Sports, Fund Raising, and the 80/20 Rule

By Peter B. Wylie

Ever since I heard about the 80/20 rule, back in the mid-'70s, I've been intrigued by it. The rule emerged almost a hundred years ago from the work of Italian economist Vilfredo Pareto who observed that 80 percent of the wealth in Italy was owned by 20 percent of the country's families. Pareto, an avid gardener, also noticed his wealth theory applied to plant productivity—20 percent of his peapods seemed to account for 80 percent of the peas he harvested.

For most of my professional life I've been applying the 80/20 rule to time management. Just about every day I make up a list of things to do. The list usually contains 10 items. I figure if I can complete the two most important items on the list, I'll get 80 percent of the value I'd get from completing all 10. It's been a good system for me. Maybe the only kink is that Linda, my wife of almost 30 years, doesn't always agree with the two items I choose.

Anyway, when I first got into doing data mining in the fund-raising arena, I thought the 80/20 rule might well apply there. It made sense to me that about 80 percent of the money raised from any given database would have been contributed by about 20 percent of the records in that database. But I never got around to systematically checking out my hunch. Then, sometime in the early fall of 2004, I picked up an obscure but fascinating book in a neighborhood used bookstore. (For me used bookstores are precious places; I can lose myself in them for hours while my bag of nagging worries seeps out like air from a leaky tire.) Later I'll tell you about the book, but suffice it to say that the book inspired me to perform some analyses that fueled the writing of this paper.

At this point you may be wondering, "Okay…but what about the word 'sports' in the title of your paper? Where does that fit in?" I'll be honest. I love the fund-raising data mining/data analysis work I do. It fascinates me. But it doesn't fascinate everybody. In fact, it bores or confuses more people than it fascinates. So I threw in the sports idea as a way to get more folks to read this piece. And…the sports stuff made the project more interesting for me, too.

Let's start with the sports stuff. Let's look at how the 80/20 rule applies to data that are routinely reported in the sports section of your newspaper during the major league baseball season.

Hits and Home Runs

I love the Internet. You can find information with a click of a mouse that only a few years ago would have taken weeks of drudgery to uncover. So I didn't have much trouble finding a website that reported batting data for major league ball players who had a minimum of 370 at bats for the 2004 regular season. There were 154 players in this

group. Not surprisingly, I had a host of categories I could look at, but I chose two: hits and home runs.

Well, how does the 80/20 rule apply to hits? Take a look at Table 1. You can see that the top 20 percent of hit-producing batters had a total of 5,920 hits; the bottom 80 percent of hit producers had a total of 17,996 hits. It doesn't look like the 80/20 rule is working here. If you look at the last column in the table, it shows that the top 20 percent of hit producers produced 25 percent of the total hits for the entire group of 154 batters. Just about their fair share (actually a bit more). If the 80/20 rule were working, we'd expect these guys to have produced about 19,000 hits, not the 5,920 hits they did produce.

Table 1: Number of Hits and Percentage of Hits by Top 20% and Bottom 80% of Hit Producers

Player Group	# of Players	Number of Hits	Percentage of Total Hits
Bottom 80%	123	17,996	75%
Top 20%	31	5,920	25%
Total	154	23,916	100%

How does the 80/20 rule apply to home runs? Take a look at Table 2. You can see that the top 20 percent of home-run-producing batters had a total of 1,111 home runs; the bottom 80 percent of home-run producers had a total of 2,090 home runs. Doesn't look like the 80/20 rule is working here either. If you look at the last column in the table, it shows that the top 20 percent of home-run producers hit 35 percent of the total home runs hit by the entire group of 154 batters. Certainly more than their fair share. But if the 80/20 rule were working, we'd expect this group to have hit about 2,560 home runs, not the 1,111 home runs they did hit.

Table 2: Number of Homeruns and Percentage of Homeruns by Top 20% and Bottom 80% of Home-Run Producers

Player Group	# of Players	Number of Home Runs	Percentage of Total Home Runs
Bottom 80%	124	2,090	65%
Top 20%	30	1,111	35%
Total	154	3,201	100%

Elite Donors and Other Donors

Now let's talk about fund raising. Earlier I said I had never gotten around to systematically checking out my hunch that about 80 percent of the money raised from any given database would have been contributed by about 20 percent of the records in that database. Technically, that's true. I had never "systematically" checked out the hunch. But from eyeballing a lot of data over the years I knew the 80/20 rule didn't apply

(just like you probably know it doesn't apply either). The 80/20 rule is far too conservative. In most databases the top 20 percent of donors usually account for over 95 percent of total dollars contributed.

But that was as far as I had taken things with the 80/20 rule. And then, as I mentioned earlier, I bought a book called *Psychology, Science, and History: An Introduction to Historiometry*. It was published in 1990 by named Dean Keith Simonton, a psych professor at UC Davis. I found it interesting but definitely not something I'd recommend to the casual reader. (After an e-mail to Professor Simonton, in which I extolled the book, he replied that it had not achieved commercial success: "Too technical.")

Halfway through the book Simonton begins talking about the productivity of scientists, and he mentions something called the "Price law" based on D.L. Price's 1963 book *Little Science, Big Science.* Simonton says, "According to the Price law, if k represents the total number of contributors to a discipline, then the square root of k will be the predicted number of contributors who generate half of all contributions."

"Whoa!" I thought. That's really something. That's very different from the 80/20 rule. If the Price law applies to fund-raising databases or, more particularly, alumni databases, that means that a *very* small proportion of all the records are accounting for a huge, huge amount of the giving. In fact, as the size of the database increases, the percentage of records that would account for half of the contributions *decreases*.

For example, look at Table 5. Say your alumni database contains 10,000 records. That means, according to the Price law, that about 100 alums (1 percent of your database) are accounting for at least 50 percent of the total dollars that have been donated by all the alums. But let's say you have 100,000 alums in your database. The square root of 100,000 is about 316. And 316 is only a third of a percent of 100,000.

Table 5: Square Roots and Relative Percentages of Four Different-Sized Hypothetical Databases

# Of Solicitable Records	Square Root Of Solicitable Records	Square Root As Percentage Of # Of Solicitable Records
1,000	32	3.2%
10,000	100	1.0%
100,000	316	0.3%
500,000	707	0.1%

Could it be that such a very small proportion of alums really contribute such a disproportionate amount to their alma maters? To begin to answer this question I took two basic steps:

1. I pulled together random samples of alumni databases from five different four-year institutions that differed markedly from one another in terms of public versus private, geographic location, and size. All of the samples were between 10,000

and 55,000 records. The only variables included in each of these samples were "lifetime giving"[1] and "preferred year of graduation."

2. For each sample, I computed the square root of the number of records in the sample. For example, one of the samples contained exactly 10,000 records; the square root for that sample, then, was 100. I then identified this top group of donors (with this example it was the top 100 lifetime donors). I computed the total lifetime giving for this top group of donors and then computed what percentage that amount comprised of the total lifetime giving for the entire sample.

Now let's look at Tables 6-10 below. We'll consider Table 6 in detail so you'll be clear about exactly what each table contains. Notice that the total number of records shown for School A in Table 6 is 53,662. The square root of this number is 232 (actually a fraction less than that). These top 232 alumni contributed a total of $142,118,390. That's about 77 percent of the total of $183,772,100 contributed by all the records in the sample.

Well, surprisingly (to me anyway), Table 6 shows that the Price law *underestimates* the giving of this elite group of alumni donors. According to the Price law, this group should have contributed about $91,500,000, or half of the total of $183,772,100.

Table 6: Total Lifetime Giving and Corresponding Percentages for Top Group of 232 Alumni Donors and All Others at School A

Group	Count	Total Lifetime Giving	Percentage of Total Lifetime Giving
All Others	53,430	$41,653,716	23%
Top Group	232	$142,118,390	77%
Total	53,662	$183,772,100	100%

But if we look at the remaining tables (7-10), the same pattern holds. In each of the four other schools the Price law underestimates the giving of the elite group:

*   In School B (Table 7) the elite group (101 alums) accounts for 83 percent of the $34,272,637 contributed by all the records in the sample.

*   In School C (Table 8) the elite group (106 alums) accounts for 81 percent of the $38,448,600 contributed by all the records in the sample.

*   In School D (Table 9) the elite group (101 alums) accounts for 68 percent of the $35,265,042 contributed by all the records in the sample.

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[1] To protect the confidentiality of each institution I did a currency conversion so that the dollar values are not the actual amounts. However, all percentages reported are exactly the same as for the original dollar amounts.

- In School E (Table 10) the elite group (134 alums) accounts for 60 percent of the $61,233,355 contributed by all the records in the sample.

Table 7: Total Lifetime Giving and Corresponding Percentages for Top Group of 101 Alumni Donors and All Others at School B

Group	Count	Total Lifetime Giving	Percentage of Total Lifetime Giving
All Others	9,899	$5,715,832	17%
Top Group	101	$28,556,805	83%
Total	10,000	$34,272,637	100%

Table 8: Total Lifetime Giving and Corresponding Percentages for Top Group of 106 Alumni Donors and All Others at School C

Group	Count	Total Lifetime Giving	Percentage of Total Lifetime Giving
All Others	11,118	$7,128,900	19%
Top Group	106	$31,319,700	81%
Total	11,224	$38,448,600	100%

Table 9: Total Lifetime Giving and Corresponding Percentages for Top Group of 101 Alumni Donors and All Others at School D

Group	Count	Total Lifetime Giving	Percentage of Total Lifetime Giving
All Others	10,199	$11,161,241	32%
Top Group	101	$24,103,802	68%
Total	10,300	$35,265,042	100%

Table 10: Total Lifetime Giving and Corresponding Percentages for Top Group of 134 Alumni Donors and All Others at School E

Group	Count	Total Lifetime Giving	Percentage of Total Lifetime Giving
All Others	17,747	$24,705,171	40%
Top Group	134	$36,528,184	60%
Total	17,881	$61,233,355	100%

To me these data are astounding. Any way you look at the numbers, it's clear that a *very* small percentage of alums accounts for a hugely disproportionate amount of the giving. And given the variety of schools included in this study, there is plenty of reason to assume this phenomenon exists throughout higher education—at least until someone comes along and provides convincing data to the contrary.

But for me the question becomes, "What do we do about this?" I'd like to divide my closing remarks between two topics:

1. What I think we're already doing
2. One other thing I'd like to see us do as soon as possible

What We're Already Doing

If "we" means all the thousands of professionals who work in the arena of higher education advancement, I'd say we're doing three things pretty well:

- Stewardship
- Prospect research
- Predictive modeling

Stewardship
Stewardship is far away from my primary area of expertise (that's data mining). Nonetheless I have the strong impression that the folks in charge of major giving at schools are doing a reasonably conscientious job of taking care of, nurturing, etc., the kinds of elite major donors shown in Tables 6-10. Gift officers and vice presidents and even presidents call on these "heavy hitters" frequently to keep them happy and involved in the ongoing campaigns of the schools they so generously support. They get the box seats at the football games. They get buildings and endowed chairs and professional schools named after them. They get on the boards of trustees. In short, these donors are treated far better than the "ultra customers" in the private sector who get the flight upgrades, free nights at luxury hotels, and other perquisites that those of us who have sit in steerage on airplanes would like to get too.

Prospect Research
I'm not an expert in prospect research, either, but I know much more about it than I do about stewardship. Simply put, I think the goal of prospect research has always been to uncover individuals who are not yet (but can become) the elite donors we're talking about here.

There are at least two things in higher education prospect research that are noteworthy:

- **The creation of a distinct profession within advancement**. Over the last 30 or so years, prospect research has come into its own as a profession within fund raising in general and higher education in particular. When someone says, "I'm a prospect researcher and I belong to APRA," we all know what that means. These

folks are dedicated professionals eager to improve their skills and help development/gift officers approach people of means for major gifts.

- **The increasing scope and accuracy of screening data**. With the advent of the Internet and galloping computer technology, the quality of screening data available to schools and nonprofits at reasonable prices is getting better and better. Gone forever are the days of searching through cumbersome directories that were obsolete the moment they were printed.

Predictive modeling
Predictive modeling is still a new kid on the block in advancement, but that situation is changing rapidly. Of that I'm certain because about all I do professionally is teach advancement professionals how to do predictive modeling.

What's particularly exciting is that not only are more schools getting interested in tapping their databases for good predictors of giving, but also that online giving is coming of age. With the specific behavioral data that can be captured in a web log (number of visits to the site, length of time per visit, what pages were accessed, etc.), we're on the verge of doing a much better job of identifying who the future givers—especially major givers—are likely to be.

One Other Thing I'd Like Us To Do As Soon As Possible

About 80 percent of the elite donors identified in Tables 6-10 belong to the oldest 25 percent of alums in each of the five schools. Practically speaking, this usually means people who have been out of school about 30 years or more.

In addition to knowing these donors are over 50, what else can we say about them? From my own work I know a few things that separate them from their peers:

- They're much more likely to have attended at least one reunion since graduation.
- They're much more likely to have a spouse or other family member listed in the database.
- They're much more likely to have given a gift online.
- They're much more likely to have participated as a volunteer since having graduated.

While this kind of information is useful from a predictive standpoint, it's meager from the standpoint of finding out who they really are and why they've been so generous to their alma maters. It's time to change that. It's time we start doing research of a careful scientific nature that can only be done by established research organizations (the University of Michigan Survey Research Center is a good example) that have the expertise to conduct in-depth interviewing of these elite donors (and samples of their peers who have given their schools little or nothing).

Such research is not inexpensive. But there are foundations and government agencies that would support it if effectively approached. Let's get the ball rolling. The value to our field could be enormous.

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