



Children Above 180 IQ Stanford-Binet: A Seventy-Five Year Follow-Up

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The findings of a follow-up study of 10 of the subjects of Leta Hollingworth's (1942/1975) study, "Children Above 180 IQ Stanford-Binet," are presented, including interviews with two living subjects, a written response to a questionnaire with a third, and an interview with the daughter of a recently deceased fourth subject. The fact that three of the subjects, identified as highly gifted as children, went on to achieve eminence is addressed, and the nature of the subjects' adult psychosocial development is presented.

Since the publication of the Binet-Simon intelligence test for children (1905), a new area of special education became possible: the ability to identify children of varying intelligence levels and to tailor the children's education according to this ability. Originally designed to find children of lower intellectual ability, the publication of this assessment also enabled a new means to identify children of superior ability.

Among the possibilities created by the development of this assessment was the ability to test a hypothesis by Galton (1892/2000) that very superior mental faculties played an important role in the achievement of eminence in adulthood. One researcher, Leta Stetter Hollingworth (1942/1975), took up this question in her study of children identified as having exceptionally high IQs. The purpose of the present study was to investigate Hollingworth's sample of individuals who were identified as having exceptionally high intelligence in childhood.

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Children Above 180 IQ

In 1916, Hollingworth (1942/1975) began studying gifted children in order "to observe them with reference to the principles of education" (p. xiii). She continued her work until her death 23 years later. A collection of her observations and theories about 12 of the most gifted of these children was posthumously edited by her husband, Harry L. Hollingworth, and published in 1942 under the title *Children Above 180 IQ Stanford-Binet: Origin and Development* (Hollingworth, 1942/1975).

Hollingworth (1942/1975) described the basis for her book as "the work of Francis Galton, on the one hand, and of Alfred Binet, on the other" (p. xi). In particular, one of Hollingworth's interests was whether the measurement of high intelligence in children would be predictive of later eminence. Galton (1892/2000) specifically identified the three traits which he believed would be necessary to lead to adult eminence: a mental "ability that was exceptionally high" (p. viii), "zeal...[and] an adequate power of doing a great deal of very laborious work" (p. 37). To Galton, all three qualities were necessary—and together, almost always sufficient—for an individual to achieve eminence. It should be noted that the dictionary definition of eminence has remained largely

unchanged from Galton's and through Hollingworth's times. Stormonth and Phelp (1881) defined *eminent* as "celebrated or conspicuous; rising above others; high in rank, etc." (pp. 175-176). Webster's (1913) dictionary defined *eminence* as "an elevated condition among men; a place or station above men in general, either in rank, office, or celebrity; social or moral loftiness; high rank; distinction; preferment." Merriam-Webster's (n.d.) online dictionary has simple definitions for *eminence* (as related to people) as "a condition of being well-known and successful," and "a person of high rank or achievements."

To identify such children with exceptionally high ability, Hollingworth used the translation and revision of Binet's intelligence test by Terman (1916), commonly known as the "Stanford-Binet," and a subsequent revision of that test by Terman and Merrill (1937), and chose an arbitrary cutoff of scores above 180 IQ. Acknowledging the need for additional data to better understand the distribution of IQ, Hollingworth (1942/1975) speculated that one could extrapolate that an IQ above 180 might be found "only once in more than a million times" (p. 23), but nonetheless would only conclude that children above 180 IQ "are extremely rare" (p. 24); thus, broadly speaking, meeting one of the three criteria set forth by Galton.

Since Hollingworth's death, the evidence has indicated a clear relationship between childhood mental ability and adult success (e.g., Judge, Higgins, Thoresen, & Barrick, 1999; Spengler et al., 2015). Additionally, the degree to which exceptionally high intelligence is specifically predictive of later adult eminence has been the subject of study, with varying findings. Research on early adolescents already marked by high ability (scoring in the top 1% of their age-mates on the college entrance examination, the SAT) conducted by Park, Lubinski, and Benbow (2008) and Lubinski (2009), showed that signs of eminence, as indicated by patents and noteworthy literary publication, were progressively more likely to be obtained at increasingly higher levels of ability. Feldman (1984) studied a group of 52 individuals first investigated by Terman (Terman, 1925; Terman, Burks, & Jensen, 1930; Terman & Oden, 1947; Terman & Oden, 1959), and contrasted a group of 26 above-180 IQ (Stanford-Binet) individuals with 26 individuals from his overall group (140+ IQ; average IQ 150). Feldman found slightly higher academic achievement in the above-180 IQ group (22 bachelor's degrees vs. 18; 15 advanced degrees vs. nine; five PhDs vs. five combined PhD and MD degrees). He also identified three individuals "distinguished" in their career among the 180 IQ group, and none in the 150 IQ group; these included "an internationally known academic psychologist, a highly honored landscape architect, [and] a judge" (p. 520). A follow-up was conducted on the Hollingworth sample by White (1990) in order to

ascertain the subjects' educational and career achievement: his interviews with three of the grown children (identified as I, J, and L) showed that two of the three had achieved doctorates, with the third also doing some graduate study and holding political positions and "positions of leadership in civic organizations" (p. 225).

Multiple factors in the achievement of adult eminence have been identified. Simonton and Song (2009) found clear, though small-to-medium, positive relationships (according to the effect sizes of Cohen, 1992) between estimated IQ and achieved eminence in Cox's (1926) sample of eminent individuals, as well as between mental health and eminence.

Also following up on the Cox sample, Wahlberg et al. (2004) noted group differences among sub-groups in varying domains; for example, religious leaders tended toward qualities of:

concentrated, joy in work, scholarly, precocious, ethical, philosophical, religious, sensitive, encouragement of mother, encouragement of others, exposed to many adults at an early age, early exposure to eminent persons, strong external incentives and support for work in field of eminence. (p. 112)

On the other hand, philosophers tended to have qualities of: "questioning, empirical, intelligent, versatile, philosophical, challenging, clear parental expectations of conduct, permitted to explore" (p. 113). Mathematicians are not grouped directly, and appear to be included among the group of scientists in the Wahlberg et al. (2004) sample, which had the following qualities: "opportunistic, single-minded, absence of mother" (p. 113).

Simonton's (2009) larger review of the literature also noted that the personality factor of "openness to experience" (Costa & McCrae, 1992) related to eminence among scientists and United States presidents. With respect to careers in creative domains, Simonton (2012) and Damian and Simonton (2015) observed several factors, including developmental adversity, mental illness, tenacity (similar to Galton's "zeal"; 1892/2000, p. 38) and other "situational factors" (those unique to the time and place of the individual) contribute to achieved eminence in addition to IQ.

Finally, Goertzel, Goertzel, Goertzel, and Hansen (2004) conducted a retrospective of 400 eminent adults, who were identified as such if they were born in the United States and had two biographies written about them which were also available at the authors' local library—or one biography if born outside of the United States. The authors found that in childhood, these adults tended to have homes strongly focused on "learning and achievement" (p. 1), to have "opinionated parents" (p. 29), to have "failure-prone" fathers as often as not (p. 55), to have troubled homes more

often than not (p. 133-134), to have often suffered the deaths of siblings or parents (pp. 220-223), and to have school problems (p. 249). The Hollingworth sample provides an opportunity to review whether any of the 12 participants achieved adult eminence, and to compare the circumstances of their childhood as originally observed with the findings in the studies by Simonton (2009, 2012), Goertzel et al. (2004), and Wahlberg et al. (2004).

Hollingworth (1942/1975) stressed the importance of social and emotional development of highly gifted children and applied her principles to the Speyer School (cf. Silverman, 1990). However, psychosocial development does not end at childhood, and any such pattern that is unique to gifted adults, and in particular to highly gifted adults, may be of use for counseling purposes. In the context of typical psychosocial development, Erikson and Erikson (1998) suggested that people largely pass through nine stages. Each stage is marked by a theme and a crisis experienced by the individual related to a particular theme. Adulthood is marked by four themes with accompanying crises as the individual ages, beginning with Love (Intimacy vs. Isolation), then Care (Generativity vs. Stagnation), and next Wisdom (Integrity vs. Despair); the final stage, Gerotranscendence, is not marked by a crisis, but rather a continual effort to transcend one's growing limitations.

However, this "typical" developmental pattern may not necessarily hold for gifted adults, due to unique traits observed in them by Lovecky (1986): "divergency, excitability, sensitivity, perceptivity, and entelechy," the last of these defined as "motivation...to become all the self is capable of being" (p. 574). Lovecky (1986) suggested that each of these qualities brings both benefits and drawbacks to the social and emotional development of gifted adults. For the highly gifted adult, who would seem more likely to have these qualities in an even greater extreme, the negative effects would seem to predominate simply because of the greater degree of difference this would bring vis-à-vis the general population. For example, with respect to sensitivity, Lovecky noted gifted adults' "positive social and emotional benefit in their deep concern for the needs and rights of others, their empathy for the feeling of others, and their desire to help even at significant cost to themselves" (p. 573). An even deeper feeling for others, though seems more likely to bring about the negative side: "others may not feel so deeply or intensely, or...may have different priorities" (Lovecky, 1986, p. 573). Similar conclusions can be drawn for the remaining qualities observed by Lovecky (i.e., of perceptivity, excitability, entelechy, and divergency). In this context, it appears that these qualities may predispose highly gifted adults toward unique resolutions to each of the adult stages of psychosocial development proposed by Erikson and Erikson (1998).

With respect to "intimacy vs. isolation," Hollingworth (1942/1975) noted that unlike their moderately gifted counterparts, highly gifted children may be "too intelligent to be understood by the general run of persons with whom they make contact" (p. 265), which suggests difficulty in later resolving this stage in the direction of intimacy. Gross (2004) similarly concluded of her highly gifted sample: "[these] children are aware that they are disliked and rejected by their classmates" (p. 198). Evidence for assortative mating (e.g., Watson et al., 2004; van Leeuwen, van den Berg, & Boomsma, 2008) suggests some hope for adulthood intimacy for the gifted. However, highly gifted adults may be overly rare in their intelligence and may thus have only a moderate improvement in their prospects for intimacy. In this light, it would seem that highly gifted adults, relative to their typically-developing counterparts, seem more likely to resolve the crisis of the "love" stage in the direction of isolation rather than intimacy.

With respect to the "care" stage, the high importance of intelligence in career success (e.g., Gottfredson, 1997) would seem to allow for resolution of this stage in the direction of career generativity rather than stagnation (relative to their peers). With such success—and a highly intelligent mind to better observe, and derive personal meaning from, the effects of one's accomplishments—the crisis of the "wisdom" stage seems more likely to resolve in the direction of integrity rather than despair (in comparison to their peers). The Hollingworth sample offers a unique opportunity to observe the extent to which these suggested hypotheses are correct, in addition to their career outcomes.

Research Questions

The following questions guided the present study:

What has been the psychosocial development of adults identified as having exceptionally high intelligence in the Hollingworth sample?

What is the career achievement of adults in the Hollingworth sample?

To what extent did the adults in the Hollingworth sample achieve eminence in their lifetimes, and what factors may have played a role in this achievement?

TABLE 1
Designations of Hollingworth (1942/1975) Subjects and Designations in Current Study

| <i>Original designation by Hollingworth (1942/1975)</i> | <i>Designation in Current Study, and Name</i> | <i>Participant?</i> | <i>Interviewed by White (1990)</i> |
|---|---|-------------------------------------|------------------------------------|
| Child A | Subject A: Richard M. Machol | No (deceased) | No |
| Child B | Participant B [name withheld for anonymity] | No (deceased; daughter interviewed) | No |
| Child C | Subject C: Dr. Herman Kremer | No (deceased) | No |
| Child D | Subject D: Daniel Berman | No (deceased) | No |
| Child E | Subject E: Rev. Dr. Edward Rochie Hardy, Jr. | No (deceased) | No |
| Child F | Subject F: Donald MacMurray | No (deceased) | No |
| Child G | Participant G: Dr. Nathaniel S. Lehrman | Yes | No |
| Child H | Participant H [name withheld for anonymity] | Yes | No |
| Child I | Subject I: Vice President (Drexel Univ.) Martha Barber Montgomery | No (deceased) | Yes |
| Child J | Subject J: Eleanor Alice Haines McKernan | No (deceased) | Yes |
| Child K | Subject K: Dr. Franklin Abbott Smith | No (deceased) | No |
| Child L | Participant L: Prof. Murray Gerstenhaber | Yes | Yes |

Method

Sample

A summary of these individuals and their degree of participation in the current study is provided in Table 1.

Of the 12 individuals studied by Hollingworth (1942/1975), three (Participants I, J, and L) were identified and interviewed by White (1990). The remaining subjects were identified using a list of last names made available to one of the authors and follow-up investigations into their identities based on the biographical information in Hollingworth's book (1942/1975).

Originally referred to as "Child A," "Child B," etc., the individuals in this study will be designated "Subject" or "Participant" under the same letter assigned to them in the original study. Those who participated in this study (or in the case of Participant B, her daughter), or in the study by White (1990), will be referred to as "participants" in order to maintain anonymity, with the exceptions of Dr. Nathaniel S. Lehrman (Participant G) and Prof. Murray Gerstenhaber (Participant L), who permitted the disclosures of their identities for this article. The remaining individuals will be referred to as "subjects" (because these individuals did not participate) and later identified by name.

Procedure

Dr. Lehrman and Participant H were identified, contacted, and given semi-structured interviews regarding their educational and career outcomes and their psychosocial development. Interview responses were recorded and transcribed. A third participant, Prof. Gerstenhaber, who was previously

interviewed by White (1990), provided written replies to the same developmental questions. Participant B died in 2013; her daughter was given a semi-structured interview with similar themes about her mother. All interviews and correspondence with participants took place in 2015. As much information as was relevant to the career achievement and, where possible, the psychosocial development of all of the subjects and participants was also recorded, including documented information in personal correspondence and books. Biographical information, and information from interviews and correspondence were reviewed for common themes, as well as deviations therefrom.

Results

Life Narratives

Summaries of the life stories of the subjects and participants follow.

Subjects A, C, D, E, F, and K; Participants I and J

Subject A was Richard M. Machol. Machol recorded an oral history of Teaneck, NJ, on April 26, 1984, upon which much of the following is based (details were verified when possible); his wife was in attendance during this recording and provided additional details (Machol, 2013). He described attending and graduating from Columbia University in 1934 (this was later confirmed with student newspaper records from the time). After a brief stint at the National Bureau of Economic Research, Machol began a career of at least 48 years at McGraw Hill. Machol was active politically and civically from shortly after his college days; in 1936, he successfully

sued for the right to continue to vote in his district. After marrying and moving to Teaneck in 1948, this civic-mindedness continued: together with his wife, he organized campaigns for school referenda, school board candidates (including running twice for school board himself), and was active in the local American Foreign Service chapter, and promoted racial integration of Teaneck.

Subject C was Dr. Herman Kremer. He attended Columbia University, at which he was awarded Phi Beta Kappa membership in his senior year and later graduated. He later attended New York University's medical school and received his MD, practiced medicine, married for the rest of his life, had five children, and died in 1991.

Subject D was Daniel Berman; he is mentioned, though not by name, in Feldman (1984) as one of the above-180 IQ subjects. After graduating from high school, he attended Columbia University (attending concurrently with Subject E, Edward Hardy), at which he received unwanted media attention. Early in his college career, he showed interest in the law, but afterward graduated with Phi Beta Kappa honors (in chemistry, according to Hollingworth, 1942/1975, p. 133). While he was receiving a master's degree in Physics from Stanford University, he worked with Lester "Ty" Cowan of Columbia Pictures on technical matters related to film (that being his specialty at Stanford).

Berman later became Cowan's personal assistant and secretary, and helped negotiate several matters, including Columbia's contract with actor Edward G. Robinson. Later, Berman began a venture with George Gallup that culminated in the Audience Research Institute, which sold market research to the film industry with which Berman had been connected. Berman died of suicide at the age of 28, about a year before his efforts met with resounding success in the form of a deal with RKO Studios (Berman, 1929-1941; *The Emergence of Market Research*, n.d.). After his passing, one relative wrote that Berman had a strong desire to help those oppressed by the economic system (Berman, 1929-1941), and that he intended to make money quickly in order to allow himself the opportunity to fix the injustices done to them. However, one of Berman's own final letters speak of his goals for independent achievement, power, and independence (Berman, 1929-1941). Nevertheless, a living relative familiar with additional family correspondence commented to one of the authors that the former, altruistic rationale for personal gain seemed far more plausible (personal communication to Wigtil, October 30, 2015).

Subject E was Rev. Dr. Edward Rochie Hardy, Jr. Hardy was a prolific scholar. In addition to his AB from Columbia University in 1923, he received his master's and PhD from the same by 1931, and received multiple degrees in theology by 1934. By 1969, at the time he left Berkeley Divinity School at Yale after 25 years of service, he had written 15 books and

brochures, contributed to 14 additional books, and penned 21 editorials, 68 articles in periodicals, and 186 book reviews and notes. In addition to being prolific, so beloved was Hardy by the students and faculty at his school, that when he left to begin teaching at the Jesus College at Cambridge University, the senior class of 1969 prepared a celebratory pamphlet which recorded these accomplishments, with a moving note by the dean of the school (Berkeley Divinity School, 1969). When he died in 1981, the Education Committee of the Executive Council of the Episcopal Church honored him with a resolution of gratitude to him for his service (Executive Council of the Episcopal Church, 1982 Feb 17-19, p. 13-15), to be sent to his wife and son.

Subject F was Donald MacMurray, who died before the book *Children Above 180 IQ Stanford-Binet* was published. MacMurray contributed articles to *Chess Review* in his free time, and was also a graduate student who tested Gerstenhaber when the latter was a child. In the book, MacMurray's inconsistent educational record is highlighted; his tendency toward truancy and illness, his passion for chess, and his extreme dislike of physical education are adduced as reasons for this inconsistency. Harry Hollingworth, author of the chapter on MacMurray in his wife's book (Hollingworth, 1942/1975), took a fairly dim view of his outcome when summarizing his short life, writing of MacMurray's marriage two years before his death: "Impetuously, and without resources except the provisions made by his sponsor for his own subsistence, he married a young Jewish girl" (p. 171). Later, Hollingworth concludes that "Chess, bridge, and racing continued to intrude themselves into his activities.... A bachelor's degree and a few chess prizes and bridge victories represent F's final achievement" (pp. 172-173).

The relationship between MacMurray and the Hollingworths appeared to be more complicated than described in this book. Denker and Parr (1995) wrote that MacMurray, whose life was marked by poverty, "showed up one day...[in] wintertime, wearing an expensive cloth coat with a wide mink collar" (pp. 37-38), given to him, according to MacMurray at least, by none other than Leta and Harry Hollingworth, who, MacMurray further asserted, had "legally adopted" him (this detail could not be verified with the clerk's office of his place of birth). However, MacMurray did live with the Hollingworths for a period of one year (Wasserman, Kearney, & Silverman, 2015). Denker and Parr added, "For [the Hollingworths], Donald was a living experiment, about which they would later write in their book, *You and Heredity*" (p. 38). Though perhaps confused about the book's title (Leta Hollingworth was referenced in, and was not the author of, *You and Heredity* (Scheinfeld, 1939, p. 220), MacMurray clearly recognized his status as a research subject.

MacMurray died of stomach cancer in December 1938. Denker and Parr (1995, p. 40) write that "he did not give up

on life until the very end,” and that he continued to discuss “bright plans” for a future that was never to be. He left a definitively positive impression on the authors.

Participant I, Martha Barber Montgomery, was interviewed as part of a follow-up study by White (1990), at which point she was serving as an assistant vice president at Drexel University. She passed away from cancer in 1992; both the New York Times and the Philadelphia Inquirer commemorated her with obituaries, the latter of which identified her as “a highly regarded specialist in engineering ethics” (McLarin, 1992), and noted:

She was a member of the Corporation of Haverford College, and a board member of the Pennsylvania Board of Landscape Architects, the National Council of Engineering Examiners and the Delaware Association of Professional Engineers. She was a trustee of the Philadelphia Free Library and a member of the Middle States Association of Colleges and Schools’ Accrediting Board.

Participant J, Eleanor Alice Haines McKernan, was also part of the follow-up study by White (1990). In addition to what was listed in that interview, McKernan’s obituary (“Ms. Eleanor Alice Haines McKernan,” 2014) lists her involvement in the community as a mentor, justice of the peace, and a member of a local lake conservation program.

Subject K was Dr. Franklin Abbott Smith, who graduated with a BSS from the City College of New York in 1942, an MA in Political Science from Columbia University in 1942, and later a PhD from the same. His thesis was published by Columbia University Press as a book under the title, *Judicial Review of Legislation in New York, 1906–1938* (Smith, 1952), and re-published in the United Kingdom, Canada, and India.

Participants B, G, H, and L

Descriptions of the remaining participants follow, drawing on interviews with the daughter of Participant B and with Participants G and H; correspondence with Participant L, and information first presented on all four participants by Hollingworth (1942/1975).

Participant B

Intimacy vs. Isolation. Originally described by Hollingworth (1942/1975) as “a good mixer,” B appears to have been the most sociable of the 12 children originally described. B’s daughter reported that this sociability continued into adulthood. Asked whether B was successful at getting the kind of people who she felt were close to her, her daughter reported, “Yes. I think she was good at that.... She had a lot

of people she knew for a long time,” and that “She was... a big social butterfly.”

Regarding her mother’s romantic life, B’s daughter reports that “[S]he probably had [saved] every dance card she ever got.” As with H, B got married later in life. Furthermore, it seemed to her daughter that it “didn’t really seem like they should’ve been together.... [I]t was kind of like, almost, two heads butting with each other, so it was kind of weird.”

Specific Career Achievements and Generativity vs. Stagnation. B entered college in 1931, but left school the following year in order to pursue writing. B served as an officer in the Navy during World War II and officially left the service in the early 1950s with a rank of either Lieutenant JG or Lieutenant, though her work in the Navy had ended some years before. Later, she sold advertising space in phone books for several years. She left this job around the time of her marriage. After having her first child at 37, B was a stay-at-home mother, and also kept the books for her husband’s business. Additionally, B was “very active” politically, volunteering her time in the 1964 presidential campaign and a local political/community organization.

Although in some ways living a remarkable life, B’s daughter reports that her mother felt bitterness. This may have been related to B’s alcohol abuse and her missed opportunities in life. Though B wished to become a writer, and indeed left college in order to do so, she never finished any major project in this area. Her daughter speculated during the interview that highly gifted individuals may “have grand ideas but never finish anything,” and added, “[M]aybe she was angry because she felt like she had to take on a lot of responsibility, although my brothers and I kind of think she was a spoiled-rotten Army brat” (B’s father was a U.S. Army general, and her extended family had a deep military background; Hollingworth, 1942/1975).

Ego Integrity vs. Despair. B’s daughter reported that her mother seemed to have “a balance” in her attitude as to whether her life was one well-lived, though that seemed to depend on the day she reflected on it (suggestive of the varying moods of people who abuse alcohol).

Participant G

Intimacy vs. Isolation. Asked how successful he felt he’d been at maintaining close, personal relationships, Dr. Nathaniel Lehrman replied that he believed that he’d been fairly successful, mentioning that he’d been married for 70 years to his late wife, and that he currently had several friends in his life.

Specific career achievements and Generativity vs. Stagnation. Lehrman received his undergraduate degree from a prestigious northeastern university, later received his MD, and practiced psychiatry. Mid-career, he suffered a mental breakdown and admitted himself into treatment at a facility.

He made a full recovery and resumed his practice and eventually became a director of a clinical psychiatric center. Late in his career, he was convicted of fraud (along with two co-workers who received harsher sentences, one of whom had already been previously convicted of serious charges and who had lost his license). Lehrman was sentenced to prison and lost his medical license (he continues to maintain his innocence). Currently retired, he still writes articles and book reviews for both professional journals and outlets directed at mainstream audiences.

Lehrman has published about 40-50 articles in scientific or professional journals; presented 20 papers to scientific or professional societies; received one prize or award for a scientific or professional project; been awarded a research grant; been the editor of a professional journal; and written or directed one play. He also cited his “three good kids” as an important achievement.

Asked how successful he’d been at contributing to society and guiding future generations, he said he’d done “good work, but it’s been ignored.”

Ego integrity vs. Despair. Lehrman felt that his life overall had been “fairly successful,” but did not elaborate.

Participant H

Intimacy vs. Isolation. When asked about her success at maintaining close, personal relationships, H reported that her romantic relationships were “relatively few,” but “very satisfactory.” On the platonic side of this question, she said that they were also relatively few.

Specific Career Achievements and Generativity vs. Stagnation. H completed her bachelor’s degree at the age of 20 and received her PhD in English literature at the age of 23. After finishing graduate school, H taught at universities for a time in what she called “the fluid bottom...where you start to teach [and] you flow from school to school until some school decides to keep you for more than a few years.” Dissatisfied, H left academia to start at “a very unexciting job” working with data at an advertising agency, yet reports that she “was happy to have [that], because that meant when I got home from work, nine hours through, I didn’t have to write a paper or something like that.” She then moved to working full-time in publishing for a several years (reduced to freelancing for a few years mid-career after the birth of her children), where she worked primarily in copy-editing and fact-checking. One accomplishment in particular which she mentioned was her work on a nonfiction book which won a Pulitzer Prize.

Asked how successful she felt she was in contributing to society and future generations, H replied, “I would say not successful.” She contrasted her own performance that of a close relative who “has gone out of his way...tak[ing] time from his job...present[ing] speeches in favor of his point of view, and so forth. He has been very aggressive in doing

what he thinks is important, and I would say I have been the opposite of that.”

Ego Integrity vs. Despair. H reported that her life as a whole was successful, noting her “very good marriage” and “very good job,” but adding “from the point of view of public benefit, not particularly,” and concluding, “Would I be willing to live the same life again? I probably would.”

Participant L

Professor Murray Gerstenhaber is a retired mathematician and the third participant in the follow-up study by White (1990). He is married with three children. According to Google Scholar as of the time this paper is written, his papers have been cited nearly 5,000 times, including one paper with over 1,000 citations.

Intimacy vs. Isolation. Gerstenhaber noted his marriage of nearly 60 years, in which he and his wife “have grown in love and understanding through the years.” Regarding platonic relationships, he replied “My other close relationships are with my children and their families, but I maintain close contact with numerous other family members, friends, and colleagues, with some of whom I collaborate. Some are former students of mine who are now professors.”

Generativity vs. Stagnation; Ego Integrity vs. Despair. Perhaps reflecting the enduring career he has had (not uncommon for eminent individuals; Simonton, 1991), Gerstenhaber appeared to be equally within both of these stages, and answered the questions aimed at each stage as though writing about the other stage. Regarding Ego Integrity vs. Despair, he replied, “To the extent that I have been successful, am still teaching, writing and publishing papers, doing research, and feel lucky to be able to continue doing what I love to do.” Replying to the question about Generativity vs. Stagnation he took the following retrospective view:

In over 60 years as a teacher, I have helped educate thousands of students not only to the beauty and value of mathematics but to the importance of standing for their beliefs. Some of my mathematical work is now included in standard graduate courses in a number of schools here and abroad and occasionally given as a full course of its own.... I have a law degree from the University of Pennsylvania, and in Penn’s law school I have taught courses in statistics for law, giving the first such course in this country. In this course I emphasize the use of statistical methods in battling racial, gender, ethnic, and other forms of discrimination. I have served on the Council of the American Mathematical Society and helped write the Society’s Rules of Ethics. I have worked with several of the Society’s committees, one of which I

chaired, to free scholars imprisoned for their beliefs overseas (we did get some out), and to fight cases of unjust dismissal in this country (less successful, but because of our support were rehired at other colleges). I helped found AMIAS, the Association of Members of the Institute for Advanced Study (its “alumni” organization, although it grants no degrees), contributions through which now support a number of young scholars for one year terms as visiting members of the Institute. As a member of my religious community I fought successfully in my synagogue to have women treated equally with men in matters of religious service. Finally, if family counts as a contribution to society—and I certainly believe that it does—then I can add that my children have been successful both in their professions and so far, as parents.

Discussion

Eminence

Consistent with the positive relationship between estimated IQ and adult eminence found by Simonton and Song (2009), three of the high-IQ people from the Hollingworth sample—Hardy, Montgomery, and Gerstenhaber—appear to qualify as eminent within their respective domains. Hardy was directly celebrated within his lifetime, Montgomery achieved a high rank at Drexel University, and Gerstenhaber’s many citations qualify as high achievements and being well-known and successful. The previously noted traits of eminent individuals will be compared to those observed in these three individuals.

Traits observed by Simonton

Of the aforementioned factors contributing to eminence noted by Simonton (2009, 2012), openness to experience, tenacity, and the “situational factors” (factors unique to the time and place of the individual) of gender and unusual child care are reviewed below.

Openness to Experience. Openness to experience involves curiosity, imagination, being “aesthetically reactive,” and having insight, originality, “unusual thought processes,” and a large range of interests (McCrae & John, 1992). Montgomery’s chosen field for her advanced degrees, philosophy, certainly requires the first two of these. Her leadership field of program evaluation, her specialization within engineering ethics, and her work across several boards with a variety of fields speaks to wide interests, and her interest in poetry and the composition of the school song

(Hollingworth, 1942/1975, p. 199) suggest early indications of originality and unusual thought processes, and speak further to an early wide range of interests.

Hardy’s unusual thought processes, insight, and curiosity are suggested in the aforementioned pamphlet, which praises his ability in Coptic and Latin, and his memorization of mixed metaphors. It is also seen in the resolution honoring him after his death, which praised his mysticism as well as his “wide span of concern” for ecumenical matters, and praised him for being “one of the Anglican Communion’s greatest and most versatile scholars” (Executive Council of the Episcopal Church, 1982, pp. 13-15).

The specialized nature of Gerstenhaber’s original mathematical theory speak to his unusual thought processes, insight, and curiosity. His wide range of interests, bounded only by a seeming need for practical usefulness in later life, included childhood hobbies and outside activities of stamp and money collecting, making model airplanes, science experiments, and running a small business; and as an adult, receiving his JD in addition to his PhD in mathematics.

Tenacity. Hardy’s and Gerstenhaber’s prodigious outputs and Montgomery’s interdisciplinary leadership suggest persistence and drive in all three individuals.

Participant B’s daughter specifically mentioned that her mother seemed not to follow-through on her creative writing projects. Participant H noted that the additional burden of writing after completing a full work day led her to seek work outside of academia, and acknowledged that she did not take initiative. For both, a lack of staying power seems to have impaired their career success.

Situational Factors

Caring for children. Of the participants who were interviewed, two (Participant H and Gerstenhaber) mentioned caring for children who were ill or had a handicap (White, 1990), and this burden appears to have attenuated their success. For Gerstenhaber, this meant that he “had little time for any avocations. Avocation in the sense of something that could not be a useful profession is something I never had” (White, 1990). While it is difficult to speculate the effect of his lack of avocations, it is worth noting that Simonton (2012) observed that “scientists who attain the highest levels of recognition... are much more likely to have artistic avocations.” If causal in nature, this could mean that Gerstenhaber’s lack of avocations (or the circumstances contributing to it) may have attenuated his career success.

Cultural reaction to gender. Gender discrimination, a more prevalent cultural factor in the middle of the 20th century, appeared to impede the progress of the women in this sample. Montgomery, though included as eminent, specifically cited her gender as an attenuating factor in her career success. Regarding B, it is difficult to say whether her

gender prevented her from achieving eminence, though given the strong military strain which runs through her family, her gender likely attenuated her success in the Navy as well.

Childhood Histories Paralleling Observations by Goertzel

To varying degrees, the childhood histories of the three eminent members of this sample align with observations made by Goertzel et al. (2004). Hardy's mother (Hollingworth, 1942/1975, p. 137), a bacteriologist who took great lengths to help her son's education, matches the profile of the dominating mother who supports the child who later becomes eminent (Goertzel et al., 2004, pp. 81-105). The deaths of Hardy's three older sisters and his own difficult birth match the profile of children born with an "intruder complex" (Goertzel et al., 2004, pp. 216-220). He appears to not have had serious primary and secondary school problems described by Goertzel et al. (2004, pp. 249-254), though he was briefly hazed as an early teenager at Columbia University—a challenge he later overcame (Hollingworth, 1942/1975, pp. 151-152).

Unlike Hardy, Montgomery had difficulty adjusting to primary school on two occasions, first when she was promoted to second grade: "She spent her spare time aimlessly drawing, and was allowed to bring library books to school. Some of the time she sat with folded hands when her work was finished, and she resented this" (Hollingworth, 1942/1975, p. 196). She enjoyed two years at Speyer School, yet her family moved to Maryland and she was promoted to 5th grade at that school, where she was also unhappy. She later attended Oberlin University (White, 1990). Her mother was involved in "debating, dramatics, and student government" and later took "active part in the League of Women Voters and in the Faculty Wives' Club" (Hollingworth, 1942/1975, p. 195). These indicate strong opinions, common among parents of eminent adults in Goertzel et al.'s (2004, pp. 29-30) sample.

Gerstenhaber's father's was trained as a "jeweler, but being unable to find work in this line he [took] employment in a factory making airplane precision instruments" (Hollingworth, 1942/1975, p. 213). Gerstenhaber noted that his parents were poor, which to some degree parallels the "failure-prone father" motif described by Goertzel et al. (2004, p. 55-65).

Traits Observed by Wahlberg et al.

Hardy's personal history suggests traits which align quite closely with observations of religious leaders by Wahlberg et al. (2004).

Montgomery showed *versatility* in childhood (including writing the school song for Speyer and a collection of poems for Leta Hollingworth; White, 1990). This was even more clearly seen in adulthood, with her maintaining

varied responsibilities and interests. Moreover, her obituary (McLarin, 1992) suggests a *challenging* nature: "She once lent her typewriter and card table to a young woman she had hired to teach at Drexel and told the woman to keep them until she had finished her doctoral thesis." Three of Wahlberg et al.'s (2004) qualities for philosophers—"philosophical," "questioning," and "empirical"—appear in her childhood passions for "nature study...and 'in her relationship to the world and the cosmos'" and "reason[ing] logically and [having] a strong sense of justice" (Hollingworth, 1942/1975), and later in her choice of philosophy and logic as a PhD program "because these were the hardest core inner disciplines having to do...the justification of thinking" (White, 1990). However, Montgomery's eminence does not necessarily stem from her advances in philosophy, but from her academic leadership. Though her life history includes most of the qualities Wahlberg et al. (2004) observed in eminent philosophers, whether this replicates their findings is questionable.

Gerstenhaber was highly motivated to obtain a scholarship from an early age, opting to study for 2-3 hours a night (Hollingworth, 1942/1975, p. 223). He specifically enrolled at the University of Chicago on account of the mathematics department there having "stolen" the best faculty in this area (White, 1990). He later received his JD after his PhD and was admitted to the state bar. He has clearly sought out opportunities to advance himself (though more benevolently than the term "opportunism" used by Wahlberg et al., 2004, would suggest). Finally, his single-mindedness was evident not only in his scholarship search and the later volume of his publications, but also, according to his interview with White (1990): "The ability to hang in there has a lot to do with scientific productivity, I am convinced. And in mathematics...hanging in there is a solitary accomplishment" (p. 227). Of the three qualities associated with scientists by Wahlberg et al. (2004), Gerstenhaber thus appears to possess two.

Overall, the factors related to eminence previously mentioned in the literature appear to be largely consistent with those observed in the eminent individuals in this study.

Additional Moderating Factors Related to Eminence

A few moderating individual factors are worth mentioning. First, the tone and content (e.g., constant complaints of fatigue despite otherwise good health, negative self-appraisals, etc.) of Berman's correspondence suggest he suffered from depression, and possibly bipolar disorder (cf. Berman, 1929-1941). His suicide came with tragic timing relative to the success of his efforts, about one year before the RKO Studio deal. Although difficult to say what his life's trajectory would have been without his mental illness, his suicide ended what might have been a resounding success

of a career, given his personal involvement in developing the ARI forms and interviewing techniques for at least two years prior (Berman's letters notably exclude mention of Gallup's input on these; Berman, 1929-1941), and also Berman's professional connections to the film industry. The eminence of George Gallup gives some indication that Berman himself could have achieved eminence.

Next, both MacMurray and Berman appeared to repeatedly take career risks in the form of frequent career path changes which were out of proportion to the likely gains. MacMurray switched from an educational interest in law to psychology to law again, yet was always interested in chess. Likewise, Berman appeared to switch his interests from law, to chemistry, to physics, to marketing/audience research, and finally briefly to parapsychology (Berman, 1929-1941), from the time he entered college to the time of his death. Though not out of character for young people, this inability to specialize and continue along a single path seemed to intrude on their career progress, a difficulty predicted by Hollingworth (1942/1975, p. 259). Berman's suicide in particular came after a long period of diligent work in a field he seemed to take little joy in; he expressed distaste for this when pursuing his master's degree (Berman, 1929-1941).

Adult Psychosocial Development

There appears to be sufficient information to draw conclusions about the resolutions of at least one psychosocial stage of development for ten of the 12 individuals studied. The apparent resolutions of the adult stages of psychosocial development for the Hollingworth sample are summarized in Table 2.

Intimacy vs. Isolation. Four subjects and participants appear to have resolved this stage in favor of intimacy, with six resolving it in a "mixed" manner (i.e., some degree of both outcomes was observed). In the cases of Machol, Hardy, Lehrman, and Gerstenhaber, this resolution appears to be unambiguously in favor of intimacy. Regarding Machol's resolution of this stage, he had been married for 45 years, and his long-term community organizing required a level of interpersonal skill and reciprocity. Though no record of the quality of his marriage is available, Hardy was clearly beloved by his students and fellow faculty, and remained married to his only wife at the time of his passing.

MacMurray married, but little about the interpersonal quality of his marriage remains. However, after his death, he was remembered fondly by *Chess Review* ("Donald MacMurray †," 1938, December): "Mac, as he was commonly known amongst his friends, was a lovable character"; and he was described by chess grandmaster Arnold Denker as a "close friend" (Denker & Parr, 1995, p. 38). Denker also notes that MacMurray's wife was a childhood sweetheart from an

elementary school that he had earlier attended (P.S. 165, Manhattan; p. 38); the bond between these two may have been stronger than suggested by Hollingworth (1942/1975).

For other cases, the record is incomplete. Berman never married and wrote of his need to meet more people before his death, but remained on good terms with current and former colleagues, including hiring at least one them for his research (Berman, 1929-1941); this stage therefore appears to have a mixed resolution. Kremer remained married for decades, but the quality of friendships remains incomplete. The remaining cases for which more complete information is available were more ambiguous, especially for the women. B's daughter said that although B was a social butterfly, she also did not seem to be a particularly good match with her husband. Though she had many friends, none seemed to be aware of her bitterness. Participant H mentioned her very good marriage, but had relatively few close friends. McKernan and Montgomery were both divorced, though the latter was engaged at the time of her passing.

It should be noted that Gerstenhaber's relationships appear to be with people of generally superior ability (his wife is also a professor). This suggests the implicit argument regarding better communication among people of similar intelligence levels (Hollingworth, 1942/1975, pp. 257, 258, 260-263, 265, 286-287). Hollingworth spoke specifically of how individuals with high intelligence, in the absence of people who are at least close to their ability, may have difficulty exercising leadership, have specific social and communication difficulties and, at the highest levels of intelligence, cause them to be "too intelligent to be understood" (p. 265). Gerstenhaber's approach has served him well socially; more generally, organizations with high-intelligence qualification standards (e.g., Mensa, the International Society for Philosophical Enquiry (ISPE), etc.) may be able to provide a social benefit to their members. Furthermore, an examination of the social effects of childhood school acceleration on the positive resolution of this stage seems warranted. After the closing of the Speyer School, scholastic and academic placement of its students varied (e.g., White, 1990); in her longitudinal study on highly gifted children, Gross (2006) noted that the degree of acceleration in school was positively associated with the quality of their adult interpersonal relationships.

Of additional interest is that the three eminent individuals in this study all achieved eminence within academic institutions. It is also noteworthy that their success may be due to being in an environment with more intelligent people who provide these individuals not only the opportunity to display leadership, but also the opportunity for socializing on a broader range of intellectual topics. Academic institutions may even have provided an atmosphere wherein one's knowledge and ability to synthesize concepts

TABLE 2
Resolution of Psychosocial Stages (Erikson & Erikson, 1998) in the Hollingworth Sample

| <i>Subject/Participant</i> | <i>Intimacy vs. Isolation</i> | <i>Generativity vs. Stagnation</i> | <i>Ego Integrity vs. Despair</i> |
|-----------------------------|-------------------------------|------------------------------------|----------------------------------|
| Subject A: Machol | Intimacy | Generativity | Unknown ^b |
| Participant B | Mixed ^a | Stagnation | Mixed ^a |
| Subject D: Berman | Mixed ^a | Stagnation | Despair |
| Subject E: Hardy | Intimacy | Unknown ^b | Unknown ^b |
| Subject F: MacMurray | Mixed ^a | Unknown ^b | Unclear ^c |
| Participant G: Lehrman | Intimacy | Mixed ^a | Mixed ^a |
| Participant H | Mixed ^a | Stagnation | Mixed ^a |
| Participant I: Montgomery | Mixed ^a | Mixed ^a | Unknown ^b |
| Participant J: McKernan | Mixed ^a | Mixed ^a | Unknown ^b |
| Participant L: Gerstenhaber | Intimacy | Generativity | Integrity |

Notes: Kremer (Subject C) and Smith (Subject K) not included due to generally incomplete information in all three stages.

^aIndications of resolution of this stage in both outcomes (e.g., a mix of both intimacy *and* isolation, generativity *and* stagnation, ego integrity *and* despair).

^bInsufficient information to surmise a likely resolution to this phase.

^cMultiple interpretations of the resolution of this phase are possible.

provided a positive feedback loop between social interaction and reinforcement, inspiration, and career achievements.

Generativity vs. Stagnation. The resolution of this stage is also ambiguous. B and H appeared to have resolved the stage in favor of stagnation. H was proud of her work on copy-editing and reviewing the award-winning book, but she explicitly stated she felt unsuccessful.

Other cases appear to have resolved this crisis more ambiguously. Overall, Lehrman felt he'd done good work (suggesting generativity), but that it had been ignored (suggesting stagnation), yet he also reflected that his three children were an accomplishment. In spite of her eminent career, Montgomery noted to White (1990), "[G]iven how hard I've worked and how many advantages I've had...I am a failure" and that she ought to have been "a university...or a foundation president" (p. 224). However, she considered her four children her major accomplishment. McKernan, who also considered her children her greatest achievement, didn't believe she was an achiever. Berman's letters and manner of death illustrate the depth of his feeling of stagnation.

Though the aforementioned summary shows an apparent drift on MacMurray's part toward stagnation, hindsight and a view of chess culture may provide some explanation for some of his decisions. The actual nature of MacMurray's chess prizes were omitted from Hollingworth (1942/1975): in 1934, at the age of 19, he took seventh place at the U.S. Open (alternatively known as the American Chess Federation Tournament); in 1937, he took third place. In 1938, possibly symptomatic with the abdominal cancer which would soon take his life, he missed qualifying for the finals

by a tiebreaker, yet handily won the "Consolation Master's" round. The average age (at first victory) of the winners of this national tournament in the ten years before and after his death was 29.1 years ($SD = 10.8$). With the high-level practice he got to that point, it seems plausible that he could have secured a national victory. Grandmaster Arnold Denker believed he would have also become a grandmaster, if he had lived (Denker and Parr, 1995, p. 40).

Though tournament winnings were not as significant at that time as today—perhaps as little as \$156 (Little, 1937), worth about \$2,500 in 2015 (U.S. Bureau of Labor Statistics, 2015)—chess champions could be paid for simultaneous exhibitions. The Belgian chess champion Koltanowski was supposedly paid £500 for such a blindfold exhibition (Gancher, 1937), or £30,000 today after adjusting for inflation (Bank of England, 2015).

MacMurray's talent was not limited to his ability to play chess, but also his ability to write about it engagingly and humorously. His first article for *Chess Review*, "The Gentle Art of Annoying" (MacMurray, 1933), is easily accessible to the chess master and non-player alike. It seems, given these talents and the "notoriety" (Hollingworth, 1942/1975, p. 171) which he had gained, that MacMurray had positioned himself for a career as a journalist, commentator, author, and international player, or some a combination of these. His games and articles are still discussed in the chess community (e.g., Horowitz, 1971; Denker & Parr, 1995). A case could be made that his educational progress interfered with his chess progress, rather than vice versa. His discussing his

plans throughout his illness suggests resolution in favor of generativity.

Machol worked persistently for his community and at his career over 45 years, and also raised three daughters. Though he did not directly reflect on this in his oral history, one gets the sense that he was proud of his accomplishments and the mark he helped leave on his community. Similarly, Gerstenhaber appeared quite satisfied with his accomplishments and his children.

Ego integrity vs. Despair. Berman and MacMurray died before the publication of Leta Hollingworth's book, and Berman's (1929-1941) letters and suicide notes show someone who looked back on his life with despair enough to end it. Terminally ill young adults, as MacMurray was, may seek resolution of this stage in anticipation of their own deaths (Trueman & Parker, 2006). MacMurray's denial that he was dying could indicate a resolution in favor of despair, or that his "plans" were an image of an integrated self that he wanted others to remember: his ultimate resolution of this stage thus appears to be unclear.

The three interviewed participants appeared to hold mixed feelings about whether their lives were successes. Lehrman felt his life had been "fairly successful," H held a similar view, while B's daughter reported that her mother's view of her own life was heavily colored by her mood that day. Gerstenhaber modestly held the view that his life was successful.

Psychosocial Trajectories in the Hollingworth Sample

The four participants in the present study, B, Lehrman, H, and Gerstenhaber, seem to have fairly mixed psychosocial trajectories, and, as Erikson and Erikson (1998, p. 64) suggested was a possibility, their resolutions of "integrity vs. despair" seemed fairly dependent on the resolution of the prior two stages. The resolution of "generativity vs. stagnation" seems heavily dependent on attitudes that their achievement in adulthood should be directly related to their IQ scores. Ironically—having faced prejudice and early poverty yet achieving a generative and successful adulthood—Gerstenhaber used variations of the root word "fortune" in his reply four times, and "lucky" twice, reflecting perhaps modesty, or an understanding of the nature of chance in achieving success—or both. Also ironically, the reverse held for Montgomery, who resolved this stage in favor of stagnation—despite being considered eminent by the present authors.

The effects of high expectations surrounding success in this sample appear to be twofold. First, when discussing their abilities, none of the participants discussed their childhood IQ scores with qualifications about their inaccuracy and inflation (previously described). With a careful reading of

Leta Hollingworth's discussion of IQ, it is clear that she herself didn't necessarily believe that scores above 180 on the Stanford-Binet indeed meant "one in a million." Moreover, contemporary (e.g., Jordan, 1923; Yerkes, 1917) and modern (Becker, 2003; Kaplan & Sacuzzo, 2012; Reynolds & Fletcher-Janzen, 2004, p. 795; Sattler, 2008, p. 106) analyses of the 1916 Stanford-Binet and its 1937 revision have shown significant variability in IQ scores across both age and ability level, which can yield inaccurate and inflated IQ scores relative to the actual percentile rank.

Second, though clearly shown as a factor contributing to adult success (e.g., Gottfredson, 1997) and eminence (e.g., Simonton, 2012), the relationship is by no means exclusive. Suppose the correlation between civilian job performance and intelligence is .75 (as described by, e.g., Hunter, 1986). A person with an IQ three standard deviations above the mean would have statistically predicted success of only 2.25 deviations above the mean (a phenomenon known as "regression to the mean"). Plus, this does not account for the standard error of such an estimate, adding further variability, and that performance does not correlate perfectly with success.

An additional theme of the participants' reactions to their perceptions of stagnation should be noted. Two of the women, Participants B and H, were overqualified for the jobs they held (Participant H as a PhD copyeditor, and Participant B, who balanced the books for her husband's business), possibly due to the dearth of opportunity given to women at the time. They appeared to resign themselves to sub-optimal levels of productivity, yet maintained active work lives. Three of the women, B, Montgomery, and McKernan, were involved in their communities (Montgomery and McKernan, who cited their children as achievements, seemed more deeply involved).

Some of the men's reactions to stagnation imply that caution should be exercised. Overestimating the abundance of opportunity as well as the effect of IQ on success and judgment, may have occurred for some of the men in the study, particularly MacMurray and Berman. As mentioned earlier, MacMurray and Berman appeared to repeatedly take career risks in the form of frequent career path changes, out of proportion to likely gains. This risk-taking behavior could be a consequence of incorrectly believing that the inflated IQ scores were accurate, as well as failing to recognize the regression to the mean. Ignoring this relatively lower statistical predicted success could lead an individual, especially an American man in the middle of the 20th Century (who faced little gender discrimination), to believe that repeated risks, in the form of career changes and risks, would ultimately and inevitably yield success.

Conclusion

Leta Hollingworth's study changed the landscape of psychology, and its subjects were themselves changed by it. The conclusions about their outcomes are colored by both the generational and individual circumstances in which they lived. Gerstenhaber's reply about highly gifted people offers wisdom:

For someone born into a minority family without means, I have been exceedingly lucky. The problems faced by talented but disadvantaged children today are preventing many who could be important contributors to the sciences, arts, and society in general, from achieving their potential. They don't all have mothers like mine, who fought to find a path to education for her child. We have to seek them out but are not doing enough to find them, bring them out of isolation, and give them the opportunities I was so fortunate to have enjoyed. (M. Gerstenhaber, personal communication, November 9, 2015)

Let us therefore continue Leta Hollingworth's work, working to ensure that our efforts change the people whom we study, and gifted people from all walks of life, for the better.

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