



# Investigating America's elite: Cognitive ability, education, and sex differences



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## ABSTRACT

Are the American elite drawn from the cognitive elite? To address this, five groups of America's elite (total N = 2254) were examined: Fortune 500 CEOs, federal judges, billionaires, Senators, and members of the House of Representatives. Within each of these groups, nearly all had attended college with the majority having attended either a highly selective undergraduate institution or graduate school of some kind. High average test scores required for admission to these institutions indicated those who rise to or are selected for these positions are highly filtered for ability. Ability and education level differences were found across various sectors in which the billionaires earned their wealth (e.g., technology vs. fashion and retail); even within billionaires and CEOs wealth was found to be connected to ability and education. Within the Senate and House, Democrats had a higher level of ability and education than Republicans. Females were underrepresented among all groups, but to a lesser degree among federal judges and Democrats and to a larger degree among Republicans and CEOs. America's elite are largely drawn from the intellectually gifted, with many in the top 1% of ability.

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## 1. Introduction

Are the American elite drawn from the cognitive elite? Murray (2008, p. 107) stated in *Real Education* that "Whether we like or not, America's future *does* depend on an elite that runs the country. The members of that elite are drawn overwhelmingly from the academically gifted." However, whether the elite are primarily composed of individuals in the top percentiles of the ability distribution who have attended the most prestigious colleges and universities has not yet been empirically examined.

The link between cognitive ability and later educational and occupational success has been well demonstrated (Kuncel, Hezlett, & Ones, 2004; Nyborg & Jensen, 2001; Schmidt & Hunter, 2004). This relationship holds even for individuals in the top 1% of the ability distribution (Park, Lubinski, & Benbow, 2007; Wai, Lubinski, & Benbow, 2005). However, another way to examine the link between ability and success is to find groups of individuals who have made it to the pinnacle of their respective professions and then retrospectively assess whether

they exhibited indications of high ability at an earlier age (Cox, 1959; Simonton, 2009).

When describing America's elite, Murray (2008) makes a distinction between the *elected elite* (i.e. Senators, House members) and the *unelected elite*, who are also individuals in the top positions that shape American society. This unelected elite includes:

"[T]he senior executives in the nation's largest corporations and financial institutions; the lawyers and judges who engage in litigation that shapes our constitutional jurisprudence; the journalists whose bylines are found in the *New York Times*, *Washington Post*, *Wall Street Journal*, and the rest of the leading print media; the producers and writers who decide what will be covered on national television news programs and how it will be covered; the producers, directors, and writers who create the nation's films and television shows; and the most influential faculty in the nation's elite universities" (pp. 107–108).

Therefore, to empirically examine whether America's elite are composed of people in the top percentiles of the ability distribution, we need groups of people who have risen to these

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positions of influence in American society as well as data that would allow a retrospective examination of their ability level.

## 2. Samples

The samples used in this study (total  $N = 2254$ ) were public data sources that 1. matched Murray's (2008) description as part of America's elite and 2. had college, graduate school, and other basic demographic information systematically available. Billionaires were also included because they clearly have the power to and do shape American society by using their wealth (e.g., in education, politics, and philanthropy).

### 2.1. Fortune 500 Chief Executive Officers (CEOs)

Data on the 500 ( $M = 481$ ,  $F = 17$ ; age range = 39 to 94, average  $\approx 57$ ) Fortune 500 CEOs (2012) were taken from CNN Money's annual database of rankings (<http://money.cnn.com/magazines/fortune/fortune500/2012/ceos/>). Name, college, graduate school, total calculated compensation, age and sex were collected.

### 2.2. Federal judges

Data on the 789 active federal judges ( $M = 553$ ,  $F = 236$ ; age range = 40 to 89, average  $\approx 60$ ) were taken from the Biographical Directory of Federal Judges (2013) on January 16, 2013 (<http://www.fjc.gov/history/home.nsf/page/judges.html>). Name, college, graduate school, age and sex were collected.

### 2.3. Billionaires

Data on the 424 American billionaires ( $M = 376$ ,  $F = 48$ ; age range = 28 to 97, average  $\approx 66$ ) were taken from Forbes magazine's database (The World's Billionaires, 2012) (<http://www.forbes.com/billionaires>). Name, college, graduate school, sector in which their wealth was obtained, net worth, age and sex were collected.

### 2.4. Senators

Data on the 100 U.S. Senators ( $M = 80$ ,  $F = 20$ ; age range = 39 to 88, average  $\approx 61$ ) were taken from the Biographical Directory of the United States Congress (2012) (<http://bioguide.congress.gov/biosearch/biosearch.asp>). Name, college, graduate school, party affiliation, age and sex were collected.

### 2.5. House of Representatives

Data on the 441 U.S. House members ( $M = 360$ ,  $F = 81$ ; age range = 29 to 89, average  $\approx 56$ ) were also taken from the Biographical Directory of the United States Congress (2012). Name, college, graduate school, party affiliation, age and sex were collected.

## 3. Method

Gaining admission to a highly selective American college or university typically requires scoring at or above a certain level on the Scholastic Assessment Test (SAT) or the American College Test (ACT), which are standardized tests that have been

shown to measure general intelligence or IQ to a large degree (Frey & Detterman, 2004; Koenig, Frey, & Detterman, 2008). Murray (2012, p. 366) concluded that "the average graduate of an elite college is at the 99th [per]centile of IQ of the entire population of seventeen-year-olds," basing this conclusion on SAT test data from the College Board website. He calculated that a median combined Critical Reading and Mathematics score of 1400 or greater puts a student in the top 3% of the select population of SAT test takers and well within the top 1% of seventeen-year-olds in the general population.<sup>1</sup> Murray defined an elite college to be roughly one of the top dozen schools in the U.S. News & World Report rankings. Therefore, in addition to a marker of high education level, elite college attendance also indicates a high general ability level.

Attendance at a national university or liberal arts college that had median combined SAT Critical Reading and Math scores of 1400 or greater according to the 2013 U.S. News rankings (America's Best Colleges, 2013) was used as one reasonable indicator that the individual was in the top 1% in ability in the American population (Murray, 2012). The U.S. News rankings report the 25th and 75th combined SAT Critical Reading and Math or ACT composite percentiles so an average of these two values was computed to approximate the median score. Before doing this, ACT composites were translated to SAT composites using a concordance table (ACT, 2011). There were 21 national universities and 8 liberal arts colleges that met these criteria for a total of 29 schools. Table 1a gives a list of these schools ranked by SAT scores.<sup>2</sup> Elite graduate school attendance was also used as a reasonable indicator that the individual was in the top 1% in ability. U.S. News ranks law and business schools and reports average Law School Admission Test (LSAT) and Graduate Management Admission Test (GMAT) scores which are relevant to at least two of the samples examined in this study: federal judges and Fortune 500 CEOs. The top law and business schools were rank ordered according to test scores and the top 12 from each group were selected which approximate the top 10% of test takers within each pool (GMAT, 2013; LSAC, 2007). Given that the fraction of the college graduate population who go on to take the GMAT and LSAT are extremely select, individuals who attended one of these schools are likely well within the top 1% in ability. Table 1b and c gives a list of the top 12 schools in each group ranked by LSAT and GMAT scores. Finally, because U.S. News only ranks other

<sup>1</sup> According to Murray (2012, p. 366): "In 2010, a combined score of 1400 put a student at about the 97th percentile of all students who took the SAT (based on the distribution produced by the known means and standard deviations for the two tests and a correlation of +0.7 between them). But the number of test-takers in 2010 represented only 36% of the seventeen-year-olds in the country. Any plausible assumptions about the proportion of the 62% of seventeen-year-olds who didn't take the SAT who could have gotten a combined score of 1400 or more puts a student who actually does score 1400 well into the 99th [per]centile of the seventeen-year-old population."

<sup>2</sup> Table 1a also allows a comparison of the elite schools included in this study strictly based on average ability level. The U.S. News rankings included criteria not just limited to ability so the fact the rank order has shifted when only examining ability is notable. Overall, top national universities had higher average test scores than top liberal arts colleges. The California Institute of Technology (originally ranked 10th among national universities) rose to number one with the highest ability level and Harvey Mudd College (originally ranked 12th among liberal arts colleges) rose to a tie with Princeton University at number two. Stanford University (6th to 12th), Duke University (8th to 16th), and the University of Pennsylvania (8th to 17th) all dropped in rank when accounting for ability alone. Otherwise, the rank order remained similar.

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