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A study of the weekly batting averages of the regular players and team standings in the American League in 1947 and 1948 in relation to certain psychological concepts

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BOSTON UNIVERSITY
SCHOOL OF EDUCATION

A STUDY OF THE WEEKLY BATTING AVERAGES OF THE REGULAR
PLAYERS AND TEAM STANDINGS IN THE AMERICAN LEAGUE
IN 1947 AND 1948 IN RELATION TO CERTAIN
PSYCHOLOGICAL CONCEPTS

SUBMITTED BY

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of the Requirements for the Degree
Master of Education

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CHAPTER I
THE PROBLEM

Baseball coaches, managers, and students of the game today hold many and varied opinions as to possible team standings due to the batting performance of regular players. These theories or opinions are, in actuality, unproven hypotheses which are founded primarily on subjective judgement rather than scientific fact.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to determine if upgrade or downgrade of batters' averages affects team standing; (2) to show the relationship, if any, of weekly batting averages of regulars with team standings.

Justification for the study. Baseball is recognized as the national sport in this country and its popularity is truly shown by the enthusiasm which overwhelms an area where a pennant may be in the making. Like most games it requires the execution of certain basic techniques or fundamentals such as running, catching, throwing, and batting. With the enthusiasm shown in this national sport for a winning team, it becomes evident that certain as-

pects of the fundamental ability of batting in relation to team success might well be considered in the light of objective evaluation. To this date records of most phases of Major League baseball have been kept, but truly objective research has been so limited as to cast little light upon this relationship of batting ability with team success. Ethan Allen, major league ball player and student of physical education, states that:

Batting, unlike other fundamentals of baseball, depends mainly on individual ability. A player is or isn't a good batter and, regardless of teaching, the condition is changed but little. This is evidenced by the fact many major league players compile their highest batting averages early in their careers.¹

It is hoped that this study will serve as a guide to the evaluation of certain psychological concepts concerning player's batting averages and relative team standings through the application of objective data obtained from reliable statistical sources.

1. Ethan Allen, Major League Baseball (New York The Macmillan Company, 1949), p. 153.

CHAPTER II

REVIEW OF THE LITERATURE

There has not been, to the knowledge of the researcher, any published research dealing with the study of baseball batting averages and its effect on team standings. The greatest portion of baseball literature has dealt with the science of playing the game defensively and offensively, individual team histories, stories and records of outstanding players, the ability of numerous successful managers in handling major league ball team, and others along these same patterns. None of these, however, throw any light on the problem being studied.

CHAPTER III
TECHNIQUES AND PROCEDURES

In this study the investigator attempted to gather the most accurate statistics available and to select a group which would be representative for the purpose of the research.

I. THE GROUP STUDIED

Description of the group. The study was carried out for the 1947 and 1948 seasons of the American League of Professional Baseball Clubs. The weekly batting averages of the eight most regular players on each of the eight teams in the league were used in both years, thus affording the records of 64 players for each year. In a few instances the records of two players were used to complete the roster of eight players for each week. This was necessitated by such things as possible sickness, injury, or the trading of a regular player. The pitchers on each team were omitted because it was not feasible to include them as regular daily players. The weekly team standings of the eight teams were also recorded for each year.

II. MATERIALS AND METHODS USED

Gathering and filing data. In order to obtain the 3,072 batting averages and the 284 team standings used in the study, two chief sources were used; (1) Howe News Bureau (a professional statistical gathering agency), and (2) New York Times newspaper. The batting averages were obtained chiefly from the Howe News Bureau and supplemented by the New York Times, while the team standings were obtained solely from the New York Times. The data thus secured was recorded in systematic order on charts (Table 1 and Table 2). The information on these charts was later transferred to graphs for interpretation. The data collected on the weekly batting averages was compiled by the Howe News Bureau for release to newspapers on the same day each week with very few variations. The total number of releases were 24 for each year studied. Thus each of the players used in the study had 24 weekly batting averages to be recorded for each year. In order to keep the relationship of batting averages to team standings as reliable as possible, the weekly standing of each team was recorded as of the same day as the batting averages were compiled. To keep the standings more accurate, the percentages (Table 2) were used rather than the listings of

the newspaper. Therefore, if two teams were tied for second place, they were both considered as holding that position and third place was left vacant. This method proved to be the most reasonable.

The complete raw data, of which tables 1 and 2 and figures 1 and 2 are samples, will be left by the author in the Physical Education office in the School of Education.

TABLE 1. WEEKLY BATTING AVERAGES OF REGULARS FOR 1948 (SAMPLE CHART)

| BOSTON | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|--------|-------|-----|-----|---------|-----|-----|-----|---------|-----|-----|-----|-----|--------|-----|-----|-----|-----|--------|-----|-----|-----|-----|-------|--|
| Williams | 379 | 385 | 411 | 372 | 374 | 388 | 387 | 407 | 417 | 402 | 392 | 388 | 388 | 391 | 390 | 388 | 383 | 374 | 368 | 367 | 377 | 370 | 367 | 369 | |
| Goodman | 250 | 214 | 270 | 240 | 209* | 231 | 263 | 258 | 272 | 297 | 312 | 315 | 312 | 309 | 302 | 298 | 296 | 296 | 306 | 315 | 312 | 317 | 312 | 311 | |
| DiMaggio D | 143 | 169 | 215 | 222 | 234 | 242 | 245 | 252 | 254 | 289 | 258 | 261 | 251 | 266 | 260 | 262 | 263 | 276 | 277 | 281 | 277 | 286 | 285 | 285 | |
| Doerr | 258 | 214 | 231 | 275 | 263 | 275 | 277 | 286 | 260 | 257 | 269 | 271 | 277 | 286 | 289 | 282 | 282 | 285 | 291 | 291 | 290 | 287 | 285 | 285 | |
| Pesky | 171 | 237 | 238 | 267 | 269 | 267 | 265 | 263 | 270 | 276 | 270 | 273 | 281 | 277 | 277 | 281 | 289 | 295 | 290 | 285 | 287 | 284 | 284 | 281 | |
| Tebbetts | 217 | 238 | 246 | 311 | 289 | 286 | 305 | 299 | 302 | 289 | 289 | 286 | 284 | 277 | 286 | 283 | 285 | 283 | 287 | 281 | 283 | 280 | 282 | 278 | |
| Stephens | 219 | 267 | 253 | 269 | 261 | 265 | 279 | 286 | 297 | 299 | 300 | 300 | 300 | 292 | 290 | 283 | 283 | 282 | 282 | 279 | 277 | 271 | 271 | 269 | |
| Spence | 192 | 222 | 271 | 292 | 304 | 256 | 240 | 228 | 230 | 221 | 214 | 208 | 215 | 205 | 220 | 218 | 222 | 228 | 223 | 230 | 226 | 232 | 236 | 235 | |
| CLEVELAND | | | | | | | | | | | | | | | | | | | | | | | | | |
| Boudreau | 519 | 425 | 429 | 439 | 383 | 354 | 377 | 374 | 371 | 368 | 364 | 355 | 349 | 347 | 343 | 346 | 361 | 366 | 369 | 369 | 358 | 353 | 355 | 355 | |
| Mitchell | 333 | 313 | 278 | 244 | 295 | 264 | 278 | 286 | 287 | 291 | 307 | 306 | 336 | 332 | 321 | 327 | 331 | 343 | 345 | 335 | 335 | 335 | 339 | 335 | |
| Doby | 300 | 256 | 269 | 256 | 258 | 248 | 254 | 252 | 275 | 286 | 286 | 288 | 278 | 275 | 275 | 270 | 274 | 281 | 283 | 288 | 288 | 293 | 296 | 301 | |
| Keltner | 375 | 351 | 365 | 346 | 333 | 315 | 309 | 305 | 276 | 282 | 293 | 283 | 284 | 295 | 302 | 291 | 286 | 292 | 284 | 288 | 286 | 292 | 297 | 299 | |
| Gordon | 241 | 227 | 239 | 244 | 255 | 250 | 241 | 258 | 250 | 248 | 251 | 260 | 264 | 268 | 260 | 267 | 272 | 268 | 275 | 276 | 278 | 280 | 278 | 279 | |
| Robinson E | 462 | 341 | 284 | 294 | 279 | 269 | 284 | 274 | 270 | 268 | 288 | 288 | 268 | 270 | 270 | 272 | 267 | 261 | 261 | 255 | 258 | 250 | 248 | 256 | |
| Hegan | 321 | 316 | 304 | 288 | 258 | 241 | 226 | 226 | 208 | 209 | 211 | 208 | 222 | 220 | 219 | 217 | 232 | 234 | 243 | 252 | 245 | 251 | 251 | 248 | |
| Tucker | 231 | 244 | 278 | 293 | 303 | 299 | 299 | 299 | 283 | 278 | 278 | 276 | 275 | 275 | 275 | 260 | 256 | 254 | 258 | 268 | 276 | 259 | 260 | 260 | |
| Week Ending | Apr 29 | May 6 | 12 | 20 | June 27 | 3 | 10 | 17 | July 24 | 1 | 8 | 11 | 22 | Aug 29 | 5 | 12 | 19 | 26 | Sept 2 | 10 | 16 | 24 | 30 | Oct 3 | |

*Jones

TABLE 2. WEEKLY TEAM STANDINGS* BY PERCENTAGES* FOR 1948 (SAMPLE CHART)

| WEEK ENDING | CLEV. | BOS. | N. Y. | PHIL. | DET. | ST.LO. | WASH. | CHIC. |
|-------------|-------|------|-------|-------|------|--------|-------|-------|
| April 29 | 1000 | 7286 | 3571 | 5500 | 6444 | 3571 | 2625 | 8143 |
| May 6 | 1667 | 4538 | 3583 | 2615 | 7400 | 5500 | 6462 | 8273 |
| 12 | 2688 | 6421 | 3667 | 1722 | 5429 | 7400 | 4474 | 8188 |
| 20 | 1714 | 5458 | 3609 | 2667 | 4481 | 7429 | 5458 | 8182 |
| 27 | 1679 | 6419 | 3600 | 2677 | 4500 | 5464 | 6419 | 8241 |
| June 3 | 1657 | 7385 | 3579 | 2650 | 5475 | 4500 | 5475 | 8238 |
| 10 | 1700 | 6444 | 2600 | 3587 | 5478 | 7419 | 4489 | 8287 |
| 17 | 1660 | 5480 | 3569 | 2585 | 4528 | 7408 | 6453 | 8305 |
| 24 | 1636 | 4519 | 2586 | 3574 | 5483 | 7393 | 6458 | 8333 |
| July 1 | 1629 | 4525 | 3594 | 2597 | 6460 | 7487 | 5469 | 8322 |
| 8 | 1623 | 4522 | 3569 | 2613 | 5486 | 7377 | 6458 | 8338 |
| 11 | 1620 | 4528 | 3587 | 2603 | 5507 | 7380 | 6440 | 8324 |
| 22 | 1614 | 3571 | 3571 | 2589 | 5500 | 7370 | 6440 | 8329 |
| 29 | 3584 | 1598 | 4582 | 2594 | 5495 | 7379 | 6429 | 8330 |
| August 5 | 1596 | 4586 | 2594 | 3590 | 5479 | 7394 | 6423 | 8333 |
| 12 | 16019 | 3585 | 4573 | 26018 | 5481 | 7402 | 6410 | 8343 |
| 19 | 1622 | 2595 | 4578 | 3593 | 5491 | 7394 | 6396 | 8327 |
| 26 | 1607 | 2602 | 3595 | 4571 | 5496 | 6404 | 7381 | 8342 |
| Sept 2 | 3603 | 1616 | 2608 | 4570 | 5488 | 7385 | 6389 | 8336 |
| 10 | 3602 | 1636 | 2609 | 4563 | 5484 | 6403 | 7366 | 8333 |
| 16 | 3604 | 1630 | 2621 | 4570 | 5496 | 6397 | 7348 | 8333 |
| 24 | 1623 | 1623 | 3616 | 4557 | 5502 | 6389 | 7358 | 8326 |
| 30 | 1629 | 2616 | 2616 | 4551 | 5500 | 6389 | 7360 | 8329 |
| Oct 3 | 1623 | 1623 | 3610 | 4545 | 5506 | 6386 | 7366 | 8336 |

Transfer of data to graphs. To facilitate the handling and interpreting of the statistics the total data collected on the charts (Table 1) for weekly batting averages was transferred to individual graphs designed by the author for this study (Figure 1). Mimeographed 5X8 cards were used for this purpose. The averages on the cards for graphing purposes ran from .100 to .525 because the investigator noted that the averages gathered for the study spanned mainly from .200 to .400. This would then place the curves on the graphs centrally in the majority of the cases and balance the graph for a more distinct interpretation.

Mimeographed 5X8 cards were also used for the graphing of the data collected on the team standings. (Figure2). A separate card was used for each team to make comparisons and relationships clearer.

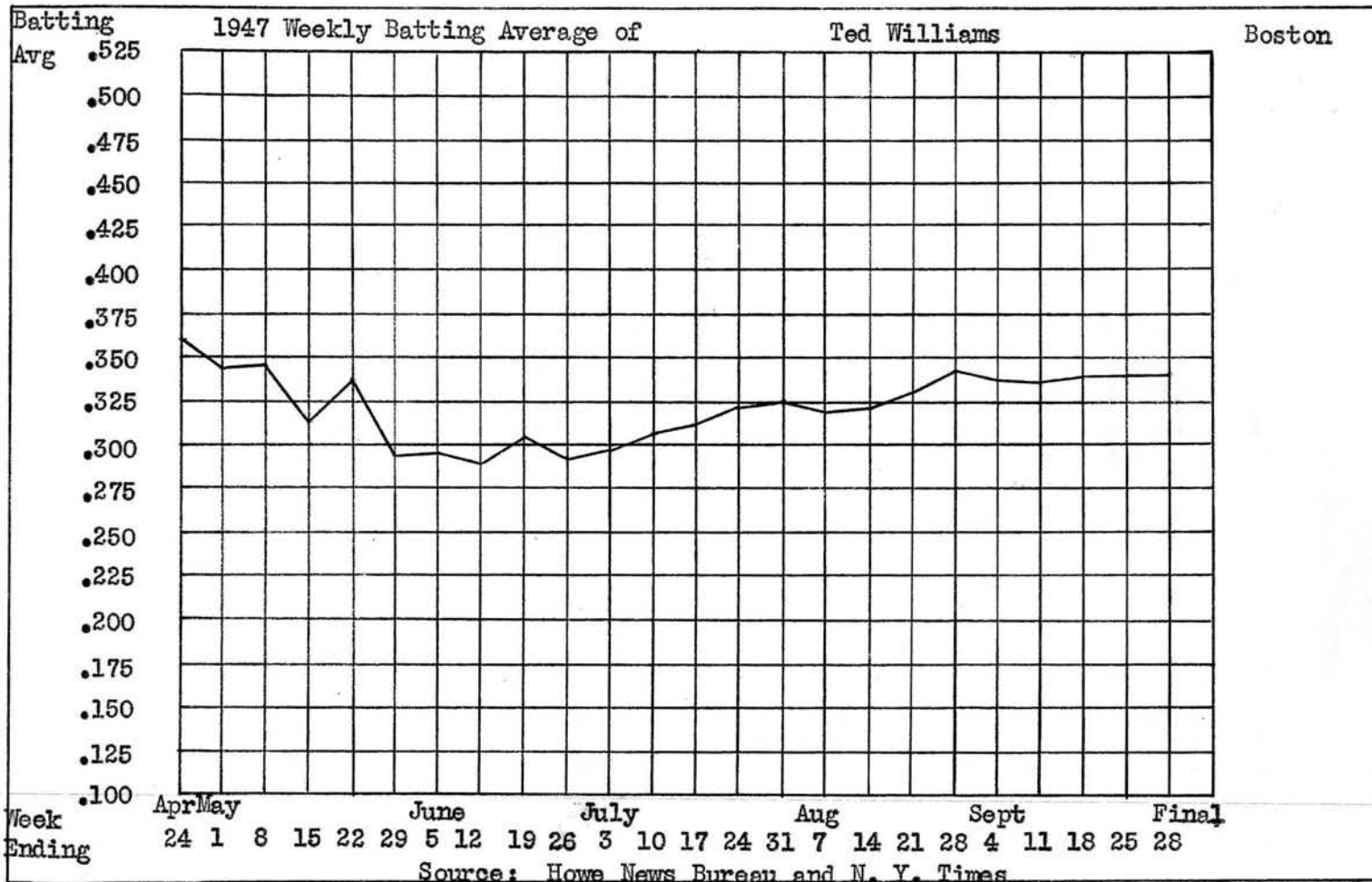


Figure 1.

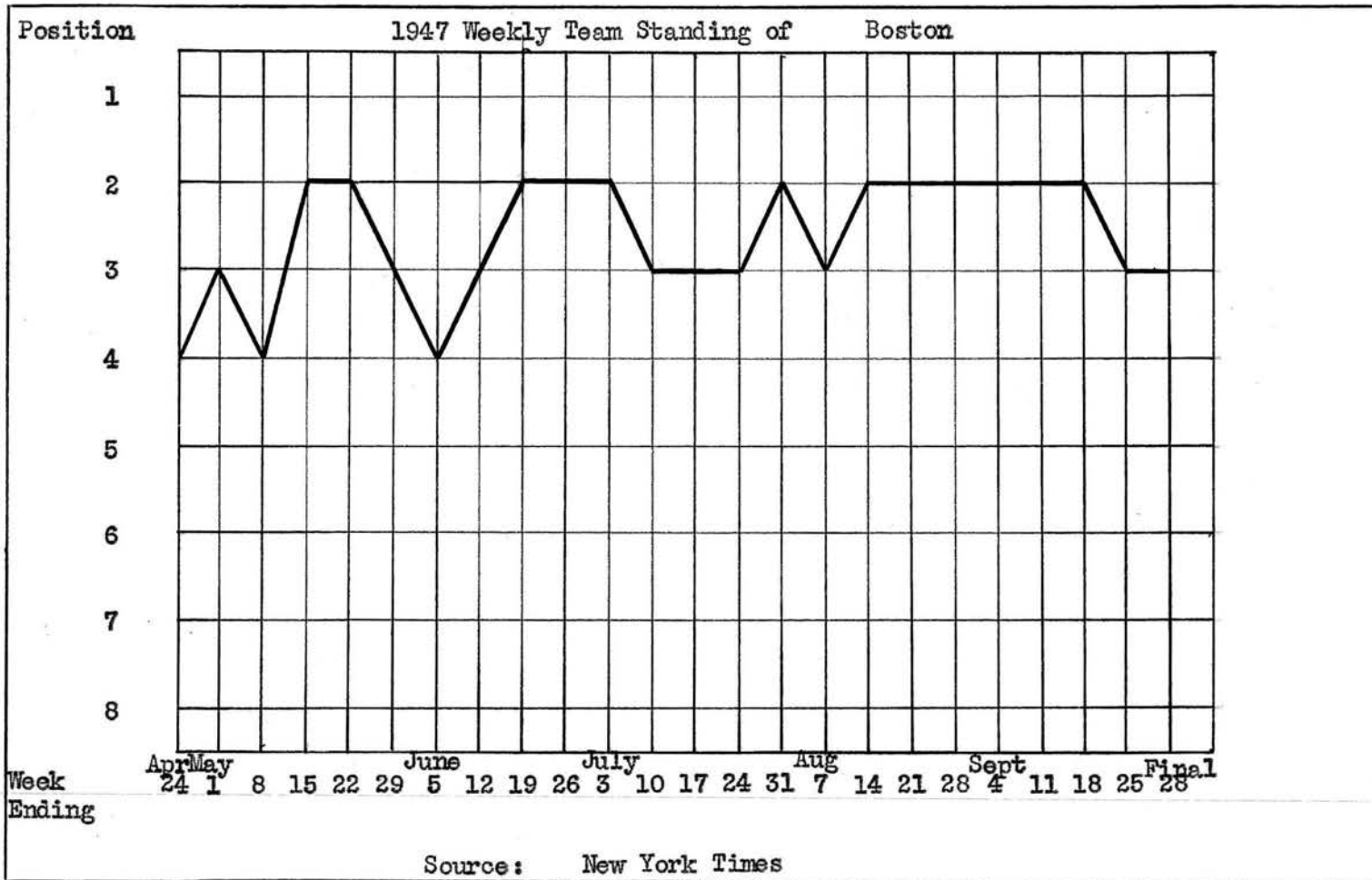


Figure 2..

CHAPTER IV
DISCUSSION OF DATA

This chapter will be concerned with reporting the findings and results of the study in relation to certain psychological factors.

I. THE EFFECT OF BATTERS' UPGRADE OR DOWNGRADE ON TEAM STANDING.

The data collected for the two year period 1947 and 1948 on the regular players in the American League of Professional Baseball Clubs tends to substantiate the theory that winning teams must have batters who are on the upgrade and inspire others on the team with a psychological spirit of winning. Because of the many variables which enter into the study, it is impossible to prove this theory conclusively.

In order to determine the effect of upgrade or downgrade of batters on team standings, each player's batting record was analysed as to its direction for both the first half and the last half of the season. This information was then tabulated for each team and compared to the team standing for each half of the year by means of a specially prepared chart (Table 3 and Table 4). This

chart shows how many batting averages were going up, going down, or neither going up nor down, and it shows the team standings at the end of the first half of the season and at the end of the second half of the season.

TABLE 3. NUMBER OF BATTING AVERAGES GOING UP AND DOWN ON EACH TEAM FOR BOTH HALVES OF THE 1947 SEASON, AND THE TEAM STANDINGS AT THE END OF EACH HALF OF THE SEASON

| 1st Half April 24 - July 10 Number of Batting Averages Going Up and Down | | | | | | | | 2nd Half July 17 - Sept 28 Number of Batting Averages Going Up and Down | | | | | | | |
|---|------|------|-------|-------|-------|-------|--------|--|------|------|-------|-------|-------|-------|--------|
| N.Y. | DET. | BOS. | PHIL. | CLEV. | CHIC. | WASH. | ST.LO. | N.Y. | DET. | BOS. | CLEV. | PHIL. | CHIC. | WASH. | ST.LO. |
| 8 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | X | | | |
| 6 | X | | | X | | | | | | X | | | | | |
| 5 | | | | | | | X | | | | | | X | | |
| 4 | | X | | | X | | | X | | | | | | X | |
| 3 | | | X | | | | | X | | | X | | | | |
| 2 | | | | | X | X | | | | | | | | | X |
| 1 | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | 1 | 1 | | | 1 | 2 |
| 1 | | | | | | | | | | X | | X | | | |
| 2 | X | | | X | | | | | | | | | | | |
| 3 | | | | | | | X | | | | | | X | X | |
| 4 | | X | | | X | | | X | | | X | | | | X |
| 5 | | | X | | | | | X | | | | | | | |
| 6 | | | | | X | X | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |

TABLE 4. NUMBER OF BATTING AVERAGES GOING UP AND DOWN ON EACH TEAM FOR BOTH HALVES OF THE 1948 SEASON, AND THE TEAM STANDINGS AT THE END OF EACH HALF OF THE SEASON

| 1st Half April 29 - July 11 Number of Batting Averages Going Up and Down | | | | | | | | 2nd Half July 22 - Oct 3 Number of Batting Averages Going Up and Down | | | | | | | |
|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|
| CLEV. PHIL. N.Y. BOS. DET. WASH. ST.LO. CHIC. | | | | | | | | CLEV. BOS. N.Y. PHIL. DET. ST.LO. WASH. CHIC. | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | X | | | | | |
| 6 | | | | X | | | | X | | | | | | | |
| 5 | | X | | | | | | | X | | X | | | | |
| 4 | X | | X | | | X | | | | | | X | | | |
| 3 | | | | | | | X | | | | | | X | | |
| 2 | | | | | X | | | | | | | | | X | X |
| 1 | | | | | | | | | | | | | | | |
| 0 | | 1 | | | 2 | | 1 | | | | 1 | 1 | 1 | 2 | 2 |
| 1 | | | | | | | | | | X | | | | | |
| 2 | | X | | X | | | | X | | | X | | | | |
| 3 | | | | | | | | | X | | | | | | |
| 4 | X | | X | | X | X | X | | | | | X | X | X | X |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | X | | | | | | | | | | | |

The investigation of both tables 3 and 4 shows a trend whereby teams in the first division had more batters on the upgrade than the teams in the second division for both halves of the season. Table 5 shows the results of this tabulation.

TABLE 5. TOTALS OF BATTING AVERAGES GOING UP AND DOWN IN BOTH DIVISIONS

| 1947 | | | | |
|-----------------|----|---------|------|-------------|
| | UP | NEITHER | DOWN | |
| First Division | 19 | | 13 | First Half |
| Second Division | 13 | | 19 | |
| First Division | 16 | 2 | 14 | Second Half |
| Second Division | 18 | 3 | 11 | |

| 1948 | | | | |
|-----------------|----|---------|------|-------------|
| | UP | NEITHER | DOWN | |
| First Division | 19 | 1 | 12 | First Half |
| Second Division | 9 | 3 | 20 | |
| First Division | 23 | 1 | 8 | Second Half |
| Second Division | 11 | 6 | 16 | |

Thus the indications from the analysed group data

are that batters' upgrade or downgrade trends during the season may have a reliable effect on the team standing. Further study with the statistics of other years is indicated.

II. THE RELATIONSHIP OF WEEKLY BATTING AVERAGES WITH WEEKLY TEAM STANDINGS.

This phase of the study dealt with the comparison of batting averages with team standings in an effort to discover how closely the yearly curves of both tended to assimilate. In order to carry this out, it was necessary for the investigator to take the batting averages of the eight players on each team and find the average for the team for each week of the season (Tables 6 & 7). With the data gathered on these two tables and the data gathered on table 2 and its equivalent for 1947, it was possible for the experimenter to set up two scatter grams (Tables 8 and 9) in order to get a graphic representation of the correlation. It was felt that the graphic representations would give a good implication of the trend of the relationship of the batting averages with team standing.

It is interesting to note that in both graphs, the correlation tends to be positive and in 1947 more so than

in 1948. The indications are that the batting averages have considerable relationship to team standings and warrants much attention if a team is to be a winning team. Further study is indicated with other years and a larger group.

In order to determine statistically the relation of team batting average to team standing, the coefficient of correlation was computed by means of the Pearson product-moment method. The result showed a correlation coefficient of $+ .600$ for the 1947 season and $+ .453$ for the 1948 season.

The significance of the computed correlations were tested by the z transformation¹ and were found to be significantly different from zero at the 1.0 per cent level of confidence. This is $\pm .187$ for 192 cases that were in this study. For 1947, the value would fluctuate between $.47$ and $.71$ and for 1948, the value would fluctuate between $.30$ and $.59$. Thus both correlations were shown to be statistically significant.

1. Quinn McNemar, Psychological Statistics (New York: John Wiley and Sons, Inc., 1949) p. 123

TABLE 6. WEEKLY TEAM BATTING AVERAGES*AND TEAM POSITION IN BATTING*(1947)

| WEEK ENDING | N.Y. | CLEV. | BOS. | PHIL. | DET. | CHIC. | ST.LO. | WASH. |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| April 24 | 6 ² 28625 | 1 ² 297500 | 2 ² 265750 | 7 ² 215875 | 5 ² 235875 | 3 ² 259625 | 8 ² 197500 | 4 ² 243750 |
| May 1 | 8 ² 213125 | 1 ² 277625 | 2 ² 274375 | 5 ² 245375 | 7 ² 230250 | 3 ² 260750 | 6 ² 234375 | 4 ² 255750 |
| 8 | 6 ² 247750 | 2 ² 267125 | 3 ² 266375 | 7 ² 239625 | 4 ² 266000 | 1 ² 285500 | 8 ² 223000 | 5 ² 258625 |
| 15 | 5 ² 262300 | 1 ² 282750 | 2 ² 279500 | 7 ² 240875 | 4 ² 272375 | 3 ² 276500 | 8 ² 228250 | 6 ² 258250 |
| 22 | 6 ² 257000 | 2 ² 270750 | 4 ² 258125 | 7 ² 238875 | 3 ² 261125 | 1 ² 280250 | 8 ² 238000 | 5 ² 258500 |
| 29 | 2 ² 271578 | 1 ² 276000 | 7 ² 241000 | 6 ² 243750 | 4 ² 260125 | 5 ² 248375 | 8 ² 237500 | 3 ² 264500 |
| June 5 | 1 ² 277750 | 3 ² 272000 | 6 ² 241875 | 7 ² 238875 | 4 ² 263875 | 5 ² 246750 | 8 ² 237125 | 2 ² 272125 |
| 12 | 1 ² 277250 | 2 ² 274625 | 7 ² 241125 | 5 ² 244000 | 3 ² 263750 | 6 ² 243250 | 8 ² 239250 | 4 ² 249250 |
| 19 | 1 ² 285250 | 2 ² 277500 | 5 ² 249125 | 8 ² 244875 | 3 ² 263375 | 6 ² 247125 | 7 ² 245375 | 4 ² 253875 |
| 26 | 1 ² 285500 | 2 ² 278000 | 5 ² 251250 | 8 ² 247375 | 3 ² 258500 | 7 ² 247625 | 4 ² 252000 | 6 ² 251000 |
| July 3 | 1 ² 281875 | 2 ² 276375 | 8 ² 249250 | 4 ² 258000 | 3 ² 267375 | 7 ² 250250 | 6 ² 250500 | 5 ² 252000 |
| 10 | 1 ² 286875 | 2 ² 283125 | 8 ² 251500 | 5 ² 254375 | 3 ² 268750 | 4 ² 256000 | 6 ² 252875 | 7 ² 251625 |
| 17 | 1 ² 287875 | 2 ² 283500 | 8 ² 252250 | 5 ² 255125 | 3 ² 271125 | 4 ² 257500 | 7 ² 252875 | 6 ² 253250 |
| 24 | 1 ² 289625 | 2 ² 282500 | 4 ² 259125 | 6 ² 256625 | 3 ² 268875 | 5 ² 257250 | 7 ² 253000 | 8 ² 244875 |
| 31 | 1 ² 289250 | 2 ² 281625 | 4 ² 263250 | 5 ² 259375 | 3 ² 265375 | 6 ² 255500 | 8 ² 244500 | 7 ² 248625 |
| Aug 7 | 1 ² 287000 | 2 ² 279875 | 4 ² 263125 | 6 ² 259000 | 3 ² 267375 | 5 ² 260750 | 7 ² 246000 | 8 ² 245000 |
| 14 | 1 ² 288875 | 2 ² 283875 | 4 ² 266125 | 6 ² 259500 | 5 ² 265625 | 3 ² 266375 | 7 ² 243875 | 8 ² 242125 |
| 21 | 1 ² 288625 | 2 ² 287000 | 3 ² 265750 | 6 ² 260750 | 5 ² 265000 | 4 ² 265625 | 7 ² 243000 | 8 ² 241750 |
| 28 | 1 ² 288875 | 2 ² 282625 | 3 ² 268000 | 5 ² 263500 | 6 ² 262250 | 4 ² 267875 | 7 ² 243375 | 7 ² 243375 |
| Sept 4 | 1 ² 289750 | 2 ² 280625 | 3 ² 271000 | 6 ² 261750 | 5 ² 264375 | 4 ² 270375 | 7 ² 243125 | 8 ² 241875 |
| 11 | 1 ² 289875 | 2 ² 278250 | 4 ² 271750 | 3 ² 275000 | 6 ² 263125 | 5 ² 270250 | 7 ² 243125 | 8 ² 241375 |
| 18 | 1 ² 287875 | 2 ² 278250 | 3 ² 276750 | 5 ² 268500 | 6 ² 266000 | 4 ² 269625 | 8 ² 244000 | 7 ² 244125 |
| 25 | 1 ² 286000 | 3 ² 257750 | 2 ² 278875 | 5 ² 268250 | 6 ² 264750 | 4 ² 272625 | 7 ² 245500 | 8 ² 243375 |
| 28 | 1 ² 284500 | 3 ² 273750 | 4 ² 272625 | 5 ² 269625 | 6 ² 264875 | 2 ² 281875 | 7 ² 247625 | 8 ² 244375 |

TABLE 7. WEEKLY TEAM BATTING AVERAGES*AND TEAM POSITION IN BATTING*(1948)

| WEEK ENDING | BOS. | CLEV. | N.Y. | ST.LO. | DET. | PHIL. | CHIC. | WASH. |
|----------------|----------|----------|----------|----------|----------|----------|----------|----------|
| April 29 | 8 228625 | 1 244775 | 6 261875 | 5 265125 | 2 294500 | 7 235875 | 3 280250 | 4 270875 |
| May 6 | 8 243250 | 1 309125 | 4 282750 | 6 253250 | 2 306000 | 5 267250 | 7 246875 | 3 296625 |
| 12 | 6 266875 | 1 305750 | 3 277500 | 5 268750 | 2 283000 | 4 270750 | 8 245750 | 7 259375 |
| 20 | 4 281000 | 1 300500 | 3 284000 | 5 267750 | 2 298425 | 8 252625 | 6 254875 | 7 254750 |
| 27 | 4 287875 | 2 295500 | 3 292875 | 5 284750 | 1 300000 | 6 264000 | 8 253375 | 7 260875 |
| June 3 | 5 276250 | 4 280000 | 3 281875 | 2 282000 | 1 294250 | 7 260500 | 8 256125 | 6 267875 |
| 10 | 3 282625 | 2 283500 | 4 276250 | 5 274250 | 1 290000 | 8 259625 | 7 261125 | 6 266125 |
| 17 | 1 284875 | 2 284250 | 4 274750 | 5 273500 | 3 282750 | 8 257125 | 7 262125 | 6 266500 |
| 24 | 1 287750 | 2 277500 | 5 269625 | 2 277500 | 4 276375 | 8 255625 | 6 269500 | 7 256625 |
| July 1 | 1 291250 | 2 278750 | 4 273125 | 3 276250 | 5 271125 | 7 258625 | 6 269125 | 8 255625 |
| 8 | 1 288000 | 2 284750 | 6 269125 | 4 277875 | 5 276000 | 7 264125 | 3 278125 | 8 255250 |
| 11 | 1 287750 | 2 283000 | 6 272250 | 5 273500 | 4 277250 | 7 266500 | 3 279875 | 8 259625 |
| 22 | 1 288500 | 2 284500 | 6 273125 | 3 278875 | 5 276500 | 7 265125 | 4 277500 | 8 262750 |
| 29 | 1 287875 | 2 285250 | 6 274875 | 5 276750 | 3 279250 | 7 266625 | 4 278000 | 8 256125 |
| Aug 5 | 1 289250 | 3 283125 | 4 276000 | 2 288125 | 5 275375 | 7 266375 | 6 274000 | 8 253625 |
| 12 | 2 286875 | 3 281250 | 4 277375 | 1 287500 | 7 262500 | 6 267750 | 5 271750 | 8 251625 |
| 19 | 1 287875 | 2 284875 | 4 280375 | 3 283750 | 5 272250 | 7 269875 | 6 270000 | 8 249375 |
| 26 | 1 289875 | 2 287375 | 3 282750 | 4 276125 | 6 270500 | 5 271250 | 7 268750 | 8 250500 |
| Sept 2 | 1 290500 | 2 289750 | 3 282500 | 4 276625 | 7 269375 | 5 270500 | 6 269500 | 8 249750 |
| 10 | 2 291125 | 1 291875 | 3 284875 | 4 275750 | 6 271625 | 5 272000 | 7 269000 | 8 247875 |
| 16 | 1 291125 | 2 290500 | 3 283750 | 5 275250 | 6 271875 | 4 275375 | 7 269475 | 8 245375 |
| 24 | 1 290875 | 2 289125 | 3 286125 | 4 278250 | 6 271375 | 5 276375 | 7 269500 | 8 245750 |
| 30 | 2 290250 | 1 290500 | 3 287500 | 5 277000 | 6 271875 | 4 278125 | 7 269500 | 8 247250 |
| Oct. 3 | 2 289125 | 1 291625 | 3 286875 | 5 277875 | 6 273125 | 4 278125 | 7 271125 | 8 248750 |

TABLE 8. CORRELATION OF TEAM BATTING AVERAGE AND TEAM STANDING FOR 1947

| POSITION OF TEAM BATTING AVERAGE | TEAM STANDING | | | | | | | | TOTAL |
|---|---------------|----|----|----|----|----|----|----|-------|
| | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
| 1 | | | | | 2 | 3 | 2 | 17 | 24 |
| 2 | | | 4 | 9 | 5 | 4 | 2 | | 24 |
| 3 | | | 2 | 3 | 3 | 3 | 9 | 4 | 24 |
| 4 | 1 | 2 | 8 | 1 | 1 | 3 | 5 | 3 | 24 |
| 5 | 1 | 4 | 2 | 6 | 6 | 3 | 2 | | 24 |
| 6 | 2 | 6 | 2 | 3 | 5 | 3 | 2 | 1 | 24 |
| 7 | 12 | 5 | 2 | 2 | 1 | 3 | | | 25 |
| 8 | 8 | 7 | 2 | 1 | | 3 | 2 | | 23 |
| TOTAL | 24 | 24 | 22 | 25 | 23 | 25 | 24 | 25 | 192 |

TABLE 9. CORRELATION OF TEAM BATTING AVERAGE AND TEAM STANDING FOR 1948

| POSITION OF TEAM BATTING AVERAGE | TEAM STANDING | | | | | | | | TOTAL |
|---|---------------|----|----|----|----|----|----|----|-------|
| | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
| 1 | | 1 | | 3 | 6 | 2 | 3 | 9 | 24 |
| 2 | | 3 | 1 | 1 | 2 | 4 | 1 | 13 | 25 |
| 3 | 3 | 3 | 2 | 1 | 1 | 7 | 4 | 2 | 23 |
| 4 | 2 | 2 | 4 | 3 | 5 | 3 | 3 | 2 | 24 |
| 5 | 1 | 7 | 4 | 5 | 4 | 1 | 2 | | 24 |
| 6 | 6 | | 2 | 8 | 2 | 4 | 2 | | 24 |
| 7 | 9 | | 2 | 4 | 1 | 2 | 6 | | 24 |
| 8 | 3 | 7 | 8 | 1 | 1 | 2 | 2 | | 24 |
| TOTAL | 24 | 23 | 23 | 26 | 22 | 25 | 23 | 26 | 192 |

CHAPTER V
SUMMARY AND CONCLUSIONS

Summary. In summing up the study it may be stated that, for the particular group studied, team batting skill has statistical significance on team standing. The many variables which crop into a study such as this reduce its reliability. However, from the data gathered and with the consideration that all players and teams have approximately the same chance of interference from these variables, the study suggests that there is a significant relationship between batting averages and team standing.

Conclusions. Undoubtedly further objective study is indicated from the findings of this investigation which may be in contrast to general opinion.

1. It may be concluded that batting averages which are consistently high or on the upgrade are the keynotes of success in keeping teams in the upper divisions of the league.

2. The important effect of batting averages on team standing is shown by the significant correlation coefficient of $+ .600$ for the 1947 season and $+ .453$ for the 1948 season.

3. In the first half of the 1947 season, 60 per cent of the batting averages of the players in the first division were on the upgrade while 40 per cent were on the downgrade. In the second division, the reverse was true with 40 per cent on the upgrade and 60 per cent on the downgrade.

4. In the second half of the 1947 season, the first division had 50 per cent on the upgrade and 44 per cent on the downgrade and 6 per cent going neither way. The second division had 56 per cent on the upgrade and 34 per cent on the downgrade with 10 per cent going neither way.

5. The first half of the 1948 season had 60 per cent in the first division going upward and 37 per cent going downward with 3 per cent going neither way. The second division had 28 per cent going upward and 63 per cent going downward with 9 per cent going neither way.

6. The second half of the 1948 season found the first division with 72 per cent going upward and 25 per cent going downward with 3 per cent going neither way. The second division had 34 per cent going upward and 50 per cent going downward with 16 per cent going neither way.

7. The second half of the 1947 season showed the only inconsistency during the two seasons.

The concept that the younger players have more enthusiasm and drive resulting in an upward trend in their batting averages seems to have a significant place in this study. A player can only go so high in his career and then the path is downward. For some, it is only one year in the major leagues, for other, baseball gives challenge for many years and as long as there is a challenge, the top has not been reached. The motivation which is responsible for the improvement toward mastery is very important. When motivation is lost a downward trend is usually the result, and in case of an upward swing again or a relearning, the motivational value has been reduced one half. When the player becomes satisfied that he has mastered the sport the usual trend of batting averages is downward, for the game has then become work and not play. This downward trend is an important phase of the player's contribution to a possible good team standing. As the study pointed out, a team needs players who are on the upgrade to be a winner and so it would be logical to assume that teams would be wise to bring new young players into their lineups almost every season. The investigator, however, did not overlook the fact that there have been a few exceptional players like Ty Cobb who played 24 years in the majors and had a lifetime batting average of .367, but the fact remains

that they are the exceptions and not the usual cases.

More research is needed to consider the possible effect such variables as pitchers' batting averages, and substitute players batting averages have upon standings. This type of study presents many variables which are very difficult to control under normal conditions.

Managers, coaches, players, and students of the game everywhere would do well to apply objective and scientific measurement to the many phases of the game in order to reevaluate some of the theories upon which the game is founded. Inquiry of this nature will do much to improve and foster the game at all levels.

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