

## Article

# Paradox and privilege: A 55-year follow-up of the mortality of Yale College graduates



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## ABSTRACT

**Objective:** Two hypotheses were tested: 1. People from privileged backgrounds had better survival than those from less privileged backgrounds. 2. The advantages of privilege were vitiated by fraternity membership.

**Methods:** A 55-year retrospective cohort study of survival since 1960 of 945 graduates of Yale College followed to 2015.

**Results:** The survival of graduates of private secondary schools (the privileged group) did not differ from that of public school graduates. However, graduates of private secondary schools who had not joined a fraternity in college had significantly better survival than private school graduates who had joined fraternities and than public school graduates, whether fraternity members or not.

**Conclusions:** The benefits of a privileged background in respect of survival were undermined by fraternity membership. It is suggested that both self-selection and substance mis-use may have contributed to the survival difference.

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## 1. Introduction

A case study of the Yale College class of 1960 makes it possible to contribute to an increasingly complex understanding of the relationship between social privilege and mortality. Since the 1920s, it has been known that public school graduates who came to elite colleges with less social privilege than their private school peers perform better academically than graduates of private preparatory schools attending those same institutions (Spencer, 1927, cited in Zweigenhaft, 2009). More recent studies of graduates of elite colleges such as Yale, Harvard, and other northeastern private institutions confirm those earlier results and show in addition that prep school and public school graduates tend to pursue different kinds of careers, the former in business and the latter in academia and the professions (Zweigenhaft, 1992, 1993a, 1993b). Thus differences in secondary school background reflect differences in economic and social advantages which in turn have shaped both collegiate experiences and subsequent occupational choices (Karamel, 2005). We hypothesized that such social advantage would

also influence health and survival. Many studies have shown that social and economic advantages in early life influence subsequent health, making such a hypothesis plausible (Hayward & Gorman, 2004; Beebe-Dimmer et al., 2004; Elo & Preston, 1992).

Complicating the impact of relative advantage and disadvantage, however, are numerous studies of the impact of fraternities on college performance and health-related behaviors. In general such studies show that people who join fraternities are more likely to have had a history of drinking before they joined; that drinking, the use of other substances (including tobacco), and unsafe sex are more frequent among fraternity members; and that academic achievement is lower. On the other hand, short term follow-up of fraternity and non-fraternity members indicates that the drinking of members declines after they leave college (Borsari & Carey, 1999; Sher, Bartholow, & Nanda, 2001; McCabe et al., 2005; Scott-Sheldon, Carey, & Carey, 2008; Cheney, Harris, Gowin, & Huber, 2014). The association between fraternity membership and alcohol use is not invariable, but is dependent to a large extent upon the cultural context created by colleges themselves (Weitzman & Chen, 2005; Weitzman & Kawachi, 2000). In general, however, the behavioral norms in fraternities at many institutions are such that we would expect that one consequence of membership might be to vitiate the survival benefits of early social

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advantage. Thus our second hypothesis is that membership in fraternities has had an adverse impact on the survival of members. This is consistent with the recognition that the effects on health of secondary group membership (social capital) may be mixed, beneficial in some contexts and damaging in others (Kunitz, 2007).

Fraternities are not the only formal organizations that exist on college campuses. There are athletic teams, singing groups, service clubs, and, especially at Yale which is the source of the data for the present study, the well-known senior secret societies such as Skull and Bones, Wolf's Head, and several others. Membership in each of these, like membership in fraternities, may also create friendship networks that provide support during and even after college, with potential consequences on health, both short and long-term. Far less is known about the consequences of membership in such organizations than is known about fraternities.

## 2. Methods

We use data from the Yale College class of 1960, the most recent collected in 2015 on the occasion of the 55<sup>th</sup> reunion. (Unlike some other universities, there is only one undergraduate college.) The data all come from publicly available sources, including yearbooks, reunion books, and published necrologies. The major source of information is the class book published at graduation. Data were provided by the students themselves as well as records maintained by the university (*The Yale Class Book, 1960*). Each entry listed name; date and place of birth; parents' names; family members who had attended Yale (legacies); high school or schools attended before coming to Yale; major; residential college (one out of ten); activities in residential college; fraternity membership, senior society membership; academic honors; extra-curricular activities; roommates; plans for future occupation; home address as of spring 1960. Also included was whether the student had received scholarship assistance, and for how many semesters. The amount of aid was not given. The data were entered into a spread sheet for a study of the class members and the impact of growing up in the 1940s and 1950s and emerging from college as the political and cultural changes of the 1960s were becoming apparent (Horowitz, 2015).

To these were added mortality data from the Class Directory published for the 55th reunion (*Yale 1960 Class Directory, 2015*). Deaths through 2014 had been recorded cumulatively over the preceding 55 years, as reported by surviving family members and friends. Twenty-two additional deaths were found in the publicly available Social Security Death Index and obituaries in Ancestry.com and on the internet. Statistical analyses include chi-square tests as well as logistic and Cox regressions. For the latter, number of years of survival since graduation in 1960 was the dependent variable. JMP 11 was used for the analyses.

Several measures of social advantage were used: graduation from a private secondary school and whether or not the student had relatives who attended Yale. *A priori* it was expected that the former would be more likely than the latter to reflect social advantage of the students' family of origin as relatives who attended Yale might not be a parent but brothers, cousins, uncles and other more distant kin whose economic status might have had no impact on the students' circumstances. Therefore in several of the analyses attention is devoted primarily to the type of secondary school attended.

In the context we studied, fraternity membership, too, is a measure of social advantage. In many colleges, the financial implications of joining a fraternity were different from what obtained at Yale. Elsewhere members lived in fraternity houses and/or took their meals there and did not pay the college for room and board. In contrast, at Yale, all students (except the handful of

the married ones) lived and paid for all their meals in residential colleges. Consequently, although fraternities offered scholarships for some students on financial aid, joining a fraternity meant that members paid for meals twice, to their fraternities and to the university, as well as other fees. This meant that fraternity membership was more stratified than in many other institutions. Students generally entered fraternities in their early college years. There were 9 of them and about 40% of the class were members.

Some students were also chosen for membership in the prestigious, aboveground senior "secret" societies which publicly listed their members. In many cases, these societies emphasized the social sorting that reinforced social stratification. Each had fifteen members who met twice a week. The most prestigious and mysterious of these "spooks" were those founded in the nineteenth century, housed in "tombs" located on or near campus. As there were 7 such societies, only about 10% of the class was selected for membership, chosen ("tapped") in the spring of their junior year.

Intramural sports and a *cappella* singing groups were also common at Yale, as at many other institutions. The best known of the singing groups was the Whiffenpoofs. About 15% of the class were members of such groups, and 48% participated in intramural athletics.

## 3. Results

At entry in 1956, the entire class, slightly above 1000 who entered but 945 who graduated, was male; 81% from east of the Mississippi; 1.5% from abroad; 37% were legacies (had a relative associated with Yale); almost 99% were Caucasian; and 75% received no scholarship aid. Almost 60% (59.8) of the students were from private schools, disproportionately from a handful of elite boarding schools. Much has changed in the years since, of course, including the admission of women and minorities, greater financial aid, fewer legacies, and a diminution in the proportion of students from private schools, to say nothing of the changing mix of students who attended elite secondary schools and, more generally, the composition of the American population.

As displayed in Table 1, students with relatives who had attended Yale were especially likely to have graduated from a private school. Both legacy and private school graduation were associated with a lower likelihood of having received scholarship aid and of having been on the Dean's list and with an increased likelihood of having been in a fraternity, secret society, and/or a *capella* singing group. As indicated in Table 2, fraternity members, whether from private or public schools, were less likely to have been on the Dean's list than non-members.

As displayed in Table 3, panels A and B, being a legacy student as well as a private school graduate were each independently associated with membership in a fraternity and in a secret society. In addition, Panel C shows that fraternity membership was strongly associated with subsequent membership in a secret society. Thus, a filtering mechanism was at work: social advantage before entering college was associated with an increased likelihood of joining a fraternity, and fraternity membership was associated with lower academic performance as well as with an increased likelihood of being chosen for a secret society.

### 3.1. Mortality

As shown in Table 4, the two measures of early social advantage – legacies and type of school attended before college – are not associated with increased risk of having died before 2015; nor is having received scholarship aid and participation in singing groups and athletic teams during college, or membership in a

**Table 1**  
Two measures of social advantage and their correlates.

| A. Background                            | Public school | Private school |      | Chi-square | p        |
|--|---------------|----------------|------|------------|----------|
|  | N             | N              | %    |            |          |
| Legacy <sup>a</sup>                      | 83            | 266            | 76.2 | 61.579     | < 0.0001 |
| Non-legacy                               | 294           | 297            | 50.3 |            |          |
| B. Type of school attended <sup>b</sup>  | Public school | Private school |      | Chi-square | p        |
|  | N             | N              | %    |            |          |
| <sup>a</sup> Scholarship assistance: yes | 162           | 75             | 31.2 | 105.270    | < 0.0001 |
| no                                       | 215           | 488            | 69.4 |            |          |
| Membership in:                           |               |                |      | 96.662     | < 0.0001 |
| <sup>b</sup> Fraternity: no              | 297           | 261            | 46.3 |            |          |
| yes                                      | 82            | 303            | 78.4 |            |          |
| <sup>b</sup> Secret Society: no          | 358           | 479            | 57.4 | 19.907     | < 0.0001 |
| yes                                      | 22            | 86             | 79.4 |            |          |
| <sup>a</sup> Singing Group: yes          | 46            | 100            | 68.5 | 5.321      | 0.0211   |
| no                                       | 331           | 463            | 58.3 |            |          |
| <sup>a</sup> Intramural athletics: yes   | 181           | 277            | 60.5 | 0.128      | 0.7205   |
| no                                       | 196           | 286            | 59.4 |            |          |
| <sup>a</sup> Dean's List. Never          | 185           | 323            | 63.6 | 6.262      | 0.0123   |
| One or more semesters                    | 192           | 240            | 55.6 |            |          |
| C. Legacy <sup>a</sup>                   | Non-legacy    | Legacy         |      | Chi-square | p        |
|  | N             | N              | %    |            |          |
| <sup>a</sup> Scholarship assistance: yes | 185           | 52             | 21.9 | 31.311     | < 0.0001 |
| no                                       | 406           | 297            | 42.1 |            |          |
| Membership in:                           |               |                |      | 34.941     | < 0.0001 |
| <sup>a</sup> Fraternity: no              | 392           | 163            | 29.4 |            |          |
| yes                                      | 199           | 186            | 48.3 |            |          |
| <sup>a</sup> Secret Society: no          | 540           | 292            | 35.1 | 12.803     | 0.0003   |
| yes                                      | 51            | 57             | 52.7 |            |          |
| <sup>a</sup> Singing Group: no           | 505           | 289            | 36.4 | 1.166      | 0.2802   |
| yes                                      | 86            | 60             | 41.1 |            |          |
| <sup>a</sup> Intramural athletics: yes   | 278           | 180            | 39.3 | 1.808      | 0.1788   |
| no                                       | 313           | 169            | 34.9 |            |          |
| <sup>a</sup> Dean's List. Never          | 293           | 215            | 43.3 | 12.781     | 0.0004   |
| One or more semesters                    | 298           | 134            | 31.0 |            |          |

<sup>a</sup> 5 missing values.<sup>b</sup> 2 missing values.

secret society. On the other hand, membership in fraternities is associated with a significant decrease in survival (Table 4, Panel A).

Because we had hypothesized that the survival advantages of social privilege might be offset by the consequences of fraternity life, the joint effects of each measure of social privilege and fraternity membership on the likelihood of having died before 2015 were examined. The results are displayed in Panel B of Table 4 and indicate that being from a privileged background does indeed confer a survival advantage, primarily for people who had

**Table 2**  
Type of secondary school, fraternity membership, and academic performance.

| Type of school and fraternity membership <sup>a</sup> | Never on Dean's List | Dean's List one or more semesters |      |
|---|----------------------|-----------------------------------|------|
|   | No.                  | No.                               | %    |
| Private school and fraternity                         | 195                  | 108                               | 35.6 |
| Private school and non-member of a fraternity         | 129                  | 130                               | 50   |
| Public School and non-member of a fraternity          | 135                  | 161                               | 54.7 |
| Public School and member of a fraternity              | 49                   | 33                                | 30.2 |

Chi-square: 24.405,  $p < 0.0001$

<sup>a</sup> 5 missing values.**Table 3**  
Multiple logistic regressions of fraternity and secret society membership. onto two measures of social advantage.

|   | Odds ratio | Chi-square | p        |
|---|------------|------------|----------|
| <b>A. Fraternity membership regressed onto type of school and legacy:</b>                           |            |            |          |
| Private school  | 3.725      | 7778.57    | < 0.0001 |
| Legacy  | 1.705      | 13.26      | 0.0003   |
| <b>B. Secret Society membership regressed onto type of school and legacy:</b>                       |            |            |          |
| Private school  | 2.546      | 15.09      | 0.0001   |
| Legacy  | 1.685      | 6.03       | 0.0140   |
| <b>C. Secret Society Membership regressed on type of school, legacy, and fraternity membership:</b> |            |            |          |
| Private school  | 2.034      | 7.82       | 0.0052   |
| Legacy  | 1.542      | 4.04       | 0.0444   |
| Fraternity member   | 2.096      | 11.31      | 0.0008   |

graduated from private schools and had not joined a fraternity. In a Cox regression displayed in Table 5, however, only fraternity membership is significantly associated with diminished survival

Fig. 1 illustrates the pattern and reveals that the greatest difference in survival was between private school graduates who were in fraternities and those who were not.

## 4. Discussion

### 4.1. Limitations

There are a number of deficiencies in the data we have used. First, only people were included who had graduated from Yale College as members of the class of 1960, not those who left before graduation. Second, it is not clear how complete the reporting of deaths is. The published figures are based upon notification by family and friends, complemented by data from the Social Security Death Index and obituaries. Nonetheless, a small and undetermined number may have escaped notice. There is no reason to think their exclusion would have altered the results with regard to the association between fraternity membership and mortality. For instance, the distribution of fraternity membership and non-membership does not differ significantly between the people whose deaths were known to the institution and the 22 whose deaths were unknown and added from other sources. The same is true of private and public school attendance.

Third, cause of death is unknown, and health histories, physical examinations, and laboratory studies are unavailable, so we cannot say what risk factors, including but not limited to substance misuse, might have contributed to the results we have reported. For

**Table 4**  
Mortality 1960–2015 by measures of social advantage and participation in college groups.

|  | Alive in 2015 | Deceased before 2015 |      | Chi-square | p value |
|--|---------------|----------------------|------|------------|---------|
|  | N             | N                    | %    |            |         |
| <b>A. single variables</b>             |               |                      |      |            |         |
| Legacy: yes                            | 266           | 83                   | 23.8 | 1.002      | 0.3167  |
| no                                     | 467           | 124                  | 20.1 |            |         |
| Private School                         | 438           | 126                  | 22.3 | 0.004      | 0.9490  |
| Public School                          | 295           | 84                   | 22.2 |            |         |
| Fraternity member                      | 284           | 101                  | 26.2 | 5.907      | 0.0151  |
| Non-member                             | 449           | 109                  | 19.5 |            |         |
| Scholarship assistance                 | 188           | 49                   | 20.7 | 0.2334     | 0.5631  |
| No assistance                          | 545           | 158                  | 22.5 |            |         |
| Secret Society member                  | 77            | 31                   | 28.7 | 2.917      | 0.0876  |
| non-member                             | 656           | 179                  | 21.4 |            |         |
| Intramural sports non-participant      | 369           | 113                  | 23.4 | 1.166      | 0.2802  |
|  | 364           | 94                   | 20.5 |            |         |
| Singing group non-member               | 116           | 30                   | 20.5 | 0.269      | 0.6041  |
|  | 617           | 177                  | 22.5 |            |         |
| <b>B. Combined variables</b>           |               |                      |      |            |         |
| Private school and fraternity member   | 221           | 82                   | 27.1 | 8.389      | 0.0386  |
| Public school and fraternity member    | 63            | 19                   | 23.2 |            |         |
| Public school and not in a fraternity  | 233           | 65                   | 21.8 | 7.362      | 0.0612  |
| Private school and not in a fraternity | 216           | 44                   | 16.9 |            |         |
| Legacy and non-fraternity              | 132           | 31                   | 19.0 | 7.362      | 0.0612  |
| Non-legacy and non-fraternity          | 317           | 75                   | 19.1 |            |         |
| Legacy and fraternity                  | 134           | 52                   | 27.9 | 7.362      | 0.0612  |
| Non-Legacy and fraternity              | 150           | 49                   | 24.6 |            |         |

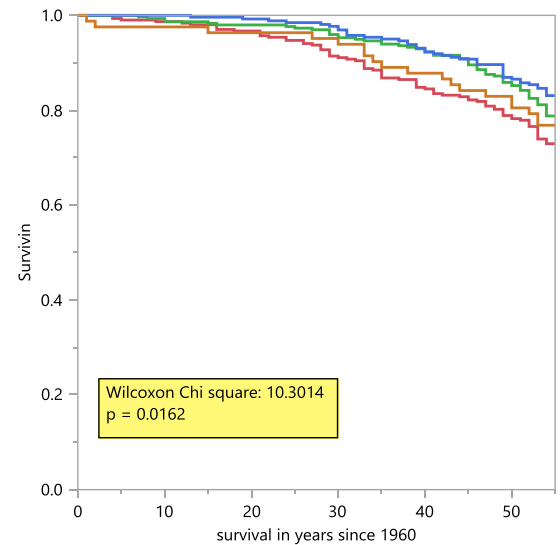
**Table 5**  
Cox regression of survival since graduation onto fraternity membership and type of secondary school.

| Term              | Risk ratio | Lower 95% | Upper 95% |
|-------------------|------------|-----------|-----------|
| Fraternity member | 1.497*     | 1.123     | 1.996     |
| Private school    | 0.92**     | 0.688     | 1.239     |

\*  $p=0.0060$ .

\*\*  $p=0.5856$ .

example, exercise in post-college years has been shown to be associated with diminished risk of cardio-vascular disease (Sesso, Paffenbarger, & Lee 2000; Lee, Sesso, Oguma, & Paffenbarger, 2004), but we have no data that address such issues. Fourth, it is not known how people may have self-selected themselves into fraternities, and whether the self-selection mechanism differed between public and private school graduates. There is evidence from research cited above that fraternity members have histories of heavier alcohol use than non-members before they join fraternities and that membership exacerbates the differences. And finally, fraternity membership may be more strongly associated with social privilege at Yale than at many other colleges for reasons mentioned previously. The data are for only one class in one college at a particular historical moment that has long since passed.



— Both  
— Neither  
— Private only  
— public & fra

Both: private school graduates & fraternity members.  
Neither: public school graduates but not fraternity members.  
Private only: private school graduates but not fraternity members  
Public & frat: public school graduates & fraternity members.

**Fig. 1.** Proportion surviving, 1960 to 2015, by type of secondary school and fraternity membership.

#### 4.2. Conclusions

Nonetheless, the data are significant, for they point to an exception to the widespread observation that social privilege is associated with lower mortality. Coming from a privileged background is associated with increased survival, but survival is better for men who were not fraternity members. Indeed, for reasons explained previously, fraternity membership itself is a manifestation of social and economic privilege, and membership appears to vitiate the survival advantage of having come from a privileged background as measured by private school attendance before college. It is particularly striking that the greatest difference in survival was between private school graduates who were in fraternities and those who were not.

To our knowledge, this is the first investigation that speaks to the long-term survival of fraternity and non-fraternity members, taking into account as well their prior level of advantage and disadvantage. The results are consistent with many studies showing that fraternity membership is associated with increased levels of risky behavior during college, but it is new in showing that the association appears to be long-lasting. If confirmed by studies of larger samples, then there are obvious implications for preventive efforts.

We cannot explain why public school graduates who were not in fraternities had similar mortality to those who were in fraternities, or why fraternity membership was so strongly associated with mortality among private school graduates. It is likely that self-selection mechanisms separated people by some important characteristic affecting private school graduates. We may speculate, for instance, that similar to the British peerage in the 18<sup>th</sup> century among whom unmarried younger sons led dissolute lives and died at high rates (Kunitz, 2007), the private school graduates who joined fraternities had less commitment to academic achievement and career goals than those who had not joined fraternities. This is consistent with the data showing that

fraternity members, who were overwhelmingly private school graduates, were far less likely to have been on the Dean's list than public school graduates. Only a prospective study can adequately answer the question.

We can only speculate on the causes of death and the role that substance mis-use by fraternity members plays, but based upon discussions with many members of the class, alcohol appears to have assumed a disproportionately important part. Certainly alcohol has been common on American campuses for many years (Wechsler et al., 2002). It was very much on the minds of Yale students and administrators in the 1950s when our cohort was in college, as it continues to be at present. The campus newspaper prominently featured advertisements for liquor stores. Several public rituals – including a contest to see which group could most quickly consume the maximum amount of beer – took place annually. The deans in charge of student lives tried their best to regulate consumption, for example by preventing local stores from delivering kegs, cans, and bottles to dormitories, to little or no avail.

The long-term mis-use of alcohol by graduates of elite institutions has also been well documented. A follow-up of men who were freshmen or sophomores at Harvard in the early 1940s has shown that 20% at some time in their lives abused alcohol (Vaillant, 2003). When the men were interviewed again in their early 50s and followed for 16 years (1972–1988), 20.6% had abused alcohol at the start of the period and 20.6% had smoked more than 30 pack-years of cigarettes (more than a pack of cigarettes a day for more than 30 years). In that 16 year period, 13% of the men died, and there was a significant association with both tobacco use and alcohol abuse at the start of the period (Vaillant, Schnurr, Baron, & Gerber, 1991). By age 80, 72% of social drinkers in the Harvard study were still alive, compared with 47 percent of alcohol abusers (chronic problems but no physiologic dependence), and 14% of alcohol-dependent men (presence of withdrawal symptoms or hospitalization for detoxification) (Vaillant, 2012, pp. 295, 300).

Our study is also consistent with others in showing a substantial improvement in survival since World War II. For example, by the time the men of the Harvard study had reached their mid-70s, about 30% had died, a substantially higher rate of survival than that of American white men who had reached age 20 in 1940, of whom about 65–70% had died (Vaillant, 2012, p. 226). In the present study 22.5% of men had died before their mid-70s, compared with 40–45% of the cohort of U.S. men who had been 20–22 years old in 1960 (Social Security Administration, 2015). There has not always been such a difference. Yale graduates in the late 18th and early 19th centuries did not have better survival than other men (Hacker, 1997). Status differences in mortality first emerged in the United States in the second half of the 19th century (Kunitz, 2007).

Survival of the entire Yale cohort was substantially higher than that of the general male population of the country, but within this elite social advantage also translated into better survival, albeit with an important qualification. The benefits of social advantage could be undone by membership in groups that engaged in behavior detrimental to health. Thus the social skills, contacts, and fraternity and club memberships developed in private schools and college that are a manifestation of social advantage may contribute to the choice of, and perhaps success in, particular kinds of careers, but may also contribute to the risk of premature death.

Unique as this population undoubtedly is, these observations are relevant to many of the discussions in recent years among epidemiologists and sociologists concerning the consequences of social inequality and the health benefits of social capital. Clearly, membership in secondary groups such as clubs and other organizations may be health-promoting, but a group's behavioral

norms may also be destructive, in both the short and the long-term. Youth gangs are groups in which risky behaviors and their health consequences are over-represented (Sanders & Lankenau, 2006; Gatti, Tremblay, Vitaro, & McDuff, 2005; Henderson, Kunitz, & Levy, 1999), often by a small group of core members who go on to have persistent difficulties while the majority mature out of anti-social behavior (Moffitt, 1993; Moffitt, Caspi, Harrington, & Milne, 2002). Perhaps something analogous occurs among fraternity members, among whom a small group may go on to have persistent problems over much of the remainder of their lives, including long-term health consequences. Whatever the selection or self-selection mechanisms at work, it was the case in the late 1950s, as it still is today, that many if not most undergraduates participated in some kind of student organization. Which they chose was often dependent upon how privileged their backgrounds were, and the choices were frequently both consequential and paradoxical.

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