Childhood Giftedness and Adulthood Genius

A Historiometric Analysis of 291 Eminent African Americans

Dean Keith Simonton
University of California–Davis

Abstract: Although the association between giftedness and genius has been the subject of several retrospective, longitudinal, and historiometric studies, this research concentrated on majority-culture samples. In the current study, Cox's (1926) findings regarding 301 geniuses were replicated on a sample of 291 eminent African Americans. Relative genius was measured by two archival eminence measures (majority White and minority Black culture) and by scores on the Creative Achievement Scale (Ludwig, 1992). Giftedness was assessed by raters blind to the identity of the individuals being evaluated. Control variables were defined for gender, year of birth, status as a living contemporary, and 18 domains of achievement. Multiple regression analyses indicated that adulthood eminence and creative achievement are positively correlated with early giftedness, with an effect size comparable to that found in the Cox study. Furthermore, this association was not moderated by gender, birth year, or most of the remaining variables.

Putting Research to Use: The study provides support for a basic tenet of most gifted and talented programs, namely, that exceptional giftedness in childhood and adolescence is associated with adulthood achievements. Accordingly, education programs designed for these select populations can be legitimately viewed as an investment in the nation’s future. The young talents of today are indeed likely to become the high achievers of tomorrow. Furthermore, this developmental continuity is found not just for youths who come from majority-culture backgrounds; the same forecast holds for those who come from minority-culture environments—African Americans in the case of the present study. Moreover, the degree to which childhood giftedness predicts adulthood success is the same for both majority and minority cultures. The longitudinal correspondence also stays the same for both males and females and for the diverse domains of achievement, whether creativity, leadership, entertainment, or sports.

However, the long-term connection between early gifts and later achievements presumes a distinct manner of identifying and assessing giftedness. In particular, giftedness must not be evaluated according to a “one-size-fits-all” procedure. On the contrary, the magnitude of giftedness should be assessed according to the occurrence of precocious behaviors that are to a certain extent specific to a given culture and achievement domain. It is for this reason that the 291 African Americans in this study could attain distinction in a remarkable diversity of domains, including domains more characteristic of the minority culture—from gospel and soul musicians to civil rights activists and Black nationalists. This heterogeneity stands in stark contrast to what would have happened if giftedness had been defined in terms of performance on a standard intelligence test.

Keywords: minority giftedness; genius; eminence; Creative Achievement Scale; African Americans

What is the connection between the promise of youth and the attainments of adulthood? Will highly gifted children grow up to become highly accomplished adults? Were high-achieving adults most likely gifted as children? Is the degree of giftedness in the early years positively related to the magnitude of success in maturity? In short, what is the association between early giftedness and later genius? The existence of this association can be considered one of the most fundamental issues in the empirical study of both giftedness and genius (Simonton, 2000b). This substantive question has both theoretical and practical importance. From the theoretical perspective this issue can be considered a specific manifestation of the broader question of the degree of continuity displayed in human development. To paraphrase an oft-quoted line

Note: This article was accepted under the editorship of Paula Olszewski-Kubilius.
of the poet William Wordsworth, is the child the parent of the adult? More specifically, is the gifted child the antecedent of the high-achieving adult? From the practical perspective, the magnitude of developmental continuity in special abilities is a central assumption of gifted education programs. In particular, one of the rationales for identifying and nurturing gifted children is the need for societal investment in the next generation of high-achieving adults (Simonton, 2002). Yet the substantive question of the giftedness–genius connection leads to a methodological question: How can this issue be investigated scientifically? The literature on giftedness and genius reveals three major approaches.

First, the researcher can conduct a retrospective study of contemporary adults who have made a name for themselves in a given domain of achievement. This approach was introduced by Galton (1874) in his survey of scientists who were of sufficient distinction to have been elected Fellow of the Royal Society of London. Galton’s questionnaire asked participants to reflect on the family environment and educational experiences that contributed to their creative development. Many retrospective investigations have been conducted since this pioneering study (for review, see Simonton, 1987). These inquiries often supplement questions about early development with psychometric assessments of cognitive and personality variables. A notable example of this combined approach is Roe’s (1953) retrospective study of 64 eminent scientists (see also Chambers, 1964; Helmreich, Spence, Beane, Lucker, & Matthews, 1980).

Second, the investigator can carry out a longitudinal study. Rather than have accomplished adults recall their past, gifted children or adolescents can be tracked into adulthood in two or more waves of observation and assessment. The best-known case is Terman’s (1925-1959) Genetic Studies of Genius. In this series of studies, Terman and his collaborators identified over 1,500 high-IQ children (Terman, 1925) and then followed them well into adulthood to discern if their educational and occupational attainments were highly distinguished (Terman & Oden, 1959). Although most longitudinal studies of giftedness are not nearly so long term as Terman’s, the literature contains many other examples (e.g., Subotnik & Arnold, 1994). Among the most noteworthy are the studies of mathematically precocious children begun by Stanley and continued by Benbow and Lubinski (Benbow, 1992; Lubinski, Webb, Morelock, & Benbow, 2001; Wai, Lubinski, & Benbow, 2005).

Third, and last, the investigator can execute a historiometric study. In this case biographical information about eminent adults is subjected to measurement and quantitative analysis (Simonton, 1990). Among the first historiometric studies is Galton’s (1869) Hereditary Genius in which he examined family “pedigrees” to discern the extent to which genius might have a genetic foundation (see also Quételet, 1835/1968). However, the first historiometric inquiry to address specifically the giftedness–genius question was Cox’s (1926) Early Mental Traits of Three Hundred Geniuses that appeared as the second volume of Genetic Studies of Genius. Here, Cox extended a method that Terman (1917) devised to estimate Galton’s IQ to a large sample of illustrious creators and leaders. In a sense, her investigation was a mirror image of Terman’s main longitudinal study. Whereas Terman tested whether high-IQ children grew up to become high-achieving adults, Cox tested whether highly eminent adults would have been identified as high-IQ children had intelligence tests existed prior to the 20th century. Historiometric studies are rarer than either retrospective and longitudinal studies, but instances are published from time to time (Ludwig, 1995; Murray, 2003; Simonton, 1991a; Sulloway, 1996; Walberg, Rascher, & Parkerson, 1980).

Needless to say, each of these three methods has advantages and disadvantages (Simonton, 1999). For instance, retrospective studies depend very heavily on the reliability of biographical memories, but have the advantage of administering most up-to-date psychometric instruments. Longitudinal studies can better ensure the accuracy of information about childhood and adolescence, but they require considerable investment of time and money, and the samples may suffer from high attrition rates. Finally, historiometric analyses can examine adult geniuses of the highest order yet must rely on the accuracy of the available biographical data regarding the early lives of these notables.

Notwithstanding all of these contrasts, retrospective, longitudinal, and historiometric studies all have one thing in common: Most have samples containing few if any members of underrepresented minorities.
Even when the samples include representatives of minority groups, their numbers are invariably too small to permit separate analyses. As a consequence, it is impossible to say with any assurance whether the giftedness–genius association holds in minority populations to the same degree as found in majority populations.

The primary goal of this historiometric study is to make a first effort at filling this gap in the literature. In particular, the inquiry will examine a sample of highly eminent African Americans. Because African Americans represent one of the oldest and largest minority groups in the United States, it is possible to obtain a sample comparable in size and variety to that in Cox’s (1926) classic investigation. In addition, the extensive scholarship on African American history has produced a wealth of reference works that provide the necessary information for assessing the differential giftedness and achievement of these exceptional individuals (Simonton, 1998). Hence, this sample and these data can be used to examine whether the magnitude of achievement displayed by these African Americans correlates with the degree of giftedness they demonstrated in childhood and adolescence. To be specific, Cox (1926) obtained a correlation of .26 between her IQ estimates and the ranked eminence according to an earlier study published by Cattell (1903). Even after correcting for data reliability, this correlation remained statistically significant (albeit reduced to .16; cf. Simonton, 1976). Will similar effect sizes be found for a sample of eminent African Americans?

This historiometric investigation will not just try to replicate key Cox’s (1926) finding, but will also introduce several methodological improvements. The first improvement concerns the criterion variable. Cox used the rankings that Cattell (1903) derived from the amount of space devoted to each genius in several encyclopedias and biographical dictionaries (see also Whipple, 2004). Although it would have been far better to have used the original space measures, these had not been published, obliging Cox to use ordinal rather than interval data for her dependent variable. Because the rank-order measures contain less information than corresponding interval measures, this could reduce the likely effect size. In fact, a follow-up study found that Cox’s original IQ scores correlated .33 with quantitative eminence measures based on word and citation counts (Walberg, Rasher, & Hase, 1978). Hence, the current investigation will use actual space measures for the eminence criterion.

Furthermore, these eminence measures will be of two kinds to deal with a distinction not recognized in Cox’s investigation: the potential contrast between in-group and out-group eminence. For instance, because of differences in cultural values, information availability, ethnocentric biases, and other sources, the fame of a French scientist within France will not be equivalent to the fame of the same scientist in England or Germany (Candolle, 1873). In the specific case of African Americans, it is essential to distinguish their eminence within the majority (White) culture from their eminence within the minority (Black) subculture. Even if these two assessments correlate highly, they are by no means identical (Simonton, 1998). Their respective correlations with differential giftedness could differ accordingly.

Just as important is the need to use some measure besides eminence to assess individual differences in adulthood achievement. The problem with reputation measures is that they represent an undifferentiated assessment that has no explicit connection to behavioral performance. In fact, even when eminence can be shown to correlate highly with achievement (e.g., the productivity of creators; Simonton, 1997), eminence also appears to correlate with variables that have no obvious relevance to genuine achievement (e.g., tragic death; Simonton, 1986). Therefore, this historiometric investigation will use a measure defined by particular achievements: Ludwig’s (1992) Creative Achievement Scale (CAS). Despite the name, this instrument can apply to domains of attainment besides creativity, albeit its application is best suited for domains in which creativity is very important (Ludwig, 1995). For instance, creativity can be a crucial component of successful political leadership (Simonton, 1988).

Besides improving and expanding the dependent variables, this investigation will also introduce improvements on Cox’s (1926) main independent variable. Although Cox used multiple, independent judges to estimate the IQ scores from the biographical information, those judges were not blind to the identity of the individuals being rated. Nor were they kept ignorant of the primary purpose of the investigation—indeed, Cox and Terman were among the judges. Consequently, it is conceivable that their IQ estimates could have been biased toward their perception of the more eminent creators and leaders in the sample. In the present study, the assessments of giftedness will be made by judges who are unaware of the identity of the individuals being rated, thus minimizing subjective bias. Other improvements to this measure will be described in the Methods section.

The final improvement pertains to the statistical analyses. With the exception of the calculation of one partial correlation, Cox (1926) confined her analyses to...
basic descriptive statistics. In the present study, multiple regression analysis incorporates a large number of control variables ignored by Cox, including birth year, gender, and domain of achievement. Moreover, multiple regression can also be used to test for the interaction effects that would be expected if the relation between giftedness and genius is contingent on certain moderator variables. For example, it is possible that the association between youthful giftedness and adulthood achievement is moderated by gender or domain.

To summarize, this historiometric study will test Cox’s (1926) main result on a comparable sample of eminent African Americans, using improvements in the measurement of both dependent and independent variables and introducing statistical analyses that can accommodate control and moderator variables.

Method

Sample

To be included in the investigation, an African American had to satisfy two requirements. First, he or she had to have a biographical entry in all of the following three standard reference works: *The Encyclopedia of Black America* (Low & Clift, 1984), *The African-American Almanac* (Estell, 1994), and *The Encyclopedia of African-American Culture and History* (Salzman, Smith, & West, 1996). These three sources were selected because they constituted the most comprehensive and most current scholarly sources at the time the investigator commenced compilation of the requisite database. Second, he or she had to be born prior to the end of World War II (i.e., 1945). The second criterion was imposed so that the individual would be at least 40 years old by the time the first reference work was published. This restriction should help ensure that the eminence and achievement evaluations will be based on sufficient information. The resulting sample consisted of 291 eminent African Americans who had attained distinction in domains associated with creativity, leadership, sports, or entertainment.

Dependent Variables

Galton (1869) was the first investigator to explicitly define genius in terms of reputation or widely acclaimed accomplishments. Nonetheless, the concept of reputation or eminence has more than one operational definition (Simonton, 1991b). Of these possibilities, two are used here: archival eminence and creative achievement.

*Archival eminence.* Cattell (1903) pioneered the assessment of reputation in terms of the amount of space devoted to individuals in established reference works (see also Woods, 1911). The reliability and validity of this approach has been established in several psychometric and historiometric investigations (Simonton, 1990, 1991b). Additionally, the method has been applied successfully to the eminent African Americans in the current sample (Simonton, 1998). In particular, Black eminence was defined by the number of pages devoted to each individual in seven minority-culture sources (Cowan & Maguire, 1994; Estell, 1994; Gates, 1994; Hornsby, 1991; Hughes, Meltzer, Lincoln, & Spencer, 1995; Long, 1993; Salzman et al., 1996). The items were summed to a single composite measure that had an internal-consistency (coefficient alpha) reliability of .80 (see Simonton, 1998, for further details and validation).

White eminence was defined by the number of pages devoted to each individual in 10 majority-culture sources (*Academic American Encyclopedia*, 1992; Bowman, 1995; Carruth, 1993; *Collier’s Encyclopedia*, 1992; *Encyclopaedia Britannica*, 1996; *Encyclopedia Americana*, 1992; Foner & Garraty, 1991; Morris & Morris, 1996; Urdang, 1996; Wenborn, 1991). These items were also summed to produce a composite measure that had an internal-consistency reliability of .92. The higher reliability of this measure mostly reflects the larger number of items making up the composite (see Simonton, 1998, for further details and validation). The number of majority-culture sources was greater than the number of minority-culture sources because the coverage in the former was less extensive than in the latter, meaning that more often the subjects would receive no pages at all (Simonton, 1998). Otherwise a large proportion of the subjects would receive a zero score on the White eminence measure.

Because space counts tend to exhibit highly skewed distributions, both eminence measures were subjected to a logarithmic transformation (Simonton, 1990). The correlation between these two log-transformed measures is .66 (p < .001). Hence, although eminence in minority and majority cultures is highly congruent, the correspondence is far from perfect.

*Creative achievement.* The CAS was designed to assess actual accomplishments (Gray, 1966; Ludwig, 1992, 1995). In particular, the “ratings pertain to assessment of recognized works, products, performances, accomplishments, creations (not personality, mental processes, or interpersonal relationships) . . . which contribute to or affect the lives of others within the context of Western civilization” (Ludwig, 1995, p. 236).
The scale consists of 11 criteria grouped into three categories:

1. The “major criteria” consist of six items scored on a 0–9 point scale. (a) “Are creations, products, performances, or works likely to be appreciated long after a person’s era even though person’s name may not be remembered?” (b) “Did personal product, ideas, or work have broad human application, apply to Western civilization in general, or embody universal values or ideas?” (c) “Did person rise above limitations of his or her society or era by setting new directions, anticipating social needs or foreseeing future?” (d) “How influential was person on contemporary and subsequent professionals (protégés, disciples, adherents)?” (e) “How original was the person’s main work, product, or accomplishment?” (f) “Extent of innovative accomplishments by person over his or her adult lifetime in his or her field?” (Ludwig, 1995, pp. 236-240). For each item raters are given specific guidelines as to what would earn a score of 0, 3, 6, and 9.

2. The “intermediate criteria” consist of three items scored on a 0–6 point scale. (a) “How versatile and many-sided (i.e., active in many fields and different media) was the person?” (b) “How prolific and/or sustained was productivity (finished personal products or works) over adult lifetime?” (c) “Was work admired, accepted, or appreciated beyond person’s own country (popularity, fame, recognition, acceptance)?” (Ludwig, 1995, pp. 240-241). For each item the guidelines indicate representative scores of 0, 2, 4, and 6.

3. The two “minor criteria” are scored on a 1–3 point scale. (a) “How great was the person’s technical competence or skill with respect to his or her work or activity (facility, proficiency, talent, special ability, etc.)?” (b) “Did person show creative involvement in nonvocational pursuits (hobbies, interests, secondary activities) outside chosen field or career over the course of lifetime?” (Ludwig, 1995, pp. 242-243). Once more the guidelines for each item provide representative scores of 0, 1, 2, and 3.

Six independent raters scored all 291 African Americans on all 11 items using the same three reference works that provided the sampling criteria (Estell, 1994; Low & Clift, 1984; Salzman et al., 1996). Two raters were assigned to each reference work, and all raters were instructed to score the subjects using only the information provided in the biographical entries (i.e., they were advised not to consult any other sources). The final CAS score was the sum of the scores for each of the 11 items. Although there was a slight tendency for raters using the same reference works to provide more similar scores (rs between .50 and .57), the correlations between ratings based on different works were also high (rs between .31 and .53). Hence, an overall composite CAS score was generated by averaging all six separate ratings. The internal-consistency (coefficient alpha) reliability for this six-item composite was .81.

The mean CAS score for this sample is 37.3 (SD = 7.7, range 20.3–62.0). This figure comes very close to the mean CAS scores of 38.4 that Ludwig (1995) obtained for 1,004 eminent moderns (only 4% of whom were African Americans). Thus, the creative achievement of these 291 is comparable to a more culturally diverse sample of highly distinguished creators and leaders. Further, the CAS scores for the sampled African Americans correlate .48 (p < .001) with the Black eminence measure and .45 (p < .001) with the White eminence measure. These two correlations are appreciably lower than the correlation between the two eminence scores. Hence, the CAS is assessing some aspect of genius not captured by the two eminence measures. This conclusion is bolstered by the fact that the CAS scores display a close approximation to a normal distribution, in contrast to the extremely skewed eminence scores prior to their logarithmic transformations.

**Independent Variables**

The three criterion variables—the two eminence measures and the creative achievement assessment—are considered to be a potential function of the following factors: giftedness, birth year, still-living contemporary, gender, and achievement domain. Although giftedness may be identified as a substantive variable and the others as control variables, all variables can contribute to our understanding of giftedness–genius relation.

**Giftedness.** As mentioned in the introduction, this variable was assessed by raters who did not know the identity of those they were rating. In particular, giftedness scores were calculated by the following three-step procedure (see also Simonton, 1986, 1988):

1. Relevant information was abstracted from several biographical sources (especially Estell, 1994; Low & Clift, 1984; Salzman et al., 1996) with all identifying material removed. These data followed closely what Cox (1926) had gathered as the basis for her IQ estimates (precocious talents and reading abilities, early awards and honors, scholastic performance, etc.).
2. The abstracts were placed in rough rank order according to the degree that they indicated that the corresponding person could be considered gifted. For
example, highest in the presumed order of giftedness was Philippa Schuyler, a musical prodigy who played the piano at age 2 and began composing at age 3, whose more than 100 compositions by the time she was 12 earned her the special distinction of being youngest member of the American Society of Composers, Authors, and Publishers—and who had a tested IQ of 185. This ordinal placement would help judges establish an appropriate baseline for comparing the relative gifts of the 291 African Americans.

3. Eight judges not involved in the previous two steps rated the ordered abstracts according to the perceived degree of giftedness. They used the following rating scheme: $-3 = \text{exceptionally below average}$, $-2 = \text{very much below average}$, $-1 = \text{below average}$, $0 = \text{average}$, $+1 = \text{above average}$, $+2 = \text{very much above average}$, $+3 = \text{exceptionally above average}$. An average score of 0 was assigned as the default score whenever there was not sufficient information to judge the person as above or below average. For two reasons, a simple 7-point scale was used rather than the highly differentiated IQ scale used by Cox (1926). First, unlike her raters, who were researchers trained in the application of intelligence tests, the current judges were relatively inexperienced undergraduate research assistants who could not be expected to have accurate conceptions regarding the implications of particular IQ scores. Second, the available information did not seem sufficient to make the kinds of fine distinctions required to generate the IQ estimates in the Cox (1926) historical inquiry. Nonetheless, prior research shows that crude ability scores calculated this way correlate highly with those derived by Cox’s far more laborious and sophisticated methods (Simonton, 1986, 1991c, 2006).

The eight ratings correlated between .30 and .60, indicating a good degree of agreement. Consequently, the eight assessments were averaged to produce a single composite rating. This composite has an internal-consistency reliability of .84, which is in the same range as the eminence and achievement measures. The scores range from slightly below average ($-0.38$) to exceptionally above average (3.00), with a mean near above average (0.87; $SD = 0.68$).

Birth year. To correct at least approximately for historical trends, each subject’s year of birth was included as a control variable (Simonton, 1990). The mean birth year was 1896.4 ($SD = 41.5$), with a range from 1723 (Crispus Attucks) to 1944 (Diana Ross). Obviously, this range is rather more contemporary than that in Cox’s (1926) study. Her sampled geniuses had to have been famous by 1903 and were required to have been born after 1450.

Living contemporary. One may question the validity of eminence and achievement assessments in the case of those African Americans who are still living. After all, they would still have the opportunity to add more credits to their reputations. This problem is particularly severe for the CAS measure because some of the component items imply some kind of posthumous assessment. Accordingly, a zero–one dummy variable was generated that equaled 1 if the individual is still alive and equaled 0 if the individual is deceased. These vital data were updated as of the summer of 2006 using both text and Internet sources. Nearly a quarter of the African Americans in the sample are still-living contemporaries (i.e., 24%). This problem was not faced by Cox (1926) because all of her subjects were deceased.

Gender. Nearly 22% of the sample is also female; a percentage more than 10 times higher than that in the Cox (1926) inquiry. Therefore, another zero–one dummy variable was created that equaled 1 if the subject was a female and 0 if a male.

Achievement domain. Each of the 291 was assigned to one (and only one) of 18 fields on the basis of how his or her biographical entries were grouped in Estell’s (1994) reference work. These assignments are thus based on how the subjects’ accomplishments are perceived within Black culture. This was deemed preferable to imposing a classification scheme originating from the majority culture (i.e., the principal investigator is White). The 18 domains are as follows: figures of the past (largely abolitionists, 2%); civil rights activists (4%); Black nationalists (3%); organizational leaders (5%); lawyers (judges, attorneys, and legal scholars, 2%); government officials (both elected and appointed, 9%); educators (including administrators and scholars, 4%); religious leaders (4%); miscellaneous leaders (largely military figures, 3%); creative writers (namely, novelists, poets, and playwrights, 10%); mass-media figures (journalists, editors, and media executives, 3%); performance artists (actors, dancers, and comedians, 11%); classical musicians (instrumentalists, singers, conductors, and composers, 7%); blues and jazz musicians (instrumentalists, singers, composers, and bandleaders, 13%); gospel and soul musicians (2%); artists (both fine and applied, 6%); scientists (including physicians, engineers, and mathematicians, 6%); and athletes (6%). In terms of variety, these domains exhibit a much wider range of achievements than shown in the Cox (1926)
Zero–one dummy variables were then defined for each of these achievement domains (Simonton, 1998). Because the three domains with the smallest ns still have 6 cases each, there was no need to collapse some of the domains into more inclusive categories.

**Results**

The statistical analyses fall into three categories: the predictors of eminence and achievement, the predictors of giftedness, and the moderators of the giftedness–genius relation.

**Predictors of Eminence and Achievement**

Each of the three dependent variables—Black and White eminence measures and the CAS scores—was regressed on giftedness, birth year, living contemporary, gender, and the dummy variables for all domains except for the performance artists. The latter were retained as the comparison group (whose mean value on the dependent variable is recorded in the intercept). This choice, though arbitrary, has no impact on the substantive conclusions. The amount of variance explained by a set of dummy variables remains unchanged regardless of which category is chosen as the comparison group, and the separate reconstructed group means are always absolutely identical (Cohen, Cohen, West, & Aiken, 2003).

The resulting unstandardized (b)s and standardized (β)s partial regression coefficients are shown in Table 1. Both coefficients are shown because they provide different information regarding effect size. The unstandardized coefficients indicate the association in raw scores, whereas the standardized coefficients indicate the association in standardized scores (i.e., M = 0, SD = 1.00). The former coefficients are especially useful in comparing the impact of the dummy variables because a standardized dummy variable has no meaning (e.g., one cannot be one standard deviation

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Black Eminence</th>
<th>White Eminence</th>
<th>Creative Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>β</td>
<td>b</td>
</tr>
<tr>
<td>Giftedness</td>
<td>0.31</td>
<td>.20***</td>
<td>0.26</td>
</tr>
<tr>
<td>Birth year</td>
<td>-0.00</td>
<td>-.06</td>
<td>-0.00</td>
</tr>
<tr>
<td>Living contemporary</td>
<td>-0.30</td>
<td>-.12</td>
<td>-0.31</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>-0.27</td>
<td>-.11*</td>
<td>-0.48</td>
</tr>
<tr>
<td>Figures of the past</td>
<td>0.95</td>
<td>.13*</td>
<td>1.64</td>
</tr>
<tr>
<td>Civil rights activists</td>
<td>1.15</td>
<td>.23***</td>
<td>0.61</td>
</tr>
<tr>
<td>Black nationalists</td>
<td>1.10</td>
<td>.17**</td>
<td>0.70</td>
</tr>
<tr>
<td>Organizational leaders</td>
<td>0.42</td>
<td>.09</td>
<td>0.18</td>
</tr>
<tr>
<td>Lawyers</td>
<td>-0.48</td>
<td>-.07</td>
<td>-0.81</td>
</tr>
<tr>
<td>Government officials</td>
<td>0.08</td>
<td>.02</td>
<td>-0.08</td>
</tr>
<tr>
<td>Educators</td>
<td>-0.24</td>
<td>-.04</td>
<td>-0.79</td>
</tr>
<tr>
<td>Religious leaders</td>
<td>-0.65</td>
<td>-.12</td>
<td>-1.27</td>
</tr>
<tr>
<td>Miscellaneous leaders</td>
<td>-0.28</td>
<td>-.04</td>
<td>-0.89</td>
</tr>
<tr>
<td>Creative writers</td>
<td>0.27</td>
<td>.08</td>
<td>0.33</td>
</tr>
<tr>
<td>Mass-media figures</td>
<td>-0.06</td>
<td>-.01</td>
<td>-0.68</td>
</tr>
<tr>
<td>Classical musicians</td>
<td>-0.91</td>
<td>-.23***</td>
<td>-0.83</td>
</tr>
<tr>
<td>Blues and jazz musicians</td>
<td>-0.44</td>
<td>-.14</td>
<td>0.83</td>
</tr>
<tr>
<td>Gospel and soul musicians</td>
<td>0.55</td>
<td>.08</td>
<td>0.76</td>
</tr>
<tr>
<td>Artists</td>
<td>-0.06</td>
<td>-.01</td>
<td>-1.10</td>
</tr>
<tr>
<td>Scientists</td>
<td>-0.97</td>
<td>-.22**</td>
<td>-0.86</td>
</tr>
<tr>
<td>Athletes</td>
<td>-0.22</td>
<td>-.05</td>
<td>0.89</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.73</td>
<td></td>
<td>0.27</td>
</tr>
</tbody>
</table>

Note: Because the performance artists define the comparison group, the intercept represent the mean score on the dependent variable when all of the independent variables are set to zero. The squared multiple correlations for the three equations are .29, .39, and .31, and the adjusted squared multiple correlations are .23, .34, and .25.

*p < .05. **p < .01. ***p < .001.
above the mean in gender). In particular, the unstandardized regression coefficient indicates the mean difference between those for whom the dummy equals 1 and those for whom the dummy equals 0. Thus, the women in the sample score 0.27 points lower on the Black eminence measure relative to the men in the sample (who obtain a score of 2.73—the intercept). However, the standardized coefficients are more useful for comparing the effects of the continuous variables, such as giftedness and birth year, especially when the comparisons are made across the three regression equations. The coefficient then specifies the change in the standardized dependent variable when the independent variable is changed by one standard deviation.

The giftedness predictor exhibits a significant positive association with all three criteria. Judging from the standardized ßs, the effect is strongest for creative achievement and weakest for White eminence, with the effect for the Black eminence measure falling almost exactly between. In concrete terms, if the giftedness score increases by one standard deviation, the Black eminence score will increase by 20% of a standard deviation (i.e., one fifth), the White eminence score will increase by 14% of a standard deviation, and the CAS score will increase by 25% of a standard deviation (i.e., one quarter). Because these are partial regression coefficients, the effect sizes are adjusted for birth year, living contemporary, gender, and domain of achievement.

Although the impact of giftedness is fairly consistent across all three equations, the effects of the control variables are much more mixed across the three criterion variables. Year of birth only has a significant relation with creative achievement, so that more recent African Americans score more highly than earlier luminaries, whereas the two archival eminence measures show no trend, indicating that earlier figures are about as famous as later figures. The difference between living and nonliving subjects is even less substantial, for in no case is the partial regression coefficient statistically significant. Hence, the introduction of this control variable was apparently unnecessary notwithstanding the prima facie rationale (see also Simonton, 1998). The regression coefficients for this dummy variable are uniformly negative, indicating that those still alive will tend to score less highly in eminence and achievement (see also Simonton, 1977).

More interesting are the statistically significant negative relationships between the gender dummy variable and the two eminence criteria; a disadvantage slightly stronger for the White than for the Black measures. It is telling that this adverse gender effect is not duplicated for creative achievement. Because the latter indicator is more strictly constrained by actual accomplishments, it suggests a degree of gender bias in the eminence measures—minority culture and majority culture alike. In concrete terms, more space is devoted to male African Americans than to female African Americans, even when they are otherwise equal in accomplishments according to CAS scores.

The findings become far more complicated when we turn to the dummy variables for achievement domain. In only one instance is the outcome consistent across all three criteria: The figures of the past display more eminence and creativity than the comparison group (performance artists). In another case, the regression coefficients are statistically significant across all three criteria, but not in the same direction. In particular, although scientists are rated more highly in terms of creative achievement, they are rated much lower in terms of eminence, whether Black or White. In the remaining domains of achievement, the effects can adopt almost any pattern of significance and sign across the three criteria. Consequently, conclusion can be drawn from these results: Giftedness has the strongest and most consistent relationship with genius regardless of how the latter individual-difference variable is assessed.

**Predictors of Giftedness**

The giftedness measure was regressed on the control variables to determine how this substantive variable systematically varied within the sample. Again the performance artists were retained as the comparison group. Perhaps the most important result from this analysis was three null effects: (a) there were no gender differences, (b) there were no historical trends according to birth year, and (c) still-living subjects obtained the same scores as deceased subjects. However, some of the dummy variables for domain of achievement were statistically significant. In particular, the following groups scored higher than the performance artists: the lawyers \((b = 0.71, \beta = .16, p < .01)\), the classical musicians \((b = 0.60, \beta = .22, p < .01)\), the scientists \((b = 0.56, \beta = .19, p < .01)\), and the athletes \((b = 0.59, \beta = .21, p < .01)\). Beyond these four exceptions, the giftedness scores did not vary significantly across achievement domains. Hence, in this particular sample, the magnitude of giftedness was unrelated to almost all control variables.

**Moderators of the Giftedness–Genius Relation**

The remaining statistical analysis addresses the question: Is the relation between giftedness and genius moderated by the other variables in the equation? More
specifically, does the relation between giftedness and eminence or achievement vary according to birth year, status as a still-living contemporary, gender, or achievement domain? To test these possibilities demands the introduction of product or multiplicative terms into the regression equation (Giftedness × Birth Year, Giftedness × Living Contemporary, Giftedness × Gender, Giftedness × Figures of the Past, etc.). When these product terms are included, there were few statistically significant interaction effects. The White eminence and CAS equations had no significant multiplicative terms, and the Black eminence equation had only two. In particular, the relation between giftedness and minority-culture eminence is stronger for figures of the past (b = 2.65, β = .25, p < .05) and for civil rights activists (b = 1.25, β = .17, p < .05). Perhaps this intensification of the association indicates the greater value that Black scholars assign to the individuals who fought so strongly for basic human rights. Nevertheless, from the standpoint of the main question driving this study, the null effects may prove more important than these two isolated interaction effects. Significant, across all three criteria, the impact of giftedness did not vary according to gender, year of birth, or status as a living contemporary. In other words, the giftedness–genius effect (a) was the same for men and women, (b) did not change across historical time, and (c) did not depend on whether or not the person was still living. Thus, the effect of giftedness shows a high degree of constancy and stability in this sample of distinguished African Americans.

Discussion

The main conclusion from the foregoing analyses is that the magnitude of childhood giftedness exhibits a significant positive association with the degree of adulthood genius. This association holds consistently across all three criteria measures—Black and White eminence and creative achievement. Moreover, the three effect estimates compare favorably with Cox’s (1926) earlier historiometric results for Europeans and majority-culture Americans. This inference is based on the standardized partial regression coefficients (βs). Specifically, the standardized coefficient for the CAS is almost exactly the same size as the zero-order correlation that Cox (1926) found between ranked eminence and IQ (.25 vs. .26), whereas the coefficient for White eminence is only slightly below what she found when she partialled out data reliability (.14 vs. .16); the coefficient for Black eminence falling between these extremes. Naturally, some would argue that the standardized regression coefficients are not directly comparable to Cox’s zero-order and partial correlations. A better choice might be to use the correlations between giftedness and the criterion obtained after partialling out the control variables. However, this does not change the conclusions, because the resulting partial correlations are actually slightly larger than the standardized partial regression coefficients (viz., .21, .16, and .26 rather than .20, .14, and .25). Consequently, the same inference stands, namely, that the results for the 291 African Americans replicate those for Cox’s 301 geniuses. Moreover, this replication was obtained even after introducing several improvements with respect to both measurement and statistical analysis. Accordingly, the conclusion appears secure that early giftedness tends to be a precursor of later genius. What holds for a majority-culture sample also holds for a minority-culture sample.

Limitations

Like any empirical investigation, the results of this historiometric study must be considered tentative. Additional research is necessary to determine the general validity of the findings. The tentative nature of the results ensues from the fact that the investigation has several limitations.

First, the prediction equations shown in Table 1 account for between 29% and 39% of the variance in their respective criteria, percentages that compare favorably with those seen in previous investigations (e.g., Cattell & Butcher, 1968; Helmreich et al., 1980; Simonton, 1976, 1977). Even so, these same figures show that we are still a long way from providing a complete explanation of adulthood eminence and achievement. No doubt a large number of variables need to be added to the equation to enhance predictive power. It is likely that some of these omitted predictors share variance with the giftedness measure that is the primary focus of this investigation. If so, then the partial regression coefficients for giftedness will be biased estimates of the true effect sizes. Unfortunately, it is impossible to forecast whether this bias is positive or negative (Cohen et al., 2003). Sometimes shared variance represents redundant information so that the current estimates would be too large, even completely spurious. Other times the overlapping variance produces “suppression effects” that would indicate that the present estimates are too small. Depending on the mix of added predictors, these two contrary consequences can also cancel out, yielding coefficients hardly different from those
found in this study. The actual outcome must await the results of additional research.

Second, the inquiry uses only one of the three available methods, namely, the historiometric. That immediately implies the need for addressing the same issue using the remaining two methodologies. First, retrospective inquiries would ask eminent contemporary African Americans and fill out a questionnaire regarding their early childhood and adolescent achievements. The only study that comes close to this type of investigation is an exploratory survey of successful African American entrepreneurs (Roberson-Saunders, 1990-1991). Second, longitudinal inquiries would follow a group of highly gifted Black children into adulthood to determine whether their promise is fully realized. Although there have been a number of studies of high-IQ African American children (e.g., Witty & Jenkins, 1935), so far none has examined whether this early potential translates into adulthood distinction (Kearney & LeBlanc, 1993). Only when the three methods converge on the same results can we be confident that the giftedness–genius association has been fully replicated for a focal underrepresented minority.

Third, these findings are most obviously restricted to African Americans. As a result, the conclusions cannot be extended automatically to other minority groups, whether Native American, Hispanic, Pacific Islander, or Asian American. Each minority has its own distinct assets and deficits with respect to the development of personal gifts. For example, not only are Hispanics distinct with respect to opportunities and obstacles, but also each subgroup within this larger group—Mexican, Cuban, Puerto Rican, Central American, etc.—faces their own unique life circumstances. Confidence in the general giftedness–genius relation would be strengthened all the more if it could be shown to replicate across these diverse vicissitudes.

Fourth and last, both the criterion and predictor variables used in this investigation represent singular definitions of their corresponding constructs. The criterion variable of genius was defined in terms of either eminence or creative achievement, while the predictor variable of giftedness was defined in terms of precocious development. Although these definitions reflect very closely the approach adopted in Cox’s (1926) classic historiometric analysis, they by no means exhaust the inventory of available operational definitions. For instance, success might be operationalized in terms of annual income, prestigious jobs, or productive output (see, e.g., Simonton, 1991; Wai et al., 2005). Or giftedness might be defined according to exceptional performance on a psychometric measure of intelligence, along the lines of Terman’s (1925) influential study. The question would then become whether the giftedness–genius association replicates across alternative definitions of the two key concepts.

Implications

Because of the limitations just mentioned, a considerable amount of research still remains to be conducted before the giftedness–genius relation is fully established beyond majority-culture samples. It may therefore be considered premature to specify the implications of the present investigation. Nevertheless, it may prove useful to do so to motivate future research. Hence, I will outline the two main implications, one theoretical and the other practical.

Theoretically, this historiometric inquiry has established an impressive developmental continuity across the life span. Precocious development in childhood and adolescence predicts the magnitude of eminence and achievement in adulthood. Not only does this long-term predictive relation hold for a minority-culture sample, but also it has been shown to be invariant across historical time, gender, and, for the most part, achievement domain. Thus, giftedness displayed in the early years is indicative of genius exhibited in the later years. Moreover, it is probable that the standardized partial regression coefficients in Table 1 (viz., .20, .14, and .25) underestimate the magnitude of the developmental continuity. The reason for this assertion is the fact that the 291 members of this sample constitute a very select group. With very few exceptions, these individuals represent the highest levels of achievement—some of the greatest leaders, creators, performers, and athletes in the history of the United States. Hence, the variance in the criteria variables is severely truncated, and such truncation will cause the predictor to account for less variance. A more heterogeneous sample that included a large number of less distinguished African Americans would no doubt yield even higher degrees of developmental continuity.

The results support those who challenge some of the most common approaches to the identification of gifted children. The most frequent assessment tools, such as performance on psychometric tests or teacher recommendations, tend to discriminate against selection of members of underrepresented minorities (Ford, 2002). The definition of giftedness used here operates on fundamentally different principles. In the first place, giftedness is defined in terms of precocity, as gauged by accelerated expertise acquisition and performance (Simonton, 2000a). A gifted child or adolescent is someone who masters a particular
domain at a faster rate than the average youth (Winner, 1996). Such youths are not necessarily those who will perform well on an IQ test or impress their teachers with their special talents. In addition, the precocious behaviors that provide the basis for the assessment of giftedness are largely domain specific. The signs of precocity in a future artist are not the same as those in a future athlete or civil rights leader. In this respect, the definition used here follows closely that applied in Cox’s (1926) pioneering study. Although she claimed to be measuring IQ, closer scrutiny reveals that she did not apply a “one-size-fits-all” approach to all 301 geniuses. On the contrary, her intelligence estimates were centered on the particular domain in which the individual attained distinction as an adult. Mozart’s IQ was calculated based on his being a musical prodigy and Pascal’s IQ was estimated from evidence of his mathematical precocity.

Finally, the definition of giftedness could be said to be specific to a particular underrepresented minority, in this case African Americans. Standard reference works in African American history were used to (a) identify the members of the sample, (b) determine the domain of achievement in which they excelled, and (c) provide the raw biographical data for the giftedness measure. This circumvents the frequent problem in the identification and assessment of minorities, namely that youths from one subculture are usually evaluated from the standpoint of a majority culture that has distinct values and priorities (Ford, 2002). Indeed, this difference may help us understand why giftedness has about the same impact on the Black eminence measure as on the CAS, but a much smaller impact on the White eminence measure (see Table 1). According to the definition used here, individual differences in giftedness are not only domain specific but also culture specific. This twofold specificity probably provides a more valid assessment than the generic definitions more often used to identify gifted children and adolescents.

Notes

1. Oxford University Press is in the process of publishing an Encyclopedia of African American History (Finkelman, 2006), but the last four volumes covering the period 1896 through 2005 are not scheduled to be published until 2009 (Finkelman, in press). By the same token, The African American National Biography (Gates & Higginbotham, 2008) did not appear until after this study had been accepted for publication. Hence, the Saltzman, Smith, and West (1996) encyclopedia still represents the most recent general reference work available at the time this investigation was conducted. However, information from these new reference works will be incorporated into the database for future research on these eminent Americans.

2. One might argue that nonvocational pursuits should not be included in the Creative Achievement Scale. However, this portion of the scoring system was retained to maintain comparability with previous research using the Scale (Gray, 1966; Ludwig, 1992). In addition, extra-domain versatility has been shown to be characteristic of high achievers in a wide range of fields (Cassandro, 1998; Simonton, 1976; White, 1931). Finally, this component of the scale receives such minimal weight that it has a minimal impact on the composite score, so it really does not make any difference whether it is included.

3. Because this decision might be interpreted as too approximate or arbitrary, all analyses reported in the results section were repeated with all cases omitted in which this rule was applied. All of the central findings, including the statistically significant relation between giftedness and the genius criteria, were replicated in this reduced sample.

4. To minimize multicollinearity, the two quantitative independent variables (giftedness and birth year) were first placed in mean-deviation form before generating the multiplicative terms with the dummy variables (Aiken & West, 1991).

5. Kathi Kearney has been gathering data for a longitudinal study of intellectually gifted African Americans, but her results are not yet ready for publication (Kearney, personal communication, October 11, 2006).

References


**Dean Keith Simonton** is Distinguished Professor and Vice Chair in the Department of Psychology at the University of California–Davis. He received his PhD in social psychology from Harvard University. His more than 330 publications treat various aspects of genius, creativity, leadership, talent, and aesthetics. His research honors include the William James Book Award, the Sir Francis Galton Award for Outstanding Contributions to the Study of Creativity, the Rudolf Arnheim Award for Outstanding Contributions to Psychology and the Arts, the George A. Miller Outstanding Article Award, the Theoretical Innovation Prize in Personality and Social Psychology, the Mensa Award for Excellence in Research, and the President’s Award from the National Association for Gifted Children.