

Some Thoughts about Athletics at Rice

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Rice is a very rich school. It can devote substantial resources to the athletic program. This includes an excellent academic support network for athletes. In this area, it is considered to be a model to which NCAA Division I-A schools should aspire. It can even field winning teams, as demonstrated by the fact that Rice was the national champion in baseball in 2003. The question is whether achieving this goal in as many sports as we currently play is worth the expense. Football, the largest and most expensive of these sports, requires close attention.

The Atlantic Monthly recently published an article on selectivity in American universities, which ranked Rice eighteenth in the nation. They published the data they used as well as the formula. What hurt Rice in the rankings was the fraction of students who are not in the top ten percent of their high school graduating class. Only 83 percent of Rice students are in the top ten percent of their high school graduating class. Stanford, which was ranked sixth had 88 percent of their students in the top ten percent of their high school graduating class. Duke, which was ranked fourteenth had 89 percent of their students in the top ten percent. If 89 percent of Rice students were in the top ten percent, Rice would be eleventh in the rankings. The number of students at Duke that are not in the top ten percent is 676 and the number at Stanford is 786. The number for Rice is 480. The reason Rice has such a large percentage of students who are not in the top ten percent of their high school graduating classes is the small size of the Rice student body.

¹ Since I wrote my original comments to the Faculty Council Athletic Subcommittee, the Board of Trustees Athletic Subcommittee has made public the report, *Intercollegiate Athletics at Rice University*, (hereinafter, the McKinsey Report). This revision reflects the information in this report.

Rice has only 2,822 undergraduates. It is by far the smallest elite school that plays Division I-A football. Rice is so small that 6.5 percent of the male students are on the football team and Rice must compete with major football powers for a limited pool of talent.

Football has become more competitive and the number of football players who are strong academically is limited. In the *Rice Football Webletter* there is an article that states: “Super-scout Max Emfinger keeps tabs on SAT and ACT scores among his list of the top recruits in the country. Among the top 500 in the class of 2004, a grand total of five listed SAT scores of 1300 or above. Rice got two of them. Stanford got two more.”

Rice does very well in recruiting football players who are strong academically *relative* to the available pool. That same article reports that average SAT scores for the Rice football team are just under 1100 (The actual number is 1082.²) and these scores are about two standard deviations above the national average. The article pointed out that: “even academics (sic) can tell you, that's statistically significant.” What the author did not seem to notice is that the reported average SAT score of the Rice football team is three standard deviations below the average of the Rice student body, which is over 1400.³

Rice football players are very strong academically relative to their peers in other schools, but not relative to other Rice students. There are eighty-nine players on the Rice football team roster. Thirteen of these players were selected for the Western Athletic Conference academic all conference team. This is the highest of all of the schools in the conference. As a group these players had a grade point average of 3.3. This is very respectable; however, in 2003, the required grade point average for *Cum Laude* at Rice was 3.720. Not one of the players named to the Western Athletic Conference academic all conference football team would have been eligible for university honors using the

² McKinsey Report p. 31,

³ McKinsey Report p. 28.

2003 standards.⁴ By contrast, over thirty-five percent of the graduating seniors in 2003 earned university honors.

In 2003 the average SAT score of non-athlete students who were admitted and matriculated was 1428 while the average SAT score of athletes who were admitted and matriculated was 1130.⁵ The average SAT score of the football team is 1082 and football accounts for half of the Rice students who were admitted with an SAT scores below 1000. The football team is more than three standard deviations below the average of the Rice male student body, which is 1400.⁶ The difference in ability is very apparent to those of us who have taught large classes that have a substantial number of football players. Large courses where there is such a difference in ability of the students are very hard to teach. If you teach the course at a level where the weaker students can understand the material, you bore the stronger students and if you meet the needs of the stronger students, you lose the weaker students. Many engineering students at Rice double major in economics or managerial studies as they expect to go to business school after a few years of practice; others are majoring in Mathematical Economics. These students have very good training in mathematics and since they are double majoring in two different and difficult subjects, they are likely among the best students at Rice. Imagine teaching a class that includes students from Cal Tech and the middle two quartiles at the University of Houston.⁷

This is reflected in the grades. Economics has one of the lowest grade point averages at Rice; it also has one of the highest variances in grades. The economics department is not a shelter. Our courses are not easy. However, in the past, a student with clever guidance could major in economics and avoid the more difficult courses by taking them in summer school. The economics department has addressed the problem and the

⁴ I checked the Western Athletic Conference academic all conference football team data against the President's Honor Roll and found two errors. One student made the honor roll both semesters and one student made it one semester in 2003-2003. See Appendix.

⁵ McKinsey p. 28.

⁶ McKinsey p.31.

⁷ See Appendix

loopholes have been closed. The key course, Intermediate Microeconomic Theory, (Econ 370), now has a calculus prerequisite and it is now the policy of the department not to approve transfer credit if the course does not have a similar prerequisite.

The Administration also facilitated the graduation of weak students by instructing the Economics department not to count courses that students had failed and repeated in calculating the grade point average for the major. This is contrary to the stated policy in the catalogue, but we were told that this was standard practice at Rice.⁸

Disparate academic backgrounds and ability is also a problem in small classes. Last year I taught a small class in Economics of the Law. The text was Richard Posner's *Economic Analysis of the Law* and I used Barnes and Stout's, *Law and Economics* as the casebook. It was one of the best groups of students I have taught at Rice. Most of the students went to the University of Texas Law School, two went to Harvard Law School, one went to graduate school at Princeton to study Political Science and there was one football player. My memory is that the distribution of grades was one D-, one A-, two A+ and the rest made an A.

There were strong personalities in the class and they challenged me and set the pace and level of class discussion. The football player was not to blame for his performance. He was competing with classmates with much stronger academic backgrounds. He did not even have the vocabulary to follow in the class discussion. He could not really participate in a discussion that involved the Coase theorem, Calabresi and Melamed's theory of entitlements and the duty to rescue in the context of *Ploof v. Putnam*. His term paper, 80 percent of the grade, was about six pages long. The other students' papers ranged from 20 to 30 pages. Three or four standard deviations are a chasm.

The argument can be made that SAT scores are not the only measure of a student's ability. This is true. I know a student with relatively low SAT scores who graduated from Rice in three years *magna cum laude*; graduated second in her class at a

⁸ This matter has now been brought to the attention of the Committee on Examinations and Standing by the Department of Economics..

top law school; clerked for a very highly respected judge and was made partner at a major Houston law firm at age 30. I also know a student with perfect SAT scores whose best grade at Rice was a B- and whose first job out of Rice was driving a truck. He grew up, went to a very good business school, and is now very successful. I, myself, had very good SAT scores, but managed to flunk out of Rice twice and returned to Rice on “Super Death Pro” after three years in the Army. Anecdotes are entertaining, but they are not a good way to make policy. Statistical tests are better. If the data is made available to the faculty, we can use it to ask the very limited and pragmatic question: do SAT scores predict academic performance of athletes at Rice?⁹ (See Appendix.)

There is also what an economist would call an agency problem with athletics at Rice. Athletic coaches are professionals who are judged by the performance of their teams. Their goal is to produce winning teams. Rice’s goal, I hope, is to educate students to the best of their potential. These goals are not always compatible.

Among all the sports at Rice, football is the biggest problem. There are simply not enough academically talented football players in the country for Rice to recruit a football team that is not three standard deviations below the average of the Rice student body in academic ability. This may not be the case in other sports. However, if Rice is to continue to compete in other sports, a culture should be established in the coaching staffs where the goal is to educate students who are athletes rather than to win games. I don’t know if this is possible.

Most faculty members at Rice support athletics in some form. Scholar-athletes contribute unique characteristics and add diversity to the student body. Fortunately, Rice can compete in many sports without compromising academic standards. If the reason for having athletics at Rice is the contribution of scholar athletes to the student body, rather than entertainment, does the sport matter? If Rice could also be competitive in football without compromising the academic standards, many of faculty, like me, who are also Rice alumni, would support it in spite of the substantial costs. However, we have to face the fact that that is not feasible. Further, with only 38,000 alumni in the United States,

⁹ See Appendix.

Rice is not a very attractive conference partner for other schools. The Southwest Conference is now a fading memory and Rice has found it hard to find a conference where it can play schools that are close to being its academic peers. Tulane, the best other school in the new Conference USA is ranked 44th in *U.S. News and World Report* rankings.

The athletic program is said to lose ten million dollars a year depending on how costs are allocated. A substantial part of this deficit, 3.1 million dollars, can be attributed to football. Gross tuition income is 46.5 million dollars and after financial aid, the net income from tuition is 29.3 million dollars. Thus, the athletic loss is almost thirty four percent of the net income from tuition and the loss attributable to football is probably about around eleven percent of net tuition income. However, these numbers are conservative. Since Rice tuition is very low relative to comparable schools, students who pay full tuition are not paying the full cost of their education. It is estimated, and President Gillis has used this number in speeches, the true cost of a Rice education is forty thousand dollars a year. This adds an additional 6.5 million dollars to the cost of athletics and the true athletic deficit is on the order of 16.5 million dollars of which 5 million can be attributed to football. Rice spends \$5,453 per undergraduate student on athletics. The average for the Ivy League is \$1,438. Yale has the highest expenditure on athletics of the Ivy League schools and they spend less than \$3,000 per undergraduate student on athletics.¹⁰

This expense might be warranted if football were an integral part of the Rice student experience. However, judging by attendance at football games, football is not a very important part of student life at Rice. Those of us who attended Rice forty or fifty years ago can remember pep rallies on Friday evenings and banners supporting the football team hanging from the library in the quadrangle before games. At the present time one can be on campus any Friday afternoon during football season and not be aware that there is going to be a football game the next day. Forty or fifty years ago, it was an honor to be elected Homecoming Queen. Last year, the students elected Rice football coach Hatfield to be a Homecoming Princess. He lost the election for Homecoming

¹⁰ McKinsey p. 50.

Queen to Associate Vice- President Neill Binford by a few votes. Neill had the misfortune of having to be responsible for installing gates in campus parking lots in the previous year.

Rice is doing about as well as possible in athletics. In most sports there are athletes with the academic ability to be true scholar athletes. One of the exceptions is football. Rice probably has the best football team possible in terms of academic ability. However, the average SAT scores of the football team are more than three standard deviations below the average Rice student. It may well be that the supporters of football at Rice could raise enough money to create an endowment that would enable Rice to field a football team that is able to compete at Rice academically and be successful in Division I- A football. With enough money many things are possible. However, Rice would be unique, and it is necessary to accept the fact that “Rice’s power to change its environment (and influence schools twenty times its size) is very small. . .”¹¹ Perhaps Rice could do it if it spent enough money, but it would not be possible for many other Division I A schools to follow Rice’s example. The pool of talented football players is too limited; there is strong competition in recruiting and the culture of the sport is corrupt.¹² What happened in Colorado is not an isolated incident. Is the game worth the candle?

The heterogeneity in backgrounds and values creates other problems. Last year a student who was graduating came to see me three days before graduation. He was a member of the Honor Council that had been convened to consider charges against the large group of athletes who were reported to have cheated in a physics course. He had just filed charges with the appropriate Rice authorities against athletes who, he claimed, had been physically intimidating him and other members of the Honor Council. He said that he had not filed charges earlier because he did not want to be in the position of judging students against whom he had filed charges. Further, he said that the College Masters were told of the situation. They tried to intervene, but were they told that they did not have standing in the matter. I have spent thirty years of my adult life at Rice and I had a hard time believing the story. I investigated the story. No one could discuss the

¹¹ McKinsey p. 74.

¹² *The Economist*, April 10, 2004, p.25.

details of the incident because student disciplinary matters are confidential; however, I was told by individuals in positions of responsibility at Rice that the student's story was essentially correct.

The cost of football in money, in admission standards and academic requirements is too high. Further, if we judge by attendance at games, there is little interest in football among most of the rest of the Rice community. The focus of athletics at Rice should be in developing character, leadership and a sense of bonding among the Rice student body. If the cost of doing this is sacrificing the entertainment value of Rice football, then, in my opinion, this is an acceptable cost.

Appendix

There is a story, attributed to Sir Francis Bacon, of a meeting of monks debating how many teeth were in the mouth of a horse. The answer was not in the works of Aristotle, which were then considered the source of all wisdom. A young monk suggested that one way to get the answer would be to find a horse and count. His suggestion did not find favor.

This appendix tries to count teeth. One of the questions that is being debated is the value of SAT scores in predicting the performance of athletes. The McKinsey report states: “the SAT itself is widely thought to be a poor predictor of collegiate academic performance [cite to National Center for Fair & Open Testing and others] and this is no less true among Rice students.”¹³ They ran a regression on the SAT scores of Rice students and found that they have little predictive value. This is not surprising since most Rice students who are admitted by the normal process have both very high SAT scores and very good grades in high school. They also make very good grades. In terms of academic performance and preparation, there is very little heterogeneity in the top three quartiles of the Rice student body.

Individuals opposed to change will cite various studies and appeal to regressions run on the entire student body to argue that SAT scores have no predictive value. However, like the monks in Bacon’s story, they will not look at or release the data so others engaged in the debate can analyze it.

There are questions among some of us as to the techniques used. One glaring error is the statement that: “The reality is that Rice athletes are not, as least on the basis of SAT scores, representative of Rice Admits as a whole. Male athletes, on average, enter with SAT scores more than 20 percent lower than all Rice male non-athletes.”¹⁴

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¹⁴ McKinsey p. 26.

This ignores that SAT scores have a minimum of 400 points on a 1600 point scale. Let us consider the entering class of 2003. The average SAT score of the non-athletes is 1428 and the SAT score of the male athletes is 1103. McKinsey reports a gap of 23 percent. If we correct for the 400 point lower bound on the test scores, the gap is now 32 percent. The true gap between the football team and the student body is 34 percent.¹⁵

This appendix is an effort to show that for the football team there is enough data to show that a reasonable case can be made that SAT scores do predict academic performance for football players.

The mean SAT score of the football team is 1082. This means that the average SAT score of the football team puts them in the lowest five percent of the Rice Student population. The cutoff score for the lowest five percent for the entering class of 2003 was 1120.

The grade point average of all the football players who are on the Western Athletic Conference academic all conference team is public knowledge. In 2003, thirteen members of the Rice football team made the academic all conference team, which requires a GPA above 3.2. To compare, 30 percent of Rice students make the President's Honor Roll each semester. In the past few years this has required a GPA above 3.8 for that semester. Of thirteen members of the Rice football team who made the academic all conference team, one member made the Honor Roll both semesters and one member made it one semester. Suppose we had an urn with 30 percent red balls and 70 percent blue balls. If we sampled with replacement 89 times, what is the probability of drawing 2 or fewer blue balls? The probability of this occurring is given by:

$$P = \sum_{N=1}^2 \frac{89!}{N!(89-N)!} \left(\frac{3}{10}\right)^N \left(\frac{7}{10}\right)^{89-N} = 1.2 \times 10^{-11} < 2 \left(\frac{89 \times 88}{2}\right) \left(\frac{3}{10}\right)^2 \left(\frac{7}{10}\right)^{87} = 2.4 \times 10^{-11}$$

¹⁵ McKinsey p. 31.

The upper bound can be checked with a hand calculator. However, it is hard to imagine a number that small. The probability of flipping a coin 30 times without getting heads once is greater.

This suggests two possibilities that are not mutually exclusive. First, SAT scores do have predictive value, or second, there is something in the operation of the football program at Rice that does not allow members of the football team to have the same opportunity to succeed in their studies as other students. However, it appears that “walk-on athletes who have the same time commitments as scholarship athletes have GPAs that are far more representative of the rest of Rice students.”¹⁶ There are people on the Rice faculty who could answer this question if they are given access to the data.

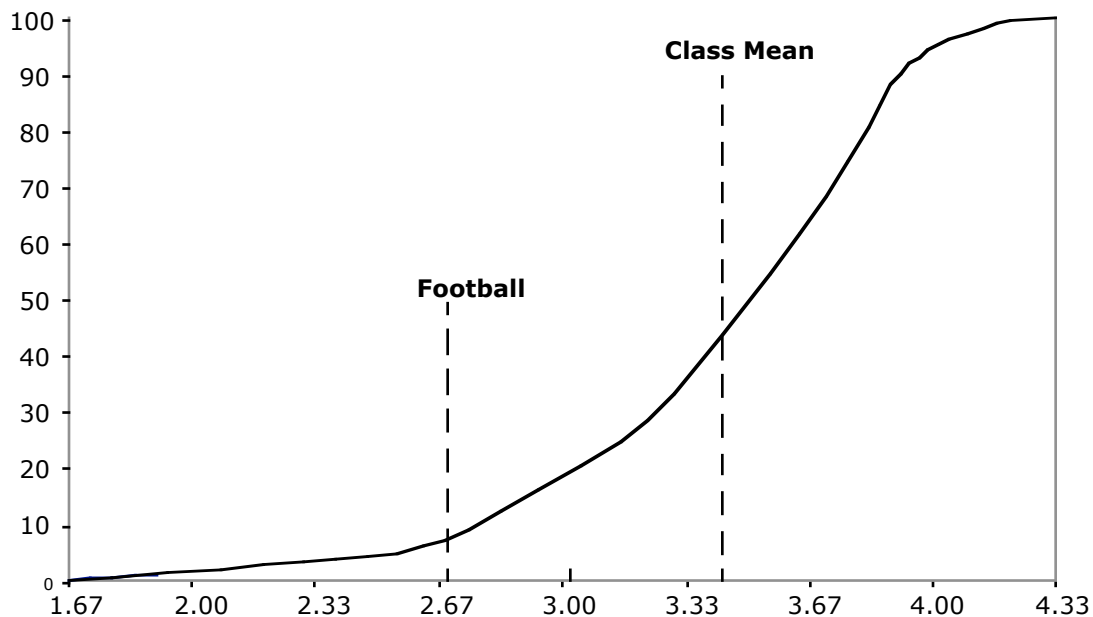


Figure 1

Figure 1 gives the cumulative density function (CDF) of the distribution of grades for the 2002 graduating class. Note that the CDF is very flat at the top and the bottom.

¹⁶ McKinsey p. 41.

This means that there is very little variation in the performance of that part of the sample.¹⁷

The fact that there is very little variation in the performance of the of the top part of the sample is easy to explain. The cutoff score for making the President's Honor Roll is above 3.80 and about thirty percent of the student body makes it. This is forty percent of the top three quartiles. A student taking 15 hours has to make 3 As and 2 A-s or 4 As and 1 B+ to make the President's Honor Roll. For forty percent of the students in the top three quartiles there is little variation in performance; it is hard to do significantly better than all As. The difference between a grade of an A or A- is often subjective unless you give fill in the blank or multiple-choice tests

Figure 2 below gives the cumulative density function (CDF) of the distribution of SAT scores for the 2003 freshmen class. The average of the football team is three standard deviations (SAT scores are calibrated so that 100 points is a standard deviation and 1000 is the average of the population) from the average Rice student. The average of the Rice football team is one standard deviation better than that the average American college student. However, there are two very different populations at Rice. This is reflected in the fact that the standard deviation of the distribution of SAT scores for the 2003 freshmen class is 133 or one third higher than the standard deviation of the population.

¹⁷ The distribution of grades of athletes between 2.2 and 3.0 is essentially uniform. See McKinsey p. 38.

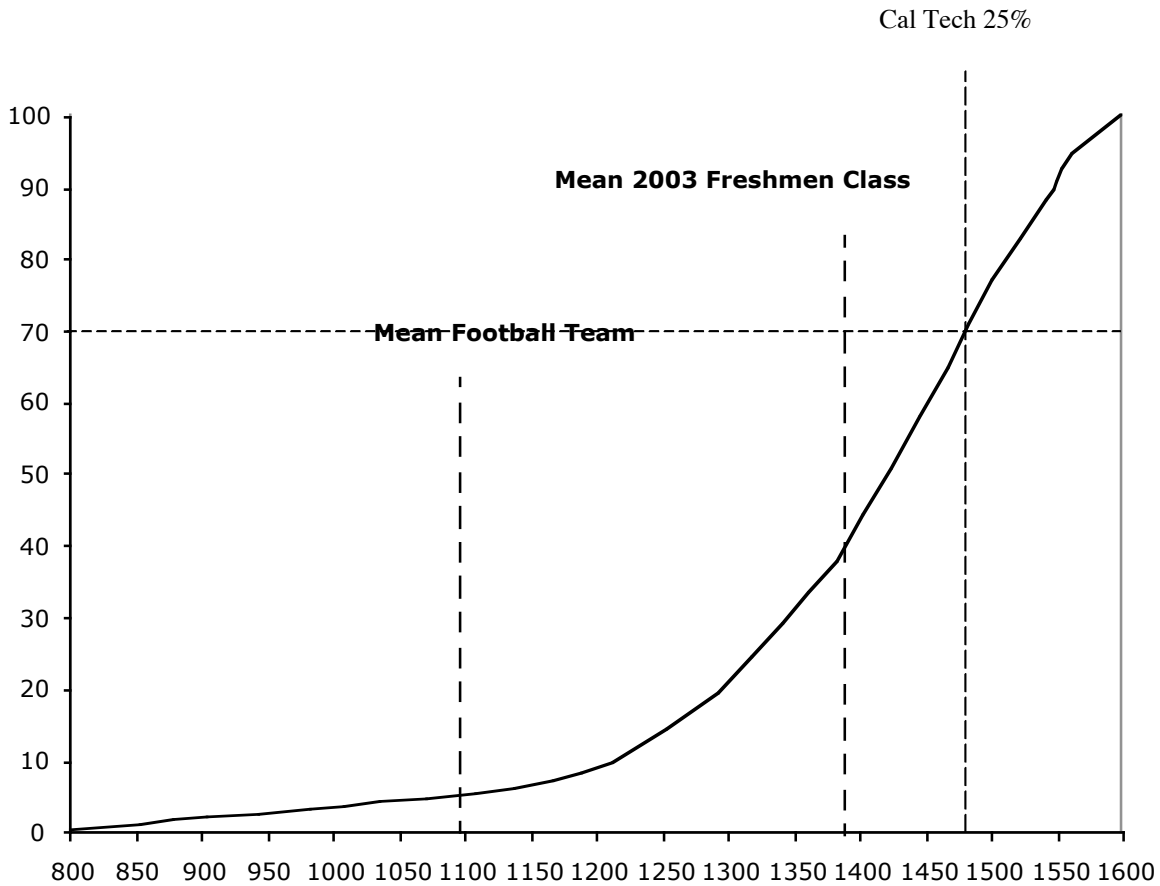


Figure 2

As an example to illustrate the problems caused by heterogeneous classes for the Economics department, it is useful to compare the Rice, University of Houston and Cal Tech. The cutoff SAT score for the top three quartiles at Cal Tech is 1480 and they have 939 undergraduates. So 705 undergraduate students at Cal Tech have SAT scores above 1480. If we look at Figure 2, we can see that top 30 percent of the Rice student body has the same SAT scores as the top three quartiles at Cal Tech. The SAT scores for the entering class of 2003 are representative of the student body. This is a reasonable assumption, as the reported SAT scores at Rice have not changed significantly in the last four years.¹⁸ Rice has 2822 undergraduates and 30 percent of them have SAT scores

¹⁸ See McKinsey p. 30.

above scores above 1480. There are 845 students at Rice with SAT scores above 1480. This number is equal to 90 percent of the Cal Tech undergraduate student body. The Rice football team, on the other hand, would be in the middle two quartiles at the University of Houston (920-1150).¹⁹ The University of Houston is a good school and their students are better than the national average. The Rice football team is academically much better than the average Division I-A team and much better than the national population of college students. However, the average Rice non-athlete student is four deviations better than the average American college student in SAT scores, 30 percent of the students are first or second in their high school class and 75 percent of the students are in the top 5 percent of their high school class.²⁰ Many come from high schools where class standing is based on the second decimal point of their GPAs. These students are in our trust. Any solution to the problem of athletics that compromises the education of these students in any subject, including economics, would be irresponsible.

¹⁹ The source of the Rice numbers is the Rice Office of Institutional Research. The Cal Tech and University numbers are from *The Atlantic* November 2004 and *U.S. News & World Report*, 2004 rankings

²⁰ Rice Facts p. 31.