

EDITOR'S NOTES

*The editorial offices of the BASEBALL ANALYST (OK, the editorial desk--alright, the editorial manilla folder) will be moving to a new location. We are moving out of the 945 Kentucky Street location at the end of August. There are two new addresses to take note of. All editorial-related stuff should be sent to:

20 Lincoln Avenue
Jersey City, NJ 07307

That means articles, letters to the editor, comments, art work and free tickets to ball games go there. Any business related correspondence; subscriptions and renewals, back issue requests, all should be sent to:

PO BOX 2150
Lawrence, KS 66044

* We will continue in our effort to make the Analyst a better publication with each issue. We can improve its looks, but only you can improve its editorial content. We are at your mercy in that department, so please send more articles, as the stockpile is a bit slim. This issue is somewhat short on new sabermetric material for that very reason. Fortunately, I met up with Joe Schwind who bestowed upon me some great baseball art work. Between Susie and Mike Ross and now Joe, we have enough art to publish monthly--but not enough studies. (Uh,oh, I'm begging again.)

* I am very excited about the continuing discussion of the importance of double plays and how that can be gauged. It all started in the December issue in an article by Dan Finkle and carried on to this issue. I think I stated when I began editing the ANALYST that I hoped something like this would occur. Ongoing discussions are neat and informative--plus you never know when they may turn into a really good fist fight.

* AN APOLOGY: Because we do not accept much advertising in the ANALYST, we don't have an advertising manager. Consequently, we did not have time to check into the background of Ray Chegley, IV and his Baseball Betz tip sheet. Apparently quite a few of our readers lost a good deal of money to this shameless fraud. To be honest, he didn't pay us either. We are extremely sorry and will try to prevent any more such ne'er do wells from getting the better of all of us.

*New Editor: John Borkowski will be joining the staff next issue. He'll probably take on a fancy title of some sort, like "Mathematics Editor." But title or not, he will go some to make this a better publication. Two editors will definitely give you more for your money.

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ABOUT THE COVER: "A Pity" an original drawing by Joe Schwind of Lawrence, Kansas. The tattered edges of Royals Stadium were drawn by Joe long before ABC decided that our town and Kansas City were ripe for a good nuking.

LETTERS

Dear Sir:

In the April issue, Pavitt and Gilby have stated a statistical relationship that does not hold. They stated that the numerators in the equations for computing the correlation coefficient and the regression coefficients are identical (for simple regression); and that the denominator of the latter is one half of the former without the square root sign. I would disagree about the denominators being related as stated.

If his statement were true, then when the square root sign is removed, the term $N\sum X^2 - (\sum X)^2$ would be equal to

$$\frac{[N\sum X^2 - (\sum X)^2]}{2} \frac{[N\sum Y^2 - (\sum Y)^2]}{2} . \text{ This does not follow. It would}$$

indicate that $(\sum X)^2 = (\sum Y)^2$. This is very doubtful.

The relationship between the two denominators may be shown by the following derivation:

$$\frac{N\sum X^2 - (\sum X)^2}{2} \frac{\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2}}{2}$$

1st, remove the square root signs by squaring the denominator of the correlation coefficient formula.

In order to just talk about the variable X, divide the denominator of the correlation coefficient by the square of the variable Y.

$$\frac{(\sqrt{N\sum X^2 - (\sum X)^2} \sqrt{N\sum Y^2 - (\sum Y)^2})^2}{(\sqrt{N\sum Y^2 - (\sum Y)^2} \sqrt{N\sum Y^2 - (\sum Y)^2})^2} =$$

$$\frac{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}{[N\sum Y^2 - (\sum Y)^2]}$$

The Y terms cancel out and we are left with $N\sum X^2 - (\sum X)^2$, which is what we have in the denominator for the regression coefficient. Therefore, the correlation coefficient is larger than the regression coefficient by a factor of $N\sum Y^2 - (\sum Y)^2$, not by 2 as Pavitt and Gilby state.

I do not know what they were trying to say, but there is a relationship between the correlation coefficient and the slope of the regression line. The correlation coefficient is the geometric mean of the slopes of the lines of regression of X_1 on X_2 and X_2 on X_1 . If r is the correlation coefficient and b is the slope, then

$$r_{12}^2 = b_{12} \cdot b_{21} \text{ and } r_{12} = \sqrt{(b_{12})(b_{21})}$$

I believe the rest of the article was sound except one could not tell which season the data represents. Just make sure that when one predicts performance, that the variables used are truly independent of one another. That is, a high performance in the independent variable does not cause what will occur in the dependent variable.

--Dan Rappoport

Dear Jim, Bill, and Readers

In Issue 10 of the Analyst, Dick O'Brien claimed without proper substantiation that a team's number of double plays and the number of runs it allows are unrelated, and then asks rhetorically how one would best substantiate this claim. In Issue 11, Elaine Gilby and I answered his question, by showing that through the use of the correlation coefficient, one could directly compute the association between any two variables. Using last year's AL and NL totals, I recently correlated runs allowed and double plays made. The resulting coefficient was .447! In other words, there was a fairly strong positive relationship between the number of double plays and the number of runs given up. Apparently, the more runners which reach base, the more runs given up and the more double plays made. Indeed, I computed a ball-park estimate of the number of base-runners allowed ($H + BB$) and found it to correlate with DPs slightly more highly (.489). Of course, the amount of data which I used (just one year, only 26 cases) is insufficient for making the general case. Nevertheless, this is evidence that Dick O'Brien is right; number of double plays is probably a function of a pitching staff's ineffectiveness.

Charles Pavitt

DAN GREENIA'S FREAK SHOW

STEALING CONTRIBUTION

It is generally thought that a player must steal about two bases to make up for each caught stealing. With this in mind, here are the leading base stealers for the last two seasons using the formula $SB - (CS \times 2) = \text{contribution}$:

<u>1983</u>			<u>1982</u>				
	SB	CS		SB	CS		
Henderson	108	19	+70	Henderson	130	42	+46
Raines	90	14	+62	Raines	78	16	+46
R. Law	77	12	+53	M. Wilson	58	16	+26
W. Wilson	59	8	+43	Molitor	41	9	+23
Wiggins	66	13	+40	Dilone	33	5	+23
Ju. Cruz	57	12	+33	Thon	37	8	+21
Sample	44	8	+28	Wiggins	33	6	+21
UL Washington	40	7	+26	Ju. Cruz	46	13	+20
Molitor	41	8	+25	Dawson	39	10	+19
McGee	39	8	+23				
				<u>Worst</u>			
<u>Worst</u>				Carew	10	17	-24
S. Henderson	10	14	-18	A. Johnson	3	13	-23
Lemon	0	7	-14	Simpson	8	14	-20
Peters	4	9	-14	C. Moore	2	10	-18
Griffin	8	11	-14	T. Cruz	2	10	-18
C. Davis	10	12	-14	Vukovich	2	9	-16

A couple points: Henderson and Raines had the second and third best marks in history in 1983 surpassed only by 1962 Maury Wills (104 and 13 for +78). Rudy Law's season is also among the top ten all-time. The list also shows what an excellent base stealer Paul Molitor is, an often-overlooked weapon in the Milwaukee arsenal.

Some Comments on
the Benefit of Getting the Leadoff Batter on Base

Charles Hofacker

This note is about Chuck Waseleski's article in the April 1984 Analyst concerning the importance of getting the leadoff batter on base. In the article, Chuck reports that an average of .96 runs score in innings in which the leadoff batter reaches base. An average of .28 runs score in innings in which the leadoff batter is out. Situational data of this type are valuable in deciding whether tactical moves such as attempting to steal are worth doing.

It is tempting to think of the runner at first as being the sole cause of those extra runs. If such were the case, we could estimate how many more runs we would get if we had a leadoff batter who got on, say, 30 more times per year while leading off. Presumably our estimate would be $(.96 - .28)$ times 30. But the half-innings in which the first batter reaches first may not be representative of all half-innings. In fact, I would expect these half-innings to be relatively poorly pitched compared to the average inning. When we compare half-innings in which a leadoff batter reached against innings in which the leadoff batter was out, we are also comparing pitchers who got the first batter with pitchers who did not. No doubt the latter category includes more bad pitchers and more tired pitchers. Consequently the data probably overstate the causal benefit of getting the first batter on by some unknown degree. To really estimate the benefit of getting the first runner on base one would have to perform the following experiment.

Two sets of key innings would have to be used in this experiment. Before the season, random draws from a hat would be used to decide what innings of what games would be part of the experiment. Just before one-half of the key innings; and unbeknownst to players, managers or fans; disguised officials of the Baseball Analyst would suddenly enter the field of play and announce that the team playing offense would get to start this inning with a runner on first. The other half of the key innings would consist of innings in which the offense must start with one out. Comparing these two types of key innings would really allow us to answer the question as to how many runs are caused by the leadoff batter reaching first. Only random drawing can insure that extraneous factors in both types of key innings differ randomly rather than systematically.

Fortunately, such an experiment is impossible. Unfortunately, simple comparisons of actual innings are also comparisons of two different defensive events as well as offensive events. I should point out that if it could be shown using actual 1982 data (as opposed to data from the hypothetical experiment) that these two classes of half-innings have similar characteristics except for the status of the leadoff batter, the force of my argument becomes considerably reduced. I suspect that the effect of holding the runner at first, among other effects, would tend

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THE NATURAL: STRICTLY ARTIFICIAL

By Chris Martens

The only thing natural about "The Natural", an adaptation of Bernard Malamud's 1952 novel, is the grass on which the Knights play their games. One of the film's biggest problems is its overindulgence in ludicrous melodrama.

For roughly the first 15 to 20 minutes, the film is major league all the way. Unfortunately, from that point forward, a time lapse of 16 years in the life of Roy Hobbs (Robert Redford), it seems as though the producer and director of the first part of "The Natural" went on hiatus, while inexperienced rookies were called up from the minor league to complete the film.

The intentional use of melodrama turns an excellent baseball story into an absolute farce, something similiar to a Monty Python excursion into the absurd. It seems obvious that the producers weren't sure whether to treat "The Natural" as a reverent baseball film or a parody. What we end up with is a mixture of both, which adds up to a ball of confusion, not easily unraveled. For example, the turning point of the movie comes when Roy Hobbs has proven he can hit batting practice pitching for miles, but will he get an opportunity to face major league pitching and fulfill his unlimited potential? If so, what position will he play? The answer - right field. But the New York Knights already have a right fielder. No problem, have the out - fielder get hurt, or better yet - get killed! But where? The ballfield of course. Should he die from "natural" causes or by accident? Sound far-fetched? Certainly! Nonetheless, the right fielder for the Knights runs through the outfield fence and dies. If that's not in bad taste, open wide because the next scene is a funeral on the field with a plane flying overhead sprinkling his ashes over the baseball diamond. The only thing missing is a close-up of John Belushi as the pilot from the movie "1941". Unintentionally, this scene turns out to be the funniest scene in the movie.

In another game, a fan yells "rip the cover off the ball Roy!" On the next pitch, Roy smashes a shot off the right field wall, as the cover of the ball is sent reeling toward earth. The outfielder retrieves the ball, which is nothing more than a clump of hay, and hands it to the umpire. This might have been more feasible if Willie Mays hit the ball because that would explain where he got his nickname the "Say 'Hay' Kid".

Although the baseball footage is edited nicely, the players are reminiscent of the "Bad News Bears". It's hard to believe any professional team, even the 1962 New York Mets, could be this bad. They lose games by football scores of 18-0, 15-1 and 17-2, but when Hobbs arrives, all of a sudden they challenge for the pennant.

In demonstrating his Ruthian power stroke, Hobbs crashes a home run off the huge clock in center field. For the next 15 seconds, from four different angles, the clock explodes like it was hit with a mortar shell in "Apocalypse Now".

Each scene becomes more predictable than filming one's own biography, especially Roy sees his long lost love, Iris Gaines, (Glenn Close) at the ballpark. He had been in a terrible slump because he has been dating a woman of questionable virtue. During one game, Roy steps out of the batters box and looks into the crowd. There sits his beloved, dressed in pure white, while all those around her seem like they were attending the funeral of the Knights' right fielder. Her wide hat resembles a halo. If only they had 30 more seconds, she may have been able to ascend into heaven.

All of these points bring to mind the question - Why? That's a 19 million dollar question, which is the estimated cost of making the movie, some important movie people may have to answer soon.

As the final scenes approached, I thought this movie could still have been salvaged if a young Roy Hobbs, the teenage phenom we left in the beginning of the movie, would wake up from a dream and rub his eyes.

Sorry. No dream. No fantasy. Could I have been dreaming? Please! Someone pinch me! Tell me I was dreaming. No such luck. What's worse, I've been having this recurring baseball nightmare ever since. Naturally.

JOE D AND THE HALO EFFECT

By Bill Deane

I first heard of the "halo effect" in Behavioral Science 103, about eight years ago, and my memory was jarred by Jim McMartin's apt definition in his article, "Two Measures of Fielding Ability", in the 1983 Baseball Research Journal:

"Halo effect: the tendency to attribute positive traits to individuals known to possess other (but unrelated) positive traits."

In my opinion, an excellent example of this phenomenon is to be found in examining the fielding records of Joseph Paul DiMaggio (dare I tread on such sacred ground?).

There is no doubt that DiMaggio was an outstanding hitter. Despite missing three full years in military service and parts of others with injuries, and then retiring at the tender age of 36, Joe amassed some fearsome offensive numbers: 1390 runs, 2254 hits, 389 doubles, 131 triples, 361 home runs, 1537 RBI, a .325 average, and a .579 slugging percentage. DiMaggio also ranks high in several little-known-but-significant categories:

MOST EXTRA-BASE HITS PER AT BAT

Minimum: 800 EBH

PLAYER	AB	EBH	PCT.
B.Ruth	8399	1356	.161
L.Gehrig	8001	1190	.149
T.Williams	7706	1117	.145
J.Foxx	8134	1117	.137
J.DiMAGGIO	6821	881	.129
J.Mize	6443	809	.126
S.Musial	10972	1377	.126
R.Hornsby	8173	1011	.124
W.Mays	10881	1323	.122
W.Stargell	7927	952	.120

MOST RBI PER AT BAT

Minimum: 1000 RBI

PLAYER	AB	RBI	PCT.
B.Ruth	8399	2204	.262
L.Gehrig	8001	1991	.249
H.Greenberg	5193	1276	.246
T.Williams	7706	1839	.239
J.Foxx	8134	1922	.236
J.DiMAGGIO	6821	1537	.225
H.Wilson	4760	1062	.223
A.Simmons	8761	1827	.209
J.Mize	6443	1337	.208
H.Heilmann	7787	1551	.199

MOST RUNS PRODUCED PER GAME (Min. 2000 RP)

PLAYER	G	R	RBI	HR	RP	RP/G
L.Gehrig	2164	1888	1991	493	3386	1.56
J.DiMAGGIO	1736	1390	1537	361	2566	1.48
B.Ruth	2503	2174	2204	714	3664	1.46
A.Simmons	2215	1507	1827	307	3027	1.37
T.Williams	2292	1798	1839	521	3116	1.36
J.Foxx	2317	1751	1922	534	3139	1.35
T.Cobb	3033	2244	1959	118	4085	1.35
C.Gehringer	2323	1774	1427	184	3017	1.30
E.Averill	1669	1224	1165	238	2151	1.29
R.Hornsby	2259	1579	1584	302	2861	1.27

FEWEST STRIKEOUTS PER HOMER

Minimum: 250 HR

PLAYER	SO	HR	SO/HR
J.DiMAGGIO	369	361	1.02
Y.Berra	415	358	1.16
T.Kluszewski	365	279	1.31
T.Williams	709	521	1.36
J.Mize	524	359	1.46
S.Musial	696	475	1.47
L.Gehrig	789	493	1.60
C.Klein	521	300	1.74
M.Ott	896	511	1.75
H.Aaron	1383	755	1.83

These performances were, for the most part, diminished by the fact that Joe played half of his games in Yankee Stadium, a right-handed hitter's nightmare. Of all players with at least 350 career home runs, none has come close to being hurt more by his home park than DiMaggio (148 homers at home, 213 on the road, 30.5 % fewer at home).

Certainly, historians would have us believe, DiMaggio's talents were not limited to crunching the ball. Joe was an all-around star, a terrific baserunner and a superior flyhawk in addition to his hitting prowess.

Whether DiMaggio was actually a great baserunner is a mystery. It was widely publicized that Joe was instructed to eschew stolen bases in order to avoid injuries. He stole just 30 bases in his career in 39 tries, a good 77 per cent ratio (but, it would not seem difficult to maintain a high success ratio when one attempts three steals per year). Looking at DiMaggio's triple totals, it is hard to believe that he wasn't a good baserunner but, statistically speaking, we will never really know.

From birth, most of us have been programmed to believe that the greatest defensive outfielders of all time are, in interchangeable order, Tris Speaker, Joe DiMaggio, and Willie Mays. "Joe D", it is said, patrolled center field with the instincts of a tiger, the reflexes of a cobra, the range of a cheetah, and the grace of a gazelle (a one-man Bronx Zoo), not to mention the flawlessness of a neurosurgeon and the hurling strength of a cannon.

The statistics tell a different story: Joe led the American League just once each in putouts, assists and fielding average, hardly the indication of a superior performer. Intrigued by this, I figured out his career totals and put them on a 154-game-average basis, then comparing Joe to two other center fielders who played in the same era:

PLAYER	154-GAME AVERAGES			
	PO	A	E	PCT.
"X"	433	16	10	.9783
"Y"	405	18	8	.9811
"Z"	404	14	9	.9780

Player "Z", the least impressive of the three, is none other than Joltin' Joe. And players "X" and "Y" are— you guessed it— Dominic DiMaggio and Vince DiMaggio, respectively. Now tell me: how in hell can Joe DiMaggio be the best outfielder in history, if he is only the third best in his own FAMILY??

I then checked several other contemporary center fielders who played at least 1000 games in the outfield during the approximate 1935-50 time-frame, with the help of statistical data supplied by Neil Munro of Ontario, Canada. I found seven such players who maintained a decent success level (including the three DiMaggios), and did the same 154-game comparisons. Joe DiMaggio seems to rank no better than fifth of his own era. Judge for yourself:

PLAYER	YEARS	GAMES	154-GAME AVERAGES			
			PO	A	E	PCT.
Sam Chapman	1938-51	1313	420	13	13	.9718
Doc Cramer	1929-48	2142	389	12	8	.9793
Dom DiMaggio	1940-53	1373	433	16	10	.9783
Joe DiMaggio	1936-51	1721	404	14	9	.9780
Vince DiMaggio	1937-46	1081	405	18	8	.9811
Mike Kreevich	1931-45	1174	433	12	8	.9815
Terry Moore	1935-48	1189	404	13	6	.9853

From this data, it seems eminently clear that Joe DiMaggio was a very average defensive outfielder, who became "great" through the work of the adoring press and the "halo effect".

All hate mail may be sent directly to me.

A major topic of conversation in the Hot Stove League, winter of 1983, was the decision by the New York Yankee braintrust to move ace left-handed starter Dave Righetti to the bullpen. The move was motivated by a combination of factors; the loss of long-time Yankee relief ace Goose Gossage to free agency, the lack of a good available relief pitcher in either the free agent or trade market, the lack of another possible stopper in the decimated Yankee farm system, and finally, one might say, desperation.

While Righetti has done well in his early stints as a bullpen stopper, there is always the question of the long-term effects that the switch will have on his future. A hard-throwing pitcher like Righetti, especially one with a history of arm problems, could have detrimental effects on his career. While it is fairly common for a young hard-throwing pitcher to be used as a reliever in his first year, the opposite career switch is rather uncommon. If one looks at current major league rosters, you see a Gubicza or Danny Jackson with the Royals, Jose Rijos with the Yankees, Jimmy Key with Toronto all being introduced to the major leagues as long relievers-spot starters. This is by no means a current trend; such well-known (and successful) power pitchers of the recent past as Jim Maloney, Don Gullett, Sammy Ellis (Reds), Bob Veale (Pirates), Len Barker (Rangers), Nolan Ryan (Mets), and Sandy Koufax (Dodgers) were primarily or exclusively relievers in their early years.

To determine the efficacy of the Yankee's decision, I decided to review power pitchers who made major career changes (start to relief or vice versa) before the age of 30. To qualify as a power pitcher, one had to have a strikeout ratio of at least 6 K/9I for most of their career before age 30. An exception was made for those pitchers whose K/9IP ratio was over 6.0 but depended mainly on "trick pitches"--this eliminated Hoyt Wilhelm, Stu Miller, Eddie Fisher, and others of that ilk. To be classified as a successful starting pitcher, one had to meet the following criteria: 1) 10+ wins as a starter or a sub- 3.75 ERA and 2) 20+ starts where starts made up at least 70% of the pitcher's appearances. A successful reliever met two of the following criteria:

1) 45+ appearances with at least 80% being in relief, 2) a sub- 3.75 ERA, and 3) 10 or more saves.

It came as some surprise that the most common career change was that of starter to reliever. Most of the "successful" starters that were converted to relief were marginally successful or changed roles due to trade or injury. No conclusion could be drawn on the effect of the change on longevity-there were as many burnouts as there were long relief careers.

START TO RELIEF TRANSITION

JOHN D'AQUISTO ¹					JOHN HENRY JOHNSON ²				
Year	G/GS	Record	ERA	Age	Year	G/GS	Record	ERA	Age
1977	38/36	12-14	3.77	22	1978	33/30	11-10	3.39	21
1978	45/ 3	S 1-1; R 3-2-10	2.13	26	1980	33/ 0	2-2-4	2.31	23

MOE DRABOWSKY ²					RONNIE KLINGE ¹⁰				
1963	26/22	7-13	3.05	27	1959	33/29	S 10-13; R 1-0	4.26	27
1966	44/ 3	S 1-0; R 5-0-7	2.81	30	1963	62/ 1	3-8-17	2.79	31

DAVE GIBSTI ³					JOHNNY KLIPPSTEIN ¹¹				
1968	37/34	S 11-14; R 0-0-1	3.19	28	1956	37/29	S 10-11; R 2-0-1	4.22/2.40	28
1970	66/ 1	R 9-3-26	3.06	30	1958	57/ 4	S 1-1; R 5-6-10	6.75/3.74	30

BILL GREIF ⁴					LERRIN LaGROW ¹²				
1974	43/35	9-19	4.66	24	1975	32/26	7-14	4.38	26
1975	59/ 1	4-6-9	3.88	25	1977	66/ 0	7-3-25	2.45	28

BOB GRIM ⁵					SKIP LOCKWOOD ¹³				
1954	37/20	S 12-6; R 8-0	3.44/2.70	24	1972	29/27	8-15	3.60	25
1957	46/ 0	12-8-19	2.63	27	1976	56/ 0	10-7-19	2.67	29

MARV GRISSOM ^{6a}					BOB L. MILLER ¹⁴				
1952	28/24	12-10	3.74	34	1963	42/23	S 6-6; R 4-2-1	3.18/1.62	24
1954	56/ 3	S 1-0; R 9-7-19	2.35	36	1964	74/ 2	S 1-0; R 6-7-9	5.11/2.37	25

TOM HUGHES ^{6b}					JUAN PIZARRO ¹⁵				
1915	50/25	S 10-14; R 10-0-5	2.43/1.34	31	1964	33/33	19-9	2.56	26
1916	40/14	S 7-1; R 9-2-5	2.49/2.13	32	1965	18/18	6-3	3.43	27

GRANT JACKSON ⁷					HEL QUEEN Jr. ¹⁶				
1969	38/35	14-18	3.34	26	1967	31/24	S 11-7; R 3-1	2.76	25
1971	32/ 0	1-1-8	2.63	28	1971	44/ 0	2-2-4	1.77	29

BOB JOHNSON ⁸					PEDRO RAMOS ¹⁷				
1971	31/27	9-10	3.45	28	1963	36/22	S 7-7; R 2-1	3.31/2.12	28
1973	50/ 2	S 0-1; R 4-1-4	3.62	30	1964	49/19	S 4-9; R 4-1-8	5.33/3.21	29

					1965	65/ 0	5-5-19	2.92	30

PHIL REGAN ¹⁸					DICK SELMA ²⁰				
1963	38/27	S 13-8; R 2-1-1	3.70/4.08	26	1969	40/28	S 9-9; R 3-1-1	3.68	25
1966	65/ 0	14-1-21	1.62	29	1970	73/ 0	8-9-22	2.75	26

PETE RICHER ¹⁹									
1967	37/29	S 7-16; R 2-0-2	3.63/1.38	27					
1968	36/ 0	6-3-6	3.47	28					

The transition from reliever to full-time starting pitcher has been more common but the burnout rate is also higher. Recent examples include Don Gullett and Sammy Ellis of the Reds and Ray Narleski of the Indians in the mid-'50's. The phenomenon is by no means new; back in 1928, the Senator brass converted left-handed stopper Garland Braxton (10 W, league leading 13 saves, 56 games, 146 relief innings) to a starting role. It looked good for a while- Braxton led the A.L. in earned run average in 1928- but Braxton was soon gone, washed up at age 30. Wiser decisions were made in the cases of Fergie Jenkins, Pat Dobson, Pete Vuckovich, and Mario Soto.

RELIEF TO STARTER TRANSITION									
Year	G/GS	Record	E.R.A.	Age	Year	G/GS	Record	E.R.A.	Age
JERRY ARRIGO ²¹					* FERGIE JENKINS ²⁸				
1967 32/ 5	2-3/4-3-1	3.16	26	*	1966 61/12	4-3/2-5-5	1.75/4.87	22	
1968 36/31	11-10/1-0	3.33	27	*	1967 38/38	20-13	2.80	23	

GARLAND BRAXTON ²²					* BART JOHNSON ²⁹				
1927 58/ 2	0-2/10-7-13	11.57/2.40	27*	*	1971 53/16	8-6/4-4-14	2.93	21	
1928 38/24	12-8/1-3-6	2.65/1.72	28*	*	1974 18/18	10-4	2.73	24	

DANNY COOMBS ²³					* BILL LEE				
1966 40/ 2	1-1/3-2-2	3.28	26	*	1972 47/ 0	7-4-5	3.20	25	
1970 35/27	8-13/2-1	3.30	28	*	1973 38/33	16-11/1-0-1	2.74	26	

PAT DOBSON ²⁴					* RAY NARLESKI ³⁰				
1969 49/ 9	2-4/3-6-9	3.60	27	*	1956 32/ 0	3-2-4	1.52	27	
1970 40/34	14-15/0-0-1	3.76	28	*	1958 44/24	11-9/2-1-1	4.31/2.90	29	

SAMMY ELLIS ²⁵					* CAMILLO PASCUAL ³¹				
1964 52/ 5	3-1/7-2-14	4.62/1.62	23	*	1954 48/ 4	0-3/4-4-3	5.70/3.86	20	
1965 44/39	20-10/2-0-2	3.79	24	*	1958 29/26	8-12	3.15	24	

DON GULLETT ²⁶					* MARIO SOTO				
1970 44/ 2	1-1/4-1-6	2.42	19	*	1980 53/12	7-0/3-8-4	3.08	23	
1971 35/31	16-6	2.64	20	*	1981 25/25	12-9	3.29	24	

BILLY HANDS					* DICK STIGHAN				
1967 49/11	4-2/3-6-6	2.48/2.44	27	*	1962 40/15	9-3/3-2-3	3.82/3.09	26	
1968 38/34	16-9/0-1	2.70/6.75	28	*	1963 33/33	15-15	3.25	27	

RORIC HARRISON ²⁷					* PETE VUCKOVICH ³²				
1972 39/ 2	1-1/2-3-4	2.30	25	*	1977 53/ 8	3-4/4-3-8	3.47	24	
1973 38/22	11-5/0-3-5	4.16	26	*	1978 45/23	11-8/1-4-1	2.55	25	

GLEN HOBBIE					* LUKE WALKER ³³				
1958 55/16	4-5/6-1-2	3.84/3.60	22	*	1968 39/ 2	0-1/0-2-3	2.02	24	
1959 46/33	16-12/0-1	3.74/3.12	23	*	1969 31/15	4-6/0-0	3.63	25	

					* 1970 42/19	12-5/3-1-3	3.04	26	

Year	G/GS	Record	E.R.A.	Age	Year	G/GS	Record	E.R.A.	Age
ED WHITSON					* BLACK JACK WILSON				
1978 43/ 0	5-6-4	3.28	23	*	1936 43/ 9	1-5/5-2-3	5.72/3.54	24	
1979 37/24	7-8/0-3-1	4.10	24	*	1937 51/21	11-6/5-4-7	4.05/2.83	25	
1980 34/34	11-13	3.10	25	*	1938 37/27	9-13/6-2-1	4.41/3.62	26	

It seems likely that eventually Righetti will end up back in the Yankee starting rotation. These multiple role transitions are somewhat rare. I could only find 12 such cases since 1900 and most of these made their second transition after age 30. Probably the biggest success at going from starter to reliever and back to starter was ex-Indian and Red Sox righthander Gary Bell. After a 12-16 4.10 mark in 1961, Bell shuffled out of the Cleveland bullpen 51 times in 1962 and led the American League in relief wins with 9 and also saved 12 games. After three more highly successful years as a reliever, Bell became a starter again at age 29 and won 14 games with a 3.22 ERA in 37 starts and was an effective starter for the rest of his career. In somewhat of an oddity, the 1967 "Impossible Dream" Red Sox had two of these multiple transition pitchers on their staff, Bell and Jose Santiago.

DUAL TRANSITION PITCHERS

STARTER → RELIEVER ↔ STARTER

Year	G/GS	Record	E.R.A.	Age	*	Year	G/GS	Record	E.R.A.	Age

GARY BELL ³⁴					*	AL McBEAN ³⁸				
1961	34/34	12-16	4.10	24	*	1962	33/29	15-10	3.70	24
1962	57/ 6	1-3/9-6-12	4.26/2.87	25	*	1963	55/ 7	2-1/11-2-11	3.86/2.12	25
1966	40/37	13-15/1-0	3.22	29	*	1968	36/28	9-11/0-1	3.45/5.40	30

LYNN McGLOTHEN ³⁵					*	JOSE SANTIAGO ³⁹				
1976	33/32	13-15	3.91	26	*	1966	35/28	12-12/0-1-2	3.98/0.00	25
1978	54/ 2	0-1/5-2-0	3.30	28	*	1967	50/11	6-1/8-3-5	4.16/2.77	26
1979	42/29	10-13/3-1-2	4.12	29	*	1968	18/18	9-4	2.25	27

BOBBY SHANTZ ³⁶					*	BOB SHA ⁴⁰				
1952	33/33	24-7	2.48	26	*	1962	38/29	14-9/1-0-2	2.87/1.50	29
1956	45/ 2	1-1/1-6-9	3.56/4.47	30	*	1964	61/ 1	0-1/ 7-5-11	6.00/3.61	30
1957	30/21	10-5/1-0-5	2.45/2.40	31	*	1965	42/33	15-8/1-1-2	2.70/1.76	31
1959	33/ 4	2-2/7-1-3	2.15/2.48	32	*	*****				

DAN SPILLNER ³⁷					*	LUIS TLANT				
1975	37/25	5-13/0-0-1	4.26	23	*	1965	41/30	11-10/0-1-1	3.57/2.92	24
1977	76/ 0	7-6-6	3.73	25	*	1966	46/16	8-5/4-6-8	2.71/2.96	25
1980	34/30	15-11/1-0	5.29	28	*	1967	33/29	12-9/0-0-2	2.74	26
1982	65/ 0	12-11-21	2.49	30	*	*****				

An even more unlikely combination of career changes are those pitchers who start their careers in relief, are moved to a starting role, then come back to pitch effectively in relief. The two prime examples of this genre are two pretty fair relievers- Lindy McDaniel and Rich "Goose" Gossage. McDaniel had an effective year in relief as a 20-year old rookie for the 1956 Cardinals, then went 12-9 as a starter the next year, along with three relief wins. After a horrible year as a starter in 1958, St. Louis management moved Lindy back to the bullpen where he responded with 13 wins and 15 saves, then went on to have a long and successful career in relief.

The conversion of Rich Gossage from relieving to a starting role in 1976 stirred up as much (if not more) controversy in Chicago than the Righetti decision did this year. Gossage had a great year in 1975; 9 wins, 26 saves, a 1.84 ERA, and 8.3 strikeouts per 9 IP. The experiment was a disaster. Gossage won but 9, lost 17 and saw his earned run average balloon over two runs a game. The White Sox then proceeded to trade Gossage to Pittsburgh where he proceeded to have one of the top five years in relief history- 11 wins, 26 saves, a 1.62 ERA while allowing just 5.3 hits per 9 innings of work. He also struck out hitters at a 10.2 K per 9 inning rate.

Another case of extreme management-induced schizophrenia belongs to Texas Ranger right-hander Danny Darwin. Since 1980, Darwin has pitched well as (in order) a reliever, starter, reliever, and starter. The year 1984 marks the first year that Darwin has had the same role for two consecutive years.

RELIEVER → STARTER → RELIEVER TRANSITION

Year	G/GS	Record	E.R.A.	Age	* Year	G/GS	Record	E.R.A.	Age
HANK AGUIRRE ⁴¹					* LINDY McDANIEL ⁴⁵				
1961	45/ 0	4-4-8	3.25	29	* 1956	39/ 7	2-4/5-2-0	5.25/2.58	20
1962	42/22	12-6/4-2-3	2.16/2.40	30	* 1957	30/26	12-9/3-0-0	3.51/3.18	21
1967	31/ 1	0-1-0	4.15/2.19	35	* 1959	62/ 7	1-4/13-8-15	4.35/3.59	23

DOUG BIRD ⁴²					* DON MOSSI ⁴⁶				
1975	51/ 4	0-1/9-5-11	3.25	25	* 1956	48/ 3	4-1/0-4-11	?? / 2.76	27
1976	39/27	9-10/3-0-2	3.26	26	* 1957	36/22	10-9/1-1-2	3.94/3.63	28
1977	53/ 5	1-1/10-3-14	3.89	27	* 1958	43/ 5	0-4/7-4-3	4.15/3.81	29
1981	29/16	7-6/2-0	3.23	31	* 1959	34/30	17-8/0-1-0	3.36/4.00	30

BOB BOLIN ⁴³					* MARY PATTIN ⁴⁷				
1963	47/12	3-4/7-2-7	2.88/3.75	24	* 1968	52/ 4	1-1/3-3-3	2.79	25
1964	38/23	5-9/1-0-1	3.66/1.57	25	* 1970	37/29	13-11/1-1	3.40	27
1965	45/13	6-5/8-1-2	3.69/1.96	26	* 1975	44/15	6-6/4-4-5	3.25	32
1966	36/34	11-10/0-0-1	2.89	27	*****				
1971					* ORLANDO PENA ⁴⁸				
1971	52/ 0	5-3-6	4.24	31	* 1959	46/ 8	3-5/2-4-5	4.21/5.73	25

DICK FARRELL ⁴⁴					* 1963				
1960	59/ 0	10-6-11	2.90	26	* 1966	54/ 0	4-2-7	3.08	32
1961	55/ 0	8-7-10	5.20	27	*****				
1962					* BOB VEALE ⁴⁹				
1962	42/29	8-16/2-4-4	3.25/1.59	28	* 1963	34/ 7	4-2/1-0-3	1.03/1.05	27
1967	57/ 1	0-1/10-5-12	40.45/2.10	32	* 1964	40/38	18-12	2.74	28

RICH GOSSAGE					* 1971				
1975	62/ 0	9-8-26	1.84	24	* 1973	32/ 0	2-3-11	3.50	37
1976	31/29	9-16/0-1-1	3.94	25	*****				
1977	72/ 0	11-9-26	1.62	26	*****				

- 23) Traded in 1969, was through after 1-6 6.21 mark at age 29.
- 24) Traded in 1969, became 20 game winner with Baltimore in 1971.
- 25) Led in relief ERA at age 23, then won 20 as starter the next year. Burned out at 28.
- 26) Torn rotator cuff injury at age 26.
- 27) Traded to National League in 1973.
- 28) Traded from Phillies to Cubs (pre-Dallas Green days) where he became outstanding starter.
- 29) Sore arm for two years--finished at age 26.
- 30) Led league in relief W, saves in '55, spent 1957 as spot starter, then gone after 1959.
- 31) One year as spot starter, two ineffective years to make transition to full time starter.
- 32) Spot starter in 1978, then traded. Another rotator cuff--this time at age 30.
- 33) Spot starter in 1969, same from 1972 on.
- 34) Led league in relief wins in 1962. 86-96 as starter, 35-21-51 3.03 as reliever.
- 35) One year as ineffective spot starter before being traded to Cubs. Cubs rewarded good relief year with spot in rotation, with dubious results.
- 36) Great if somewhat forgotten career marred by 3 major injuries. Led league in wins and ERA and was still effective reliever at age 39 after changing style 2-3 times.
- 37) Inconsistency, thy name is Spillner! Never had two straight good years.
- 38) A very effective short reliever for four years before Pirates put him back in rotation in 1968, his last effective year.
- 39) Sore arm in late 1967, early 1968 finished a promising career.
- 40) Spot starter in 1963, rotation starter thereafter.
- 41) Led league in ERA in first year moved to rotation. Lifetime 56-34 3.35 as starter, 19-18-33 3.01 in relief.
- 42) Under .500 as starter (20-22), 43-20-59 as reliever.
- 43) Under .500 (50-58) as starter, 38-17-50 as reliever.
- 44) Became starter with expansion Colt 45's, went back to relief when traded back to Phils, his original team, in 1967.
- 45) One additional year as spot starter before long relief career.
- 46) Stats for 1956 are wrong in all editions of MacMillan Baseball Encyclopedia. Had fine years in relief in 1954-55. Went back to relief at age 35.
- 47) One year as ineffective spot starter with Pilots in 1969, then filled same role well for Royals for four years.
- 48) Strange career that ended with short effective stint with Angels at age 41 in 1975. Never a #1 reliever but usually served as set-up man.
- 49) Came to major leagues at advanced age of 27. Went back to relief at age 35 with the omnipresent red handkerchief.
- 50) Finished career with 28 innings in 1968.
- 51) Two outstanding years in 1964-65; traded in 1967, then gone after 2-4, 5.03 in 1970.

* * * * *

HOFACKER, continued from page 6

to make such a finding unlikely even if my argument is wrong. Another line of evidence which would tend to mute my argument would be if there is independence between what one batter does and what the following batters do during any and all innings.

Another way to disconfirm this position would be to consider only those innings in which the first batter reached on an error. My argument implies that these innings will show less scoring than innings in which the first batter reached on a hit or walk. If the implication is true, it would be more accurate to use the average runs scored in innings beginning with an error than all innings in which the first batter reaches base. We would then be replacing the .96 value with a smaller value.

To review, when we compare half innings in which the leadoff batter reached base with half innings in which he did not, we are comparing two complex events. We are comparing relatively better leadoff batters and worse pitchers on the one hand, with worse leadoff batting and better pitching on the other. One last thing; I want to make clear that my argument does not apply to the steal/no steal comparison. In those cases, the runner has reached first in both instances.

TIM MARCOU

ONE ADJUSTMENT TO THE RANGE FACTOR

The following study ranks fielders---1b, 2b, 3b, SS, and outfielders---by a percentage derived by dividing the fielder's chances handled safely per game by his team's chances handled safely per game (Total chances - errors - team strikeouts). The number of chances per game---the range factor adjusted to the number of opportunities of earning such a chance.

Dale Berra over Ozzie Smith!!! A ringmaster taking charge over the acrobat??? Examine the numbers. The ubiquitous Smith fielded 823 chances, the most of any shortstop in the big leagues, in 158 games. A range factor of 5.21 chances per game. Berra handled 791 plays in 161 contests, a 4.91 factor.

However, in adjusting to the opportunity of participating in a team out, the rankings change. The Pittsburgh fireballers of 1983 fanned 1061 hitters to the Redbird staff's 709. Cardinal fielders, simply, had to chase down more batted outs than the Pirates; 34.53 chances compared to Pittsburgh's 31.13. With this in mind, Smith's ratio is $5.21/34.53$ or .151; Berra's $4.91/31.13$ or .158.

The range factor has limitations. The most glaring, of course, that it is based on chances per game. A "game" for some players consists of 7, 8, or 9 innings; for others 1, 2, or 3 innings. With maintenance of proper records, a ratio of chances per innings will eventually be developed. Also, as mentioned in *The Hidden Game of Baseball* by Pete Palmer and John Thorn, the number of chances may be dependent on such variables as (1) grass vs. turf (2) predominantly left-handed or right-handed pitching (3) winning percentage on the road where a loser only gets eight innings afield (4) home park dimensions and (5) the number of strikeouts registered by the pitching staff.

The numbers below are presented with strikeouts removed. To give full credit to Dale Berra, a power staff characteristically permits fewer ground balls and chances for infielders. However Berra's reputed range or lack of is conjured by fans and scribes, he did avail himself in a good many of the Pirate's out plays.

Third sackers Wade Boggs and Gary Gaetti, less illustrious by reputation, also fare well. Though, possibly because of Boston's and Minnesota's southpaws or free swinging in their respective ball parks??? Boston and Minnesota outfielders also seem to handle more chances than flyhawks of other squads. (Mickey Hatcher, not listed, grabbed 2.52 cpg, a .078 rating.)

This is one adjustment to the range factor. This author is curious as to the development of others.

A few words on omissions and commissions.

Ratings for pitchers and catchers are not listed. I wrote another article demonstrating the "chances per inning" ratings using the pitcher's stats, (the hurler being the one position where innings by that position are recorded), and will save that for another discussion. I could not figure out a way to calculate a catcher's range factor with many putouts resulting from strikeouts and assists from caught stealing.

I should have broke down outfielders by the 3 categories: left, center, right. Perhaps the reader will mentally separate the outfielders. The ABSTRACT does perform this division. And baseball recordkeepers might consider viewing the outfield as 3 distinct positions one day.

As I mentioned that the catcher's range factor is difficult to evaluate, the same may hold true for the firstbaseman. Most putouts arrive from tosses from other infielders. Though the ability to scoop up and flag down errant throws, preventing the error as well as recording the chance, could still be apart of the firstsacker's range.

PROJECT SCORESHEET may enlighten us all. I understand that "innings by position" are being tallied. And that range factor formulas for firstbasemen and catchers, as well as the other positions being developed.

One explanation. On the rankings, I included the items: AL CG AVG and Median numbers. The American League statistics conveniently total putouts, assists, and errors for each position. (The National League does not.) For each position, I figured out the percentage of safe chances that each position handles on a complete game basis. In other words, firstbasemen in the American League in 1983 record a chance on 26% of batted outs; secondbasemen 14.1%, etc. The median is just the number of the middle fielder on each list. Both numbers are guides in determining who is above or below average in this method.

With an appropriate average, it would be interesting to determine just how many points a fielder adds or subtracts from a hitter's average on drives in his direction. Assuming .141 would be a meaningful number for secondbasemen. Ryne Sandberg at .170 would take away .029 points from hitter's BAVG??? I am not concluding that this is so, but it is a direction to which this sort of study can lead.

Also, it should be reemphasizes that the numbers are based on 1983 stats. A few players, like Jerry Dybzinski, appear at the bottom of their position because of their late inning specialist function. I tried to list one-player-per-team-per-position and the lists should contain names of 1983 regulars. Though I strayed a bit from this with outfielders. I do not know why the Tiger's Trammell and Whitaker appear so mediocre? Though Whitaker's 1983 range factor took a plunge from his 1982 mark---and falls far short of fellow Bold Glover Sandberg's numbers.

Again this study only attempts to refine the range factor. It asks more questions than relates answers. Any comments and insights from readers are appreciated.

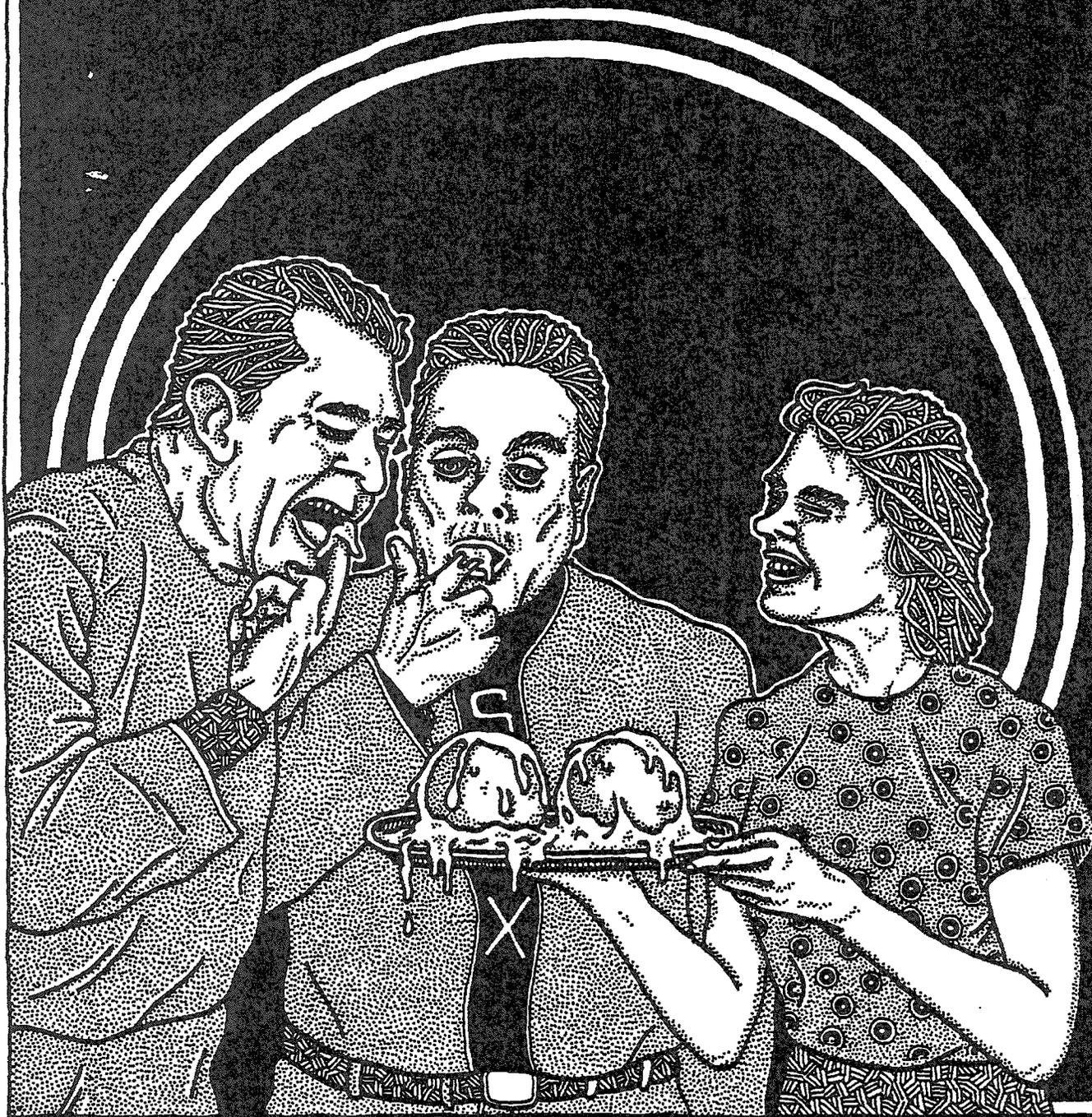
IB		2B		3b		SS	
Hernandez	.317	Sandberg	.170	Bell	.098	Berra	.158
Buckner	.315	White	.169	Gaetti	.098	Thon	.156
Murray	.297	Randolph	.168	Boggs	.097	Smith	.151
Evans	.292	Gantner	.167	DeCinces	.096	Ripken	.150
Carew	.291	Hubbard	.165	Schmidt	.092	Ramirez	.146
Cooper	.290	Castino	.165	Salazar	.092	Foli	.146
Garvey	.290	Ray	.164	Molitor	.090	Yount	.145
Knight	.288	Garcia	.161	Law	.088	Franco	.144
Chambliss	.288	Cruz	.160	Lansford	.088	Templeton	.144
Thompson	.288	Doran	.160	Nettles	.087	Russell	.144
Putnam	.287	Brich	.157	Guerrero	.086	Bowa	.142
Driessen	.285	Bonilla	.156	Wallach	.084	Hoffman	.141
Brock	.284	Morgan	.154	Harrah	.083	Concepcion	.140
O'Brien	.283	Bernazard	.153	Barner	.081	Griffin	.139
Hargrove	.282	Oester	.153	Cruz	.081	Owen	.138
Stapleton	.282	Trillo	.153	Allen	.080	WashingtonU.	.137
Hendrick	.282	Sax	.151	Brooks	.080	LeMaster	.137
Upshaw	.280	Tolleson	.149	Brett	.079	Trammell	.135
Hrbek	.278	Whitaker	.146	O'Malley	.075	Robertson	.133
Griffay	.273	Flynn	.145	Esasky	.072	DeJesus	.132
Oliver	.271	Remy	.143	Oberkfell	.071	Oquendo	.128
Paciorek	.269	Giles	.142	Cay	.068	Speier	.128
Cabell	.268	Herr	.141	Horner	.068	WashingtonR.	.123
Aikens	.249	Dauer	.137	Brookens	.066	Smalley	.121
Rose	.246	Lopes	.134	Madlock	.064	Dent	.120
		Youngblood.	.116	Gross	.064	Phillips	.113
						Cruz	.103
						Dybziński	.101

AL CB AVG	.260	AL CB AVG	.141	AL CB AVG	.081	AL CB AVG	.125
Median	.284	Median	.154	Median	.083	Median	.139

Outfielders

Murphy Dw	.093	Brown D	.072	Cedeno	.063	Easler	.050
Milner	.093	Law	.071	Clark J	.062	Hendrick	.049
Manning	.090	Evans Dw	.071	Foster	.062	Breen	.048
Lemon	.089	Oglivie	.070	Moore	.061	Matthews	.048
Thomas	.089	Jones R	.070	Leonard	.061	Moreland	.048
Moseby	.088	Sample	.069	Brown B	.060	Lowenstein	.046
Dawson	.088	Lynn	.069	Strawberry	.060	Jackson R	.041
Armas	.087	Bumbry	.069	Barfield	.060	LeFebvre	.039
Davis C	.085	Landreaux	.069	Beniquez	.060	Rose	.037
Wilson M	.085	Herndon	.068	Bonnell	.059		
Brunansky	.082	Cromartie	.068	Lezcano	.061	AL CB AVG	.066
Ward	.081	Gibson	.068	WashingtonC.	.059	Median	.066
Moreno	.079	Kemp	.068	Downing	.056		
Henderson R	.078	Raines	.067	Smith L	.055		
McGee	.078	Miller R	.067	Cowens	.055		
Wilson W	.077	Redus	.066	HendersonB	.055		
Mumphrey	.076	Gwynn	.066	Baker	.055		
Henderson D	.075	Wynne	.066	Lacy	.055		
Davis M	.075	Winfield	.066	Puhl	.055		
Murphy Da	.074	Hall	.065	Kittle	.053		
Rice	.073	Householder	.065	Durham	.053		
Collins	.073	Ford	.064	Hayes	.053		
Nichols	.073	Parker	.064	Bannister	.052		
Wiggins	.073	Butler	.064	Wilson G	.052		
Maddox	.073	Tabler	.064	Parrish	.051		
Otis	.073	Baines	.063	Vukovich	.051		
Sheridan	.072	Cruz	.063	Roenicke B	.050		

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