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A few issues back--number 25. I think it was--we did a short issue of the Analyst, one which had only 14 pages. Since then we've been promising to do a long one to catch up. This is the long one, running 26 pages. This is how the 26 pages break down:

This is.	Page 1
Suggestions for Areas of Research.	Pages 2-7
	Bill James
Scoring From First Base on a Double.	Pages 8-10
	Dallas Adams
Why Making DPs is Important.	Pages 10-13
	Dan Finkle
Ranking the All-Time Greats.	Pages 14-17
	Robert K. McCleery & Robert O. Wood
Looking at the 1987 Rookie Crop.	Pages 18-26
	Bill James

I get letters occasionally from people saying that they would like to do research, but could I suggest any topics that need to be investigated? I have exactly the opposite problem--many more things I would like to research than time to research them, but I'm not an organized person, and its harder for me to keep track of somebody's letter and write to them outlining a proposed piece of research than it is just to do it myself. But for the last nine days I've been noting down research ideas, and I'll list them here just in case any of them grab you and you get the time and the inclination to do them. They'd make good Analyst articles.

Editor and Publisher: Bill James Address: Box 171, Winchester, KS: 66097

I. Find out which players hit the highest percentage of their career home runs after the age of 30. I was listening to a Royals broadcast recently in which a guest commented on Frank White's exceptional increase in power as he has gotten older, and Denny Matthews said that he didn't really think it was all that unusual, that if you looked at the greatest power hitters of all time you would find that most of them didn't hit that many home runs when they were 22 or 23 years old, but developed power later on.

Well, of course it is unusual. White hit only 39 home runs in his twenties, which might include one or two hit after his 30th birthday on September 4, 1980, but has now hit 92 home runs since turning 30. Whereas the average player hits about 70% of his career home runs in his twenties, White has now hit 70% in his thirties, and that percentage will rise with every home run. But how unusual is this? What is the record for the highest percentage of career home runs hit after the age of 30 (by a player hitting 100 or more career homers?) I'd like to see a chart of the leaders:

Player	HR -29	HR 30+	% in 30+
Ken Williams	6	190	96.9
Cy Williams	40	211	84.1
Tilly Walker	29	89	75.4
Frank White	39	92	70.2
Ray Boone	56	95	62.9
Hank Aaron	342	413	54.7

Has any player except those who were in mid-career when the lively ball era arrived ever hit 70% of his homers after age 30? Who? The totals wouldn't be exact because of in-season birthdays, but then somebody could build on such a list if they wanted to place the exact date of home runs.

What about the all-time leaders in percentage of wins after 30? I'd presume it would start with Dazzy Vance, but who then? You could do the percentages of homers or wins before age 30, but you would find quite a few players with more than a hundred homers or wins who had 100% of them before the age of 30, so then it would just be a matter of finding who had the most before 30 with none after.

II. What is the connection between strikeout-to-walk ratio and a winning record? Take a substantial period of time-- say, 1970-1985--and look at all the pitchers who pitched 162 innings. Of those who had K/W ratios of 1.75-1 to 1.99-1, how many had winning record?

You would not want to make the period of time too long, because standards of strikeouts and walks change over time. Obviously, you would find that the pitchers with better K/W ratios would have better won-lost records, but how much better? I'd bet the connection is strong. I'd like to see a chart, something like this:

K/W Range	Pitchers	W-L	Pct.
	Winning Records		
	*		
5.00-1 or better	13	11 .85	221-143 .624
4.75-1 to 4.99-1	5	3 .60	82-65 .558
4.50-1 to 4.74-1	8	7 .88	135-75 .643
4.25-1 to 4.49-1	11	7 .64	165-130 .559

Which would mean (the data is made up) that there were 13 pitchers in the period with K/W ratios better than 5-1, of whom 11 had winning records, which is 85%. Those 13 pitchers had a combined won-lost record of 221-143, which is a .624 percentage. I'd like to be able to make a definitive statement, something like "of pitchers with K/W ratios of 3-1 or better, 78% have winning records."

III. What is the level of career runs scored and RBI at which a player becomes a strong Hall of Fame candidate?

Obviously, if a player has a career total of 4000 runs scored plus RBI, he's a certain Hall of Famer. If he's got a career total of 3000, he's a real strong candidate. But what is the critical mass? What is the level at which career totals tend to dictate selection?

Again, I'd like to see a chart, a portion of which would look something like this:

CAREER R + RBI	Players	Selected	
		Eligible	Percentage
2400-2499	17	14	12 .86
2300-2399	24	17	11 .61
2200-2299	23	19	13 .68
2100-2199	26	21	8 .38
2000-2099	27	22	5 .23

Which means, of course, that of 17 players who have a career total of 2400-2499 runs scored plus RBI, 14 are eligible for the Hall of Fame and 12 of those 14 have been selected.

One of the laws of research is that him what does the work gets to make up the rules, but I would implore that you not use that horrible "runs produced" method, and subtract the home runs, because that just muddies the research with an irrelevant argument about the validity of the runs produced method.

You could, of course, also do similar studies for career hits, homers, extra base hits, total bases or whatever, but I would think it would be advisable to start with runs + RBI because those are the categories which most consistently reflect any form of excellence. Then, if you wanted, you could split the categories into players at positions: Of all middle infielders who have career totals of 2000-2200 runs plus RBI, how many are in the Hall of Fame. Of all outfielders who have 2400-2599 runs plus RBI, how many are in the Hall of Fame?

But don't try to do too much right off; just contribute something to the sum of human knowledge, and move on.

The point of this, of course, is to enable us to gauge in a simple, direct way where a favorite player is vis a vis the Hall of Fame. Keith Hernandez has driven in or scored 1,869 runs entering the 1987 season. How many more does he need to become a strong Hall of Fame candidate? How many more does Ozzie Smith need to compare, as an offensive player, to the Luis Aparicios and Rabbit Maranvilles?

IV. Is the number of players playing all of their team's games increasing or decreasing?

This one has to do with the chance that Gehrig's consecutive-game streak will be broken in our lifetime. You hear people say that the record will never be broken because these modern players don't have the kind of grit and endurance that they had in Gehrig's day, which is an obviously falacious argument because it assumes that the prevailing attitudes of the ordinary player are determinant of whether or not the record can be broken, when it is obvious that, if the record were to be broken, it would be broken not by an ordinary player with an attitude characteristic of his time, but by an exceptional athlete with exceptional determination, like Lou Gehrig or Cal Ripken. Anyway, it seems to me that, while no one has yet launched a serious charge at Gehrig's record, the number of players launching semi-serious charges has increased markedly in the last fifteen years. We're seeing a lot of players, like Alfredo Griffin, Steve Garvey, Dale Murphy and Cal Ripken, getting up to 500 or 700 straight games, and I really think the record will be broken in my lifetime. But it's not going to happen tomorrow because Ripken is still about nine years away.

Anyway, I got to wondering what the pattern is of players playing all of their team's games. I notice just on a quick look that in 1930, when there were 16 teams, 14 players (.88 per team) played every game, whereas in 1980, when there were 26 teams, only 10 players played every game (.38 per team). But has their really been that dramatic a decline? I'd like to see some systematic data. The book The Sports Encyclopedia: Baseball is the research source that you would need.

Let me suggest a few other questions, the answers to which would be useful in trying to sort out whether or not the record might be broken. Of those players who do play every game in a season, what percentage repeat the feat in the next season? How does this percentage compare to the 1930s? What is the age distribution of players playing in every one of their team's games? I would certainly guess that most players playing all games would be in the mid-twenties, but is that true? What is the position distribution?

V. How many players who win batting championships in the low minors will be successful players in the majors? Home run championships? Stolen base championships? ERA championships? How about the high minors?

I got to wondering about this because I was looking at the "Best Major League prospects" from years past as picked by Baseball America, which I suppose a good many of you read. They've made some really strange selections. For example, in 1984 a pitcher named Ted Higuera led the Texas League in ERA despite pitching in that fabulous hitter's park in El Paso; he had 99 strikeouts and only 43 walks in 121 innings, 2.60 ERA. Nonetheless, the league's managers did not deign to list him among the ten best major league prospects in the league. In the Pacific Coast League the same year they listed as a top prospect a first baseman named Francisco Melendez who hit .315 but with 3 homers, 43 walks and 1 stolen base in over 500 at bats, while they did not choose to list Sid Bream, who hit .343 with 20 homers and 67 walks in 429 at bats. For that matter, they didn't list Bream in 1983, either, when he hit .307 with 32 homers and 118 RBI, 93 walks. This is not to knock them; you can also find times when they listed as the best prospect in the league some .240 hitter with no obvious credentials who did, indeed, mature into a player a year or two later, but I got to wondering if you couldn't do just about as well to ignore the Baseball America selections and concentrate on the stats. I mean, common sense ought to tell you that a first baseman with a secondary average of .209 in the PCL is not on the verge of becoming a major league starter.

Anyway, then I got to looking at the players who win batting titles in the low minors, and concluded that you'd probably be better off with the manager's votes than with the stats. But what are the percentages? You can't run percentages on the Baseball America votes because they haven't been doing them long enough, but I thought it would be interesting to establish some sort of basic standard of success as a major league player--say, 600 career games played or two consecutive seasons of 140 or more--and try to correlate minor league batting championships with that achievement.

VI. What is Don Mattingly's chance of breaking the career record for consecutive 100-RBI seasons?

This is like IV, the chance of Gehrig's record being broken. I think the record for consecutive 100-RBI seasons is thirteen, by Gehrig and Jimmie Foxx, and I never expected to see it broken. Mattingly is the first player in a long time who realistically could break it. Why? Because to break that record a player is going to have to be able to drive in a hundred runs even in a season that is significantly below his norm, and Mattingly is the first young player in a long time to establish that kind of RBI ability. Well, maybe Jim Rice in 1979 had established a shot, but he didn't make it.

Anyway, how would you figure this? I set up a simple schematic to try to estimate it. Let's assume that Mattingly's chance of driving in a hundred runs this year is 80%, and that this decreases by .01 per year as he ages (in other words, if he drives in 100 runs in 1987 we will assume there is a 79% chance he will do so again in 1988, 78% in 1989, etc.) His chances of making it to six straight (he has three) would be $.80 \times .79 \times .78$, or 49%. What is the chance that he will drive in a hundred in each of the next 11 years, as he would need to do to break the record?

Under those assumptions, Mattingly's chance of breaking the record would be .0418, or one in 24. If you start at .82, his chance is .0556, or one in 18. If you start at .84, the chance is .074, or one in 13.5.

If you assume that he has a 90% chance of driving in a hundred runs this year, which certainly would not be an unreasonable assumption, his chance of breaking the record would be .166, or one in six.

The research that needs to be done here would be research to guide the improvement of these calculations. I mean, what is the chance that Mattingly will drive in a hundred runs this year? We don't really have any idea, do we? How will that chance change as he ages? What I'd like to have is some specific information to plug into the model. Among players who drive in a hundred runs in one season, how many repeat? Among players who have driven in a hundred runs four straight times, how many make it five? How does age factor into those chances? What is the distribution of hundred-RBI seasons by age? I figured it once, but don't know where it is.

For a durable, consistent player, what is the standard deviation of RBI relative to the RBI norm? What is the standard deviation of Tony Perez' RBI from 1966 through 1980? What is the S.D. of Steve Garvey's RBI from 1974-1980? Lou Gehrig from 1926-1938? Jimmie Foxx from 1929-1941? Bill Terry from 1927-1932? And if you assume that Mattingly will drive in 125 runs a year with a normal standard deviation for a consistent player, what would be the chance that he would have eleven straight seasons of 100 or more?

VII. What is the average performance for a first- or seventh-place team in each respect?

This is a computer study. Suppose that you divide teams into seven sectors, calling the teams which win 94 games or more "First Place Teams". Like this:

94 or more wins	First Place Teams
89-93 wins	Second Place Teams
84-88 wins	Third Place Teams
79-83 wins	Fourth Place Teams
74-78 wins	Fifth Place Teams
69-73 wins	Sixth Place Teams
68 or fewer wins	Seventh Place Teams

What is the average number of doubles hit by a first-place team, over a period of ten years or so? I mean, I've done this, but I'm thinking here of looking at everything--sacrifice hits, won-lost record in one-run games, number of games started by left-handed pitchers, complete games, number of times shut out, double plays turned, opposition stolen bases, record on artificial turf and grass fields. Anything you can find. What characteristics of a team "spread", identifying the successful teams, and which ones don't? I'd like to be able to make a well-founded statement such as "First-place teams tend to hit 48% more home runs than last-place teams, but tend to steal only 8% more bases. They win 50% more games overall, but only 36% more one-run games."

VII. Do Black Players tend to exceed their career projections under Brock2 or Brock6?

In the 1987 Abstract, I did a series of comparisons of similar rookies, trying to identify the factors which tend to predict success. That is, I compared 22-year-old and 23-year-old rookies who had extremely similar batting records and tended to play the same position to see how much difference that extra year makes in projecting their future performance. I also compared second basemen to center fielders, third basemen to first basemen, players who had poor K/W ratios to those with good K/W ratio but similar records otherwise, etc. etc. I also compared, not really expecting to find anything, black rookies to white rookies of the same performance.

To my astonishment, the black rookies in subsequent seasons out-performed the similar white rookies by an enormous margin. Comparing a black rookie and a white rookie of the same age, same defensive position and similar batting record, the black rookie went on to have a better major league career about 75% of the time. I'm sure this will be somewhat controversial, and you'll be hearing more about it, but if I thought there was one chance in a hundred that subsequent research would fail to validate the conclusion, I wouldn't have published the study.

Ever since I did that study, I've been trying to think of an independant way to study the issue. Of course: the Brock systems. In light of that study, it would be interesting to know whether black players tended to exceed their Brock system projections in terms of career hits, career home runs, career games played, etc.

You don't even have to do fresh projections. In Analyst issue No. 19, Dallas Adams reported on a study in which he ran Brock4 projections for 200 players. It would be interesting to look back at those projections and compare the subsequent performance of black and white players, remembering that Dallas found the projections overall to be about 30% too high. If nobody else does this study, I'll probably do it myself.

SCORING FROM FIRST BASE ON A DOUBLE, OR FROM SECOND ON A SINGLE

By Dallas Adams

The Elias Baseball Analyst (1985 edition) includes data on the probability of driving in runners from first base and from second base. From these data one can calculate the probability of a runner scoring from first on a double, or from second on a single.

Consider the likelihood of a runner scoring from first base on a double. The total number of runners scoring thusly consists of those who score via a triple or home run, plus those who score on a double. I assume that driving in a runner from first with a single occurs so rarely as to be negligible. Hence,

$$\begin{aligned} \text{runners scoring from 1st} = & \text{runners driven in from 1st by doubles} \\ & + \text{runners driven in from 1st by triples} \\ & + \text{runners driven in from 1st by homers} \end{aligned} \quad (\text{EQ. 1})$$

The Elias Analyst gives the number of at bats which occur with a man on first base, and the number of same which result in the runner scoring. In addition, while it does not report the number of doubles, triples and home runs hit with a man on first base, it does give batting statistics for "Bases Empty" and "Runners On". Therefore, one can approximate the number of triples and home runs with a man on first base by making the assumption that they will occur with the same frequency as they do for the "Runners On" case.

$$3B+HR, \text{ man on 1st} = (AB, \text{ man on 1st})(3B+HR, \text{ bases occ.}) / (AB, \text{ bases occ.}) \quad (\text{EQ. 2})$$

Similarly,

$$2B, \text{ man of 1st} = (AB, \text{ man on 1st})(2B, \text{ bases occ.}) / (AB, \text{ bases occ.}) \quad (\text{EQ. 3})$$

Combining equations 1 and 2 yields:

$$\begin{aligned} \text{Runs driven in from 1st by doubles} = & (\text{total runs driven in from 1st}) \\ & - (AB, \text{ man on 1st}) * (3B+HR, \text{ bases occ.}) / (AB, \text{ bases occ.}) \end{aligned} \quad (\text{EQ. 4})$$

However, the probability of a runner scoring from 1st by means of a double is equal to the number who actually do score thusly (calculated by EQ. 4) divided by the total number of doubles hit with a man on first base (per EQ. 3). Symbolically:

Let

- P1 = probability of a runner scoring from 1st on a double
- r1 = total runners driven in from first base
- abl = at bats with first base occupied
- D = doubles with bases occupied
- T = triples with bases occupied
- HR = home runs with bases occupied
- AB = at bats with bases occupied

$$\text{Then } P1 = \{ r1 - (abl)(T+HR)/(AB) \} / \{ (abl)(D)/(AB) \} \quad (\text{EQ. 5})$$

where all the variables on the right side of the equals sign are available in the Elias Analyst.

SCORING FROM FIRST BASE ON A DOUBLE, OR FROM SECOND ON A SINGLE

The probability of a runner scoring from second base on a single can be derived along the same lines (which I won't repeat here). Symbolically:

Let $P2$ = probability of a runner scoring from 2nd on a single
 $r2$ = total number of runners driven in from second base
 $ab2$ = at bats with second base occupied
 S = singles with bases occupied
 and D, T, HR, AB remain as defined above

$$\text{Then } P2 = \{ r2 - (ab2)(D+T+HR)/(AB) \} / \{ (ab2)(S)/(AB) \} \quad (\text{EQ. 6})$$

Now, I have evaluated equations 5 and 6 using data for the 1984 major league season. The results:

A.L. Team	P1	P2	N.L. Team	P1	P2
Baltimore	.245	.606	Atlanta	.465	.576
Boston	.299	.611	Chicago	.443	.713
California	.646	.686	Cincinnati	.540	.651
Chicago	.429	.588	Houston	.466	.701
Cleveland	.452	.615	Los Angeles	.364	.682
Detroit	.371	.626	Montreal	.442	.543
Kansas City	.580	.622	New York	.598	.627
Milwaukee	.398	.619	Philadelphia	.417	.576
Minnesota	.448	.569	Pittsburgh	.518	.572
New York	.437	.597	St. Louis	.546	.605
Oakland	.475	.602	San Diego	.519	.639
Seattle	.582	.497	San Francisco	.560	.599
Texas	.621	.640			
Toronto	.345	.661			

	P1				P2			
	0 OUT	1 OUT	2 OUT	TOTAL	0 OUT	1 OUT	2 OUT	TOTAL
American Leag.	.323	.378	.577	.445	.449	.579	.699	.610
National Leag.	.285	.428	.671	.491	.513	.600	.685	.623
Major Leagues	.308	.402	.619	.467	.478	.589	.692	.615

I computed the league figures for the various Outs situations, as well as the overall case. Although the Elias Analyst also gives team data subdivided by Outs I refrained from calculating these because I felt that such a treatment would divide up the team's at bats so finely as to risk invalidating the assumption that the frequencies of the various types of hits with first base occupied is identical to the frequencies for the more comprehensive "Runners On" situation.

For me, the main purpose with this study was to obtain the probabilities with which a runner scored from first base on a double, and from second on a single. Consequently I haven't done much toward interpreting the team results. The National League enjoys the reputation of being the more aggressive league on the base paths; hence it is not surprising that the NL's P1 and P2 probabilities are higher than those of the AL. Nor is it surprising that, for both leagues, the probabilities increase as the number of outs increases: base runners tend to be more conservative with no one out, more aggressive with two out.

I did make a quick check on the correlation of P1 and P2 with various parameters:

CORRELATION OF:	WITH P1	WITH P2
Palmerian LNWTs Batting Runs	-.409	.101
Runs	-.329	-.005
Stolen Bases	.224	.097
Triples	-.176	.264
On Base Average	-.391	.022
Slugging Average	.012	-.060
Palmerian Park Factor	-.066	.132

SCORING FROM FIRST BASE ON A DOUBLE, OR FROM SECOND ON A SINGLE

Most of the above correlation magnitudes are so small as to be of virtually no significance. Moreover, there does not appear to be much correspondence between a given parameter's correlation with P1 and its correlation with P2; this could merely mean that none of the selected parameters have a significant bearing on whether a team runs aggressively from first and second bases, or it might mean that teams run aggressively from first base for different reasons than they do from second.

It is interesting that the correlation of Palmerian Linear Weights Batting Runs with P1, which has the largest magnitude of any correlation in the above table, also carries a negative sign. Meaning that teams which tend to score a lot, also tend to run conservatively from first base when a double is hit. Note, however, that the correlation magnitude (.409) cannot be described as "large"; and also, a correlation coefficient only indicates the degree of correspondence between two variables, it makes no judgment as to which variable represents a "cause" and which shows an "effect".

Another unexpected finding is that there is almost no relationship between a team's slugging average and the frequency with which it scores from first base on a double. I would have thought that teams with good home run power (and hence a high slugging average) would run more conservatively than teams with little home run power (and low slugging average); but apparently this is not so -- not in 1984 anyway.

THANKS DICK O'BRIEN or
WHY MAKING DOUBLE PLAYS IS AN IMPORTANT PART OF FIELDING SKILL

Dan Finkle

'Way back in issue 9, December 1983, I had an article in the Analyst, *The Best Fielding Second Basemen Since 1925*. Dick O'Brien offered a prompt and gracious critique in issue 10. My life became complicated so I haven't had time until now carefully to think over Dick's arguments and see how I react. My apologies Dick. If you can still remember what it was all about, here are some investigations resulting from your comments.

My Fielding Index is a combination of three factor indices: The Range Index, the Double Play Index, and the Misplay Index. Dick took the position that both the Double Play Index and the Misplay Index are unnecessary. "Why didn't he just use the range factor and let it go at that?", he wrote.

Dick said, "What I hope to do is put to rest once and for all time the idea that executing double plays by the tonfull is somehow related to defensive skill." I'll tackle that dazzler in my conclusions! The gist of his arguments, which are quantitative and persuasive, is: "A high number of double plays executed is almost always a direct reflection of and proportionate to the number of bases on balls and/or base runners allowed."

If Dick is right, that making double plays is mostly a function of the opportunities available, opportunities being measured by number of walks or number of opponent's runs, then we should be able to test that hypothesis by correlating DP's to BB's and DP's to OR's. I've done that using team records from three different groups of years. The results are tabulated below:

CORRELATION COEFFICIENTS

Year	Double Plays Versus <u>Bases on Balls</u>		Double Plays Versus <u>Opponents Runs</u>	
	<u>A L</u>	<u>N L</u>	<u>A L</u>	<u>N L</u>
1932	.63	.50	.73	-.05
1933	-.37	.04	-.10	-.33
1934	.04	.35	-.35	-.03
1935	.29	.59	.54	-.12
1936	-.17	-.36	-.07	-.35
1937	.45	.41	.40	.43
1938	-.08	-.48	-.46	-.16
1939	.12	.10	-.56	-.46
1940	.50	.75	.16	.25
1941	-.13	.45	-.31	.42
1958	.64	.64	.09	.20
1959	.29	.06	-.06	.54
1960	.50	-.49	-.43	-.33
1961	.32	-.28	-.30	.59
1962	-.03	.03	-.16	.23
1963	-.06	.30	-.34	-.12
1964	-.50	.46	-.68	.32
1965	-.10	.28	-.40	.06
1966	.45	.41	.28	-.02
1967	.07	.16	-.13	.08
1977	-.35	-.44	-.14	-.41
1978	-.02	-.33	.29	-.12
1979	-.34	.21	-.12	.07
1980	-.01	.02	.22	.30
1981	.16	.53	.45	.42
1982	-.33	.39	-.23	-.12
1983	-.02	.31	.63	.09
1984	-.07	.00	-.31	-.42
1985	-.12	.19	-.36	.39

For the correlation to bases on balls the range is from a positive correlation of .75 to a negative correlation of .50 with nearly every number in between represented. The correlation to opponents runs has a range from positive .73 to negative .68. If there is a pattern in the data, I don't find it. My conclusion is that there is no causative relationship between team double plays and team bases on balls, nor of team double plays and opponent runs scored. As a corollary to that conclusion I'm comfortable with the idea that the individual fielder does make a difference in the number of double plays that the team makes.

Dick also says that Billy Herman's "best years were with the Cubs when their pitching staff was consistently among the league leaders in walks permitted. Well, let's see:

<u>Year</u>	<u>Herman's Rank in DP Rating</u>	<u>Cub's Rank in BB Permitted</u>	<u>Cub's Rank in Opponents Runs</u>
1932	3	4	8
1933	1	2	6
1934	3	4	7
1935	1	6	8
1936	2	3	8
1937	2	2	5
1938	2	6	8
1939	7	6	5
1940	3	7	6

(1) means best in making double plays.

(2) means second highest walks allowed,

(8) means least opponent runs allowed.

(7) means second lowest walks allowed.

I don't know, Dick, but I don't see it exactly the way you said it.

But look at that third column. Billy Herman played for the Cubs in the happy days when they had outstanding pitching staffs. Still he didn't do too bad on double plays. Another thought occurs to me, maybe he did well because he had a good shortstop to work with. I took a look at that and in the Cub years Herman worked most of the time next to Billy Jorges. In four of those years Jorges had the top range rating in the league, in one year he was number two. Maybe what is needed (and I don't right now know how to do it) is to include in the ratings of second base double play skill the abilities of the shortstop on the team.

My conclusions are:

1. The number of double plays made is not related to the number of runners on base in a manner that can be measured by the conveniently available statistics. Of course, if there are more opportunities there are likely to be more double plays made, but this appears to be outweighed by the players' skills at turning the double play.

2. In assessing the best fielders we should not leave out any skills that can be measured with some reliability. The ability to turn the double play requires somewhat different skills than having great range. Both are important to defense. Both need to be considered. Likewise the need for measuring errors. It may not be the most important skill of a fielder, but it is important and needs to be included in a valid index of fielding skill. An analogy is the use of isolated power and on-base percentage to measure hitting skills. They measure different skills and both are needed.

3. No statistical index of performance is perfect, not Linear Weights, not Runs Created, certainly not the Fielding Index. They don't replace observation, but they do give insights that are not otherwise available.

Hall of Fame and a New Historical Ranking of the All-Time Greats

We have recently concluded a comprehensive statistical analysis of the top baseball players of all time. Instead of employing the uni-variable method of Palmer-Thorn (*The Hidden Game of Baseball*, 1985) or the amalgamation of such tools as offensive winning percentage and career approximate value, and combined with a cursory look at defense, as performed by Bill James (*Baseball Historical Abstract*, 1985), we chose to create a career value formula with many variables covering all aspects of a player's contribution to his team. Besides, we began our study before either of the two historical books were published.

It was our task to intelligently determine the coefficients of the (linear) value formula. We subjectively ranked the top hitters and ran regressions to determine those variables we valued most highly, and this process gave us preliminary coefficients. The formula was adjusted until we achieved the desired balance between career total statistics (quantity) and ratios or averages (quality).

The eight variables that make up the formula are: (1) career batting average minus the league average over one's career; (2) career slugging percentage minus the league average; (3) defense; (4) the sum of each season's home runs as a percentage of the league leader's total; (5) the sum of each season's runs batted in as a ratio of the league leader's total; (6) total bases; (7) runs scored; and (8) post-season performance.

We made special care to take into account a player's era and park effect. Batting averages, slugging percentages, home runs, runs batted in, total bases, and runs scored were adjusted for the player's home ballpark. Total bases and runs scored were also adjusted for the era, and the other variables have already considered the era either implicitly or explicitly. We calculated park effects using a different method than did Palmer-Thorn. We then compared the two sets and observed general agreement. On whole however their effects are smaller (closer to one) than ours. Since Palmer is the guru of park effects, we shade our numbers toward his despite the belief that our method is legitimate. Park effects for the variables other than runs scored were estimated via regressions. (That is, a ten percent runs scored park effect translates into a smaller effect on batting averages, for example.)

Included in total bases are a fraction of walks, HBP, and steals, while caught stealings and grounds into double plays are subtracted. We could write an entire article on the defensive numbers, but suffice it to say that we ranked everyone on a scale from 8 (Rico Carty) to 35 (Louis Aparicio), taking the defensive spectrum into account. At the skilled positions (C, 2B, 3B, SS, CF) the number of games played weighs heavily along with the player's defensive quality. We were cognizant of the fact that the importance of infielders increased in the dead-ball era, while outfielders became more crucial with the advent of the lively ball. Intangibles (such as amassing a lengthy consecutive game streak, being a good influence or team leader in the clubhouse as well as on the field, playing while injured, etc.) are implicit in the defensive rating. Post-season performance is total bases, runs batted in, runs scored, etc., weighed slightly more heavily than their regular season counterparts. This variable, while important in moving players a few ranks, comprises no more than two percent of career value for even the 1950's Yankees. Other aspects that we considered were time spent in military service (referred to *Baseball Goes to War*, W. Mead, 1985), career influencing injuries, the color barrier, the presence of the DH rule in AL 1973-present, as well as discounting performances in the Federal League and during World War II.

We have ranked 850 position players of the twentieth century (although a few players who would otherwise meet our standards of inclusion did play in the 19th century). It should be noted that the rankings, while definitely personal in that they are based upon our beliefs, are not subjective in the usual sense of the word. We cannot move players around on a whim, and would be forced to rank someone at the same place regardless of the player's era, team, personality, availability to the media, etc., given the numerical values of the variables we chose to calculate as those capturing the critical qualities of ballplayers. Indeed, after we convert a player's career statistics that we are all familiar with, such as his batting average and home run total, into our variables, players lose their former identity -- which is a guarantee that our analysis does not suffer from excessive subjectivity. While some of our favorites rank "too low" and some of our whipping boys rank "too high", our acceptance of the analysis's methodology causes us to revise our opinions of the players rather than tailor the study to corroborate our ex ante beliefs.

Our study has spanned several years, and we do not feel it is possible to convince the reader of its preeminence in a short article such as this, but one way we can ensure the reader that we do have some baseball sense is to list our top players. The table on the following page lists our top 55 players along with their rank and career value. The right-hand side of the table consists of all the other (lower ranked) Hall of Fame members. As a guide to the career value numbers, we scaled the formula so that a certain HOF member has a value above 300, and there should be no chance of entering HOF with a value below 230. The table shows that there are thirteen HOF members who we believe have absolutely no business being there, and a dozen or so others that we have serious doubts about.

It is widely believed that the HOF is stocked with too many hitters from the very-lively-ball era of 1920-40; indeed nine of the above-referenced 13 "joke" HOF members played in this period. Even those who think that there are not already too many HOF members concur. (We actually believe that there are way too many enshrined, and would welcome a super-HOF which would only honor those with career value over 300, or some such stringent criterion.) We are now in a position to quantify this effect. The second table lists the number of players who were in the productive portion of their career in the years specified. We have compiled four different cases, and we list for each the count of players as well as the percentage within each case.

The first case is from the HOF, including nine other certain future members who are not yet eligible. One can see that the 1920-40 era is indeed over-represented. The second case is our top 125 players, a larger sample since several are still active. The pattern is much more even, we believe indicating that we have properly corrected for era effects. The bulge has actually migrated to the modern era of 1966-76. Note that there is thinning out in 1941-51, surely an effect of WWII and Korean War. The wars delayed (or even cancelled) many careers, ended others prematurely, and surely affected those who came back after serving in the military. We believe that these hidden factors are the real cause of the pattern, rather than our not crediting missing years sufficiently.

Since the great players are rare, and would star in any era, we thought we should expand our sample to minimize their impact on the pattern. The third case is our top 200 players. The fourth case is our top 200 players after we estimated the careers of all active players, going out of our way to be conservative in all cases. The finding that the top 200 percentages are roughly the same as the top 125 leads us to

BABE RUTH	1	501.33	JESSE BURKETT	56	277.11
WILLIE MAYS	2	454.37	ENOS SLAUGHTER	57	276.88
TED WILLIAMS	3	450.40	WILLIE MCCOVEY	59	276.04
TY COBB	4	435.00	BILLY WILLIAMS	60	275.71
HANK AARON	5	431.94	BILLY HERMAN	61	275.65
ROGERS HORNSBY	6	421.38	HARMON KILLEBREW	62	275.34
LOU GEHRIG	7	410.08	GABBY HARTNETT	65	272.55
HONUS WAGNER	8	409.55	ROY CAMPANELLA	68	270.82
JOE DIMAGGIO	9	401.25	GEORGE SISLER	69	270.20
TRIS SPEAKER	10	397.44	FRED CLARKE	71	268.46
NAP LAJOIE	11	393.27	BILL TERRY	73	267.64
STAN MUSIAL	12	390.95	JACKIE ROBINSON	74	266.71
MICKEY MANTLE	13	389.38	JOE CRONIN	75	266.54
EDDIE COLLINS	14	380.04	ZACK WHEAT	76	266.13
FRANK ROBINSON	15	359.34	EDD ROUSH	80	262.67
JIMMIE FOXX	16	356.78	ERNIE LOMBARDI	82	260.70
MEL OTT	17	351.55	WILLIE KEELER	83	260.52
MIKE SCHMIDT	18	344.05	LOU BOUDREAU	89	259.30
JOE MORGAN	19	334.56	CHUCK KLEIN	95	256.50
EDDIE MATHEWS	20	333.32	PIE TRAYNOR	97	255.72
AL KALINE	21	332.25	JOE MEDWICK	101	254.74
JOHNNY MIZE	22	330.03	MAX CAREY	103	253.72
JOE JACKSON	23	323.02	ELMER FLICK	106	253.19
ROBERTO CLEMENTE	24	321.46	EARL AVERILL	107	253.05
HANK GREENBERG	25	318.76	KIKI CUYLER	108	252.62
CHARLIE GEHRINGER	26	318.67	PEE WEE REESE	110	252.26
JOHNNY BENCH	27	318.31	JAKE BECKLEY	112	252.05
SAM CRAWFORD	28	313.68	BOBBY WALLACE	114	251.11
CARL YASTRZEMSKI	29	312.81	RALPH KINER	115	250.83
PETE ROSE	30	311.79	JIMMY COLLINS	118	249.07
BROOKS ROBINSON	31	311.72	SAM RICE	122	246.01
GEORGE BRETT	32	311.70	JOE KELLEY	128	242.29
YOGI BERRA	33	310.35	GEORGE KELL	134	240.93
REGGIE JACKSON	34	306.28	JIM BOTTOMLEY	138	239.75
ERNIE BANKS	35	301.87	RABBIT MARANVILLE	139	239.05
WILLIE STARGELL	36	301.24	ROSS YOUNGS	142	237.29
GEORGE DAVIS	37	299.02	LOU BROCK	143	237.09
PAUL WANER	38	292.87	HEINIE MANUSH	152	234.44
AL SIMMONS	39	292.54	JOE SEWELL	153	234.41
BILL DICKEY	40	292.21	MONTE IRVIN	155	234.02
LUKE APPLING	41	290.03	HACK WILSON	156	233.91
DUKE SNIDER	42	287.65	EARLE COMBS	161	233.37
RON SANTO	43	287.10	HARRY HOOPER	180	226.33
FRANK BAKER	44	287.01	DAVE BANCROFT	186	225.29
DAVE WINFIELD	45	285.77	CHICK HAFEY	194	223.52
BILL DAHLEN	46	283.66	JOE TINKER	210	218.79
HARRY HEILMANN	47	283.03	TRAVIS JACKSON	218	217.86
ROD CAREW	48	282.36	LLOYD WANER	257	206.80
GRAIG NETTLES	49	282.19	JOHNNY EVERS	258	206.64
FRANKIE FRISCH	50	281.42	ROGER BRESNAHAN	281	202.41
GOOSE GOSLIN	51	281.00	FRED LINDSTROM	285	200.75
MICKEY COCHRANE	52	279.88	FRANK CHANCE	347	191.00
BOBBY DOERR	53	278.83	GEORGE KELLY	370	186.42
ARKY VAUGHAN	54	277.95	RICK FERRELL	376	185.55
LOUIS APARICIO	55	277.67	RAY SCHALK	529	161.43

Year	Hall of Fame		Top 125		Current Top 200		Future Top 200	
	Count	Pct	Count	Pct	Count	Pct	Count	Pct
1891	1	0.4	1	0.3	1	0.2	1	0.2
1896	6	2.4	7	2.4	9	2.0	9	2.0
1901	12	4.8	12	4.1	18	4.0	17	3.8
1906	10	4.0	7	2.4	12	2.7	10	2.3
1911	13	5.2	11	3.8	18	4.0	16	3.6
1916	11	4.4	10	3.4	19	4.3	18	4.1
1921	19	7.7	13	4.5	24	5.4	21	4.7
1926	27	10.9	17	5.9	28	6.3	27	6.1
1931	28	11.3	19	6.6	28	6.3	26	5.9
1936	21	8.5	20	6.9	24	5.4	23	5.2
1941	13	5.2	17	5.9	23	5.1	21	4.7
1946	12	4.8	14	4.8	24	5.4	22	5.0
1951	11	4.4	13	4.5	23	5.1	22	5.0
1956	14	5.6	17	5.9	28	6.3	24	5.4
1961	12	4.8	17	5.9	24	5.4	20	4.5
1966	15	6.0	23	7.9	32	7.2	31	7.0
1971	13	5.2	26	9.0	36	8.1	36	8.1
1976	8	3.2	26	9.0	40	8.9	39	8.8
1981	2	0.8	16	5.5	28	6.3	37	8.4
1986	0	0.0	4	1.4	8	1.8	23	5.2
Total	248	100.0	290	100.0	447	100.0	443	100.0

conclude that we have indeed ranked players in the absence of era effects that have so polluted the Hall of Fame. The last case is added in order to predict how the pattern will evolve.

As the table demonstrates, the period of the late 1960's to the present is truly the golden age of baseball. Despite arguments that the modern era has been diluted by expansion and the deterioration of the minor leagues, there are many reasons why the modern players are better (at least in number) than the early stars. Careers are longer now due to off-season conditioning, better medical care which prevents as well as treats injuries, better nutrition, (all which clearly have resulted in better overall athletic ability as well), the presence of the DH rule in the AL, etc. Hence, as we value longevity, the modern day player moves up on our rankings and stays in his productive years longer, thus showing well in the table. Players such as E. Murray, G. Carter, J. Rice, B. Bell, R. Yount, S. Garvey, and D. Parker (to name but a few) are true superstars on an historical basis. We are sometimes too close to the action to notice the larger picture around us.

To conclude this article, we wish to state our analysis's HOF "sleepers", those players we claim are deserving of HOF membership (career value over 270) yet may not be considered as such: (in order) R. Santo, D. Winfield, G. Nettles, K. Boyer, O. Cepeda, R. Allen, T. Simmons, and J. Torre. In an article as short as this, we necessarily were vague or mute on many of the details of our analysis. We are preparing further articles for this journal which may give the reader a better understanding of our work, and we are happy to reply to any inquiries at our address below.

Robert K. McCleery & Robert O. Wood
4919 Rhonda Drive
San Jose, California 95129

LOOKING AT THE 1987 ROOKIE CROP

A few years ago I introduced a method to translate minor league statistics into meaningful major league equivalents. This method was reviewed and defended in the 1985 Abstract, pages 16-21. In the newsletters for two years I carried the MLEs (major league equivalencies) for some of the players who could have an impact at the major league level, but the newsletter is no more, and I can't get ahold of the minor league stats in time to run the MLEs in the Abstract. It is desirable to get these equivalencies on record somewhere, because for the system to receive a fair evaluation the MLE has to be on record before the player plays a full season in the major leagues. So here it is.

The MLEs must be entered with several reservations. MLEs have the same reliability in projecting major league performance as does past major league performance--and not any more. Terry Pendleton hit just .239 last year in the majors, but that doesn't mean he's going to hit .239 again. It is generally believed that he is capable of hitting much higher, perhaps as high as .300. The players listed here will tend to perform in a manner consistent with the MLEs displayed, but it is important to remember that these statistics describe the past, and not the future. At that, they describe but one season of the past. Mike Kingery had a red hot 79 games for Omaha before being called up in 1986, but lots of people have 79 hot games, and you've got to remember that Kingery hit .255 with 2 homers in 132 games for the same team in 1985.

Second, the park effects estimates used in forming these projections are not as accurate as were those used in developing the method several years ago. To calculate exact park effects for each team is time-consuming, and since I'm not doing this as a commercial enterprise, I didn't invest the time to re-calculate them all, but just used the 1985 figures except where I had reason to believe they were no longer appropriate, and then often substituted raw estimates. For Texas, for example, I just projected their rookies into a neutral park. This saved quite a bit of time, and the loss in accuracy should be negligible.

Third, also to save time, I projected each player into the major league and team and park with which he was associated in 1986, regardless of who he is playing for at the moment. To save more time, I'm not going to explain why this saved time for me; just take my word for it. In those cases where players have changed teams, the differences created here could be significant. Obviously, Dion James figures to hit better in Atlanta than he would have in Milwaukee. You'll just have to figure those things out for yourself, and anyway, most of those guys aren't going to make the major league rosters.

Finally, many minor league players split their time between two or three teams. The equivalencies presented here are all based only upon the player's performance at one level of play, which you could identify if need be by the games played figure. Most of these equivalencies are based on AAA play.

With no further delays, the MLEs for 1987 rookies and some other players who spent part of 1986 in the minor leagues:

ATLANTA BRAVES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Gerald Perry	107	374	58	115	28	3	10	63	47	90	.308	.477
Paul Runge	138	448	64	116	25	1	6	49	74	56	.259	.357
Albert Hall	125	431	61	109	17	2	3	34	56	47	.254	.321
John Rabb	123	414	73	110	19	6	19	78	57	101	.266	.478
Bob Tumpane	81	242	27	62	11	0	8	48	29	44	.256	.401

BALTIMORE ORIOLES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Tom O'Malley	59	205	31	58	9	0	8	26	35	26	.283	.445
Jim Traber	87	313	40	80	17	1	11	48	18	42	.255	.421
Ken Gerhardt	124	440	64	111	16	2	25	63	34	116	.252	.470
Nelson Simmons	89	294	29	73	11	3	7	32	23	58	.249	.383
Mike Hart	123	425	55	99	22	1	12	44	64	63	.233	.374
Billy Ripken	141	499	39	111	16	1	4	43	16	54	.223	.282
David Smith	89	282	30	56	12	1	4	23	18	52	.200	.286

BOSTON RED SOX

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Danny Sheaffer	79	264	29	89	18	1	2	26	8	26	.337	.429
LaSchelle Tarver	97	373	58	118	21	2	2	22	35	55	.317	.395
Mike Greenwell	89	317	53	93	24	1	14	50	36	22	.294	.504
John Marzano	118	450	55	131	34	2	11	62	24	71	.291	.447
Dave Sax	99	320	26	91	21	1	7	42	36	53	.285	.421
Ellis Burks	124	466	70	130	24	3	15	55	43	81	.278	.440
Pat Dodson	120	412	51	108	26	1	21	87	50	100	.261	.479

CALIFORNIA ANGELS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Mark Ryal	127	450	51	134	27	2	11	60	26	51	.298	.439
Darrell Miller	63	200	26	53	6	3	6	21	17	47	.265	.422
Gus Polidor	119	450	51	117	22	2	4	43	21	42	.260	.345
Devon White	112	437	60	110	20	4	11	43	22	92	.251	.393
Stan Cliburn	80	246	26	57	20	1	7	25	17	32	.231	.406

CHICAGO CUBS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Steve Hammond	120	414	49	126	44	0	8	58	34	49	.304	.465
Rafael Palmeiro	140	497	59	144	30	1	11	85	49	34	.290	.424
Tom Lombarski	96	259	37	73	18	1	8	36	37	25	.282	.447
Chico Walker	138	510	77	138	29	7	14	52	51	72	.271	.437
Dave Martinez	83	306	42	80	11	3	4	26	29	36	.260	.359
Brian Dayett	121	396	55	102	28	4	16	69	54	70	.258	.471

CHICAGO WHITE SOX

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Daryl Boston	96	347	47	96	15	2	4	34	35	49	.277	.367
Tim Krauss	114	412	52	106	18	2	10	41	39	65	.257	.383

Russ Mormon	106	353	43	85	15	2	10	47	45	63	.242	.381
Ron Karkovice	97	303	43	74	11	1	15	37	43	118	.244	.430
Tommy Thompson	108	331	33	79	16	1	6	38	27	47	.239	.350
Dave Cochrane	93	332	45	78	19	3	12	51	43	111	.235	.426

CINCINNATI REDS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Kal Daniels	42	126	26	43	12	1	6	25	27	20	.341	.596
Barry Larkin	103	397	52	120	30	7	7	40	25	43	.302	.471
Terry McGriff	108	328	42	87	21	1	7	42	32	71	.264	.394
Orsino Hill	120	342	43	88	24	5	8	32	51	78	.258	.429
Lloyd McClendon	132	419	58	98	29	1	18	68	55	75	.234	.432

CLEVELAND INDIANS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Cory Snyder	49	190	23	56	19	0	8	30	16	39	.294	.526
Dave Gallagher	132	491	55	139	23	3	7	41	39	41	.282	.388
Junior Noboa	108	394	41	109	21	1	4	30	14	33	.277	.362
Dave Clark	106	351	52	95	17	1	18	54	50	70	.270	.477
Jay Bell	138	483	75	126	26	2	6	63	76	65	.261	.366
Shanie Dugas	69	193	23	49	9	0	7	30	18	38	.254	.416

DETROIT TIGERS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Bruce Fields	116	360	46	118	25	3	1	43	36	55	.328	.423
German Rivera	140	483	70	128	24	1	13	68	39	86	.266	.399
Tim Tolman	139	463	55	123	18	3	10	57	55	66	.265	.381
Scott Lusader	136	463	63	118	19	2	11	50	60	87	.254	.375
Matt Nokes	125	410	44	104	20	3	9	57	25	44	.253	.381
Billy Bean	80	269	37	67	8	2	7	42	31	27	.250	.378
Doug Baker	112	353	37	85	11	4	2	32	26	67	.242	.311
Rey Palacios	135	447	56	102	16	3	15	56	71	81	.228	.376

HOUSTON ASTROS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Ty Gainey	104	341	55	108	20	7	11	48	43	88	.316	.510
Chuck Jackson	127	429	63	118	24	3	7	47	48	85	.275	.395
Louie Meadows	82	278	32	75	13	5	6	40	38	57	.269	.419
Bert Pena	118	440	60	102	21	2	7	46	29	67	.232	.335
Robbie Wine	106	336	32	68	22	1	6	34	35	112	.201	.329

KANSAS CITY ROYALS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Mike Kingery	79	294	44	95	14	7	2	44	36	28	.323	.446
Kevin Seitzer	129	425	80	131	20	10	11	69	82	54	.309	.480
Ron Johnson	127	479	53	135	15	13	1	56	23	49	.281	.372
Onix Concepcion	57	181	13	50	6	2	0	19	14	16	.275	.328
Bo Jackson	53	176	22	43	8	2	5	19	16	76	.245	.395
Roger Hansen	73	191	22	46	5	0	3	12	18	27	.241	.319
Van Snider	134	471	59	112	24	4	17	60	36	133	.237	.414

LOS ANGELES DODGERS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Jeff Hamilton	71	270	27	72	14	1	6	29	8	46	.267	.400
Mike Watters	138	483	60	120	14	2	1	28	56	55	.249	.289
Larry See	142	504	57	123	26	1	17	73	32	104	.245	.402
Jose Gonzalez	89	286	27	67	14	1	4	25	10	72	.235	.332
Ralph Bryant	107	322	38	64	12	1	12	38	26	108	.198	.353

MILWAUKEE BREWERS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Glenn Braggs	90	307	63	99	22	4	11	59	34	33	.322	.527
B J Surhoff	116	437	56	120	16	2	4	47	21	32	.274	.346
Dion James	130	464	67	116	21	4	4	44	46	68	.251	.343
Steve Kiefer	126	408	53	96	19	4	11	55	34	91	.236	.382
Joey Meyer	126	432	51	96	14	0	17	78	45	120	.223	.373

MINNESOTA TWINS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Andre David	111	341	48	107	18	1	9	39	46	21	.314	.451
Pat Dempsey	107	356	41	102	21	0	11	40	12	44	.287	.437
Alex Sanchez	99	343	41	89	19	1	9	41	17	75	.260	.400
Scott Ullger	121	406	44	101	10	2	13	50	45	69	.249	.381
Chris Pittaro	107	411	44	100	14	3	7	32	37	60	.244	.343

MONTREAL EXPOS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Casey Candaele	119	460	59	125	32	4	1	32	41	30	.272	.367
Dallas Williams	124	411	50	106	20	3	7	49	37	40	.258	.375
Tom Romano	136	462	53	109	25	2	9	48	42	68	.236	.355
Billy Moore	122	393	53	90	23	0	17	63	71	96	.228	.414
Mike Hocutt	127	395	50	90	21	2	13	48	64	116	.228	.390

NEW YORK METS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Dave Magadan	133	457	58	131	28	3	1	55	70	51	.287	.368
Mark Carreon	115	414	53	111	19	1	9	55	41	47	.268	.388
Terry Blocker	117	422	45	113	11	3	8	40	25	78	.268	.367
Stan Jefferson	95	358	51	96	16	2	2	32	34	73	.268	.341
John Gibbons	96	309	36	70	14	0	3	23	34	78	.228	.298

NEW YORK YANKEES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Paul Zuvella	89	324	48	91	11	1	2	27	34	20	.281	.336
Juan Espino	53	174	18	49	4	1	4	18	12	18	.280	.385
Phil Lombardi	75	269	37	73	11	3	7	24	27	42	.271	.408
Orestes Destrade	98	348	51	88	18	3	15	48	33	92	.254	.459
Henry Cotto	97	350	39	80	15	5	6	41	16	56	.229	.350

OAKLAND A'S

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Stan Javier	69	236	40	69	12	1	3	41	39	48	.294	.393
Mark McGwire	78	266	34	75	16	3	10	48	35	70	.281	.471
Luis Polonia	134	528	79	144	16	2	2	51	43	67	.272	.322
Terry Steinbach	138	466	73	126	23	1	14	86	62	78	.271	.415
Mike Gallego	132	427	47	106	12	3	3	37	32	60	.247	.310
Rob Nelson	139	487	62	119	20	2	15	87	51	119	.245	.386

PHILADELPHIA PHILLIES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Greg Legg	120	437	56	125	25	3	5	51	33	47	.287	.393
Fran. Melendez	96	338	37	95	19	1	3	44	27	36	.281	.375
Ken Dowell	114	417	51	110	10	3	1	34	40	71	.264	.310
Steve DeAngelis	101	342	50	77	24	3	12	49	39	83	.224	.412
Chris James	69	256	23	54	5	1	10	32	14	50	.212	.360

PITTSBURGH PIRATES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Ron Wotus	125	412	65	125	24	3	4	49	47	52	.303	.402
Sam Khalifa	50	197	26	60	9	3	1	22	14	21	.303	.398
Rich Renteria	112	382	44	115	20	8	1	44	18	30	.302	.401
Bobby Miscik	116	393	36	104	20	2	4	44	41	43	.264	.353
Benny Distefano	111	398	50	100	25	8	13	49	33	46	.251	.447

SAN DIEGO PADRES

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Tim Pyznarski	135	457	68	131	27	4	18	87	58	139	.287	.484
James Steels	126	456	63	122	21	5	6	47	31	53	.268	.379
Mark Wasinger	103	358	55	96	17	3	1	25	35	39	.268	.337
Benito Santiago	117	415	40	104	20	2	13	52	12	89	.251	.404
Randy Asadoor	125	377	50	92	12	6	10	38	47	98	.245	.389

SAN FRANCISCO GIANTS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Randy Kutcher	55	195	34	59	11	2	8	28	12	31	.302	.499
Phil Ouellette	89	273	34	73	17	0	5	28	27	32	.268	.386
Chris Jones	112	344	55	86	19	3	6	40	33	39	.251	.375
Pat Adams	96	305	49	75	14	1	11	46	30	95	.245	.403
Jay Reid	120	408	51	94	20	3	10	44	37	94	.230	.368

SEATTLE MARINERS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Mickey Brantley	106	377	73	107	15	2	25	64	39	55	.283	.533
Dave Valle	105	336	50	93	18	1	17	50	29	47	.276	.491
Randy Braun	134	481	51	133	26	2	17	63	28	102	.276	.447
Pat Casey	116	365	43	99	28	2	13	44	54	77	.271	.469
Dave Hengel	113	389	51	98	19	1	22	66	25	85	.253	.476

ST. LOUIS CARDINALS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Curt Ford	53	193	38	52	8	2	3	25	23	16	.270	.380
Casey Parsons	123	380	50	100	20	4	11	49	41	59	.264	.421
Fred Manrique	133	503	64	131	17	6	7	42	19	83	.260	.359
Alex Cole	63	195	20	45	2	4	1	13	14	29	.230	.292
Jim Lindeman	139	494	67	113	34	5	15	78	32	95	.229	.411

TEXAS RANGERS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Mike Stanley	56	190	26	62	11	2	3	35	28	45	.325	.451
Jerry Browne	128	476	69	133	14	5	2	48	52	64	.280	.340
Ruben Sierra	46	179	22	46	9	1	6	29	10	29	.258	.418
Tommy Dunbar	135	466	55	118	17	4	6	65	55	77	.253	.347
Bob Brower	140	523	92	131	21	4	8	51	61	112	.251	.354
Jeff Moronko	120	408	43	100	17	4	4	31	27	75	.245	.338

TORONTO BLUE JAYS

Player	G	AB	R	H	2B	3B	HR	BI	BB	SO	Avg.	Slg.
Ken Kinnard	63	220	35	71	11	5	6	25	12	68	.323	.502
Kevin Sliwinski	142	502	65	143	29	5	18	67	53	103	.285	.465
Chris Johnston	117	410	51	114	35	3	17	60	44	112	.278	.503
Jose Castro	122	406	46	112	20	3	12	47	41	36	.277	.430
Mike Sharperson	133	510	75	141	19	10	4	39	63	71	.277	.375
Cecil Fielder	88	321	41	87	14	3	18	60	29	97	.271	.501
Nelson Liriano	135	538	66	140	25	14	6	44	37	67	.261	.390
Glenallen Hill	141	551	65	139	23	5	26	72	30	163	.253	.456
Sil Campusano	132	479	67	112	31	5	12	44	47	117	.234	.396
Manny Lee	76	232	30	54	6	1	1	17	19	41	.231	.281

A few words about these selections. First of all, let me pick my top ten Most-Exciting-Newcomers of 1987:

1. Barry Larkin, Cincinnati Larkin had 159 at bats last year, so I guess he isn't eligible for Rookie honors, but to me he's the most impressive newcomer of the year. What he did in those 159 at bats was exactly what can be expected of him this year. He's a good shortstop, an excellent line-drive hitter with some power and he can run. If he gets 500 at bats, and I think he will, he'll be one of the best shortstops in the league.

2. Mickey Brantley, Seattle There are two negatives about Brantley--one, that he's not a great defensive center fielder who will probably have to play there, and two, that he had surgery last September to remove scar tissue from his shoulder. If it doesn't slow him down, look for him to be the American League Rookie of the Year. The Mariners are likely to make a big move forward this year, and that will help him get attention. If Dick Williams decides the job is his he'll get 650 plate appearances, and if he gets 650 PA, he's going to run up some big numbers. The man can hit.

3. Joe Magrane, St. Louis The only pitcher who has everything going for him. Magrane throws hard, he has decent control, he's been effective at every level, he has a record of

being healthy, he's playing in a good pitcher's park with a great defense behind him, and he's got a great manager to help him. There's always an opportunity for a pitcher, and with Conroy not pitching well, he'll get a callup in late April. A good shot at being the third straight Cardinal to win the Rookie award.

4. Kevin Seitzer, Kansas City Almost nothing has been said about him, and the plan for the moment is to platoon him with Rudy Law, but the man is going to hit buckets. He hasn't impressed defensively, but the indications are he will hit .300 with many, many walks, good line-drive power and surprising speed. His year at Omaha, equivalent to .309 at the major league level, is fully consistent with his entire hitting record. In 28 major league games he hit .323 with a .440 OBP. In 1985 he hit .314 in the Florida State League with 85 walks in 90 games. Called up to Memphis for 52 games, he hit .348. Kevin Seitzer is the best hitter produced by the Royals system since George Brett.

5. Ron Karkovice, Chicago Karkovice isn't a great hitter, but he isn't bad either. His MLE for 97 games at AA is .244 with a .430 slugging percentage; his actual performance when called up for 37 games was exactly the same, .247 and .443. With his defensive skills, that's going to keep him in the lineup, and with Parrish and possibly Gedman and Boone out of the league, that's going to mark him as the coming man for the Gold Glove.

6. Tim Pyznarski, San Diego In a season that as I see it is going to be a struggle for a good many of the San Diego rookies, Pyznarski is the one that I see as most likely to step forward as a hitter.

7. Mark McGwire, Oakland McGwire should beat Nelson in the battle for the third base job, and he has a lot of positives. While he may not hit for the .281 average shown here, his secondary average is likely to be very good, with power and plate discipline, and his defense apparently is adequate.

8. Rafael Palmeiro, Chicago Cubs Baseball America has named Palmeiro the outstanding rookie prospect of 1987. If they're just trying to pick the Rookie of the Year, it's a sound pick. With the Cub outfield in a shambles before the signing of Dawson, the opportunity is certainly there for a young player. With a bad team, the pressure isn't on him or on the manager if he starts to struggle. With Wrigley Field to inflate his stats, there is a very real chance that he is going to hit .290, .300 as a regular, and that would make him the Rookie of the Year.

But I can't see naming him the top rookie. He just isn't going to be that good a player. He may develop power, at least enough to hit some out of Wrigley, and he should hit for average, but that's basically all there is to him. If he develops well, he's going to be Bill Buckner. I don't think he's ever going to be the asset to his team that Larkin is or Kevin Seitzer or even Ty Gainey. Even as a rookie, the Cubs may open the season with Andre Dawson in right field and Keith Moreland trying to play third base. Come the 31st of May if Moreland has 14 errors Palmeiro better not be hitting .250.

9. Ty Gainey, Houston With Cruz fading and Hatcher not much of a hitter, there's room in the Houston outfield for a hitter. Gainey is a hitter.

10. Dave Valle, Seattle His defensive skills aren't the equal of Karkovice's and he'll have to battle like hell for playing time, but he sure does look like a hitter, or

10. Bobby Thigpen, White Sox As I read him, he's going to blow hot and cold, but he's going to be awfully good at times, or

10. Terry Steinbach, Oakland Steinbach, too, is going to have to win a job over competition, and it's important to remember that in 1985 he hit .272 with 9 homers in the same league he tore up in 1986, so we can't really be sure he's for real as a hitter. But he has a chance to be good.

Other rookies that I see as having a chance to make an impact: Mike Sharperson, Toronto, and Jerry Browne, Texas, are second basemen in the Robby Thompson mold, likely to draw some R.O.Y. support if they have good years. Both are fairly selective hitters, and Browne also has speed. Casey Candaele may take the keystone job in Montreal, and he would be in the same class. Nelson Liriano could play Steve Sax to Sharperson's Perconte, too (that is, take the job out from under him.) The Blue Jays ain't going to be wishing they had Damaso Garcia back. Greg Legg (love that name) is similar but would have to dislodge Juan Samuel to get a job. Good luck.

Dave Magadan probably won't hit .300 in Shea Stadium, but he'd be a decent player. Stan Javier may arrive this year. Mike Stanley of Texas may be one of those hitters who is just going to kick somebody out of the way and take a job even if there isn't one there for him. He's hit a ton everywhere he's been. Ken Gerhardt of Baltimore has legitimate power, but I don't see him as being any real improvement over Larry Sheets, Mike Young, Fred Lynn, Lee Lacy and the other people that he would be taking playing time away from. Jeff Hamilton, Dodger third baseman, probably is a more capable hitter than is reflected in his 1986 major league stats, and Larry See as a first baseman has a great opportunity and some talent. Dave Clark of Cleveland is an excellent major league hitter.

B.J. Surhoff could win the A.L. Rookie of the Year Award if he has a good year and the crop isn't too terribly strong.

In addition to players, there are some positions that you have to speak well of. With Gedman leaving Boston and Sullivan being a disgrace, there is a opportunity for a Boston catcher. If Gedman goes somewhere else, expect someone to surprise the league as a hitter. Danny Sheaffer (AAA) and John Marzano (AA) can both hit--and either of them could seize the job and wind up with a lot of ink. There is a similar situation at first base. If Bill Buckner has to be shot in April, any of several young hitters--Greenwell, Burks, or Dodson--could step in and post impressive Fenway numbers.

But if the crew of young first baseman/DH/maybe outfielder types is impressive in Boston, that in Toronto is positively awesome. With Cliff Johnson having reached the point at which his bat will no longer carry his mouth, the Blue Jays will likely give the DH job to some young stud, and boy, do they have a stable. Sil Campusano is regarded as the coming outfielder in the organization, but Cecil Fielder is the most likely to get the DH job this year. If Fielder doesn't, Kennard or Sliwinski or Chris Johnston or Glenallen Hill or somebody else will--and if one person is holding the job for 550 AB, the numbers are going to be good.

There may be an opportunity for a Detroit catcher, and Matt Nokes or Rey Palacios might step into the job and do well. If new Twin chief Tom Kelley has a brain, he'll realize that he has better hitters in his system than the people they have been using in left field (Hatcher) and at DH (Bush). There's an opportunity for Andre David, Pat Dempsey, Alejandro Sanchez, Stan Holmes or Gene Larkin, and any could probably help the team (as opposed to giving the at bats to Hatcher.) Dempsey also may earn some time as a catcher.

Now, the other side, the top rookie disappointments of 1987. With Raines and Dawson leaving, there's a great opportunity for Montreal outfielders. There may be somebody, buried in a system like Mitch Webster was, who can do it--but the guys who will get the first shot in spring training (Moore, Romano, Hocutt and Williams) figure to disappoint.

Some Cardinal fans have been talking a lot about Jim Lindeman, who drove in 96 runs for Louisville in 1986. In another park, maybe. In Busch Stadium, no. Jose Gonzalez, Dodger outfielder, has been promoted as a prospect out of sheer desperation, the Dodgers having nobody else to play center field. That's a joke. Gonzalez can't hit.

The Angels apparently intend to play Devon White in the outfield. White as a hitter will probably be comparable to Gary Pettis except that he won't walk as often. One of those in your outfield is fine. Two of them? I don't think so. Unless White adds 20 points to his average, which is certainly possible, the Angels figure to be disappointed in White's offensive output.

Some Pirate fans are still looking to Benny Distefano to provide something, but don't ask my why. Stan Jefferson, playing center field for San Diego, looks like a .250 hitter with little power; he'd better be Gary Pettis with the glove, or he's going to hear a whole lot about Kevin McReynolds. Benito Santiago, promoted as a Rookie of the Year candidate, probably isn't. Robbie Wine, a good defensive catcher, may be forced into playing time by the defensive shortcomings of Ashby and Bailey. If so, he won't hit .220.

Joey Meyer, Milwaukee DH, will have to hit a lot better than is indicated by his 1986 season to stick in the major leagues.