WHAT DOES EXPANSION AFFECT MORE: PITCHING OR HITTING?

When the 1993 season began, there was considerable speculation that, since it was an expansion year, teams would be short of pitching. With the explosion of offense in 1993, the pundits seemed to be correct. But is this falloff in pitching the norm for an expansion season? And what *should* we expect from expansion?

In the past, it's often been difficult to judge the effect of expansion, as other significant changes were taking place at the same time. In 1969, the pitching mound was lowered and the strike zone reduced. A new ball was manufactured in 1977. Even in 1961, two hitters' parks were added to the American League (Wrigley Field in Los Angeles and Metropolitan Stadium in Minnesota); all by themselves, the two parks were responsible for that year's increase in home runs.

However, those changes don't affect the relative abilities of ballplayers. In comparison to each other, the worst, average and best ballplayers should be the same, regardless of whether the league batting average is .240 or .300. The "standard deviation" of a statistic measures this variation, and should have a predictable response with respect to expansion.

Major league baseball players represent a minuscule percentage of the population; that is, they are pulled from the extreme high end of the talent curve. If you keep the number of baseball jobs the same while the population increases, this percentage grows ever smaller, and the worst major leaguers are culled from ever higher levels of ability on the normal curve; in other words, as the population increases, the average player gets better. In terms of relative ability, differences between the best and worst players get smaller—or technically, the standard deviation shrinks.

Let's take a look at how the standard deviation of pitching has changed with each expansion; an increase in the standard deviation indicates a dilution of talent:

ERA Qualifiers

Year	Mean ERA	Standard Deviation	Year	Mean ERA	Standard Deviation
1960	3.56	.53	1976	3.30	.51
1961	3.77	.58	1977	3.77	.67
1962	3.71	.65			
			1992	3.51	.69
1968	2.83	.60	1993	3.97	.77
1969	3.35	.68			

The theory holds well for pitching. In each case, the spread between the best and worst ERA qualifiers became larger. Here's the data for batting average:

Batting Average Qualifiers

Year	Mean BA	Standard Deviation	Year	Mean BA	Standard Deviation
1960	.275	.023	1976	.272	.029
1961	.281	.028	1977	.281	.025
1962	.280	.025			
			1992	.274	.027
1968	.262	.028	1993	.281	.027
1969	.272	.027			

The theory does *not* hold well for batters. In three of the five expansions, the standard deviation among batting title qualifiers actually went down. Last year, the change was nonexistent. How can we explain this unexpected finding?

The simplest explanation supported by the data is that it is easier to find hitters than pitchers. The standard deviations among batting title qualifiers range from about eight to 10 percent of the mean; ERA standard deviations, on the other hand, range from 15 to 20 percent of the mean, indicating that pitching talent is more spread out, or thinner, than batting talent. When baseball increases the number of teams, this divergence becomes even greater; hitters take advantage of weak pitchers, offense goes on the rise, and the effect can be so great as to mask an actual dilution of offense!

One last point; it's not going to get better any time soon. We are in the middle of a "baby bust" in which the number of 18-24-year-olds has shrunk over the last 10 years. The Census Bureau reports that in 1980, there were 30.5 million people in the United States in this age group, while in 1990 there were only 26.7 million, about one-sixth less. The Census Bureau does not expect a return to the 1980 level until 2010; even though baseball could heighten the search for talent in places like Latin America, Australia or Japan, we still figure to have at least another 15 years of higher diversity among players. Couple this with the likely expansion to 32 teams by the end of the century, and we could possibly be in for a decade of offense unmatched since the 1930s.