

Achieved Eminence in 80 Female Psychologists:  
Family, Marriage, Children, Education, Career, and Contributions

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Author Notes

I thank Christopher Green for directing me to the Harald Høffding example.

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## Abstract

Although a large body of empirical research has shed considerable light on the attainment of eminence in psychology, this literature has focused almost exclusively on samples of eminent males. Yet there is sufficient reason to expect that eminent female psychologists do not necessarily follow the same life and career pathways as do eminent male psychologists. To help remedy this deficiency, the current historiometric study concentrates on a sample of 80 eminent female psychologists born between 1847 and 1950. After obtaining three reliable eminence measures, variables were defined with respect to family background (parental occupations and sibling configurations), marriage and children (including divorce), education and career development (especially the attainment of higher degrees and full professorships), and professional contributions (to 20 different specialty areas). Even after controlling for potential artifacts due to year of birth and reference source, statistically and substantively significant correlations were found in all four sets of variables. Even though the pattern of findings sometimes closely paralleled what was found for eminent male psychologists, other times the results strongly diverged. Because these divergences most likely reflected traditional gender roles and gender-biased policies, female and male routes to eminence should progressively converge over time, if they have not done so already. Finally, some findings based on this all-female sample deserve empirical examination in comparable male samples.

Keywords: eminent women; psychology; family; education; career

## Achieved Eminence in 80 Female Psychologists:

## Family, Marriage, Children, Education, Career, and Contributions

What does it take to make a mark on the history of psychology? What factors determine lasting fame as a psychologist? After all, psychologists vary greatly in distinction both in their own times and in the eyes of posterity (Annin, Boring, & Watson, 1968; Diener, Oishi, & Park, 2014; Haggbloom et al., 2002; Zusne & Dailey, 1982). At one extreme are those who known to anyone claiming to be a psychologist, such as William James, Ivan Pavlov, Jean Piaget, and B. F. Skinner, whereas at the other extreme are those who are more likely unknown to all except historians of a narrow specialty area. To illustrate, how many psychologists today know anything about the contributions of Harald Høffding (1843-1931), the Danish philosopher? Yet he ranked 402nd in a recent survey of more than 1200 respondents (see <http://elo.sha.nemart.in/elo/ratings>), a pretty respectable rating given all of the contributors in the discipline's history (cf. Annin, Boring, & Watson, 1968). More generally, any reader can probably supply their own list of psychologists who made contributions to their fields and yet who were largely unknown to most psychologists and who are almost completely forgotten today. Nor is it very probable that any particular psychologist will be resuscitated as a "neglected genius" in a manner like Gregor Mendel in biology. Eminence assessments in most domains exhibit sufficient stability over time so that those who are overlooked will tend to remain so (Ginsburgh & Weyers, 2014; Over, 1982; Simonton, 1991). Moreover, any transhistorical changes most often reflect gradual decay at the top: The famous are more likely to become less famous than the obscure become more notable (cf. Runco, Acar, Kaufman, & Halliday, 2016; Weisberg, 2015; Whipple, 2004).

Happily, a great deal of psychometric and historiometric research has been already published on the variables associated with differential eminence, including comparative

distinction in psychology and related sciences (for reviews, see Simonton, 2002, 2003). This literature has built up a robust inventory of relevant cognitive, dispositional, developmental, and sociocultural influences. Nonetheless, this research suffers from one striking deficiency: The work largely concentrates on majority-culture males! For example, Roe's (1953) psychometric study of 64 eminent scientists (among them B. F. Skinner) did not include a single minority or woman. Even when underrepresented groups are integrated into the sample, they often constitute such a small number that they cannot be separated out for comparative analyses. For instance, Simonton's (1992b) historiometric investigation of 69 eminent American psychologists included no minorities and only 3 women, who made up just 4% of the whole.

To be sure, one might argue that it should not make a genuine difference one way or another. The same factors might affect attainment regardless of gender, ethnicity, or even nationality or culture (e.g., role-model and mentor effects; Boring & Boring, 1948; Goldstein, 1979; Simonton, 1992a; Simonton & Ting, 2010). However, that convenient invariance cannot be just assumed without conducting the necessary research. Indeed, the plausibility of that assumption for all factors is already undermined by what little results have been published so far. In the case of minorities, for instance, it has already been shown that the impact of developmental adversity and psychopathological tendencies on eminent African Americans differs from what is observed in majority-culture figures who achieve eminence in the same fields (Damian & Simonton, 2015). And with regard to women, not only may birth order play a much bigger role in talent development than holds for men (Helmreich, Spence, Beane, Lucker, & Matthews, 1980; Simonton, 2008), but any specification of the sibling configuration may also have to incorporate the actual ordinal placement of brothers and sisters (Helson, 1980; Simonton, 2016; Steinberg, 2001; Sulloway, 1996). Birth order effects are thus moderated by gender.

Consequently, the goal of the current historiometric investigation is to identify some of the factors that contribute to the eminence of *female* psychologists. In fact, male psychologists will be entirely excluded from the sample (cf. Simonton, 2008). Because past research samples have been so thoroughly dominated by men, almost exclusively male comparative baselines have already become well established. At the same time, this inquiry will concentrate on those factors that probably prove especially crucial for women relative to men. Because of traditional gender roles—roles that have not completely vanished even today—the route to eminence will very likely take a different course depending on the gender of the young talent. In particular, the study will focus on variables in the following four broad categories:

1. *Family background* encompasses two sets of variables, namely parental occupations and sibling configurations. With respect to the first set, abundant research has shown that eminent scientists in general and eminent psychologists in specific tend to come from homes where one or both parents are professionals, practicing some occupation that requires a higher degree (Berry, 1981; Chambers, 1964; Eiduson, 1962; Moulin, 1955; Roe, 1953; Zuckerman, 1977; cf. Feist, 1993; Galton, 1874). Such an advantage may prove even more crucial for women by providing the additional parental support to overcome the numerous arbitrary obstacles that often interfered with their educational and career development. If the mother can claim status in a learned profession, the potential support may become even more pronounced (cf. Eiduson, 1962; Wispé, 1965). Regarding sibling configurations, Simonton (2016) has already examined how a family size, birth order, and gender distributions have shifted over a century of female contributions to psychology's history. Yet no investigation to date has examined how these same factors influence a female psychologist's ultimate eminence (cf. Clark & Rice, 1982; Simonton, 2008; Terry, 1989).

2. *Marriage and children* has often been shown to have a detrimental relation with exceptional achievement in science (Simonton, 2002). Galton (1874) was the first to show that eminent male scientists have smaller families than they themselves grew up in, and other researchers have shown how high-impact scientists tend to marry later (Moulin, 1951; Roe, 1953; Visher, 1947). The impact of marriage and children may become even more accentuated for female eminence given the traditional emphasis on every woman serving as wife and mother (cf. Hargens, McCann, & Reskin, 1978). Not only may eminent women less likely marry, but those who do may have fewer children (cf. Kyvik, 1990). For example, one psychometric inquiry found that among American psychologists of both genders, the women were almost 5 times more likely to be unmarried, and the women who did marry were almost 3 times more likely to have had no children (Helmreich et al., 1980).

3. *Education and career development* in some respects represent the counterpart of the preceding set of factors (Abir-Am & Outram, 1987; Cole, 1987; Ochse, 1991). To the extent that women were expected to devote their lives to wife and mother roles, they often faced obstacles in obtaining the advanced training necessary to become a full-fledged scientist. Indeed, even when personal family responsibilities did not prevent them from seeking higher degrees, women would face sexist admission policies that denied them access to graduate school. The most notorious example in the history of psychology is how Mary Whiton Calkins was denied a PhD from Harvard University despite submitting a doctoral dissertation that was approved *summa cum laude* by mentors as distinguished as William James and Hugo Münsterberg. Even should ambitious women get over this hurdle, they often had to face the obstacles standing in their path to an academic position that would enable them to carry out scientific research. These obstacles included not just sexist discrimination, but also nepotism rules that denied them the same status

as their husbands at research institutions and universities. Many women, in fact, were obliged to get jobs at liberal arts colleges. Calkins, for example, ended up at Wellesley College.

4. *Professional contributions* deals with the final stage when those women fortunate enough to pursue careers pick particular specialties in which they make a name for themselves in the discipline. Their choices may have an influence on their long-term eminence in psychology. Besides differences in whether a woman has the resources to pursue certain research topics (such as those demanding expensive laboratories and equipment), diverse specialty areas vary in scientific prestige. An example is the striking contrast between experimental and correlational psychologists (Cronbach, 1957; Tracy, Robins, & Sherman, 2009), where the former are far more likely to earn election to the National Academy of Sciences (Over, 1981; for specific instances, see Haggbloom et al., 2002, pp. 146-147). Even so, for those psychologists who consider their discipline more a human science than a natural science, some advantages in impact might accrue to those women who contribute to “softer” specialties (Simonton, 2000; cf. Simonton, 2015). In any case, because eminent female psychologists contributed to well over a dozen distinct areas, their choices would likely have consequences.

This variation in professional contributions provides a key rationale for excluding from this investigation two variables that have been shown to be the most proximate predictors of achieved eminence in the sciences: publication productivity and citation impact (cf. Feist, 1993; Grosul & Feist, 2014; Simonton, 1992b). Not all of the women worked in research universities where the emphasis was on publishing numerous journal articles and acquiring abundant citations from scientific colleagues. On the contrary, a significant number were engaged in practice and other applied areas. When they did publish, the publication might more likely take

the form of a book designed for a lay readership rather than a technical article submitted to a peer-reviewed journal.

## Methods

### Sample

The sample consisted of *all* women who were eminent enough to become subjects of entire chapters in (a) *Women in Psychology* edited by O'Connell and Russo (1990) and (b) all three volumes of *Models of Achievement* edited by O'Connell (2001a) and O'Connell and Russo (1983, 1988). These volumes all provide biographical information about eminent female psychologists who spanned a full century of psychology's history as a scientific discipline (cf. Gul et al., 2013; Johnston & Johnson, 2008; Scarborough & Furumoto, 1987). *Women in Psychology* produced 36 women and *Models of Achievement* provided 53, but because 9 women are treated in both sources, the final sample size is 80. The earliest woman, Christine Ladd-Franklin, was born in 1847, and the most recent, Lillian Comas-Díaz, was born in 1950, with the average woman born in 1915 ( $M = 1914.662$ ,  $SD = 21.182$ ). With conspicuous exceptions, such as Anna Freud and Karen Horney, 83% were born in the United States, with much of the remainder born in either Great Britain or one of the British Commonwealth nations. Moreover, almost all women, including Freud and Horney, ended their careers in English-speaking countries. That holds even for Maria Montessori, who had escaped from Fascist Italy to Great Britain, later moving to India before spending the last years of her life in the Netherlands. Here eminence in psychology is inclusively defined to include eminent practitioners working outside of academe. Nevertheless, most of the women can be considered psychological scientists in the strict sense of conducting scientific research. The Appendix lists all 80 women.



Besides providing the sample of 80 women, the above four volumes were also the primary sources for the biographical data used for the majority of the measures defined below (see also Simonton, 2016). The entries in these more specialized sources contained far more detailed information than is usually available in standard encyclopedias and biographical dictionaries (e.g., Sheehy, Chapman, & Conroy, 1997).

### **Measures**

The measures used in this inquiry fall into the following five categories: differential eminence, family background, marriage and children, education and career development, and professional contributions.

**Differential eminence.** A series of 0-1 dummy variables gauged whether or not a given woman was honored with an entry in the following 6 reference works: Kazdin (2000); Sheehy, Chapman, and Conroy (1997), Stewart (2008), Weiner and Craighead (2010), Wolman (1989), and Zusne (1984). The resulting measures were positively correlated (range .210-.728 with a median of .419), and a principal components analysis yielded a single-factor solution with loadings ranging from .548 to .846. Consequently, all measures were summed into a single composite indicator of eminence. Given that this composite featured a coefficient alpha of .816, differential eminence was thus reliably assessed.

However, because the women who were born early in the history of psychology enjoy the opportunity to earn entries in more biographical dictionaries and encyclopedias, the resulting measure exhibits a significant negative correlation with the woman's year of birth ( $r = -.599, p < .001$ ). Accordingly, a new detrended measure was generated by regressing the original eminence measure on birth year and then taking the standardized residuals of that regression analysis. Even so, a third eminence measure was also defined to acknowledge a critical contrast between

*Women in Psychology* and *Models of Achievement*. The former volume contained chapters written by various scholars (i.e., biographies), whereas the latter 3 volumes had chapters written by the women themselves (i.e., autobiographies). As a result, all of the latter women had to still be living at the time the volumes were compiled, a stipulation not required for the former women. To control for this potential source of spuriousness, a second regression analysis was performed, this time regressing the initial eminence measure on both birth year and a 0-1 dummy variable recording whether or not the woman had an entry in O'Connell and Russo (1990), and then taking the standardized residuals from that analysis ( $r = -.421, p < .001$ , between that dummy variable and year of birth).

The end result was three alternative measures that will just be called *original* eminence, *detrended* eminence, and *residualized* eminence. Table 1 presents the intercorrelations and basic statistics for these three eminence measures. Bivariate correlations between any variable defined later and either of the latter two measures are then equivalent to semipartial coefficients with the specified contaminating effects statistically controlled.

**Family background.** Variables characterizing a woman's family background fall into two categories: parental occupations and sibling configurations.

1. *Parental occupations* were first assessed by adapting a 5-point scale used in Terman's (1925-1959) *Genetic Studies of Genius* (see also Cox, 1926; Simonton, 1976; cf. Berry, 1981; Ellis, 1904; Roe, 1953; Zuckerman, 1977), yielding the following 6-point scale applicable to both parents: 1 = homemaker, 2 = unskilled, 3 = semi-skilled, 4 = skilled worker and lower business, 5 = semi-professional and higher business, and 6 = professional (albeit no father was a homemaker). However, because the placement of homemaker at the bottom of the scale may be questioned, homemaker status was also defined as a separate dichotomous 0-1 dummy variable,

where 1 indicated that the mother had homemaker as her main occupation, especially during the childhood and adolescence of the future eminent psychologist. This coding then avoids any assumptions about the occupational status of homemakers. These two variables were taken unchanged from an earlier inquiry into historical trends in the family context for the same 80 women (Simonton, 2016). In addition, 7 new 0-1 dummy variables were introduced here to capture (a) whether the mother worked outside home before marriage, worked outside home during childrearing, and mother worked outside home after childrearing and (b) whether the father was an academic, the mother an academic, the father occupied a learned profession, and the mother occupied a learned profession.

2. *Sibling configurations* were assessed using the same measures that had been generated for the earlier investigation of the same women (Simonton, 2016). To begin with, sibling relationships were described ignoring gender: sibling size (the count including the subject) and birth order (an ordinal variable) plus five 0-1 dummy variables to record whether or not the woman was an only child, first born with younger siblings, either only child or first born, middle child, and last born (excluding the only child). Next, a set of variables took gender into consideration, namely, the number of older sisters, older brothers, younger sisters, younger brothers, total sisters (including the subject). Furthermore, the number of brothers was divided by sibling size to gauge sibling proportion of brothers. In other words, to what extent was the subject's family dominated by brothers independent of family size?

Lastly, a 0-1 dummy noted whether or not the subject was born in the United States.

**Marriage and children.** Three 0-1 dummy variables recorded whether or not the subject had been married at least once, whether or not she had been divorced at least once, and whether or not the woman had any children. With respect to the latter circumstance, the number of

children was also counted. Finally, two quantitative variables measured the subject's age at first marriage as well as her age at first child. With the exception of the divorce measure, which was added here, the measures were all taken from Simonton (2016). Naturally, the two age variables would have missing values for those women who never married or bore children.

**Education and career development.** Like the eminence measures, this set of variables are completely unique to this investigation. First, 0-1 dummy variables registered whether or not the woman earned a PhD, MA, or MD as her highest degree. An additional dummy noted whether or not she attained the status of full professor at a college or university. Lastly, two quantitative variables were defined, namely, age at highest degree and age at attaining a full professorship. Once more, the latter two variables were not always defined and thus had missing values.

**Professional contributions.** The final 20 variables used 0-1 dummies to note whether or not the woman made important contributions to (a) clinical, (b) community, (c) counseling, (d) developmental, (e) educational, (f) ethnic minority issues, (g) engineering, (h) experimental, (i) history, (j) industrial and organizational, (k) lesbian and gay issues, (l) personality, (m) physiological and comparative, (n) psychoanalysis, (o) psychotherapy, (p) school, (q) social, (r) social issues, (s) systems, methodology, and techniques, and/or (t) psychology of women / sex and gender roles and differences. Because the areas are not mutually exclusive, a woman may have contributed to more than one. The 20 categories come directly from O'Connell & Russo (1990), who also made specialty assignments for "185 women contributors to psychology" (pp. 386-397), including 75% of the 80 women. Given the straightforward nature of the categories, it was easy to provide the missing information for the remainder. That kind of datum is usually listed at outset of most biographical entries (e.g., "a developmental psychologist who ...").

## Results

The 80 women who are the subject of this investigation by no means represent a random sample of all female psychologists or even all potential “models of achievement.” On the contrary, they constitute what has been called a *significant sample* that can be exactly replicated by anyone (Simonton, 1999). Consequently, traditional null-hypothesis significance tests have doubtful validity (Simonton, 2014). Because the sample is by design highly representative of the target population, descriptive statistics have substantive meaning in the absence of tests of statistical significance. For this reason, in reporting the results below I will emphasize effect sizes over  $p$  values. In particular, anytime  $r \geq .20$ , then the correlation will be considered *substantively* significant. A bivariate coefficient this size means that a one standard deviation increase in one variable predicts a change in the other variable of one fifth of a standard deviation. This magnitude of change can count as halfway between a small and medium effect (Cohen, 1992). Fortunately, this substantive criterion does not depart appreciably from statistical significance. Given that  $n = 80$  for most associations, a correlation this size would have a  $p$  value of .038 for a one-tailed test and .075 for a two-tailed test (when in many if most instances the former, directional test is justifiable based on prior scientometric research; Simonton, 2002). If a reader finds that this criterion too permissive, then using  $r \geq .25$  (i.e., an effect representing one fourth of a standard deviation) would yield  $p \leq .013$  and  $p \leq .050$  for directional and non-directional tests, respectively. Correlations below *this* value can then be ignored if so desired.

### Family Background

Table 2 presents the correlations and statistics for parental occupations. It is obvious from the means that the occupational status of the mothers is noticeably below that of the fathers (by a difference of over 2 points on a 6-point scale). That difference is largely attributable to the fact

that around 54% of the mothers were homemakers. Although the fathers are twice as likely to have academic jobs (5% versus 2.5%), the fathers and mothers are closer in their odds of working in learned professions (35% versus 28%). Finally, 40% of the mothers worked outside the home before marriage, 25% did so during childrearing, a percentage that increased to 31% after childrearing ended. Of course, these statistics are certainly not static across the century of history represented by the sample. In fact, Simonton (2016) showed that the mother's occupational status dramatically increased over the same years (viz.  $r = .40$ ), a change strongly associated with a decrease in the number who were homemakers (viz.  $r = -.44$ ).

The correlation coefficients in Table 2 establish at once the value of generating detrended and residualized eminence measures. Not one of the significant correlations using the original measure survived controls for birth year and reference source, indicating that these zero-order coefficients are spurious. Indeed, all correlations involving detrended eminence are nonsignificant. Nonetheless, two suppression effects appeared for the residualized measure: Once adjusting for reference source as well as birth year, having parents who are academics actually revealed a negative relation with eminence (for an introduction to suppression, see Maassen & Bakker, 2001). Hence, the high proportion of academic fathers and mothers is not necessarily a good thing!

Turning to the measures concerning sibling configuration, the correlations are almost completely nonsignificant (see Simonton, 2016, for the basic statistics for these variables). Nevertheless, the proportion of siblings who were brothers was negatively correlated with both detrended and residualized eminence;  $r_s = -.221$  and  $-.209$ ,  $p_s = .048$  and  $.062$ , respectively. Hence, growing up in a home dominated by male siblings does not appear conducive to later emergence as an eminent female psychologist. This negative relation does not show up for the

original eminence measure probably because a tendency of this gender proportion to decline over time (Simonton, 2016). Year of birth must be included as a suppressor variable.

As yet another demonstration of the crucial importance of controlling for historical time, original eminence correlates negatively with birth in the United States ( $r = -.210, p = .061$ ), but that correlation vanishes for the detrended and residualized measures.

### **Marriage and Children**

Table 3 displays the results for this set of variables. From the basic statistics it is evident that 83% of the women married at least once, 22% of at least one marriage ending in divorce. Moreover, 52% of the women bore children, albeit the average number of children is only slightly above unity. As Simonton (2016) pointed out earlier, these eminent women tended to have fewer children than the siblings that they grew up with (1.275 versus 3.075). In terms of the mean age at these crucial life transitions, a woman who married did so at age 27, and those who had children started at age 29, or just two years later. Their close proximity provides the basis for the high correlation between the two transitions:  $r = .566, p < .001, n = 42$ . Yet only three correlations in Table 3 are significant, and all three are semipartials rather than zero-order. Divorce correlates positively with just residualized eminence, whereas age at first marriage correlates negatively with both detrended and residualized eminence. It is striking that the most eminent women in this sample do not delay matrimony and parenthood but rather get it over with as soon as possible, and sometimes end it all with a divorce!

### **Education and Career Development**

Table 4 displays two sets of findings, one very reasonable and the other quite surprising. In the former instance, age at highest degree and age at full professor both correlate negatively with both detrended and residualized eminence measures. Put differently, the most eminent

women psychologists finish their formal education at younger ages and attain promotion to full at younger ages as well. Their progress concerning both education and career development is accelerated. Yet these two developmental landmarks correlate only .213 ( $p = .108$ ,  $n = 58$ ), indicating that some slippage often intervenes between doctorate and full professorship—a slippage that is no doubt more pronounced for women relative to men.

In the case of surprising findings, we have the curious consequences of getting a PhD or MD. On the one hand, 95% of the 80 women earned PhDs, while only 2.5% earned MDs. On the other hand, whereas obtaining a PhD has a negative correlation with eminence by all three measures, obtaining an MD has a positive correlation with eminence by all three measures. The rarer degree is better no matter how eminence is measured. This result will obtain an explanation in the next and last section.

### **Professional Contributions**

Table 5 provides the statistics and correlations for the 20 contribution indicators. As is immediately evident, the representation of the women varies greatly across specialties: 25% or more in clinical, developmental, personality, social, systems, methodology, and techniques, and the psychology of women, but less than 5% for community, engineering, industrial and organizational, lesbian and gay issues, and social issues. Even more important is how these contributions impact on eminence. Concentrating on those correlations that replicate across both detrended and residualized measures, eminence is positively correlated with contributions to developmental and psychoanalysis but negatively correlated with contributions to school psychology. The highest correlations are in fact for psychoanalysis, which may explain the paradoxical result reported in the previous section. Psychoanalysts are more likely to have MDs rather than PhDs ( $r = .214$  versus  $r = -.306$ ), yet they are also the most likely to attain eminence.



In fact, when the effect of psychoanalytic contributions is partialled out using a multiple regression analysis, neither MD nor PhD status has any remaining predictive utility with respect to eminence, however measured.

### **Discussion**

In some respects, the primary empirical results reported in this investigation show that the emergence of eminent female psychologists does not depart appreciably from what has been observed in their male colleagues. For example, age at highest degree and age at promotion to full professorship are both negatively correlated with differential eminence, just as seen in samples of male scientists and psychologists (Simonton, 2002). Regardless of gender, the highly eminent accelerate through both graduate training and academic advancement. Yet what counts as acceleration differs noticeably across the two genders. Where the women in this sample obtained their highest degree at around age 30, eminent male psychologists are far more prone to earn their highest degree 4 or more years earlier (Lyons, 1966; Simonton, 1992b), albeit the gender gap has probably decreased substantially for more recent cohorts (e.g., Feist, 2006). The gender contrast in promotion to full is even greater. The slippage mentioned earlier between age at highest degree and age at full professor works to the definite disadvantage of the women, who tended to be a few years shy of 50 years old before they received their last major promotion, the pinnacle of the professorship hierarchy. By comparison, eminent male scientists receive the same promotion at least a decade sooner (e.g., Zuckerman, 1977).

Part of the foregoing delay may be attributed to the gender difference in the placement of marriage and children in adult development. On the one hand, eminent women either avoid marriage altogether or else marry early and begin childrearing early, if they decide to have any children at all. On the other hand, eminent men tend to marry late and thus begin parenting much

later, very likely leaving the primary parenting responsibilities for their wives (Moulin, 1951; Roe, 1953; Visher, 1947). These divergent marital decisions are also witnessed in their differential divorce rates: Where the eminent women are more likely to get divorced, eminent male scientists appear more likely to have stable marriages (Post, 1994; albeit this stability might be less common among eminent psychologists; Roe, 1953). It is hoped that these gender discrepant responses to marriage and children will eventually vanish, if they have not already.

Presumably other potential divergences between men and women will also dissipate over time as well. A particularly curious one is the finding that the more eminent women are less likely to come from brother-dominated sibling configurations. This falls right in line with Helson's (1971) early observation that eminent female mathematicians were very unlikely to have had a brother (see also Helson, 1990; Henning & Jardim, 1977). If birth order effects partially reflect parental investment strategies (Downey, 2001), and if parents are more inclined to invest in sons than in daughters under the assumption that only the former are compelled to become traditional "breadwinners," then the smaller the proportion of brothers relative to sisters, the stronger should be the investment in daughters (Simonton, 2016). This pattern also explains why eminent women have a much stronger propensity for being the first born child (Simonton, 2008), given that the first born is likely to claim a bigger share of those resources relative to any other sibling except the last born (Downey, 2001). Furthermore, the fact that family size has been decreasing over the past century suggests that the parents of future eminent women are more disposed to invest in their first-born daughter rather than dilute parental investment with the addition of sons to the family (Simonton, 2016). The parents of eminent women in psychology do not seem obsessed with having male offspring.

Although most of the findings regarding the 80 women can be easily placed in the context of past research on eminent men, some of the results do not have clear comparative baselines. These standalone results then suggest the need to replicate the findings on comparable male samples. Two such instances stand out.

The first concerns the negative correlation between a woman's eminence and whether or not both of her parents had academic occupations. Given that the vast majority of women themselves ended up employed by academic institutions, it is not obvious why this relationship should be found. So would the same relation hold up eminent men? Of course, this surprising inverse association only holds for residualized eminence, not detrended eminence, so the result might be peculiar to this sample. The reference resource dummy variable used to define the residualized measure may not even have an equivalent for all-male samples.

The second instance pertains to professional contributions. To obtain a superior grasp of these results it would be necessary to see if the eminence of male psychologists is also positively correlated with contributions to developmental psychology and psychoanalysis but negatively correlated with contributions to school psychology. In the absence of any relevant data at this time, we can only speculate that these associations are gender specific. Both developmental psychology and psychoanalysis happened to have attracted some highly illustrious figures, such as developmentalists Mary Ainsworth and Eleanor Gibson as well as psychoanalysts Anna Freud and Karen Horney. In contrast, school psychologists are represented by Thelma Thurstone and Pauline Sears, two less distinguished figures. Male psychologists, both the highly eminent and the much less so, may have been attracted to a distinct set of fields.

In light of the preceding remarks, this inquiry into 80 eminent female psychologists might have raised almost as many questions as it has answered. Yet that outcome is not at all

undesirable. Even though the representation of women among eminent psychologists has dramatically increased over the past century (see Simonton, 2002, Figure 12.1), the empirical research on eminence in psychology still relies very heavily on samples in which men clearly dominate (Diener, Oishi, & Park, 2014). Consequently, knowing more about the factors underlying female contributors should also enhance understanding of the directions that psychology is most likely to take in the future.

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Table 1

*Correlations and Statistics for the Three Eminence Measures*

Measure		Original	Detrended	Residualized
Original		1.000		
Detrended		.801	1.000	
Residualized		.692	.864	1.000
	<i>M</i>	1.463	0.000	0.000
	<i>SD</i>	1.814	1.000	1.000
	Median	1.000	-0.124	0.039
	Mode	0.000	-0.998	-0.581
	Minimum	0	-1.846	-2.429
	Maximum	6	2.425	2.403

Table 2

*Differential Eminence with Respect to Family Background: Parental Occupation (N = 80)*

Correlate	Eminence correlations			Basic statistics		
	Original	Detrended	Residualized	<i>M</i>	<i>SD</i>	Range
FOS	.027	-.150	-.037	4.650	1.020	2-6
MOS	<b>-.265</b>	-.036	.079	2.625	1.824	1-6
MWB	<b>-.238</b>	-.027	.017	.400	.493	0-1
MWD	<b>-.260</b>	-.064	-.019	.250	.436	0-1
MWA	<b>-.308</b>	-.068	-.010	.313	.466	0-1
FAC	-.123	-.173	<b>-.282</b>	.050	.219	0-1
MAC	-.130	-.167	<b>-.202</b>	.025	.157	0-1
FLP	-.028	-.126	-.025	.350	.480	0-1
MLP	<b>-.205</b>	-.149	.002	.275	.449	0-1
HMM	<b>.294</b>	.042	-.050	.537	.502	0-1

*Note.* Correlations in boldface are considered *substantively* significant because  $r \geq .20$  (for then  $p \leq .038$  one-tailed test and  $p \leq .075$  two-tailed test). FOC = father's occupational status, MOC = mother's occupational status, MWB = mother worked outside home before marriage, MWD = mother worked outside home during childrearing, MWA = mother worked outside home after childrearing, FAC = father academic, MAC = mother academic, FLP = father learned profession, MLP = mother learned profession, and HMM = homemaker mother. For 0-1 dummy variables, all means multiplied by 100 equal percentages.

Table 3

*Differential Eminence with Respect to Marriage and Children*

Correlate	Eminence correlations			Basic statistics			
	Original	Detrended	Residualized	<i>M</i>	<i>SD</i>	Range	<i>n</i>
Married	-.156	.015	.099	.825	.382	0-1	80
Age first married	-.078	<b>-.354</b>	<b>-.265</b>	26.788	7.081	20-56	66
Divorced	.009	.134	<b>.214</b>	.224	.420	0-1	67
Age first child	-.054	-.161	-.062	29.024	4.946	22-43	42
Children	-.034	.136	.122	.525	.503	0-1	80
Number of Children	-.021	.035	-.029	1.275	1.750	0-12	80

*Note.* Correlations in boldface are considered *substantively* significant because  $r \geq .20$ . For 0-1 dummy variables, all means multiplied by 100 equal percentages.

Table 4

*Differential Eminence with Respect to Education and Career Development*

Correlate	Eminence correlations			Basic statistics			
	Original	Detrended	Residualized	<i>M</i>	<i>SD</i>	Range	<i>n</i>
PhD	<b>-.418</b>	<b>-.255</b>	<b>-.229</b>	.950	.219	0-1	80
MA	.034	-.105	-.149	.013	.112	0-1	80
MD	<b>.359</b>	<b>.236</b>	<b>.236</b>	.025	.157	0-1	80
Age highest degree	-.095	<b>-.251</b>	<b>-.214</b>	29.582	5.080	22-52	79
Full professor	-.028	.052	-.004	.725	.449	0-1	80
Age full professor	-.169	<b>-.341</b>	<b>-.224</b>	47.207	9.130	34-81	58

*Note.* Correlations in boldface are considered *substantively* significant because  $r \geq .20$ . For 0-1 dummy variables, all means multiplied by 100 equal percentages.

Table 5

*Differential Eminence with Respect to Professional Contributions (N = 80)*

Correlate	Eminence correlations			Basic statistics	
	Original	Detrended	Residualized	<i>M</i>	<i>SD</i>
Clinical	.103	.030	.060	.325	.471
Community	-.130	-.075	-.026	.025	.157
Counseling	-.104	-.196	-.195	.087	.284
Developmental	<b>.207</b>	<b>.216</b>	<b>.222</b>	.463	.502
Educational	-.055	-.041	-.033	.125	.333
Ethnic minority issues	-.097	.108	.018	.125	.333
Engineering	-.087	<b>-.222</b>	-.186	.038	.191
Experimental	.061	-.049	-.046	.225	.420
History	-.027	-.026	-.122	.050	.219
Industrial and organizational	-.087	-.184	-.156	.037	.191
Lesbian and gay issues	.003	.114	-.022	.025	.157
Personality	.153	.169	-.017	.275	.449
Physiological and comparative	.132	.145	<b>.234</b>	.050	.219
Psychoanalysis	<b>.331</b>	<b>.263</b>	<b>.283</b>	.100	.302
Psychotherapy	.068	.059	.144	.087	.284
School	-.123	<b>-.212</b>	<b>-.239</b>	.050	.219
Social	-.036	.102	-.085	.250	.436
Social issues	-.088	.113	-.043	.188	.393



Table 5 (continued)

Correlate	Eminence correlations			Basic statistics	
	Original	Detrended	Residualized	<i>M</i>	<i>SD</i>
Systems, methodology, and techniques	.115	-.027	-.137	.263	.443
Psychology of women / sex and gender roles and differences	<b>-.208</b>	.106	-.020	.325	.471

*Note.* Correlations in boldface are considered *substantively* significant because  $r \geq .20$  (for then  $p = .038$  one-tailed test and  $p = .075$  two-tailed test). All of the above correlates involve 0-1 dummy variables. Hence, all means multiplied by 100 equal percentages.

## Appendix

*The 80 Women in the Sample*

Mary Ainsworth; Judith Albino; Thelma Alper; Anne Anastasi; Katharine Banham; Linda Bartoshuk; Nancy Bayley; Sandra Bem; Martha Bernal; Jeanne Block; Patricia Bricklin; Jeanne Brooks-Gunn; Alice Bryan; Charlotte Bühler; Mary Calkins; Dorothy Cantor; Mamie Clark; Lillian Comas-Diaz; Marie Crissey; Frances Culbertson; Kay Deaux; Florence Denmark; Dorothy Eichorn; Olga Engelhardt; Else Frenkel-Brunswick; Anna Freud; Erika Fromm; Eleanor Gibson; Lillian Gilbreth; Florence Goodenough; Jacqueline Goodnow; Frances Graham; Diane Halpern; Eugenia Hanfmann; Molly Harrower; Elaine Hatfield; Edna Heidbreder; Ravenna Helson; Mary Henle; Leta Stetter Hollingworth; Karen Horney; Frances Horowitz; Ruth Howard; Janet Hyde; Barbel Inhelder; Margaret Ives; Marie Jahoda; Norine Johnson; Margaret Jones; Phyllis Katz; Patricia Keith-Spiegel; Christine Ladd-Franklin; Jane Loevinger; Eleanor Maccoby; Margaret Matlin; Clara Mayo; Myrtle McGraw; Martha Mednick; Mildred Mitchell; Maria Montessori; Lois Murphy; Bernice Neugarten; Carolyn Payton; Pamela Reid; Margaret Rioch; Sandra Scarr; Pauline Sears; Virginia Sexton; Carolyn Sherif; Patricia Smith; Janet Spence; Lois Stolz; Bonnie Strickland; Thelma Thurstone; Lillian Troll; Leona Tyler; Margaret Washburn; Beth Wellman; Diane Willis; Mary Wright.

*Note.* Most of the above women have biographical entries available on either [Wikipedia.com](http://Wikipedia.com) or [FeministVoices.com](http://FeministVoices.com) or both.