You Have To Get To Him Early

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Abstract - Sportscasters are paid to make observations. Many of those observations are astute and insightful. Many are nonsense. In this paper we will examine a particular sportscaster observation.

As a Mets fan growing up in the New York metropolitan area in the 1960s and 1970s, I got to see Tom Seaver pitch a lot. Ticket prices, travel considerations and family income being what they were, that meant watching the games on television. So I regularly got to hear Lindsay Nelson, Bob Murphy and Ralph Kiner give their commentary on the future Hall of Famer's performances.

One comment I particularly remember was "If you don't get to Seaver early, you won't get to him." In other words, the conventional wisdom was that if teams did not get runs in the early innings against the Mets' ace, they were not going to get many runs at all. I certainly never thought to question the immortal broadcasting triumvirate. After all, Kiner is a Hall of Famer with many years of experience as a great baseball player and as a verbal gaffe waiting to happen. Surely I could not question Lindsay Nelson, whose garish jackets made me glad we only had a black and white television. And Bob Murphy, known only for not being known for anything in particular, was immune from being questioned.

Now, years later, and much less likely to take anyone's word for something without some justification, I have decided to examine this "axiom." For ease of reference throughout the paper, I will call "If you don't get to Seaver early, you won't get to him" our "axiom." Also, I will refer to innings one through three as "early," innings four through six as "middle" and innings seven through nine as "late."

I decided to look at the five year period of 1969-1973. I chose that era for three reasons. First, it is the period of time when I would most likely have heard the claim. Second, it was the period of Seaver's greatest dominance of National League hitters and therefore most likely to be the time that led to the claim. Lastly, the tedium of the data collection made me unwilling to consider a longer time period.

All data for this project was obtained from the play-by-play accounts of Seaver's games at www.retrosheet.org.

I acknowledge immediately that any firm conclusions from this data will not really be possible. For statistical analysis purposes, we cannot make claims of various innings being independent events. There is no good reason to think they are independent events. There are so many other variables involved that the data which follow are only valuable for amusement purposes, and I will make no effort to determine if any variations are statistically significant.

The obvious place to start is Seaver's inning by inning earned run average. In other words, for 1969-1973, consider the number of earned runs Seaver allowed in the first inning of every game he pitched. [Though Seaver was primarily a starter, he did have three relief appearances during this time (one in each of 1969, 1970, 1971). Regardless of the inning in the game, I considered his initial inning to be a first inning for the purposes of this study.] Then, considering the number of total innings pitched in his first innings, I calculated his "first inning earned run average." I then did the same for each inning pitched. During these years, Seaver had five games in which he pitched more than nine innings, with a maximum of 12. While I include those values in all charts below, there are not enough 10th, 11th or 12th innings to draw any conclusions about those innings.

Our first chart will give each inning's statistics for the five year period.

Chart 1 - All Games, All Five Years

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	178	177	174	171	168	162	152	120.67	91	4	2	1
ER	62	42	49	42	37	43	43	24	22	2	0	0
ERA	3.13	2.14	2.53	2.21	1.98	2.38	2.54	1.79	2.18	4.50	0.00	0.00
$\lvert x-\bar{x}\rvert/\sigma$	2.08	0.46	0.54	0.28	0.87	0.15	0.57	1.36	0.36	---	---	---

In the chart, "IP denotes the number of innings Seaver pitched in first innings of games he pitched during the period in question. "ER" denotes the number of earned runs allowed in those innings. "ERA" denotes the earned run average for each inning (ERA = 9*ER/IP). And, "$\lvert x-\bar{x}\rvert/\sigma$" denotes the number of standard deviations away from the mean for the inning ERAs. Note that, for this data, the mean is 2.32 and the standard deviation is 0.389.

This first glance does seem to support our axiom. The first inning has not only the highest ERA but also is the inning with the ERA farthest from the mean. Note also that the third inning, still an early inning, has the third highest inning ERA.

Evidence against our axiom also exists. The sixth and seventh innings produce the second and fourth highest inning ERAs. Aside from those, however, there is a fairly consistent downward trend in inning ERAs from the beginning to end of a game.

Consider now the same data but for each year individually.

Chart 2 - All Games, 1969 - $\bar{x} = 2.10$, $\sigma = 1.03$

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	35.33	35	34	33	32	31	31	25	17	---	---	---
ER	9	11	12	6	5	6	9	9	0	---	---	---
ERA	2.29	2.83	3.18	1.64	1.41	1.74	2.61	3.24	0.00	---	---	---
$\lvert x-\bar{x}\rvert/\sigma$	0.18	0.70	1.04	0.45	0.67	0.35	0.49	1.10	2.04	---	---	---

Chart 3 - All Games, 1970 - $\bar{x}$ = 2.85, σ = 1.12

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	36.33	36	36	36	35.33	34.33	32	25.67	19	---	---	---
ER	10	10	10	15	14	11	9	2	10	---	---	---
ERA	2.48	2.50	2.50	3.75	3.57	2.88	2.53	0.70	4.74	---	---	---
$\lvert x-\bar{x}\rvert/\sigma$	0.33	0.31	0.31	0.80	0.64	0.03	0.29	1.92	1.69	---	---	---

Chart 4 - All Games, 1971 - $\bar{x}$ = 1.72, σ = 0.78

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	35.67	35	35	34	34	32.67	31	26	21.33	1.67	---	---
ER	8	11	11	6	3	5	3	3	5	1	---	---
ERA	2.02	2.83	2.83	1.59	0.79	1.38	0.87	1.04	2.11	5.40	---	---
$\lvert x-\bar{x}\rvert/\sigma$	0.39	1.42	1.42	0.16	1.19	0.43	1.08	0.87	0.50	---	---	---

Chart 5 - All Games, 1972 - $\bar{x}$ = 2.98, σ = 1.44

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	35	35	34.33	34	33	30.33	26.33	20.33	13.67	---	---	---
ER	23	4	6	10	10	10	11	5	6	---	---	---
ERA	5.91	1.03	1.57	2.65	2.73	2.97	3.76	2.21	3.95	---	---	---
$\lvert x-\bar{x}\rvert/\sigma$	2.03	1.35	0.97	0.23	0.17	0.00	0.54	0.53	0.67	---	---	---

Chart 6 - All Games, 1973 - $\bar{x}$ = 2.01, σ = 0.93

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	36	36	35	34	34	34	32	23.67	20	2.33	2	1
ER	12	6	10	5	5	11	11	5	1	1	0	0
ERA	3.00	1.50	2.57	1.32	1.32	2.91	3.09	1.90	0.45	3.86	0.00	0.00
$\lvert x-\bar{x}\rvert/\sigma$	1.07	0.54	0.61	0.74	0.74	0.97	1.16	0.11	1.67	---	---	---

We can make a number of observations for the various years.

1969 Inning one, though above the mean, is the closest to the mean. Seaver's worst inning is the eighth. Aside from the eighth, the worst innings are the second and third, both early. Interestingly, Seaver allowed no ninth inning ER in 1969. The best innings were the ninth, and the fourth through sixth, a late inning and three middle innings.

1970 This season surely did not follow the axiom. The worst inning, in stark contrast with 1969, is the ninth. The next three worst are all middle innings. Except for the eighth inning, the early innings, with almost identical results, were Seaver's best. Interestingly, if Seaver's lone 1970 relief appearance were ignored, the first three innings would have yielded identical numbers.

1971 The ninth inning, though significantly better than in 1970, is again above the mean. Aside from the ninth inning, the axiom seems to be supported here with the early innings being three of the worst four.

1972 This season follows none of the previous years' patterns. The worst innings are the first (supportive of the axiom) and the ninth (not supportive of the axiom). Then the next four worst innings are the seventh and the three middle innings. Seaver's best two innings were the second and third, in opposition to the axiom.

1973 This season does not particularly fit the axiom. The first and third innings were relatively high but the sixth and seventh innings were two of the three highest. Seaver returned to his strong ninth inning performance of 1969. The fourth and fifth inning effectiveness also mirrored 1969.

One significant problem in looking at our axiom is the fact that if Seaver had a game in which he was ineffective, then he was unlikely to have a seventh, eighth, or ninth inning. In other words, if the team really "got to him early" then they likely would not have a chance to "get to him late" because he would not be around anymore. The following charts take that into account. The first chart will look at games where Seaver got at least one out in the eighth inning. The second considers games where he got at least one out in the sixth but none in the eighth. The third chart looks at games in which he got no outs in the sixth inning.

Chart 7 - At least 7-1/3 IP - all five years, $\bar{x} = 1.62$, $\sigma = 0.42$

Inning	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
IP	125	125	125	125	125	125	125	120.67	91	4	2	1
ER	33	22	16	16	24	20	19	22	22	2	0	0
ERA	2.38	1.58	1.15	1.15	1.73	1.44	1.37	1.64	2.18	4.50	0.00	0.00
$\lvert x-\bar{x}\rvert/\sigma$	1.78	0.10	1.12	1.12	0.25	0.43	0.60	0.04	1.31	---	---	---

Chart 8 - At least 5-1/3 and less than 7-1/3 IP - all five years, $\bar{x} = 4.26$, $\sigma = 2.13$

Inning	1	2	3	4	5	6	7	8
IP	39	39	39	39	39	37.33	27.33	0
ER	13	10	17	23	8	23	24	2
ERA	3.00	2.31	3.92	5.31	1.85	5.54	7.90	undefined
$\lvert x-\bar{x}\rvert/\sigma$	0.59	0.91	0.16	0.49	1.13	0.60	1.71	---

Chart 9 - Less than 5-1/3 IP - all five years, $\bar{x} = 9.03$, $\sigma = 3.81$

Inning	1	2	3	4	5	6
IP	14.33	13	10.33	7	4.33	0
ER	16	10	16	3	5	0
ERA	10.05	6.92	13.94	3.86	10.38	undefined
$\lvert x-\bar{x}\rvert/\sigma$	0.27	0.55	1.29	1.36	0.35	---

These charts may give the greatest evidence for the axiom. Chart 7 shows that, in these games, Seaver allowed the most runs in the first and ninth innings. But in none of the innings did he allow many. In other words, "they didn't get to him much early and didn't get to him much any other inning." Charts 8 and 9 show higher ERAs early AND late, indicating "if you get to him early then you'll keep getting to him."

Further evidence for the axiom comes from our final three charts

Chart 10 - First run scored in what inning pitched

1	39
2	24
3	21
4	17
5	15
6	12
7	14
8	5
9	5
10	1
none	27

In 52 games, Seaver didn't allow an earned run in an early or middle inning. In over half of those, he allowed no runs at all.

How many runs did Seaver allow when his first earned run was allowed in a given inning? The following two charts both give that data, though sorted differently.

Chart 11 - sorted by when first run scored

ER	FIRST RUN	COUNT
1	1	8
2	1	12
3	1	8
4	1	3
5	1	5
6	1	1
7	1	1
8	1	1
1	2	4
2	2	8
3	2	6
4	2	6
1	3	1

Chart 12 - sorted by number runs allowed

ER	FIRST RUN	COUNT
0	none	27
1	1	8
1	2	4
1	3	1
1	4	5
1	5	7
1	6	5
1	7	10
1	8	4
1	9	4
1	10	1
2	1	12
2	2	8

2	3	12
3	3	4
4	3	2
5	3	1
6	3	1
1	4	5
2	4	6
3	4	2
4	4	2
5	4	2
1	5	7
2	5	4
4	5	1
5	5	3
1	6	5
2	6	3
3	6	2
4	6	2
1	7	10
2	7	3
4	7	1
1	8	4
3	8	1
1	9	4
2	9	1
1	10	1
0	none	27

2	3	12
2	4	6
2	5	4
2	6	3
2	7	3
2	9	1
3	1	8
3	2	6
3	3	4
3	4	2
3	6	2
3	8	1
4	1	3
4	2	6
4	3	2
4	4	2
4	5	1
4	6	2
4	7	1
5	1	5
5	3	1
5	4	2
5	5	3
6	1	1
6	3	1
7	1	1
8	1	1

What conclusion can we draw? Is the axiom true? Is it true that "If you don't get to Seaver early, you won't get to him?" Or should we consider the following restatement of the axiom? "If you get to Seaver early, you'll keep getting to him until they take him out but if you don't get to him early you won't be getting to him at all." I do not choose to make a choice between the axiom or this restatement. I will simply leave it to any interested readers to debate that so they will have something to do during cold winter days until spring training begins.

Biographical Sketch

Fred Worth received his B.S. in Mathematics from Evangel College in Springfield, Missouri in 1982. He received his M.S. in Applied Mathematics in 1987 and his Ph.D. in Mathematics in 1991 from the University of Missouri at Rolla. He has been teaching at Henderson State University since August, 1991. Among his professional affiliations is his membership in the Society for American Baseball Research, home to hundreds of baseball geeks.