

## Variations in School Sector Advantages: Degrees, Earnings, and College Majors<sup>1</sup>

SARA SKILES  
DAVID SIKKINK

Previous research focusing on differential outcomes by school sector have primarily concluded that although private school graduates have more success in terms of standardized test scores, high school graduation rates, and entrance into and graduation from college, almost all of that advantage can be attributed to a selection effect. That is, academic achievement for most private school students has more to do with the factors that led to their parents placing them in private schools in the first place (parents' education, income, the importance placed on education in the home, personal networks, etc.) than the schools themselves. This holds true for all types of private schools other than Catholic schools, whose graduates score higher on several academic achievement than do non-Catholic school graduates regardless of family characteristics (Altonji, Elder and Taber 2005; Carbonaro and Covay 2010; Evans and Schwab 1995; Grogger and Neal 2000; Neal 1997; Figlio and Stone 1997; but see Ludwig 1997 for competing evidence).

Close investigation reveals that this Catholic school advantage is at best negligible for white and/or suburban students, but is strong for non-white and/or urban students. Neal (1997) suggests that Catholic schools are likely on par with most suburban public schools, but are better, on

average, than urban schools that minority students are likely to attend. Marks and Lee (1989:1) agree, concluding that "Catholic schools are particularly effective for those students who are at some social or educational disadvantage."

In this paper, we extend this research to include slightly different academic outcomes. We start by adding support to the conclusion that minority students from Catholic schools are more likely than those from non-Catholic schools to graduate from college, and then go on to examine annual income in early adulthood as well as choice of college major to examine how else high school sector might influence young adult outcomes.

### Methods

The data for this paper come from the National Survey of Youth and Religion (NSYR) project<sup>2</sup> which was designed to study the religious lives of adolescents and young adults. In addition to asking about religious beliefs and behaviors, the NSYR survey asked respondents about their educational experiences, family life, engagement with the work force, various attitudes and opinions, and many other aspects of young adult life. The NSYR survey was fielded four times between

2002 and 2013 with the same respondents each time, which allows researchers to examine how respondents changed over time, or how their behaviors and attitudes in adolescence influenced their young adult lives. For this paper, we use a school sector measure, gathered in the first wave of the survey when respondents were ages 13-18, to examine educational attainment and annual income outcomes measured at the fourth wave, collected when respondents were ages 23-28. Table 1 displays relevant demographic information about the sample.

## Results

**College Degree Completion.** When we compare college degree completion by school sector, we find that students from Catholic and non-religious private schools are significantly more likely to earn a college degree than are public school students. Figure 1 demonstrates that the

probability of public school students completing college is 50%, the probability of a student who attended a Protestant religious school completing college is 57%, and so on. The hatched bars representing the probability of private non-religious school and Catholic school students completing a college degree indicate that these students are significantly more likely to earn a Bachelor's degree than are public school students ( $p < .05$ ). Likewise, students from school sectors represented with solid bars are not significantly different than public school students in their likelihood of completing college degrees.

The results presented in Figure 1 were calculated from a logistic regression model that used only school sector to predict college graduation. To compare individuals on more equal footing, a second logistic regression model was run that held constant individual, family, and community characteristics, such as race, gender, having been

Table 1. Characteristics of the NSYR Wave 4 Sample (N=2111)

	N	Percentage
Female	1136	53
Bachelor's Degree	911	43
Race		
White	1569	73
Black	256	12
Hispanic	190	9
Asian	32	1
Other Race	97	5
School Sector		
Public School	1835	87
Catholic School	94	4
Protestant School	51	3
Other Religious School	29	1
Non-Religious Private School	49	2
Homeschool	53	3

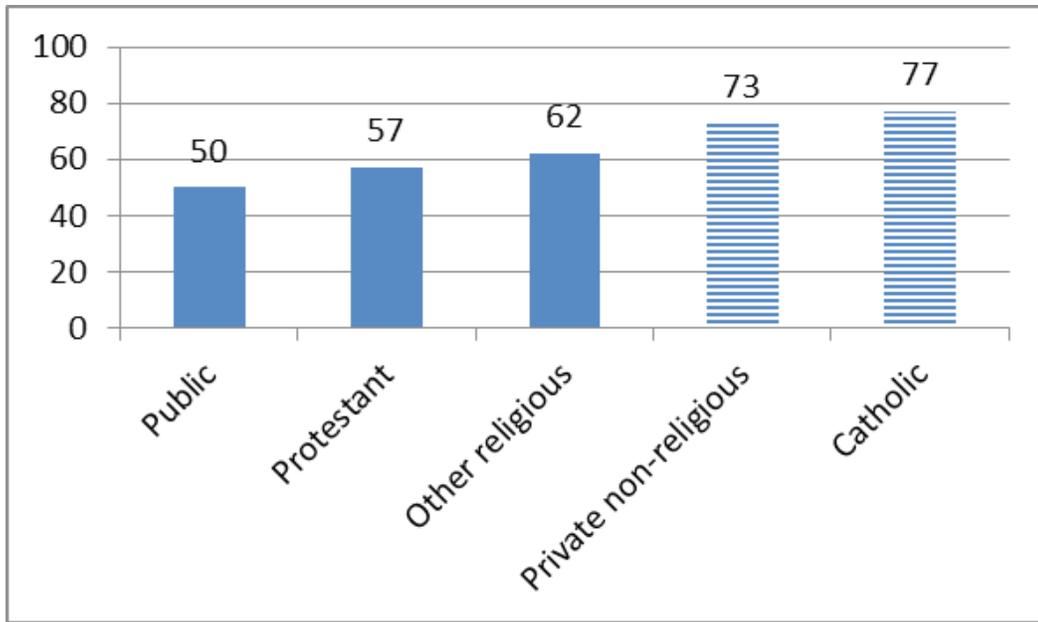


Figure 1. Predicted probabilities of earning a Bachelor's degree, no controls

diagnosed with a learning disability or labeled by a parent as rebellious, parent's educational level, household income, census region, median income and urbanicity of the county in which individuals grew up.<sup>3</sup> Once these "control" variables were added to the model, we find that the results for private non-religious schools are eliminated (we find that non-religious private school students no longer have a "college advantage" over public school students, see Figure 2).<sup>4</sup> In logistic regression results not shown here, we find that the two control variables that are the most meaningful here are parents' educational attainment and income (at the time when survey respondents were growing up). This tells us that private, non-religious school students are more likely to graduate from college, not because of some advantage they receive from their schools, but because of benefits received via the family. Said another way, a public school student and a private non-religious school student whose parents have identical education

levels and incomes have the same chance of graduating from college.

However, the Catholic school college advantage remains (note the hatched bar representing the predicted probability of college graduation for Catholic school students in Figure 2), even after parents' characteristics are accounted for, suggesting that attending a Catholic school significantly increases students' chances of completing a college degree, independent of benefits accrued from students' home environments.

When we dig a bit deeper, taking racial differences among students into account, we see that this Catholic school advantage holds for students who identify as black, Hispanic, and in an "other" racial category, but not for white and Asian students (see Figure 3), who benefit from attendance at (some) other types of private schools.

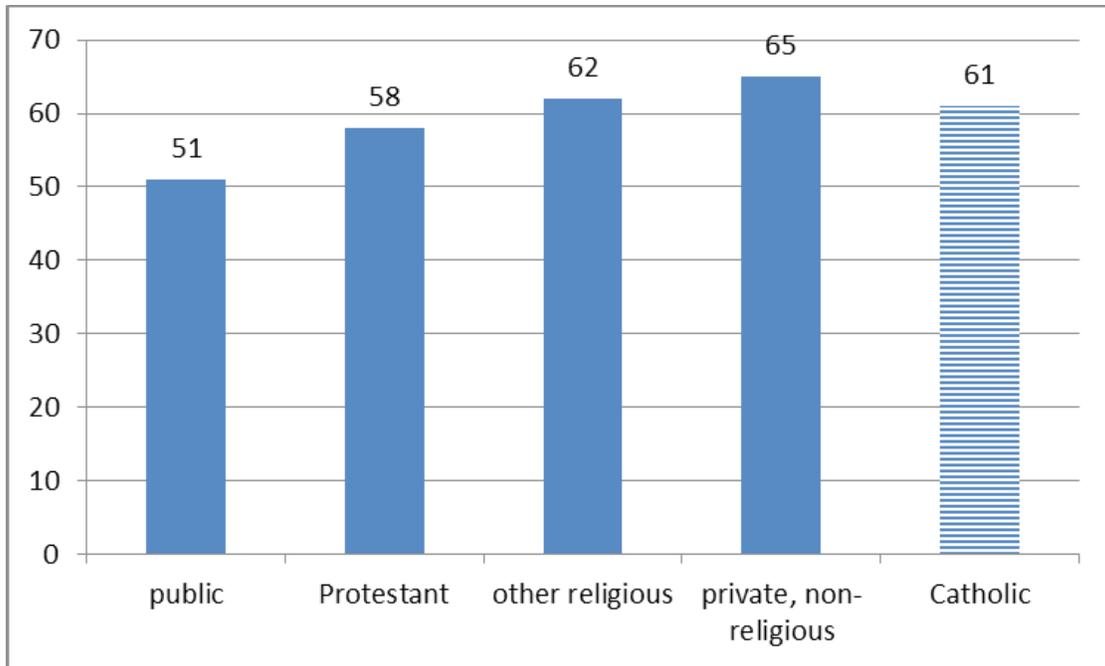


Figure 2. Predicted probabilities of earning a Bachelor's degree, controls included

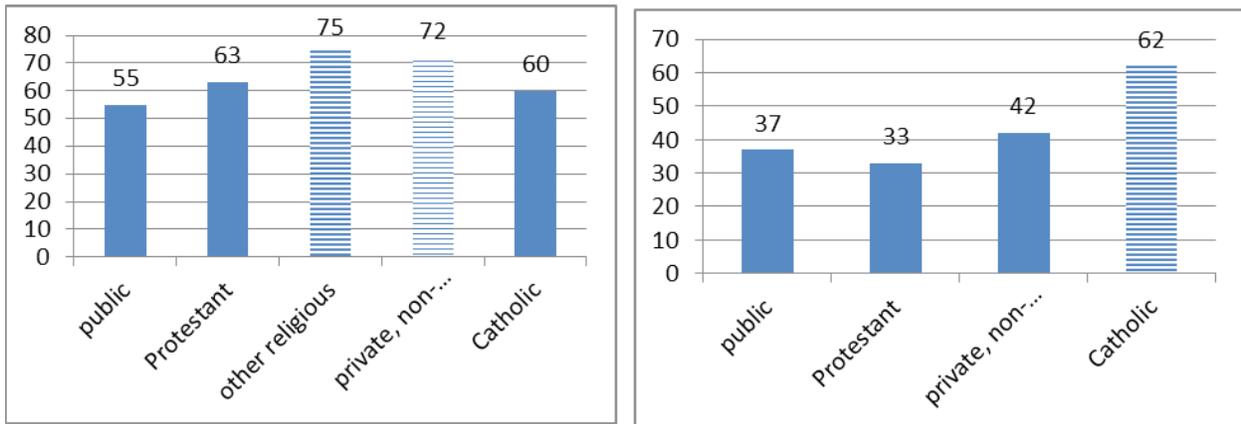


Figure 3. Predicted probabilities of earning a Bachelor's degree, white and Asian (left) and minority (right) respondents

In the graph on the left side of Figure 3, we see that white and Asian students from other religious schools are significantly more likely to complete a college degree than are their counterparts in other school sectors, although the lighter hatching for the private non-religious school bar indicates a slight (at  $p < .10$  rather than  $p < .05$ ,

as is the case with the bars with darker hatches) college completion effect for non-minority students at these schools as well. Therefore, non-minority students have a slightly better chance of completing a Bachelor's degree if they attended a private non-religious school or a religious school not associated with the Catholic church or any

Protestant denominations than do minorities in public, Catholic, and Protestant schools.

The graph on the right side of Figure 3 tells a different story completely. First, comparing the two graphs in Figure 3, we see that minority students are only about half as likely to complete college as non-minority students, with the exception of Catholic school students, about 60% of whom are predicted to complete a Bachelor's degree regardless of race.<sup>5</sup> Second, the hatched bar representing the college completion rate of Catholic school respondents indicates that minority students who attend Catholic schools are significantly more likely to complete college than are minority students from any other school type. This leads to the conclusion that students traditionally underrepresented in higher education (specifically, students from non-white and non-Asian racial groups) receive a significant college completion advantage from attending Catholic schools before college, making them almost twice as likely to graduate

from college, that white and Asian students do not receive, or more likely, do not need, as they are the racial groups most likely to complete college degrees.<sup>6</sup> Further, private non-religious schools and "other" non-religious schools give non-minority students a college completion advantage that they do not give to minority students.

These findings echo the results mentioned at the beginning of the paper regarding a Catholic school advantage in terms of college degree completion for minority students that does not hold for minority graduates of other types of schools. Taken together, these results suggest that Catholic schools serve as an equalizing force in terms of reducing racial disparities in college completion rates, while some other types of private schools might reinforce racial inequalities in college completion.

Annual Income. This finding leads us to wonder how this college completion advantage that

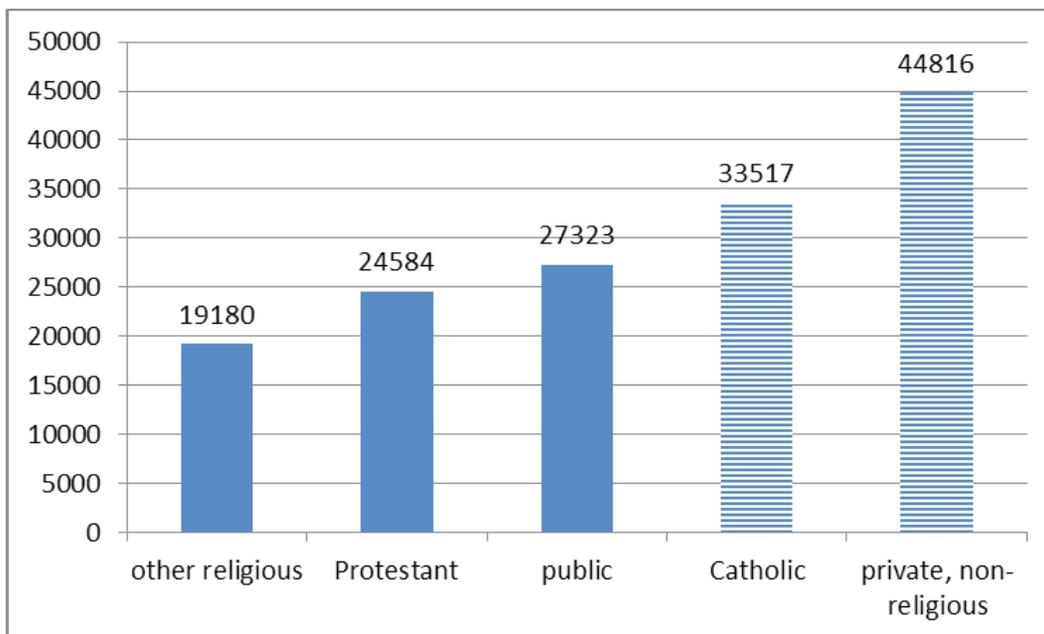


Figure 4. Annual income by pre-college school sector

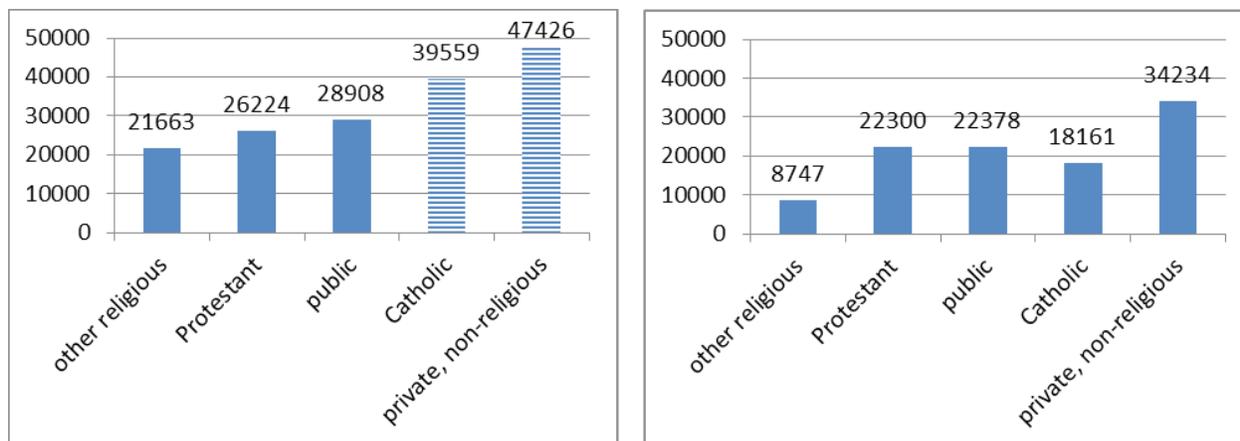


Figure 5. Annual income by pre-college school sector, non-minority (left) minority (right)

Catholic schools confer on minority students translates into the work world. Is there a Catholic school effect on respondents' earnings, and does this effect vary by race? If minority individuals who attended Catholic school receive an advantage in terms of college graduation relative to their non-Catholic school counterparts, will the same be true with regard to earnings? Figure 4 demonstrates the predicted income of Catholic school and private non-religious school graduates as being significantly higher than individuals from other types of schools (on average, \$33,517 and \$44,816, respectively), even after individual, family, and neighborhood-level variables are held constant.

Does this earnings advantage vary by racial group, or are individuals of all racial groups influenced by school sector in the same way? The results presented in the left side of Figure 5 reveal that for whites and Asians, attending either a Catholic or a private non-religious school predicts a significantly higher income than does attendance at the other school types. Meanwhile, in the right side of Figure 5, we see that for minority individuals, there are no differences by school sector in annual income.

Therefore, although minority individuals who attended Catholic schools are more likely to graduate from college than are their non-Catholic school counterparts, attending a Catholic school confers no advantage in early adulthood in terms of earnings. Therefore, minority individuals benefit from a Catholic school advantage only through the completion of college, but then are no different from minority graduates of any other type of school in terms of annual income. How can we explain this "loss" of advantage between college and the work force for minority individuals from Catholic schools? Perhaps minority students are choosing occupations that pay less than are non-minority students. It's also certainly plausible that the work world has not yet matched the relative progress of institutions of higher education in their progress toward making opportunities equally available to everyone.

**College Major.** To examine how school sector might be influencing respondents' decisions about college major (which could in turn influence their occupational fields), we examined differences in three broad types of college majors by school sector—STEM (science, technology,

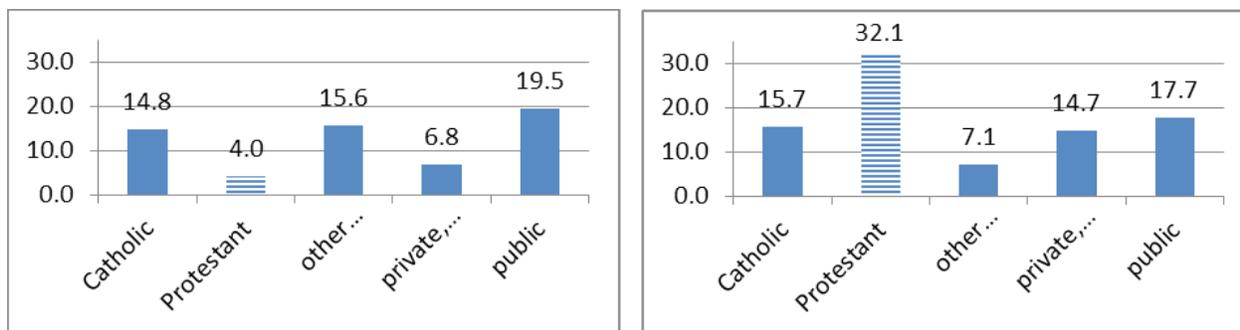


Figure 6. Predicted probabilities of majoring in a business field (left) and care field (right), controls included

engineering and math), business (business administration, finance, accounting, etc.), and care (nursing, education, social work, counseling, etc.) fields. Generally, STEM and business careers provide high-paying salaries, occupational prestige, and diverse professional networks, while careers in care fields do not (Cataldi, Siegel, Sheperd, Cooney, and Socha 2014). Therefore, determining whether or not there are school sector effects on the types of majors students select into gives an indication of the success they might have in the work force (when success is measured in terms of salary, prestige, networks, etc.).

We found no sector effects with regard to majoring in a STEM field, but we did find interesting Protestant school effects for both care and business fields. Specifically, individuals from Protestant schools were significantly more likely than everyone else to major in care fields, and significantly less likely to major in business fields. Figure 6 summarizes results from analyses that predict majoring in care and business majors. Here we see that individuals from Protestant schools are twice as likely to major in a care field than most everyone else, and one-quarter as likely to major in business. In fact, individuals from Protestant schools had a 32% chance of majoring

in a care field, but if we divide these graduates by gender (results not shown, but available from the authors), we see that women from Protestant schools have a 44% predicted probability of majoring in a care field.<sup>7</sup>

Therefore, in addition to the Catholic school effects discussed above, our analyses also reveal a Protestant school effect that seems to indicate that attendance at Protestant high schools encourages individuals to pursue college majors that will enable them to work in career fields in which they are directly responsible for the well-being of others, often via face-to-face interaction (England 2005). Our analyses don't allow us to specify the specific mechanisms through which Protestant school attendance influences decisions about college majors (perhaps through selection of college or university, or via an environment in which students have more role models in care than STEM or business fields), but we can conclude that Protestant schools graduates are being influenced in some ways to forego (potentially) more lucrative college major options in order to major in fields that will give them the opportunity to pursue careers focused on helping, teaching, and serving.

## Conclusions

This analysis of school sector effects on contemporary young adults (those who graduated from high school in 2003-2008) demonstrates both a Catholic school effect that varies by race, and a Protestant school effect. Our results demonstrate that minority students from Catholic schools are significantly more likely to complete college degrees than are minority students from any other school sector, but that this advantage does not translate to an earnings benefit. Instead, we find no significant sector effects for minority students on income. However, we do find that white and Asian individuals from both Catholic and private non-religious schools have significantly higher annual incomes than do white and Asian individuals from other school sectors. Therefore, we find that Catholic schools are helping their minority students to close the gap in terms of college degree attainment, and are also having a positive impact (along with private non-religious schools) on non-minority early adult incomes, but minority students from these schools do not receive the same income benefit. This suggests that whatever gains have been made in institutions of higher education regarding increased equality of opportunity for minority individuals have not (yet) impacted the workforce.

In addition, we find that Protestant school graduates are significantly more likely to major in “care” fields in college than are individuals from any other sector, at the expense, it seems, of choosing business majors. More research is needed to discover if this is a function of the type of colleges and universities that individuals from Protestant schools are choosing to attend (for instance, perhaps the schools they choose are much more likely than other schools to offer care-type majors and much less likely to offer business degrees), but even if the college major effect has more to do with characteristics of individuals’ institutions of

higher education than their high schools, the fact that Protestant school students are selecting into schools that might funnel them into care majors in the first place is a substantively interesting finding.

It should be remembered that the data utilized for this paper capture only the early adult period from ages 23-28, so while they shed light on some of the most current empirical results regarding outcomes by school sector, they don’t tell a complete picture of these respondents’ life after high school—it’s certainly possible that effects from high school will still be felt into their thirties and beyond for this cohort. In addition, this dataset does not give us the opportunity to look at a complete educational history. Instead, we have only one measure of school sector attendance. Therefore, it’s certainly possible that some respondents coded as private school graduates transferred to public schools for most of their high school career, and vice versa, although we do not have reason to believe that a very large portion of the sample switched sectors.

## Methodological Appendix

The results presented in Figures 1-3 come from analyses that use Bachelor’s degree completion or current enrollment in a Bachelor’s degree program (measured dichotomously) as the dependent variable. Logistic regression is used to model the probability of graduation/enrollment, and results are presented as predicted probabilities. Statistical significance is measured at  $p < .05$  (with the exception of one result significant at the .10 level, highlighted in the left side of Figure 3). The results in Figure 1 are from a model run with only school sector dummy variables as independent variables. Results in Figure 2 include a fuller model, which includes the following independent variables: race, gender, having been diagnosed with a learning disorder at Wave 1 of the survey, being characterized as

rebellious by a parent at Wave 1, living with both parents at Wave 1, college completion of at least one parent, parent's income, parent's status as a citizen of the United States, parents' religious tradition, religious attendance, and two measures of frequency of prayer for parents (all parent variables were measured at Wave 1), and urbancity, median household income, and census region of the respondent's home county at Wave 1. Parents' religiosity variables are included as previous research has shown that parents' religiosity could account for some of the effects that would be credited to school sector if these variables are not included (e.g. Sander 2001). Results in Figure 3 come from a model identical to the one described for Figure 2, but restricting the sample by race.

The results presented in Figures 4 and 5 come from OLS regression models in which the dependent variable is respondents' annual income at Wave 4, using the same independent variables discussed above, and adding BA completion (although results with BA completion omitted are not significantly different). Results are presented as predicted probabilities, and statistical significance is measured at  $p < .05$ .

Finally, results presented in Figure 6 use dichotomous measures of measuring in a business field or a care field as dependent variables, using the same independent variables discussed above, constraining the sample only to those who have earned or who are currently pursuing a Bachelor's degree (those coded 1 on the dependent variable used in the analysis depicted in Figures 1-3). Each outcome is coded as 1 for any degree in progress, any earned BA or post-graduate degree, resulting in non-mutual exclusivity of categories for a few respondents. Logistic regression was used to model the probability of choosing each type of major, results are presented as predicted probabilities, and statistical significance is measured at the .10 level because of small sample sizes.

## Notes

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<sup>2</sup> The National Study of Youth and Religion, <http://youthandreligion.nd.edu/>, whose data were used by permission here, was generously funded by Lilly Endowment Inc., under the direction of Christian Smith, of the Department of Sociology at the University of Notre Dame and Lisa Pearce, of the Department of Sociology at the University of North Carolina at Chapel Hill. Read more about the project in Smith and Denton (2005).

<sup>3</sup> More information about the analytical methods used in this paper are available in the methodological appendix, and complete results are available from the authors upon request.

<sup>4</sup> The predicted probabilities for graduating from college for students from other religious schools and private non-religious schools are slightly higher than the predicted probability for Catholic school students, and it is possible that small Ns in these groups are keeping these results from statistical significance. Therefore, Figure 2 hints that there might be a slight college completion effect for students from other religious and private, non-religious schools in addition to the Catholic school effect discussed here.

<sup>5</sup> Note that students from other religious schools are not represented in the right side of Figure 3, as only one minority respondent from an other religious school completed a Bachelor's degree, so this analysis of variation within groups was not possible for this sector.

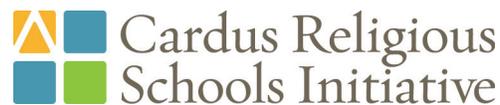
<sup>6</sup> In our sample, 55% of white respondents completed college degrees, as did 81% of Asian respondents, compared with 40% of black respondents, 39% of Hispanic respondents, and 38% of respondents who identified as another race.

<sup>7</sup> We cannot analyze racial differences in this school sector effects on college major because of small sample sizes (for instance, only 8 of the Protestant school respondents are minorities).

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University of Notre Dame  
 Notre Dame IN 46556  
<http://crsi.nd.edu>