

## Where Is the Home Choke?

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Lab and field data did not support the home-choke hypothesis as it was articulated by R. F. Baumeister and A. Steinhilber (1984). Home teams do not perform poorly in key games. Furthermore, evidence favors a darker form of choking (social pressure plus self-doubts), not the kinder form (disruptive fantasies of success in front of a supportive audience) that explicitly distinguished the home choke. R. F. Baumeister's (1995) reply clouded the concept of the home choke and blurred the standards for its assessment. Even the new measure he proposed usually favored the home team. For coaches and players, the data offer a straightforward conclusion: Take the home field if you have a choice.

The exquisite beauty of the scientific method lies in its demand for an interplay between ideas and data. For an idea to survive, much less prosper, its advocates must provide evidence to convince fans and skeptics that the data warrant the conclusion. In our view, the central issue here is simple and straightforward: Do the data support the home-choke hypothesis as it was articulated by Baumeister and Steinhilber (1984)? It is not whether people choke in pressure situations or whether archival data are messier than laboratory data. We looked closely at the home-field disadvantage and could not find satisfactory evidence for it. The baseball and basketball championships, on which the idea was based, usually showed a clear home-field *advantage* in key games. If a player or coach asks our advice, we confidently answer, "Take the home field if you have a choice."

In his reply, Baumeister (1995) mentioned only the World Series data and ignored data from basketball and other baseball championships. He also took a different, more amorphous approach to choking than he did in his earlier article with Steinhilber (Baumeister & Steinhilber, 1984). Current research supports a darker form of choking, not the kinder form of the home choke. Furthermore, we do not agree that the problem is due to the sometimes messy nature of archival data. Any data set, lab or field, can be good or bad. The home-choke idea may be intriguing, but the data from both lab and field research do not support it.

We agree with Baumeister (1995) about many aspects of performance pressure. Focusing attention on the details of skilled performances can be disruptive (e.g., the expert pianist concentrating on precise finger movements); social pressure can produce social anxiety; success can be problematic when it commits people to expectations that they think they cannot fulfill or do not want to

fulfill. Baumeister's (1995) own research in these areas helped illuminate how pressure can produce decrements in performance. We disagree, however, about the core idea of the home choke—that playing at home in key championship games is disruptive and disadvantageous. Baumeister and Steinhilber (1984) hypothesized that teams will perform more poorly in decisive championship games in front of home fans than they will in earlier home games. Furthermore, they hypothesized that teams who anticipate success in decisive championship games before supportive home fans (recall their image of the home shortstop envisioning the victory parade as the ball rolls through his legs) will choke more than those who fear failure or who are playing before unsupportive away crowds (pp. 86, 88–89, 91). These ideas define and distinguish the home choke and are the ones for which we were unable to find support.

Baumeister's (1995) reply conceded some problems with Baumeister and Steinhilber's (1984) original data but gave the impression that there have been numerous confirmations of the effect over the years, and, thus, it does not really matter whether the original study was imperfect. This is not the case, however, as the home choke rests on the baseball and basketball data. Choking is easy to document; the home choke is not. Baumeister's citations obscured the distinction between the darker (social pressure plus self-doubts) and the kinder (disruptive fantasies of success in front of a supportive audience) forms of choking. The home-choke hypothesis was justified through the kinder form, and Baumeister and Steinhilber (1984) explicitly rejected, conceptually and empirically, the possibility that darker fears of failure were involved (pp. 86, 88–89, 91). Yet, Baumeister (1995) cited, as support for the home choke, studies that found that people choke when public expectations exceed private ones, thereby portending public failure (Baumeister, Hamilton, & Tice, 1985), and that people perform more poorly on skill tasks when under evaluative pressures and other self-focusing conditions (Baumeister, 1984).<sup>1</sup> These citations support choking but not the home choke.

Of the laboratory studies Baumeister (1995) cited as support-

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<sup>1</sup> Perhaps Baumeister (1984) is cited less often than Baumeister and Steinhilber (1984), not because the former was a controlled lab study and the latter was archival, as Baumeister (1995) suggested, but because the lab studies found intuitive evidence for choking and the archival one seemed to offer a counterintuitive conclusion.

ing the home choke, one dealt with the kinder form. Heaton and Sigall (1991) manipulated whether participants were ahead or behind an opponent in front of an audience who could be regarded as supportive or unsupportive. Participants who were low in dispositional self-consciousness and were observed by a supportive audience performed slightly better when they were ahead than behind; and, when participants were ahead, they performed slightly better in front of a supportive audience than an unsupportive audience. These trends were both in the opposite direction of a home-choke effect. It may be arguable how problematic these results were for the home-choke hypothesis, but they did not provide support for it.<sup>2</sup> The studies Baumeister cited as showing laboratory support for the home choke showed nothing of the kind. It was the original baseball and basketball data that were the foundation and the hope for the effect.

Returning to that data, Baumeister's (1995) most serious charge against our update was that we used faulty and flawed methods. The sole basis for this charge was that we used the identical dependent variable that Baumeister and Steinhilber (1984) used in their research (i.e., decisive games won or lost by the home team, as compared with initial games won or lost by the home team). We wonder how often, historically, a researcher has tried to justify his or her conclusion by impugning the validity of the measure on which it was based. Of course, if we had used a different measure and found no evidence for the effect, we would have been open to charges that we used a poor measure. It should be noted that Baumeister and Steinhilber once justified the measure by arguing that it maximized the pressure to win.

Are there better dependent variables than the one that Baumeister and Steinhilber (1984) used? There are always alternative ways to test any hypothesis, and each usually has its advantages and disadvantages. The new measure Baumeister (1995) suggested (i.e., home games in which a team can clinch) has a major disadvantage. It confounds, in all except the seventh game, the hypothesized pressure from clinching a series in front of home fans with the luxury of only having to win one of several remaining games. If the home team loses, is it because they succumbed to the self-conscious pressure of the championship choke or relaxed, with less self-consciousness, knowing they only have to win one of several remaining games? These possibilities cannot be disentangled from such data yet they involve very different processes. In any case, Baumeister provided no new data and recounted anecdotal descriptions of just two series. Given Baumeister's assertions, we went back to the data and looked at all instances in which a home team (and visiting team) could have clinched a baseball championship. Even using this measure, the hypothesis still failed and the home field is still usually to be preferred in key games.

Specifically, we tabulated all games in which baseball teams could have clinched a championship, omitting only the World War II years of 1943–1945 because of home–visitor scheduling problems (see Schlenker, Phillips, Boniecki, & Schlenker, 1995). This was precisely the measure that Baumeister (1995) suggested is the best way to test the home choke and included all games in which a team had won three games and was playing for the championship. Table 1 presents the data for the World Series, broken down by eras (1924–1949, 1950–1968, and 1969–1993), and the league championships from 1985 to 1993 (i.e., all seven-game series play-offs). For the sake of complete-

ness, Table 1 includes all games in which the home team could have clinched and all games in which the visiting team could have clinched; it also shows how the data look when four-game sweeps (i.e., series won in four straight games) were included and excluded. Game 7, in which the home and visiting team had each won three games, was counted in both the home and visiting team totals because both could have clinched in that game.

The patterns mapped those we report elsewhere in this issue. First, the distinctive cell in Table 1 was again the home team's poor performance during the 1950–1968 period, which was different from how the home team performed in any other era in Table 1. For example, comparing the home team's performance in the 1950–1968 era against the total of the other eras yielded a significant effect regardless of whether sweeps were included,  $\chi^2(1, N = 82) = 4.89, p < .03$ , or excluded,  $\chi^2(1, N = 75) = 7.06, p < .01$ . For the visiting team, in no case did any era differ from any other era. Other eras showed the usual home-field advantage.

Second, even including the aberrant data from the 1950–1968 era, the home team's overall performance in games in which they could have clinched did not differ significantly from any reasonable baseline. Historically, the home team won 54% of the time from 1900 to 1992 during the regular season, won 58% of the time in the World Series when sweeps were excluded, and won 57% of the time when sweeps were included. Rather than arguing over the precise baseline for a comparison, we used the generous baseline of 60%, which was the high initial baseline from Games 1 and 2 in the World Series (excluding sweeps). Using 60% as the expected home win baseline, the performance of the home team in games in which they could have clinched failed to reach conventional levels of significance regardless of whether four-game sweeps were included,  $\chi^2(1, N = 82) = 1.58, p < .21$ , or excluded,  $\chi^2(1, N = 75) = 3.24, p < .08$ . Thus, this new dependent variable still failed to yield support for the home choke despite a confound (i.e., poor performance could have been due either to choking or relaxing) and the use of an advantageous baseline.

Third, the home team usually wins slightly more than the visiting team when the conditions are held comparable. When a team can clinch, the home team has an edge over the visiting team, just as it does during the regular season or other championship games.

Thus, no matter how we looked at the data—"new" variable or "original"—the home choke just did not appear to be there. A brief streak of home losses appeared during the 1950–1968

<sup>2</sup> Baumeister (1984) argued that participants who are low rather than high in dispositional self-consciousness will be more likely to choke under performance pressure because they are less used to dealing with the disruptive effects of self-attention. Thus, according to the home choke, these participants should have been most likely to choke when ahead of an opponent in front of a supportive audience, yet the means were in the opposite direction. Heaton and Sigall (1991) did not report simple contrasts, so our statements about these tendencies were based solely on the direction of the mean differences that fell under the significant interaction for participants who were low in dispositional self-consciousness. The comparable two-way simple interaction for participants high in dispositional self-consciousness was only marginal ( $p < .10$ ); again, however, before a supportive audience, these participants also did slightly better if they were ahead than behind.

era of the baseball World Series. Was this a genuine albeit very short-lived effect or a chance run? If it was genuine, wouldn't some other data have fallen in line (e.g., error data, which Baumeister & Steinhilber [1984] said would track the home choke)? In the absence of any other satisfactory data, the principle of parsimony prompts us to lean toward chance.<sup>3</sup>

We also had problems with the argument that, because our (Schlenker et al., 1995) data did not differ significantly from Baumeister and Steinhilber's (1984) data, their conclusions were still valid. There seemed to be a confusion of standards. To conclude that the home choke existed, it was necessary to show that the data departed significantly, using accepted statistical criteria, from the patterns that were consistent with the alternative, null hypothesis. The data failed this test. It was irrelevant whether our data set differed significantly from their data set. We both used the identical World Series data from the years 1924 to 1982 (excluding World War II years); our addition of 11 years of data represented the difference. It would be astounding if these few years produced overall significant differences between the data sets. Indeed, the nonindependence of the data made the test itself of dubious value. However, the addition of these years resulted in the data failing to satisfy the only standard that matters: Is there significant support for the home choke? Furthermore, the data looked far worse for the home choke when the baseball championship series data were added, and the basketball data raised many more questions—facts that were omitted in Baumeister's (1995) reply. Only by ignoring the relevant standards can this argument seem plausible. The home choke began as a paradox; it should not be converted to an orthodoxy.

In fact, the World Series data set was not statistically significant (e.g., the vital seventh game comparison was  $p < .36$ ). Our dissection of the data suggested why the pattern once was significant (i.e., because of a short-lived run of visitors' victories in the 1950s and 1960s and a problem with analyses of the fifth game). Furthermore, our analyses showed that the effect was not matched by the required pattern of fielding errors across eras, was not found in baseball championship series, and was not found in basketball championships when confounds were removed. The empirical basis for the original conclusion was removed. Should we exhibit belief perseverance?

Baumeister (1995) also said that Schlenker et al. (1995) overlooked a rule change in baseball, concerning the designated hitter (DH) rule, which favors the home team and invalidates our analyses. First, the relevant DH rule was implemented in 1986 only for the World Series; it is irrelevant to the baseball league championships, to the World Series before 1950 (or from 1969–1985), and to the basketball data, none of which showed a home choke or were even mentioned by Baumeister. Second, even in the World Series from 1986, any possible (and debatable) increase in home-field advantage would have raised the winning percentage of the home team overall; it would have been irrelevant to the relationship between early versus decisive games, which was the only comparison that mattered. In the five relevant World Series that went six or seven games during those years, the home team won slightly more often in the decisive last game (80%, 4–1) than in the initial two games (60%, 6–4). There also were five World Series games in which a home team could have clinched; the home team also was 4–1 (80%). We would not want to draw any conclusion from such a small sam-

ple other than that there was, once again, no hint of a home choke, as the means were in the opposite direction of what Baumeister said should have happened.

Although there are other points we wish we had the space to address,<sup>4</sup> there is one last point worth mentioning. In their analysis of social anxiety, Schlenker and Leary (1982) proposed that people perform poorly when they are motivated to create a desired impression but doubt that they will do so. Anticipations of undesired identity images, not desired ones, seem to generate problematic behavior. Baumeister (1995) indicated we said the opposite. We invite you to read the originals.

In summary, Baumeister (1995) urged the endorsement of the home-choke hypothesis. Science requires a burden of proof for those who advance an idea. It does not ask skeptics to prove the null hypothesis. If one is to believe in the home choke, one must accept the original data of Baumeister and Steinhilber (1984), which seemed to indicate that baseball and basketball teams perform poorly at home in decisive championship games.

<sup>3</sup> Low probability sequences of events do occur by chance alone, although it is easy after the fact to interpret them as if a meaningful pattern existed. It is always worthwhile, therefore, to look at the consistency of the pattern over time and to see if other variables that should be associated with the pattern also track it (e.g., do errors accompany the aberrant home losses?). Baumeister (1995) stated that the pattern of home losses found in the 1950–1968 period must indicate a home choke because it “would occur only once in many centuries” (p. 647). We agree that it is a low probability event; we do not agree that it is so unlikely that even in the absence of other supporting data it must indicate a home choke. We asked the question: What is the likelihood that a team, which had an actual winning probability of 60%, would go 2–9 (18%) at least once during an adjacent string of 11 games over the course of 35 games? (Note: 35 is the number of seventh games that have occurred in the World Series and baseball championships from 1924 to 1993; 18%, the percentage highlighted by Baumeister, was the home team's record in the 11 decisive seventh games during the 1950–1968 era, which happened to be the worst record of home teams using any of the possible dependent variables.) A run of 3,000 such 35-game sequences found that a 2–9 pattern occurred at least once per sequence 5.75% of the time (i.e.,  $p = .0575$ ,  $SD [100] = .0041$ ; the latter was the standard deviation of the probability based on 100 runs of 3,000 35-game sequences; if a particular 35-game sequence contained more than one 2–9 pattern, the sequence was still counted only once). If the team's actual winning percentage was 55% (which is still slightly higher than the home-field advantage found during the regular season), the probability increased to 12.64% ( $p = .1264$ ,  $SD [100] = .0061$ ). These probabilities are hardly remarkable. Remember, the overall significance of the home choke in decisive seventh games of the World Series was  $p < .36$ . So we are now talking about the probability of some subset of games meeting the lone aberrant pattern. Furthermore, these probabilities stand without any additional corroboration from the patterns during other periods of baseball history, from the data on errors that should but do not track the losses, or from basketball championships.

<sup>4</sup> We feel compelled to add, in response to Baumeister's (1995) charge that we “obscured” the implications of the data in our Table 7 (about sixth game performance), that we clearly indicated that the data tracked the pattern Baumeister and Steinhilber (1984) found; we then provided an alternative interpretation. Curiously, Baumeister and Steinhilber (pp. 88–89) once used that sixth-game data to assert that the home choke *must* be produced by the anticipation of success and could not have been produced by fears of failure. Later, however, Baumeister (1995) asserted that his original interpretation of that data was correct while also suggesting that maybe fears of failure were involved.

Table 1  
*Record of Home and Visiting Teams in Situations Where the Team Could Clinch a Championship Because It Has Already Won Three Games in a Best-of-Seven Games Series*

Games	Home team can clinch		Visiting team can clinch	
	Wins-losses	Winning %	Wins-losses	Winning %
All games, including four-game sweeps				
World Series				
1924-1949				
(Except 1943-1945)	11-9	55	12-12	50
1950-1968	7-16	30	12-10	55
1969-1993	13-9	59	12-18	40
League championships				
1985-1993	10-7	59	8-10	44
Games excluding four-game sweeps				
World Series				
1924-1949				
(Except 1943-1945)	9-9	50	9-12	43
1950-1968	4-16	20	11-10	52
1969-1993	13-9	59	9-18	33
League championships				
1985-1993	8-7	53	8-10	44

What must one ignore? First, ignore all World Series data before 1950 because the effect did not occur then (e.g., home teams won 67% of decisive sixth and seventh games and 75% of seventh games alone). Second, ignore all World Series data since 1968 because the effect has not occurred since (e.g., home teams won 56% of decisive sixth and seventh games and 60% of seventh games alone). Third, ignore error data from the World Series because (a) errors did not follow the necessary pattern across eras and (b) teams committed errors when they fell behind in the score, not when they were ahead. Fourth, ignore all baseball league championship data because the effect did not occur then (e.g., home teams won 58% of decisive sixth and seventh games and 67% of seventh games alone). Fifth, ignore the basketball championships because the effect did not occur before 1967 and has not occurred since 1967 except under the condition of a confound between strength of team and home advantage, that is, sixth game only (e.g., home teams won 62% of decisive games overall, including confounds). Sixth, ignore laboratory data on social facilitation, accountability, choking, and social anxiety, which support the idea that people choke when they have self-doubts about an important performance, not when they expect an important success in front of a supportive audience. In fact, look only at the win-loss data from the World Series from 1950 to 1968 because this is the only place the effect occurred, and even there the error data do not fit the expected pattern. We prefer not to ignore so much.

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