

## Online Appendix C: Exploring Differences between Charles et al.'s (2009) Results and Our Own

In their study of racial differences in college experiences and outcomes at elite universities, Charles et al. (2009) argue that social engagement is more important for student persistence than college GPA. However, our results indicate that college GPA is a more important driver when we examine black and white students' experiences in non-elite as well as in elite colleges. Are the differences between Charles et al.'s elite college sample and the ELS sample the main driver of the discrepancy in our results?

We first examine the possibility that social engagement matters more at higher quality colleges than lower quality colleges. To do so, we estimate an interaction between social engagement and college quality for black and white students separately, holding pre-college, institution-level, and college experience variables constant. As can be seen in Table 1, the interaction effect is far from statistically significant for either black or white students, suggesting that social engagement in fact matters equally at high- and low-quality colleges. This result does not provide any evidence that discrepancies in the effects of social engagement in our respective college samples explains the differences between Charles et al. and our current results.

A second possibility is that the effects of grades vary by college quality such that grades are more weakly related to dropout in elite colleges, but this seems not in fact to be true. We find evidence that the effect of grades becomes larger, not smaller, in high quality college environments. As Table 1 demonstrates, the interaction effect between population-standardized college GPA with institutional quality is positive and statistically significant for white students and positive, though not statistically significant, for black students. We also estimate a combined, interactive model for academic achievement (Table 1, Columns 10 and 11); this result shows a positive and statistically significant effect for the interaction of college quality and college grades for the combined black-white sample. In sum, our results do not support the idea that grades are less important in higher quality colleges.

Table 1: Interactive Effects of Social Engagement and Academic Achievement on Dropout Given College Quality

	Includes Social Engagement Interaction				Includes Academic Achievement Interaction					
	Black ( $n=590$ )		White ( $n=3,520$ )		Black ( $n=590$ )		White ( $n=3,520$ )		Combined ( $n=4,110$ )	
	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>Coef.</i>	<i>Std. Err.</i>
Black	—	—	—	—	—	—	—	—	-0.48	0.258
College Quality	-0.79***	0.271	-0.69***	0.112	-1.16***	0.417	-0.75***	0.115	-0.71***	0.110
College GPA	-1.75***	0.219	-1.22***	0.115	-1.98***	0.324	-1.34***	0.113	-1.36***	0.111
College Social Engagement Factor	-0.42	0.216	-0.61***	0.090	-0.44*	0.190	-0.60***	0.088	-0.54***	0.079
Social Engagement*College Quality Factor	0.01	0.292	-0.00	0.106	—	—	—	—	—	—
College GPA*College Quality Factor	—	—	—	—	-0.57	0.398	-0.43***	0.134	-0.44***	0.126
Black*College GPA	—	—	—	—	—	—	—	—	-0.45	0.241
Black*College Quality	—	—	—	—	—	—	—	—	-0.43	0.258
Constant	-1.220	0.547	-1.10***	0.000	-1.37*	0.642	-1.14***	0.185	-0.96***	0.168

Notes: Results reported as effects on log odds; standard errors reported on two-tailed tests; \*\*\* $z < 0.001$  \*\* $z < 0.01$  \* $z < 0.05$ . Model also includes pre-college, institution-level, and college experience covariates. Full results are available upon request.

Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.

A third possibility is that relatively few students who attend the elite colleges studied by Charles et al. achieve low enough grades to threaten their persistence, while more students are at risk due to lower levels of social engagement. Part of this dynamic may result from college-level policies restricting continued enrollment to students who receive a high enough GPA. Though Charles et al. do not detail the entire academic distribution in their work, they do note that the average GPA for black students is 3.0 while it is 3.4 for white students; they also do not have a singular measure for social engagement. However, our factor variables enable us to examine the distribution of both GPA and social engagement in elite contexts. We find that the average GPA in the “most selective” colleges in the ELS sample is 2.9 for black students and 3.3 for white students, while it is 2.3 and 3.0, respectively, for black and white students enrolled in all colleges. This difference between students in the most selective colleges versus all colleges demonstrates considerable GPA compression in the selective colleges, providing limited evidence that Charles et al. underestimate the impact of academic performance in comparison to social engagement be-

cause they do not observe low enough grades.

To gain greater clarity on this point, we also identify the proportion of black and white students with GPA or social engagement levels in the “red zone,” or levels highly predictive of dropout, within selective colleges and the entire distribution. For GPA, we define the red zone as less than or equal to 2.5 since the average GPA among dropouts is 2.43; for social engagement, we use similar logic to define the red zone as less than or equal to 0.5 standard deviations below average (the mean among dropouts is -0.54 standard deviations). As Appendix Table 2 conveys, it is clear that a lower proportion of students in selective colleges encounters either the academic or social engagement red zone as compared to the entire distribution of colleges. Yet there is also some evidence that a slightly higher proportion of students in the social engagement red zone are observed in the most selective institutions as compared to the academic red zone, especially among white students. Accordingly, it is possible that Charles et al. overestimate the impact of social engagement in comparison to academic achievement because they observe lower levels of social engagement in their sample.

Table 2: Proportion of “Red Zone” Students in Selective Colleges and All Colleges

	Proportion in Academic Red Zone		Proportion in Social Engagement Red Zone	
	Black	White	Black	White
Selective Colleges	0.30	0.06	0.14	0.10
All Colleges	0.50	0.18	0.37	0.27

As an additional explanation, we explore the possibility that differences in Charles et al.’s and our own approach to defining social engagement might cause the discrepancy. In our model, the variables most predictive of persistence include participating in high-impact activities and intramural sports, while those in Charles et al.’s model are playing a varsity or junior varsity sport, joining a fraternity or sorority, and participating in religious and community organizations. In order to test the possibility that the discrepancies in our findings are due to these differences, we develop a second social engagement factor that overlaps more with Charles et al.’s. Specifically, we eliminate our variables for high-impact activities, negative life events, and attending an out-of-state college and instead incorporate variables capturing participation in varsity sports, participation in career development activities, and volunteering in religious, environmental, or political

organizations. We then disaggregate the new social engagement factor into individual variables, as Charles et al. do, reported in Table 3. The results support our original conclusion in light of the fact that the only variables protective against dropout in the updated model are participating in intramural sports and participating in career development activities (an item included but only marginally significant in Charles et al.’s model).

Table 3: Comparing the Impact of Disaggregated Social Engagement Indices on Dropout: Our Model vs. Alternative Model ( $n=4,110$ )

	Own Model		Alternative Model	
	<i>Coef.</i>	<i>Std. Err</i>	<i>Coef.</i>	<i>Std. Err</i>
Pre-College Controls	X		X	
Institution-level Controls	X		X	
Black	-0.06	0.201	-0.20	0.194
Female	0.42**	0.134	0.38**	0.131
GPA	-1.20***	0.106	-1.28***	0.103
Arts & Humanities Major	-0.92***	0.192	-0.96***	0.190
Business, Education & Trades Major	-1.24***	0.172	-1.19***	0.165
STEM Major	-0.60**	-0.179	-0.64***	0.172
Curricular Risk	0.37***	0.066	0.38***	0.069
Academic Integration	-0.12	0.070	-0.15*	0.071
Live on Campus	-0.24	0.163	-0.21	0.159
Live at Home	0.49**	0.161	0.41*	0.158
High-Impact Activities – Sometimes	-1.09***	0.153	—	—
High-Impact Activities – Often	-1.75***	0.164	—	—
Number of Negative Life Events – One	0.42**	0.150	—	—
Number of Negative Life Events – Two or More	0.20	0.164	—	—
Attend College Out of State	0.42**	0.160	—	—
Participate in Extracurriculars – Sometimes	-0.27	0.158	-0.28	0.156
Participate in Extracurriculars – Often	-0.14	0.189	-0.17	0.187
Participate in Intramural Sports – Sometimes	-0.45*	0.177	-0.38*	0.175
Participate in Intramural Sports – Often	-0.16	0.184	-0.11	0.186
Participate in Varsity Sports – Often	—	—	-0.20	0.171
Participate in Career Events – Often	—	—	-0.82***	0.132
Volunteer in Religious Group – Often	—	—	0.25	0.152
Volunteer in Environmental Group – Often	—	—	-0.14	0.317
Volunteer in Political Group – Often	—	—	-0.16	0.225
Volunteer in Community Organization – Often	—	—	-0.49**	0.182
Constant	-0.08	0.231	-0.251	0.202

Notes: Coefficients reported as effects on log odds; “Never” is the reference category for categorical variables; standard errors reported for two-tailed tests; \*\*\* $z < 0.001$  \*\* $z < 0.01$  \* $z < 0.05$ .

Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron’s Profile of American Colleges, 2016; IPEDS, 2004-2009.

We instead turn to one final explanation, that differences in our respective windows of analysis produce the contradictory results. Specifically, we hypothesize that the discrepancy might emerge because Charles et al. study only the first two years of college while we consider the entire college career. We examine this possibility by restricting our regression results to the first two years of college, using a measure of dropout indicating departure after those two years, alone, and curricular variables drawn from students' first two semesters of college. We then compare these results to those from a subsequent regression model focused on years three and onwards. We complete this procedure defining the social engagement variables using our own strategy and also an alternative strategy more closely resembling Charles et al.'s. We insert social engagement variables into both models as a standardized, composite factor variable to enable direct comparison with standardized college GPA (see Table 4 for these results).

Table 4: Effects of Pre-College, Institution-Level, and College Experience Variables on Dropout among Four-year College Beginners, Using Our Own and Alternative Measures of Social Engagement ( $n=4,110$ )

	Own Model				Alternative Model			
	Year Two and Below		Year Three and Onwards		Year Two and Below		Year Three and Onwards	
	<i>Coef.</i>	<i>Std. Dev.</i>	<i>Coef.</i>	<i>Std. Dev.</i>	<i>Coef.</i>	<i>Std. Dev.</i>	<i>Coef.</i>	<i>Std. Dev.</i>
Pre-College Controls	X		X		X		X	
Institution-level Controls	X		X		X		X	
Black	-0.19	0.224	-0.07	0.205	-0.15	0.224	-0.03	0.206
Female	-0.34*	0.149	0.36*	0.144	-0.29	0.148	0.39**	0.144
College GPA	-0.65***	0.078	-1.23***	0.123	-0.67***	0.077	-1.26***	0.123
College Social Engagement	-0.56***	0.097	-0.39***	0.089	-0.23*	0.091	-0.23**	0.081
Arts & Humanities	-0.39	0.244	-0.96***	0.219	-0.41	0.244	-0.98***	0.217
Business, Education & Trades	-0.49**	0.185	-1.34***	0.180	-0.50**	0.183	-1.34***	0.179
STEM	-0.50*	0.221	-0.70***	0.193	-0.50*	0.220	-0.72***	0.192
Curricular Risk	-0.37***	0.079	0.54***	0.077	-0.34***	0.077	0.55***	0.077
Academic Integration	-0.07	0.074	-0.14	0.079	-0.14	0.074	-0.17*	0.079
Live on Campus	-0.43*	0.210	-0.001	0.176	-0.48*	0.209	-0.05	0.175
Live at Home	0.27	0.174	0.59**	0.174	0.28	0.173	0.60**	0.175
Constant	-2.12***	0.194	-1.45***	0.188	-2.05***	0.193	-1.44***	0.187

Notes: Coefficients reported as effects on log odds; standard errors reported for two-tailed tests; \*\*\* $z < 0.001$  \*\* $z < 0.01$  \* $z < 0.05$ .

Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.

The results from this analysis indicate that high levels of social engagement and academic achievement provide nearly the same protection against dropout after just two years of college. However, if we examine years three and onwards, high GPA increases in protectiveness substantially, surpassing social engagement, while high social engagement maintains its initial level of protectiveness in the alternative model and decreases in protectiveness in our own model. In studying the distribution of students who drop out from college during the first two years, we find a comparable proportion of students, about 30 percent, with social engagement and GPA levels below the overall average among dropouts, 0.54 standard deviations for social engagement and 2.43 for GPA. This finding indicates that the relative effects we observe for social engagement and college GPA are not a byproduct of differences in students' responses to low levels of each postsecondary resource. We therefore argue that the availability of the longer time window with the ELS data more accurately reveals the greater importance of college GPA than social integration for the dropout risk of both black and white students.

## References

Charles, Camille Z., Mary J. Fischer, Margarita A. Mooney, and Douglas S. Massey. 2009. *Taming the River: Negotiating the Academic, Financial, and Social Currents in Selective Colleges and Universities*. Princeton, N.J.: Princeton University Press.