evolution, and sought to apply it to his own interests.

Galton was interested in what drives greatness, and he posited that "natural ability" – a trait that would be similar to intelligence – was at its root. However, as a working test for intelligence had yet to be developed, he turned to the next best thing: historical records. Through kinship studies of eminent individuals, Galton believed that the hereditary nature of natural ability could be inferred (Galton, 1865, 1869/1892). In *Hereditary Genius* (1869/1892), Galton presented a kinship study of eminent judges, military commanders, scientists, poets, and oarsmen, among others, which did indeed show a correlation among family members: Where one individual in a family was considered to be an eminent contributor to society, successive generations of men often followed in a similar trajectory. He therefore concluded that ability is hereditary. Galton further expressed the belief that certain psychological factors, such as persistence, were essential to the expression of one's natural ability; however, social and other environmental factors had little bearing. He said, "If a man is gifted with vast intellectual ability, eagerness to work, and power of working, I cannot comprehend how such a man should be repressed" (1869/1892, p. 39). In essence, geniuses are born, not made; nature, not nurture.

Galton's approach has been very influential in the psychology of genius literature. Besides defining one of the primary narratives – "genius" as a hereditary quality that can be identified, measured, and predicted, he also began to move the understanding of genius as something "Other" and divine towards an understanding of genius as the product of positive evolutionary forces (particularly sexual selection). However, Galton's work was also important because he was the first to use historical data to argue his thesis. While Galton belongs to the Carlyle's "Great Man" school, their approaches differed drastically. Carlyle's approach used genius to shape the telling of history, while Galton's used history to shape the science and psychology of genius.

However, some authors at the time took issue with Carlyle's and Galton's main premises – that eminent individuals are worthy of study, and that they are the primary mechanism that drives society forward. Herbert Spencer, who is widely considered

to be the cofounder of Social Darwinism along with Galton, did not ascribe to the "Great Man" school of thought. Spencer said:

> The genesis of societies by the action of great men may be comfortably believed so long as, resting in general notions, you do not ask for particulars. But now, if, dissatisfied with vagueness, we demand that our ideas shall be brought into focus and exactly defined, we discover the hypothesis to be utterly incoherent. (1878/1921, pp. 29–30)

Spencer believed that the thesis inherent in Carlyle's and Galton's work was fatally flawed. The psychological characteristics, achievements, and life histories of eminent individuals do not provide a thorough explanation of discovery and social evolution. The historian, John Fiske – one of Spencer's disciples – elaborated on this point:

> History is something more than biography. Without the least disrespect to the memories of the great statesmen of Greece and Rome, it may safely be said that one might learn all of Plutarch's Lives by heart, and still have made very little progress toward comprehending the reasons why the Greek states were never able to form a coherent political aggregate, or why the establishment of despotism at Rome was involved in the conquest of the Mediterranean world. The true way to approach such historical problems as these is not to speculate about the personal characteristics of Lysander or C. Gracchus, but to consider the popular assemblies of the Greeks and Romans. (1881, p. 81)

Therefore, in order to understand greatness, we need to go beyond Carlyle's Great Man histories, and we also need to dispense with Galton's inherited characteristics thesis. The key to genius is not within the individual, but within society itself. As Spencer said, "Before he can re-make his society, his society must make him" (1878/1921, p. 31). From this perspective, genius is made, not born; nurture, rather than nature. In this way, the Spencerian school uses the existence of genius as a signpost to point to interesting political, social, and cultural trends. As in the Carlylian tradition, the genius shapes history, but instead of exploring individual life histories (as in the Carlylian tradition), or psychological characteristics (in the Galtonian tradition), genius is used to explore social histories.

During this debate between Social Darwinists, a third perspective on the relationship between genius and history began to emerge in American psychology. James Mark Baldwin (1913/2001) argued for a midway point between the Galtonian and Spencerian positions. Building on evolutionary theory, genius could be thought of as a variation[3] from the mean – the "average man." While this premise is shared by Galton, Baldwin explicitly cautioned against understanding genius to be a product of variations in natural ability. Rather, genius should be thought of as the expression of good judgment and social fit. An individual may create works of art or scholarship, but if they have bad judgment and select the wrong ideas to bring to fruition, they will never be labeled as a genius – and depending on the nature of those ideas, they may even be labeled "mad" or "bad" instead. For example, Caligula may have become the Emperor of Rome, but he clearly selected the wrong ideas to bring to fruition. Historians depict him as a cruel tyrant, whose rule was ended by assassination. In the end, he is remembered as both mad and bad. On the other hand, if an individual were able to apply good judgment to the selection of ideas, then they may have a chance at

becoming a genius. Of course, whether an idea is truly "good" is a matter of social fit, and they will only be remembered as a genius if society recognizes the value in their work. In this way, Baldwin's work represents a midpoint between Galton's psychological, nativist approach, and Spencer's sociogenic approach; it straddles the nature and nurture positions.

Baldwin's work marks an interesting turn in the relationship between genius, history, and psychology. First, where Baldwin's work concerns the relationship between genius and history, "social fit" can be used to explain fluctuations in the use of "genius" as an appellation to describe a particular individual over time. For example, Antonio Salieri was a well-respected and widely sought-after composer in his time. He also taught many other great composers including Franz Schubert, Franz Liszt, and Ludwig van Beethoven. However, now his work is rarely considered to be of the caliber of his students', and the label of genius is instead given to one of his contemporaries – Wolfgang Amadeus Mozart.

Second, where Baldwin's work concerns the relationship between history and the psychology of genius, the focus on normal variation in ability continues to uphold the understanding that genius is not divine. Baldwin said,

> To know that the greatest men of earth are men who think as I do, but deeper, and see the real as I do, but clearer, who work the goal that I do, but faster, and serve humanity as I do, but better, – that may be an incitement to my humility, but it is also an inspiration in my life. (1913/2001, p. 177)

Here, histories of genius serve Galton's project in that they are a way to better understand human development and ability. Baldwin's quote also hints at the role that stories such as these have in providing guidance, inspiration, and a sense of affiliation in others (see also Hong & Lin-Siegler, 2012; Söderqvist, 1996). This will be expanded on in greater detail below. And yet, despite the importance that Baldwin places on individual variation in ability and judgment, he simultaneously stresses the role of social fit as the mechanism for social evolution. Furthermore, the potential for talent that resides within the individual is the result of population-level variations, but that potential can only be realized in the context of education and other positive environmental pressures (cf. organic selection, and the "Baldwin Effect"; Burman, in press; Wozniak, 2009). In other words, genius is both born and made.

The relationship between genius, psychology, and history continues to be informed by the theories espoused by Carlyle, Galton, Spencer, and Baldwin. For example, in his contribution to the psychology of genius literature, Howard Gardner (1997) adopted the Carlylian "Great Man" approach in order to develop and illustrate his theory of extraordinariness. However, the Great Man style of historiography also informs notable histories of psychology, such as *A History of Experimental Psychology* (Boring, 1929), *History of Psychology in Autobiography* (Murchison, 1961), *Great Psychologists* (Watson, 1963), and *Portraits of Pioneers in Psychology* (Kimble & Wertheimer, 1998), among many others (see Ball, 2012). On the other hand, while Galton's and Spencer's views have little traction with modern psychologists, falling too far to either side of the nature versus nurture debate, they still frame discussions on the topic (see Simonton, 2009a). The moderate position held by Baldwin seems to adequately characterize the psychology of genius literature today. Admittedly, some do fall more on the side of

nature (e.g., Simonton, 1999a, 2008), and some more on the side of nurture (e.g., Ericsson, Krampe, & Tesch-Römer, 1993; Howe, 1999). Yet each presents a slightly more nuanced and complex picture of how genius emerges.

The Psychology of Genius: Theory Across History

Given the complexity of the genius literature, it can be difficult to paint a complete picture of the philosophical and theoretical narratives that inform our understanding of the psychology of genius. The following is a system for understanding the literature, which is based on three psychological and one statistical construct: (1) creativity; (2) madness; (3) intelligence; and (4) eminence. Of course, this is an overly simplistic and imperfect categorization, as many contributors to the psychology of genius literature have blended interests (e.g., Andreasen, 1987, 2005; Eysenck, 1995; Jamison, 1989, 1993; J. C. Kaufman, 2001; S. B. Kaufman, Christopher & J. C. Kaufman, 2008). Therefore, for ease of explanation in this context, I have included their contributions in the category to which they seem to have awarded the most significance.

The creative genius

Creativity has had the longest tradition of research with respect to its relationship to genius, and is consequently one of the most well-known themes. The theoretical tradition of the creative genius theory dates back to the Enlightenment, and Immanuel Kant's (1790/2000) rational aesthetics. While Kant, and other proponents of this tradition (e.g., J. C. Kaufman, 2001; S. B. Kaufman, Christopher & J. C. Kaufman, 2008), may disagree on whether genius is expressed in the arts alone, or both the arts and sciences together, they do agree on several points. There is a strong consensus that the creativity of a genius is innate and cannot be learned. Furthermore, they tend to emphasize that this creativity is, to some extent, outside the control of the genius. This notion continues to propagate the spiritual undertones to the term, as well as the idea of spontaneous creation for works of genius. It also explains why many of these authors also emphasize the link between creativity and madness; perhaps it is the sheer uncontrollable force of their creativity (and all that is associated with it, e.g., social exclusion) that drives them mad sooner or later. Examples of this type of genius are often drawn from the arts: music (e.g., Mozart), art (e.g., Pablo Picasso), dance (e.g., Mikhail Baryshnikov), poetry (e.g., Emily Dickinson), literature (e.g., William Shakespeare), and film (Steven Spielberg).

The mad genius

The second most prevalent theory is what is sometimes known as the "mad genius syndrome" (Simonton, 1999a). Proponents of this position (e.g., Andreasen, 1987, 2005; Jamison, 1989, 1993; Kretschmer, 1929/1970; Lombroso, 1889/1905) hold that there is a strong correlation between genius and insanity, madness, or mental illness. This categorization covers different sides of the "dark side" of genius: the "good" genius who struggles with mental illness and/or substance abuse, and the

"evil" genius who performs acts so terrible that they could not possibly be sane. While the proponents of this position have not achieved a consensus as to whether or not there is a biological basis to genius, they do tend to share a disbelief in the eugenicist notion that breeding geniuses would be beneficial for humanity (see Galton, 1865, 1869/1892; Terman, 1925). While the mad genius may produce some benefits for humanity, overall their presence is thought to be problematic, and could in some cases pose more of threat than any great good. Similarly to the "creative genius" literature, examples of the "good" mad genius are often drawn from the arts: music (e.g., Kurt Cobain), art (e.g., Vincent Van Gogh), dance (e.g., Isadora Duncan), poetry (e.g., Edgar Allan Poe), literature (e.g., Virginia Woolf), and film (e.g., Marilyn Monroe). On occasion, however, there are examples to be found in the sciences (e.g., John Nash). Examples of the "evil" genius are almost exclusively drawn from the monarchy, political, and military leaders (e.g., Vlad III, known as Vlad the Impaler) or criminal activities (e.g., Jack the Ripper).

The intelligent genius

The third type, the intelligent genius, has not enjoyed quite as long a tradition as the previous two categories. In the early 20th century, it managed to gain considerable ground in the psychological literature, mainly through Lewis M. Terman's work (1916, 1925; see also Cox, 1926; Hollingworth, 1926, 1942; Miles & Wolfe, 1936). However, as Robert S. Albert (1969) has noted, the use of the term "genius" was gradually phased out and replaced with the notion of "giftedness" by the mid-20th century. Therefore, taken from this perspective, giftedness research (especially longitudinal studies) can also be thought of as part of the larger lineage of research on the psychology of genius.

The philosophical roots of the intelligent genius tradition date back to the German Romantic philosopher, Arthur Schopenhauer (1883/1964), in *The World as Will and Idea*. However, this stream of thought remained fairly isolated in philosophy. Rather, it was the psychometric and historiometric traditions that began in England with Galton (1865, 1869/1892) that got taken up by psychology proper. Unfortunately for proponents of the intelligent genius theories, however, there is little similarity between them. They are divided on the issues of sociohistorical influence, how genius may be recognized, and what intelligence is at the most basic level (see, for example, Gardner, 1997; Terman, 1925). However, there are two distinct points of convergence beyond their primary focus on intelligence: They all acknowledge that genius is an innate gift that cannot be taught; and genius is, to some extent, a hereditary quality. Examples of intelligent geniuses are, unsurprisingly, most often drawn from the sciences (e.g., Albert Einstein), and more recently developers of technology (e.g., Steve Jobs) and business (e.g., Warren Buffett).

The eminent genius

The final type is the eminent genius, which is most clearly evident in the works of Albert (1975), Castle (1913), and Cattell (1903, 1906, 1910). While most of the authors espousing this position believed that eminence is not sufficient for defining genius in and of itself, they did believe that one had to become eminent before being

considered a genius, and that this step was the most crucial element. Albert (1975) produced an often-cited definition of genius that is based on this notion:

> A person of genius is anyone who, regardless of other characteristics he may possess or have attributed to him, produces, over a long period of time, a large body of work that has a significant influence on many persons for many years; requiring these people, as well as the individual in question, to come to terms with a different set of attitudes, ideas, viewpoints, or techniques. (p. 144)

From this perspective, it almost does not matter whether someone has become known as a genius because of their outstanding creativity, intelligence, or even madness – they must all be recognized as genius first. Therefore, fame, celebrity, notoriety, or eminence is a prerequisite for genius; it is a necessary condition. Examples of people who are eminent geniuses may come from any domain, as recognition is the only precondition. However, there are those who could be said to have become eminent who may not have been otherwise if it were not for birth right (e.g., Henry VIII), marriage (e.g., Anne Boleyn), celebrity (e.g., Paris Hilton) or other factors external to the person, such as being victims of, or surviving, a tragedy (e.g., Margaret Brown, known as "The Unsinkable Molly Brown").

The Psychology of Genius: Historical Methods

Theoretical orientation and explanation are not the only axes upon which the history of the psychology of genius literature can be explored; methodology has always been a defining feature of psychological explanation. As with the broader field of psychology, the psychology of genius literature is dominated by two styles of analysis: quantitative and qualitative. It should be noted that what follows is, of necessity, a brief account of the different methods used to study genius. For a more complete discussion, refer to Simonton's (1990, 1999b, 2009b) writings.

Quantitative approaches

In general, the quantitative approaches to the psychology of genius pay homage to Galton, who first brought nomothetic and statistical reasoning to bear on the psychological study of genius. However, contemporary methods can most clearly be seen in Lewis M. Terman's *Genetic Studies of Genius* project, where there is a definable research study design (longitudinal), the use of psychometric assessments (e.g., the Stanford–Binet Intelligence Scales; Terman, 1925), and the use of what has come to be known as historiometry (Cox, 1926).

Psychometrics Psychometric studies of genius are relatively rare, simply because recognized geniuses are in short supply – most have long since passed away and fall into the category of "historical subjects" rather than "research participants." That said, there are some longitudinal studies of gifted students and cross-sectional assessments of talented adults that have contributed to the psychology of genius literature (e.g., Helson & Crutchfield, 1970; Lubinski, Webb, Morelock, & Benbow, 2001). Given that this method does not typically make use of historical data, a discussion of this topic more properly belongs in the "science of genius." Therefore, I will simply outline the

early development of this method in the psychology of genius literature, rather than its more modern usage.

Galton was a pioneer in the psychometric approach to the study of genius. His anthropometric laboratory allowed him to conduct large-scale assessments of individual differences on factors such as reaction times, sensory acuity, height, weight, finger prints, and so on (Fancher, 1985; Simonton, 2009a). His work, published in *Inquiries into Human Faculty and its Development* (1883), inspired James McKeen Cattell to undertake similar assessments (Fancher, 1985). However, it was through the work of one of his graduate students – Clark Wissler – that Galton's (and Cattell's) methods were eventually found to be ineffective (Wissler, 1901).

In 1925, Terman published the first volume of a book series chronicling a large-scale longitudinal study of gifted children. Each participant, identified as gifted using the Stanford–Binet Intelligence Scales (see Terman, 1916), was followed throughout their lives by the Stanford research team. During that time, the participants and their families were asked to complete a large number of psychometric assessments, including personality tests, and assessments of their mental and physical health. Many demographic details (e.g., marital status) were also tracked. While the *Genetic Studies of Genius* project was in its infancy, another psychologist – Leta S. Hollingworth – was also doing studies of gifted children (1926, 1942). Both of these studies have contributed greatly to the psychology of genius literature, as well as to our understanding of gifted children and adults.

Historiometrics This is by far the most often used quantitative approach to studying the psychology of genius. Historiometry is the "scientific discipline in which nomothetic hypotheses about human behavior are tested by applying quantitative analyses to data concerning historical individuals" (Simonton, 1990, p. 3). Historiometric studies typically draw from at least one of four potential sources: (1) personality sketches; (2) developmental histories; (3) content analyses; and (4) expert surveys (Simonton, 2009b). Overall, this is a statistical approach to the presentation of historical arguments that has resonated with psychologists (and social historians).

Within the genius literature, Galton's (1869) article "Hereditary Talent and Character" was the first foray into a statistical understanding of eminence, which was further developed in his book *Hereditary Genius* (1869/1892). In these publications, where Galton attempted to determine if natural ability was an inherited quality, he looked at how many eminent individuals had family who were also eminent in their time. He also tracked the degree of the relationship, whether they were first relations (e.g., parent–child, siblings), second relations (grandparent–child, uncle–nephew, cousins), and so on. This kinship, or pedigree, method of analysis not only influenced later historiometric studies, but also came to contribute to the development of behavioral genetics.[4]

Following on the heels of these publications, Cattell published a series of articles where he further developed Galton's methodology (Cattell, 1903, 1906, 1910). He quantified "eminence" by developing a list of the 1000 individuals who occupied the most space across a number of encyclopedias and other reference works. One of his students, Cora Sutton Castle, also adopted this methodology to do a study of eminent women (Castle, 1913). Havelock Ellis (1904) further refined the method by examining biographical characteristics of eminent individuals, such as birth order, class, marital status, and other demographic factors.

The first psychologist to use the term "historiometry" in their study was Catharine Cox (1926). For her dissertation, under the direction of Terman, Cox examined biographies and archival documents of noted geniuses, such as Galton and John Stuart Mill. She used this information to generate IQ scores, and then ranked her eminent historical subjects by that criterion. This is notable because it was the first attempt to generate a relative ranking of eminent individuals based on psychological characteristics thought to relate to genius, rather than by relative eminence (Cattell's methodology), which could be influenced by popularity/celebrity, salacious stories/notoriety/infamy (e.g., sexual exploits, criminal activities), or social position (e.g., monarch, president; see also Terman, 1940). Later, as Catharine Cox Miles, she published a further study that compared her IQ estimates to estimates of mental and physical health (Miles & Wolfe, 1936). Miles's work has probably had the biggest influence on current historiometrics, most notably those done by Dean Keith Simonton (e.g., Simonton, 1984, 1994, 2002).[5]

Other approaches A new form of historical scholarship is emerging, which may provide new and fresh insights on the psychology of genius. The notion of a "factory" was first used by Daniel P. Todes (1997, 2002) to describe the way in which Ivan Pavlov was able to produce large quantities of scholarly writings on his classical conditioning studies. Recently, this approach has been adapted by Jeremy T. Burman and me (Ball, 2012; Burman, 2012; Burman & Ball, 2011, 2012). A "psychological factory" is defined as any author who is able to publish 10 or more publications for at least two consecutive years. Using this search and selection criterion in PsycNET, we were able to develop a list of "factories" operating in (predominately North American) psychology. By applying this method, we are able to ask new questions of history, such as: what is effective leadership and mentoring in psychology; and what kind of departments foster excellent publication records? This method does not look to data and statistics to provide answers, as it would with traditional historiometric approaches to productivity and eminence in psychology (e.g., Simonton, 2000, 2002, 2005). Rather, it uses the data to open up new questions and new avenues of historical critique and explanation. It therefore acts as a bridge between the quantitative and qualitative approaches.

Qualitative approaches

In general, qualitative approaches to the psychology of genius pay homage to the Carlylian tradition. While many authors who write in this style are not "hero-worshippers," and may even be critical in their orientation, their methods nonetheless derive from Carlyle's lineage.

Biography The varieties of biography make up by far the largest amount of qualitative work produced on the psychology of genius. Frequently, popular biographies are written about recognized geniuses (e.g., Gleick, 2003; Goldsmith, 2005; Kanigel, 1991) to be consumed by academic and general audiences alike. However, academic authors also produce biographies of eminent individuals and geniuses. Some are strictly traditional narratives concerning an individual or group of individuals (e.g., Dewsbury, Benjamin, & Wertheimer, 2006; Forrest, 1974; Minton, 1988), whereas others are used to present a historical argument (e.g., Fancher, 1985; Gould, 1996; Rutherford, Vaughn-Blount, & Ball, 2010). While the former run the risk of being akin to

"hero-worship," and are often deemed celebratory in nature, the latter often have a more critical focus.

Interestingly, there are biographies of both a celebratory and critical nature that aim to provide insight into the psychology of genius, or the study of genius. For example, Albert (1998) used the life stories of G. H. Hardy and Srinivasa Ramanujan – both mathematicians – to illustrate the differences between giftedness, talent, and genius. In addition, Gardner (1997) has used biographies to illustrate his theory of extraordinariness, featuring the lives of Mozart, Sigmund Freud, Woolf, and Mahatma Gandhi. On the other side of the coin, Geoffrey Cantor (1996) has borrowed Michael Faraday's life story in order to illustrate how biographies cast scientists in the role of "hero," while Peter Hegarty (2007) has shown the gendered and gender-conformist nature of Terman's theory of genius through an exploration of Terman's life experiences.

There is yet another variety of biography – psychobiography – that has been used to explore the nature of genius. Psychobiography combines biographical narratives with psychoanalysis in order to say something new about the historical subject. An excellent example of this is Erik Erikson's (1958) case study of Martin Luther. Raymond E. Fancher (1983, 1998) has also written extensively on Galton's life and work using various psychobiographical approaches. All of these strategies come together to give the reader a compelling and innovative look at the nature of genius, historical geniuses, and those who study them.

Other techniques There are relatively few authors who have moved beyond biography and psychobiography as tools to explore the psychology of genius. However, participant interviews have been used by Nancy C. Andreasen (1987) to explore the prevalence of mental illness among creative writers. Similarly, Mihaly Csikszentmihalyi (1996) interviewed eminent creators across the arts, humanities, sciences, applied sciences, and politics in order to derive a theory of creativity and creative individuals. Using a slightly different approach, Kay R. Jamison (1989) used open-ended questionnaires in order to elucidate responses from writers and poets describing their struggles with mental illness. In all of these cases, not every participant may have been a "genius," but they were certainly all eminent creators – some were even Nobel Prize winners. These alternative strategies help present an autobiographical voice that is rarely heard in the psychology of genius literature.

The Genius in History

Obviously, there are a wide variety of approaches to studying the psychology of genius. But how do these methods impact our perception of geniuses? What qualities, characteristics, and stories do they lead us to privilege in our scholarship? Here I will discuss not the relationship between the genius and history, but the relationship between the author and their eminent historical subject(s).

Writing history is a continual process of engagement and reconstruction. One historian – Mary Terrall (2006) – said this of writing biographies in particular,

> A biography, a written life, in some manner brings back to life someone from the past, known to the present only through the material traces left behind, in archives, in attics, in print. Though historians do not tend to think they are in the business of resurrection, biographers do share something with novelists in this manner of bringing characters to life, or back to life. (p. 306)

This allusion to writing fiction is intentional; Terrall argues that biographers engage in many of the same processes as novelists and use many of the same techniques, but unlike the novelist, their stories are bound by empirical, material evidence. And yet, biographies (and other histories) are a form of story-telling: We choose the narrative we put forward. But why do we choose the narratives we espouse?

Daston and Sibum (2003) have suggested that people unknowingly adopt the "persona" – the explicit and implicit cultural values – of their discipline.[6] The "scientific persona" is a role or identity that a scientist implicitly strives to emulate (see also Bordogna, 2005). Elsewhere, I have suggested that perhaps it is those individuals who most closely emulate the values of the discipline who become recognized as geniuses (Ball, 2012). Similarly, it is possible that biographers reconstruct their historical subjects in light of these personae; "genius" has its own persona (creativity, intelligence, madness), and biographers privilege evidence that fits with these narratives. Cantor (1996), when writing his biography of Michael Faraday, noted that other biographers had constructed different "Faradays" to fit the narrative they were trying to tell:

> Closer inspection of the literature shows that these "Faradays" fulfilled many different and contradictory functions. Thus, for some authors, he became the great discoverer of nature's secrets, while for others he was the Christian philosopher *par excellence*, or the leading public lecturer, or the scientist with refined sensibilities – to mention but a few. These portrayals of Faraday – or more exactly these "Faradays" – embody complex cultural values and meanings. They posit the nature of science, its aims and methods, and also the ideals for which the scientist should strive. (p. 172)

In all of these stories, however, the scientist (in this case Faraday) is cast in the role of hero to academic and popular audiences. These narratives serve important functions, including inspiration to potential and current scientists (Cantor, 1996; Hong & Lin-Siegler, 2012; Söderqvist, 1996; see also earlier quote from Baldwin, 1913/2001). However, they also have an impact on how we understand the psychology of genius. These biographies form an important source of information for any methodological approach, whether quantitative or qualitative. They introduce an important limitation on how we are able to understand the psychology of genius.

The Construal-Level Theory of psychological distance (Liberman & Trope, 2008; Trope and Liberman, 2010) suggested yet another limitation: Perceived psychological distance has an effect on the inferences we make. The more psychologically distant we perceive an "Other" to be, the more likely we are to process their actions in terms of high-level personal qualities and characteristics. For those whom we perceive to be psychologically close to us, we tend to explain their behavior in highly situational and contextualized terms (e.g., "I studied hard, and that's why I got an 'A' on the test"). For those that we perceive to be psychologically distant, we attribute their behavior to stable personality factors (e.g., "she got a 100% on that exam. She must be a genius!"). This is similar to the false attribution bias for in-groups versus out-groups: The psychologically distant "Other" is akin to the out-group.

In the case of our eminent historical subjects, we see them as psychologically distant on at least two levels: time and behavior. Often, these individuals are not our contemporaries in a given field, providing perceived distance over time. And there is a perceived distance in their behaviors – they have produced extremely original, creative, and highly valued works, and their other behaviors may be erratic, reflecting a

mental illness or substance-abuse problem. Because of this, we may see their behaviors as more intentional, directed, and indicative of underlying motivations and psychological attributes. In essence, we see them as "performing" genius (cf. Butler, 1990). This "performance" then becomes the focus of the historical narrative.

Recently, Simonton (2012) examined the biographies and other historical works surrounding Galileo and his discoveries. Typically, biographers portray Galileo's findings as purposeful, the product of foresight, intuition, and unusual insight. However, upon closer examination, Simonton found that this was not strictly speaking the case. Galileo had successes as well as failures along the way to his discoveries, but it is his successes that are continuously highlighted by his biographers. To the contrary, the path to Galileo's discoveries was not linear and purposeful. Often, he wandered the path blind and found inspiration in his artistic endeavours. Mario Biagioli (1993) has also written about the extent to which Galileo's patronage networks influenced his work. Not only did they provide him with necessary funds, but they also provided him with scientific credibility. Much like Cantor (1996) found in his examination of Faraday's biographies, the traditional image of Galileo has come to represent the scientific ideal of objective, independent, empirical observation. He is cast as a scientific hero. Galileo's failures, the inspiration he found in the arts, and his need for wealthy patrons are often absent in his biographies.

This case study highlights the effects of psychological distance, and the scientific persona at work in the biography of genius. Genius is constructed and reconstructed through biographical and other historical narratives. In the process, new life and meaning are given to the historical subject. This constructed representation of the genius through biography then comes to inform other approaches to the psychological study of genius, feeding historiometric, and psychobiographic research. In this way, the historian creates the narrative upon which the psychology of genius is based, thereby revealing the genius in history.

Notes

1 This is also true in French (see Derrida 2003/2006).
2 The choice in wording ("devout follower") is intentional. Galton was an Anglican and a committed member of the Church of England prior to *Origin*'s publication. However, after reading Darwin's manuscript, he suffered a crisis of faith. Fancher (2009) has argued that Galton responded by replacing one faith and set of beliefs with another, turning to the theory of evolution with religious fervor and devotion.
3 This reference to "variation" should not be interpreted as "genetic variation." Baldwin is writing in a pre-Mendelian time, and therefore without our current understanding of genes and genetics. By "variation', he is referring to the original Darwinian meaning: within a niche, species vary. These variations drive natural selection. Baldwin also seems to be referring to the idea of the "normal curve," which is rooted in Galton's work (who drew inspiration from Quetelet).
4 Especially through two publications following his work on genius where he developed an early version of twin study methodology (Galton, 1876, 1883; see Teo & Ball, 2009).
5 Simonton and Song (2009) conducted a secondary analysis of the Miles and Wolfe (1936) data using the same materials, gleaned from the archives at Akron and Stanford. Interestingly, they found slightly different results.
6 This is akin to Goffman's (1959) dramaturgical model.

References

Alaya, F. (1977). Victorian science and the "genius" of woman. *Journal of the History of Ideas*, *38*, 261–280.

Albert, R. S. (1969). The concept of genius and its implications for the study of creativity and giftedness. *American Psychologist*, *24*, 743–753.

Albert, R. S. (1975). Toward a behavioral definition of genius. *American Psychologist*, *30*, 140–151.

Albert, R. S. (1998). Mathematical giftedness and mathematical genius: A comparison of G. H. Hardy and Srinivasa Ramanujan. In A. Steptoe (Ed.), *Genius and the mind: Studies of creativity and temperament* (pp. 111–137). New York, NY: Oxford University Press.

Andreasen, N. C. (1987). Creativity and mental illness: Prevalence rates in writers and their first-degree relatives. *American Journal of Psychiatry*, *144*, 1288–1292.

Andreasen, N. C. (2005). *The creating brain: The neuroscience of genius*. Washington, DC: Dana Press.

Baldwin, J. M. (2001). Social and ethical interpretations in mental development: A study in social psychology. In R. H. Wozniak (Ed.), *Selected works of James Mark Baldwin: Developmental psychology and evolutionary epistemology* (Vol. *2*). Bristol, UK: Thoemmes Press. (Original work published 1913)

Ball, L. C. (2012). Genius without the "Great Man": New possibilities for the historian of psychology. *History of Psychology*, *15*, 72–83.

Biagioli, M. (1993). *Galileo, courtier: The practice of science in the culture of absolutism*. Chicago, IL: University of Chicago Press.

Bordogna, F. (2005). Scientific personae in American psychology: Three case studies. *Studies in the History and Philosophy of the Biological and Biomedical Sciences*, *36*, 95–134.

Boring, E. G. (1929). *A history of experimental psychology*. New York, NY: Century.

Burman, J. T. (2012). Jean Piaget: Images of a life and his factory. [Invited research report inspired by the book *Bonjour Monsieur Piaget: Images d'une vie – Images of a life*, curated by M. Ratcliff.] *History of Psychology*, *15*, 283–288.

Burman, J. T., & Ball, L. C. (2011, August). *Mechanically objective history: Mining PsycINFO, excavating the discipline's "psychological factories."* Paper presented at the American Psychological Association conference, Washington, DC.

Burman, J. T., & Ball, L. C. (2012, July). *Beyond the Great Man: Psychological factories as a method of inquiry*. Paper presented at the Cheiron conference, Montreal, QC.

Burman, J. T. (in press). Updating the Baldwin effect. *New Ideas in Psychology*.

Butler, J. (1990). *Gender trouble*. New York, NY: Routledge.

Cantor, G. (1996). The scientist as hero: Public images of Michael Faraday. In M. Shortland & R. Yeo (Eds.), *Telling lives in science: Essays on scientific biography* (pp. 171–194). New York, NY: Cambridge University Press.

Carlyle, T. (1841). *On heroes, hero-worship and the heroic in history*. London, UK: J. Fraser.

Castle, C. S. (1913). A statistical study of eminent women. *Archives of Psychology*, *7*, 1–90.

Cattell, J. M. (1903). A statistical study of eminent men. *Popular Science Monthly, LXII*, 359–377.

Cattell, J. M. (1906). A statistical study of American men of science: The selection of a group of one thousand scientific men. *Science*, *24*, 658–665, 699–707, 732–742.

Cattell, J. M. (1910). A further statistical study of American men of science. *Science*, *32*, 633–648, 672–688.

Cox, C. (1926). *Genetic studies of genius (Vol. 2): Early mental traits of three hundred geniuses*. Stanford, CA: Stanford University Press.

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York, NY: Harper Perennial.

Darwin, C. (1859). *On the origin of species.* London, UK: John Murray.
Daston, L., & Sibum, H. O. (2003). Introduction: Scientific personae and their histories. *Science in Context*, *16*, 1–8.
Dewsbury, D., A., Benjamin, L. T., Jr., & Wertheimer, M. (Eds.). (2006). *Portraits of pioneers in psychology* (Vol. 6). Washington, DC: American Psychological Association.
Derrida, J. (2006). *Geneses, genealogies, genres, and genius: The secrets of the archive* (B. B. Brahic, Trans.). New York, NY: Columbia University Press. (Original work published 2003)
Ellis, H. (1904). *A study of British genius.* London, UK: Hurst and Blackett.
Ericsson, E. H., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, *100*, 363–406.
Erikson, E. H. (1958). *Young man Luther: A study in psychoanalysis and history.* New York, NY: Norton.
Eysenck, H. J. (1995). *Genius: The natural history of creativity.* New York, NY: Cambridge University Press.
Fancher, R. E. (1983). Francis Galton's African ethnography and its role in the development of his psychology. *British Journal for the History of Science*, *16*, 67–79.
Fancher, R. E. (1985). *The intelligence men: Makers of the IQ controversy.* New York, NY: Norton.
Fancher, R. E. (1998). Biography and psychodynamic theory: Some lessons from the life of Francis Galton. *History of Psychology*, *1*, 99–115.
Fancher, R. E. (2009). Scientific cousins: The relationship between Charles Darwin and Francis Galton. *American Psychologist*, *64*, 84–92.
Fiske, J. (1881). Sociology and hero-worship: An evolutionist's reply to Mr. James. *The Atlantic Monthly*, *47*, 75–84.
Forrest, D. W. (1974). *Francis Galton: The life and work of a Victorian genius.* London, UK: P. Elek.
Galton, F. (1865). Hereditary talent and character. *Macmillan's Magazine*, *12*, 157–166, 318–327.
Galton, F. (1869/1892). *Hereditary genius: An inquiry into its laws and consequences* (2nd ed.). London, UK: Macmillan. Retrieved from http://galton.org/books/hereditary-genius/text/pdf/galton-1869-genius-v3.pdf
Galton, F. (1876). The history of twins, as a criterion of the relative powers of nature and nurture. *Journal of the Anthropological Institute of Great Britain and Ireland*, *5*, 391–406.
Galton, F. (1883). *Inquiries into human faculty and its development.* London, UK: Macmillan.
Gardner, H. (1997). *Extraordinary minds: Portraits of exceptional individuals and an examination of our extraordinariness.* New York, NY: Basic Books.
Gleick, J. (2003). *Isaac Newton.* London, UK: Harper Perennial.
Goffman, E. (1959). *The presentation of self in everyday life.* New York, NY: Anchor Books.
Goldsmith, B. (2005). *Obsessive genius: The inner world of Marie Curie.* New York, NY: Norton.
Gould, S. J. (1996). *The mismeasure of man (revised and expanded).* New York, NY: Norton.
Hegarty, P. (2007). From genius inverts to gendered intelligence: Lewis Terman and the power of the norm. *History of Psychology*, *10*, 132–155.
Helson, R., & Crutchfield, R. S. (1970). Mathematicians: The creative researcher and the average Ph.D. *Journal of Consulting and Clinical Psychology*, *34*, 250–257.
Hollingworth, L. S. (1926). *Gifted children: Their nature and nurture.* New York, NY: Macmillan.
Hollingworth, L. S. (1942). *Children above 180 IQ: Stanford–Binet origin and development.* Yonkers-on-Hudson, NY: World Book Co.
Hong, H.-Y., & Lin-Siegler, X. (2012). How learning about scientists' struggles influences students' interest and learning in physics. *Journal of Educational Psychology*, *104*, 469–484.
Howe, M. J. A. (1999). *The psychology of high abilities.* London, UK: Macmillan.

Jamison, K. R. (1989). Mood disorders and patterns of creativity in British writers and artists. *Psychiatry*, *52*, 125–134.
Jamison, K. R. (1993). *Touched with fire: Manic-depressive illness and the artistic temperament*. New York, NY: Simon & Schuster.
Johnson, S. (1755). *A dictionary of the English language* (Vol. 1). London, UK: W. Strahan.
Kanigel, R. (1991). *The man who knew infinity*. New York, NY: Washington Square Press.
Kant, I. (2000). *The critique of judgment* (J. H. Bernard, Trans.). Amherst, NY: Prometheus Books. (Original work published 1790)
Kaufman, J. C. (2001). Genius, lunatics and poets: Mental illness in prize-winning authors. *Imagination, Cognition and Personality*, *20*, 305–314.
Kaufman, S. B., Christopher, E. M., & Kaufman, J. C. (2008). The genius portfolio: How do poets earn their creative reputations from multiple products? *Empirical Studies of the Arts*, *26*, 181–196.
Kimble, G. A., & Wertheimer, M. (Eds.). (1998). *Portraits of pioneers in psychology* (Vol. 1). Washington, DC: American Psychological Association.
Kretschmer, E. (1970). *The psychology of men of genius* (R. B. Cattell, Trans.). New York, NY: Arno Press. (Original work published 1929)
Liberman, N., & Trope, Y. (2008). The psychology of transcending here and now. *Science*, *322*, 1201–1205.
Lombroso, C. (1905). *The man of genius* (H. Ellis, Trans.). London, UK: Walter Scott Publishing Co. (Original work published 1889)
Lubinski, D., Webb, R. M., Morelock, M. J., & Benbow, C. P. (2001). Top 1 in 10,000: A 10-year follow-up of the profoundly gifted. *Journal of Applied Psychology*, *86*, 718–729.
Miles, C. C., & Wolfe, L. S. (1936). Childhood physical and mental health records of historical geniuses. *Psychological Monographs*, *47*, 390–400.
Minton, H. L. (1988). *Lewis M. Terman: Pioneer in psychological testing*. New York, NY: New York University Press.
Murchison, C. (Ed.). (1961). *History of psychology in autobiography*. New York, NY: Russell & Russell.
Murray, P. (1989). Introduction. In P. Murray (Ed.), *Genius: The history of an idea* (pp. 1–8). Oxford, UK: Basil Blackwell.
Rutherford, A., Vaughn-Blount, K., & Ball, L. C. (2010). Responsible opposition, disruptive voices: Science, social change, and the history of feminist psychology. *Psychology of Women Quarterly*, *34*, 460–473.
Schopenhauer, A. (1964). *The world as will and idea* (Vol. 3; R. B. Haldane & J. Kemp, Trans.). London, UK: Kegan Paul, Trench, Trubner & Co. (Original work published 1883)
Simonton, D. K. (1984). *Genius, creativity and leadership: Historiometric inquiries*. Cambridge, MA: Harvard University Press.
Simonton, D. K. (1990). *Psychology, science, and history: An introduction to historiometry*. New Haven, CT: Yale University Press.
Simonton, D. K. (1994). *Greatness: Who makes history and why*. New York, NY: The Guilford Press.
Simonton, D. K. (1999a). *Origins of genius: Darwinian perspectives on creativity*. New York, NY: Oxford University Press.
Simonton, D. K. (1999b). Significant samples: The psychological study of eminent individuals. *Psychological Methods*, *4*, 425–451.
Simonton, D. K. (2000). Methodological and theoretical orientation and the long-term disciplinary impact of 54 eminent psychologists. *Review of General Psychology*, *4*, 1–13.
Simonton, D. K. (2002). *Great psychologists and their times: Scientific insights into psychology's history*. Washington, DC: American Psychological Association.
Simonton, D. K. (2005). High-impact research programs in psychology: Quantitative and qualitative aspects. In T. C. Dalton & R. B. Evans (Eds.), *The life cycle of psychological ideas:*

Understanding prominence and the dynamics of intellectual change (pp. 83–103). New York, NY: Kluwer.

Simonton, D. K. (2008). Scientific talent, training, and performance: Intellect, personality, and genetic endowment. *Review of General Psychology*, *12*, 28–46.

Simonton, D. K. (2009a). *Genius 101*. New York, NY: Springer.

Simonton, D. K. (2009b). The "other IQ": Historiometric assessments of intelligence and related concepts. *Review of General Psychology*, *13*, 315–326.

Simonton, D. K. (2012). Foresight, insight, oversight, and hindsight in scientific discovery: How sighted were Galileo's telescopic sightings? *Psychology of Aesthetics, Creativity and the Arts*, *6*, 243–254.

Simonton, D. K., & Song, A. V. (2009). Eminence, IQ, physical and mental health, and achievement domain: Cox's 282 geniuses revisited. *Psychological Science*, *20*, 429–434.

Söderqvist, T. (1996). Existential projects and existential choice in science: Science biography as an edifying genre. In M. Shortland & R. Yeo (Eds.), *Telling lives in science: Essays on scientific biography* (pp. 171–194). New York, NY: Cambridge University Press.

Spencer, H. (1878/1921). *The study of sociology* (2nd ed.). New York, NY: D. Appleton.

Teo, T., & Ball, L. C. (2009). Twin research, revisionism, and metahistory. *History of the Human Sciences*, *22*, 1–23.

Terman, L. M. (1916). *Measurement of intelligence*. Boston, MA: Houghton Mifflin Company.

Terman, L. M. (1925). *Genetic studies of genius (Vol. 1): Mental and physical traits of a thousand gifted children*. Stanford, CA: Stanford University Press.

Terman, L. M. (1940). Psychological approaches to the biography of genius. *Science*, *92*, 293–301.

Terrall, M. (2006). Biography as cultural history of science. *Isis*, *97*, 306–313.

Todes, D. P. (1997). Pavlov's physiology factory. *Isis*, *88*, 205–246. doi:10.1086/383690

Todes, D. P. (2002). *Pavlov's physiology factory: Experiment, interpretation, laboratory enterprise*. Baltimore, MD: Johns Hopkins University Press.

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, *117*, 440–463.

Watson, R. I. (1963). *Great psychologists*. Philadelphia, PA: J. B. Lippincott.

Wissler, C. (1901). The correlations of mental and physical tests. *Psychological Monographs*, *3*, 1–62.

Wozniak, R. (2009). Consciousness, social heredity, and development: The evolutionary thought of James Mark Baldwin. *American Psychologist*, *64*, 93–101.