Casey at the Bat (And in the Field?)
An Economic Analysis of Baseball's Designated Hitter Rule

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Abstract: Baseball fans have long argued over the pros and cons of the designated hitter rule. Even economists have weighed in on the debate, arguing that the rule – which allows American League pitchers to avoid batting – creates an invidious moral hazard for pitchers. American League pitchers can fearlessly pitch high and inside (putting the batter at great risk of being hit) because the designated hitter rules absolves the pitcher of stepping up to the plate himself and facing "eye for an eye" retaliation. While our research concludes there is some truth to this intuition, the moral hazard created by the designated hitter rule may not be an insurmountable problem. Other incentives exist for American League pitchers not to indiscriminately hit batters, including reputational loss and the decline of one's statistics and paycheck by putting batters on base unnecessarily. Vicarious liability can also be imposed by disciplining the pitchers' manager or by the negative consequences associated with causing a teammate to face retaliation in the pitcher's stead. In addition, recent rule changes in Major League Baseball have led to higher hit-by-pitch rates in the National League despite the absence of the designated hitter rule, evening out the rates between the leagues. Moreover, the designated hitter rule brings significant benefits to the American League, particularly increased offense and extended careers for star athletes who can no longer play in the field. In the end, the current arrangement, with only the American League using the designated hitter rule, allows baseball fans to have the best of both worlds: the greater strategy required by National League play, and the increased offense produced in the American League – with only minimally differential moral hazard effects.

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I. Introduction

There are certain things that most Americans have learned not to talk about in public unless they want to start an argument. Religion and politics top the list, but not far behind is the designated hitter rule, particularly in a group of mixed National and American League fans. Despite its 35 year history in the American League, the designated hitter rule is still one of the most controversial changes that Major League Baseball has ever made. Fans of the rule argue that it drew fans to baseball games when attendance in the American League was lagging,[1] increases offense, and allows great players to stay in the game after injuries or age limit their ability to play in the field.[2] Opponents argue that the designated hitter rule has changed the way the game was meant to be played by taking away important elements of managerial strategy and allowing "broken-down hitters" to stay in the game far beyond when they should have retired.[3] And the controversy generally runs along party lines, as The Field Institute noted in a survey of Californians in 1985. When asked how they felt about the designated hitter rule the results were clear: "National League Fans Hate It. American League Fans Love It."[4]

But is there something more sinister going on? In December of 2004 the New York Times Magazine published a brief article entitled *The Designated Hitter as Moral Hazard*, discussing a study finding that the designated hitter rule increased the number of batters hit by pitches in the American League. The New York Times was not the first to note the potential

[1] G. RICHARD MCKELVEY, ALL BAT, NO GLOVE: A HISTORY OF THE DESIGNATED HITTER 6 (2004).
[2] *Id.* at 22-23.
[3] *Id.* at 61.
[4] The Field Institute, *Designated Hitter Rule: National League Fans Hate It. American League Fans Love It.*, THE CALIFORNIA POLL RELEASE #1298, (May 30, 1985). A survey of a representative cross section of California adults inquired into Californians' interest in baseball. Participants were asked whether they were more interested in the American or National League and their views about the designated hitter rule. National League fans disliked the designated hitter rule by a five to four margin (50% to 40%), with 63% favoring dropping the rule entirely or limiting it to the American League. However, 61% of American League fans favored the designated hitter rule, with only 29% indicating they disliked the rule. In fact, 53% of the American League fans indicated that they would like the designated hitter rule to be used in the National League.

problem, in fact economists had been arguing about the effect of the designated hitter rule since at least the late 1990s and fans had probably started the argument mere moments after the rule was introduced.

But what is this so-called "moral hazard" that everyone is so worried about? A moral hazard exists when the provision of insurance against a risk encourages dangerous behavior that makes the risk itself more likely to materialize.[5] In other words, individuals are encouraged to take a risk when they do not bear its full cost. Rather, the cost of the risk is partially or fully borne by others, creating a moral hazard and negative externality. Critics of the designated hitter rule have argued that the rule creates a moral hazard for pitchers in the American League because they do not bear the full cost of making risky, inside pitches that are more likely to hit batters.[6] Succinctly put, since the designated hitter rule exempts the pitcher from batting, he does not face dreaded eye-for-an-eye retaliation from the opposing team's pitcher.

Another way to view this problem is to consider the cost-benefit analysis pitchers undertake each time they take the mound.[7] A primary benefit of throwing inside or even hitting a batter is that it may lower the probability of runs being scored against the pitcher in current and future pitching appearances. For example, the batter will be more reluctant to lean close to the plate if they fear being hit, reducing their effectiveness against pitches that are low and outside.[8] A second type of benefit is retaliation, i.e., revenge for the pitcher's teammate having been hit by a pitch earlier, or revenge by the pitcher against an opponent for having hit home runs off of him.[9]

These benefits are weighed by the pitcher against the costs of hitting a batter. If the pitcher hits a batter, the batter will advance to first base, and advance any runner already on first base. In addition, the opposing pitcher may retaliate by throwing at the offending pitcher's teammates, or the offending pitcher and his manager may even be ejected from the game and fined.[10] Finally, the pitcher may find himself the subject of direct retaliation the next time he comes to bat.[11] As Hammurabi would have it, perhaps there is no better justice in society – or in Major League Baseball – than "an eye for an eye, a tooth for a tooth."[12]

However, in the American League the pitcher does not face this significant final cost because he is never required to bat.[13] As noted above, facing less than full cost for a dangerous action leads to overusing the action, excess risky behavior, creating a moral hazard. Economists

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[5] Odette Lieunau, *Who is the "Sovereign" in Sovereign Debt? Reinterpreting a Rule-of-Law Framework from the Early Twentieth Century*, 33 YALE J. INT'L LAW 63, 95-96 (2008) (quoting Int'l Monetary Fund, World Economic Outlook 8 (1998), *available at* www.imf.org/external/pubs/ft/weo/weo0598/index.htm).

[6] *See, e.g.*, Brian L. Goff, William F. Shughart II & Robert D. Tollison, *Batter Up! Moral Hazard and the Effects of the Designated Hitter Rule on Hit Batsmen*, 35 ECON. INQUIRY 555, 555 (July 1997).

[7] *Id.* at 556.

[8] *Id.*

[9] *Id.*

[10] John Charles Bradbury & Douglas Drinen, *The Designated Hitter, Moral Hazard, and Hit Batters: New Evidence From Game-Level Data*, 7 J. SPORTS ECON. 319, 322 (Aug. 2006). If the umpire believes that the pitcher has intentionally hit the batter the umpire may elect to expel the pitcher, or the pitcher and the manager, from the game or "may warn the pitcher and the managers of both teams that another such pitch will result in the immediate expulsion of that pitcher (or a replacement) and the manager." Major League Baseball Rule 8.02(d). "To pitch at a batter's head is unsportsmanlike and highly dangerous. It should be—and is—condemned by everybody. Umpires should act without hesitation in enforcement of this rule." Major League Baseball Rule 8.02(d) Comment.

[11] Goff, Shughart & Tollison, *supra* note 6, at 556.

[12] *See* Hammurabi's Code, available at http://www.wsu.edu/~dee/MESO/CODE.HTM.

[13] Pitchers are nearly always replaced in the batting order by the designated hitter, although the team is free to substitute a designated hitter for any position it sees fit.

have theorized that the effect of this moral hazard is more hits-by-pitch in the American League than in the National League, where a pitcher has to take his turn at bat and does not have the luxury of never confronting fastballs being hurled at his head in retaliation.[14]

But is the designated hitter rule (and the moral hazard it theoretically creates) actually a problem? Are there other elements and incentives weighed in pitchers' cost-benefit calculus that keep the potential for moral hazard in check? And even if there remains some moral hazard that cannot be alleviated, do the benefits of the designated hitter rule still outweigh the drawbacks?

Our research concludes that while American League pitchers do not face the threat of direct retribution by pitch, there are significant costs to hitting a batter that have not been (and probably cannot be) perfectly considered in economic analyses. Baseball is a team sport and when one teammate gets hit, all other teammates feel the effects. Thus a pitcher does not need to be hit himself to be harmed vicariously by a teammate getting hit by a pitch. Furthermore, the chance of direct physical retaliation is not absent in the American League – it is has merely changed forms: now the batter may charge the mound if hit by a pitch, subjecting the pitcher to a bench-clearing brawl right on the pitching mound. Further, a pitcher who frequently hits batters may become known as a dirty "head-hunter," and suffer reputational loss as a consequence.[15] Finally, if those hit-batters come around to score, the pitchers' statistics and paycheck will be the items that take the real hit.

Moreover, any remaining moral hazard created by the designated hitter rule is only a problem if the rule does not create sufficient benefits to outweigh this negative externality. And there are indeed significant benefits associated with the rule. Designated hitters have directly and dramatically increased offense in the American League.[16] After having trailed the National League in overall batting average from 1964 to 1972, the American League has now bested the senior circuit every year since 1973.[17] Increased offense also translates into increased fans in the stands. One study estimated that the designated hitter rule is associated with an additional 2,000 fans per game.[18] Even Nike noted the phenomenon in a series of television commercials surrounding Mark McGwire famous chase of Babe Ruth's homerun record. McGwire duly impressed screen-siren Heather Locklear by belting homerun after homerun, with the narrator commenting simply, "Chicks dig the longball."[19]

The designated hitter rule also allows star players to stay in the game beyond the time their aging bodies are no longer able to play the field, allowing fans to watch their idols for a few extra years. Injured players can also benefit from the designated hitter rule if they recuperate enough to be able to bat before they are able to play a position. Furthermore, designated hitters have some of the highest salaries in baseball, providing hard economic evidence that they are

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[14] *See, e.g.*, Goff, at 557.

[15] Roger Clemens and Pedro Martinez are classic examples of pitchers who became known for their dirty play.

[16] *See* THE BASEBALL ALMANAC, *available at* http://www.baseball-almanac.com/hitting/hibavg4.shtml (last visited June 3, 2008).

[17] *Id.*

[18] Bruce R. Domazlicky & Peter M. Kerr, *Baseball Attendance and the Designated Hitter*, 34 AM. ECON. 62, 67 (Spring 1990).

[19] *See* http://www.youtube.com/watch?v=4ltD21rYWVw (last visited June 10, 2008). The Nike ad was so popular that it was listed on ESPN's top 25 sports ads of all time, number 10 for the ESPN expert panel, number 7 for the fans. *See* ESPN, *available at* http://sports.espn.go.com/espn/espn25/story?page=listranker/25bestcommercials (last visited June 10, 2008). T-shirts bearing the slogan are still available from Nike. *See* ESPN, *available at* http://sports.espn.go.com/espn/espn25/story?page=listranker/25bestcommercials (last visited June 10, 2008).

highly valued in the American League.[20] Finally, no matter how politically incorrect, fans enjoy the drama of watching players getting hit by pitches, wondering if they will calmly take a base or if they will charge the mound and incite a bench clearing brawl. After all, fights between athletes certainly make the fans happy.[21]

Nevertheless, these benefits inspired by the designated hitter rule must be weighed against other negative externalities created. Beyond moral hazard, the designated hitter rule directly affects a significant element of managerial strategy: namely, when to remove a successful pitcher and thus possibly damage a team's defense, in order to potentially increase the offense by using a pinch-hitter. For true aficionados of baseball, this strategic decision is one of the hallmarks of the game, and its loss in the American League comes at great consequence. And of course there is always the chance that a batter could be severely injured by a pitched ball, a cost that no one wants to incur lightly.

In sum, the cost-benefit analysis underlying the designated hitter rule is far from clearcut, but perhaps it has already been soundly decided for us by the leagues themselves. The American League has used the rule quite well for 35 years and does not appear to have suffered any ill effects. The National League has continued on without the rule with perfect equanimity. Baseball is a booming business today with attendance reaching record numbers throughout the country.[22] In the end, why mess with a system that works?

II. The History of the Designated Hitter

Empty stadiums first brought the designated hitter rule to the American League in 1973. In the early 1960s the hitter was at the center of the game, and fans packed the seats to see home runs, not pitching duels.[23] However, over the next decade, pitching and defense dominated, and offenses fell flat. Several factors contributed to the strong pitching witnessed through the 60s and into the 70s. Perhaps most importantly, some of the all-time greatest pitchers were in their primes during this era, including Sandy Koufax, Bob Gibson, Jim Bunning, Juan Marichal, and Don Drysdale.[24] In addition, various structural changes to the game added to these great pitchers' power. After the 1962 season the strike zone was enlarged, allowing pitchers to more widely vary the placement of their pitches and make them harder to hit.[25] Greater use was made of relief pitchers during the 1960s, forcing batters to contend with the different styles and

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[20] For instance, designated hitters David "Big Papi" Ortiz, Jason Giambi, Gary Sheffield and Jim Thome are some of the most feared hitters and highly compensated players in all of baseball. *See* USA Today's salary database for complete salary listings of every major league ballplayer, available at http://content.usatoday.com/sports/baseball/salaries/.

[21] For example, ESPN SportsCenter compiled a video of the ten greatest mound charges of all time. The video is no longer available on ESPN's SportsCenter web site, but is *available at* http://flashwarner.com/2006/03/best_mound_charges.html (last viewed June 11, 2008). Professional hockey is notorious for its fights on the ice, without which thousands of fans would not bother to show up for games. *See, e.g.*, Jamie Mottram, *Hockey Fights and the Grizzly Fans Who Love Them*, available at http://journals.aol.com/dcsportsguy/mrirrelevant/entries/2007/03/28/hockey-fights-and-the-grizzly-fans-who-love-them/3309 (quoting Hockey "blogfather" Eric McErlain interviews with fans, which concluded that "Fighting, for lack of a better word, is good.")

[22] *See* SPORTS REFERENCE & 24-7 BASEBALL, THE EMERALD GUIDE TO BASEBALL, *available at* http://www.baseball-reference.com/leagues/AL_2007.shtml (last visited June 13, 2008).

[23] MCKELVEY, *supra* note 1, at 6.

[24] *Id.* at 10.

[25] *Id.* at 9.

repertoires of multiple pitchers during a single game.[26] New, harder to hit pitches were invented such as the "forkball" and the "slider."[27] And finally, new ballparks were being built around the country on a far larger scale than those of their predecessors, making home runs significantly more difficult to hit.[28] These changes combined to lower the composite batting averages and average number of hits per game in both leagues from .246 and 7.89 in 1963 to just .237 and 6.84 by 1968.[29]

In December of 1968 the Major League Baseball Rules Committee met to attempt to reinvigorate the offensive side of the game.[30] Some fairly radical ideas were proposed, including shortening the distance between the bases, increasing the size of the ball, and alleviating teams' hectic travel schedules to allow batters more time to rest.[31] Eventually, the Committee voted to: (1) lower the pitcher's mound from fifteen to ten inches (thereby decreasing pitchers' leverage and slowing down the ball), (2) shrink the strike zone back to the 1950s size,[32] and (3) begin enforcing existing rules governing illegal pitches.[33] These solutions worked relatively well in the National League, but brought only temporary relief to the American League, whose offense began to falter once again in 1970.[34] In the early 70s the National League was leading the junior circuit significantly in league batting average, total hits, and total runs, and it became clear that the American League again needed change.[35]

American League president Joe Cronin believed that exciting, offensive baseball was what brought fans to the stands.[36] He backed the designated hitter rule as the best way to achieve greater offensive output and he lobbied the owners in the American League to experiment with it.[37] On January 11, 1973, Cronin's lobbying was finally successful, as the American League owners voted 8-4 to try the designated hitter rule on a three-year experimental basis.[38] The National League chose not to join the experiment, however, voting down the proposed rule change.[39]

Cronin's gamble paid off. Although the American League was derided by its National League colleagues for "making a mockery of the game," the American League offense benefited dramatically from the designated hitter rule.[40] Every year since its institution in 1973, the American League has led the National League in overall batting average and runs scored.[41] And the added offense directly translated into increased attendance for the formerly struggling

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[26] *Id.* at 11.
[27] *Id.* at 12.
[28] *Id.*
[29] *Id.* at 10.
[30] *See* Major League Baseball Rules Committee, 1968 [cite].
[31] *See* DAVID QUENTIN VOIGT, BASEBALL: AN ILLUSTRATED HISTORY 280 (1987).
[32] A smaller strike zone would naturally lead to better hitting counts for batters and more aggressive swings.
[33] MCKELVEY, *supra* note 1, at 14.
[34] *Id.* at 16.
[35] *Id.*
[36] *Id.* at 18.
[37] *Id.* at 44.
[38] *Id.* at 24.
[39] *Id.*
[40] VOIGT, *supra* note 31, at 298.
[41] *See* THE BASEBALL ALMANAC, *available at* http://www.baseball-almanac.com/hitting/hibavg4.shtml (last visited June 3, 2008). The increase in offense brought about by the designated hitter rule appears to have been both immediate and effective. The National League led the American League in composite batting average from 1964 through 1972, but since 1973 the American League has had a higher composite batting average every season, without fail. *Id.*

American League.[42] While only four teams in the American League drew more than one million fans in 1971, eight teams bested that same mark in 1973.[43] Excited by the bolstered offense and attendance, the American League voted to make the designated hitter rule permanent in 1976.[44]

Today, the designated hitter rule is used by all teams in the American League. During interleague play (both during the regular season and the World Series), the designated hitter is used when the game is played in an American League ballpark, but not when the game is played in a National League ballpark.[45] This is known as the "rule of the park."[46] The rule of the park requires National League teams to have a designated hitter in mind for interleague games, while American League pitchers are occasionally forced to pick up a bat (a task undoubtedly made more challenging by their lack of regular practice).[47]

But let us delve further into the exact workings and implications of the designated hitter rule in the American League. Under traditional baseball rules, all nine players in the field must take their turn at bat. If a manager wishes to have someone pinch-hit for the pitcher (who is generally a weaker batter because of his specialized focus on pitching), a new pitcher must be brought in for the next inning.[48] Under the designated hitter rule, a hitter may be designated before the start of the game to bat for the starting pitcher and all subsequent pitchers.[49] Thus, the designated hitter is allowed to "pinch hit" for the pitcher without requiring the pitcher to leave the game, effectively adding a tenth man to the team.

The direct effect of the designated hitter rule then is to remove the pitcher from the batting line-up entirely. Opponents of the rule have argued that allowing pitchers to pitch without the requirement of batting has changed not only the managerial strategy of the game,[50] but has influenced the ways in which players, particularly pitchers, act during the game. In baseball, it is not uncommon for pitchers to "brush back" or plunk batters with inside pitches. After such an incident, a National League pitcher will be forced to take his turn at bat, and may then find himself the target of a retaliatory inside pitch.[51] But in the American League the designated hitter rule eliminates this most direct method of settling disputes by removing the pitcher from the batting line-up altogether.

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[42] MCKELVEY, *supra* note 1, at 42.
[43] MCKELVEY, *supra* note 1, at 42.
[44] Conflicting information exists regarding the date the rule was officially adopted. The Baseball Encyclopedia: The Complete and Official Record of Major League Baseball, Macmillan Pub., N.Y. 1990, states that the rule as permanently adopted during the December, 1975, meeting of the American League. Richard McKelvey in *All Bat, No Glove* states that the American League decided to make the rule permanent during their 1973 December meeting (pp. 43-44). And finally, David Voigt's *Baseball an Illustrated History* (also cited in the paper) says that the rule was made permanent in 1976 at the end of the three year trial period.
[45] *See* VOIGT, *supra* note 31, at 380-81. *See also* MCKELVEY, *supra* note 1, at 92, 143-44.
[46] *See* MCKELVEY, *supra* note 1, at 92.
[47] AL pitchers' have a spectacularly meager batting average in interleague games.
[48] Major League Baseball Rule 3.03. ("A player, or players, may be substituted during a game at any time the ball is dead. A substitute player shall bat in the replaced player's position in the team's batting order. A player once removed from a game shall not re-enter that game.")
[49] Major League Baseball Rule 6.10. The designated hitter can be utilized for a non-pitcher as well, but is almost never used in this fashion.
[50] In the absence of the designated hitter rule managers must weigh the value of a pitcher at the mound with the value of a stronger hitter at the plate when deciding whether to put in a pinch-hitter. The designated hitter rule allows a manager to have both.
[51] MCKELVEY, *supra* note 1, at 128.

That brings us to the subject matter of this article – the moral hazard theoretically created by the designated hitter rule. Critics have strenuously argued that the designated hitter rule causes American League pitchers to face a moral hazard because they are not required to pay fully for their actions.[52] Others have urged that the rule has now made charging the mound (and occasionally starting a brawl) the most direct way to make a pitcher pay for a brush-back or plunk.[53] Moreover, the introduction of the designated hitter rule eliminated a large element of managerial strategy from the game – i.e., the decision when to pinch-hit for a pitcher to boost one's offense at the expense of one's defense.

These negative aspects of the rule must be weighed against the positive, most notably the increase in offense and home runs that the designated hitter brings. However, that is not the sole benefit of the designated hitter rule – we must also consider the fans' pleasure at watching great sluggers remain in action after their ability to play the field is reduced by age or injury. Finally, though it may sound perverse, many fans indeed enjoy seeing the occasional hit-batter and bench-clearing brawl.

III. The Tort System's Goal of Deterrence and the Problem of Moral Hazard

The tort system in America has traditionally been justified by three policy goals: deterrence of undesirable conduct, fairness or corrective justice, and compensation of victims.[54] Economic analysis focuses on the deterrence goal, which can also be thought of as incentives-toward-safety.[55] The deterrence rationale is achieved in two ways. First, requiring an injurer to pay for harm caused by his wrongful conduct provides a strong incentive to avoid undertaking that wrongful conduct in the first place.[56] Second, as Patrick Hubbard opined, "even when no wrongdoing is involved, imposing liability for accident costs provides an incentive to reduce injuries not currently preventable by due care by lowering the level of activity, or by seeking innovations that result in new, more cost-effective safety measures."[57]

As an introductory matter, it is important to note that not all injuries can or even *should* be deterred. Rather, economists and lawmakers should wish to maximize social welfare, which involves making tradeoffs between benefits and costs.[58] Thus, behavior that is beneficial may be enjoyed even if there is some social cost or possibility of injury as long as the benefit outweighs that cost. Deterrence of risky or dangerous activity is achieved by ensuring that the cost of an action – i.e., the liability that will be imposed if the actor causes injury – is high enough to ensure that only those who obtain more utility from the action than the harm created will engage in the action.

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[52] *See, e.g.*, Goff, Shughart & Tollison, *supra* note 6.
[53] MCKELVEY, *supra* note 1, at 128.
[54] F. Patrick Hubbard, *The Nature and Impact of the "Tort Reform" Movement*, 35 HOFSTRA L. REV. 437, 445-46 (2006).
[55] STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW __ (2004) (noting that economic analysis views the role of tort law as serving the goal of deterrence, because the compensation function of law can be achieved in other manners, namely through insurance).
[56] MCKELVEY, *supra* note 1, at 445.
[57] *Id.* at 445-46.
[58] *See generally* Steve P. Calandrillo, *Responsible Regulation: A Sensible Cost-Benefit, Risk versus Risk Analysis of Federal Health and Safety Regulation*, 81 B.U. L. REV. 957, 977-85 (2001).

Take, for example, a situation in which injurers have complete control over whether an accident will occur and victims cannot control the outcome, i.e., a "unilateral" accident.[59] Let us imagine that if the injurer takes no care the probability of an accident that would cause a harm of 100 is 15%, leading to total expected costs of 15.[60] However, if the injurer takes moderate care at a cost of 3 he can lower the probability of an accident to 10%, creating a total expected social cost of only 3 + 10 = 13. If the injurer were to take even greater care, at a cost of 6, he could lower the probability of an accident to 8%. But, is it socially desireable that he exercise this very high level of care? No – it would not be socially optimal because the total expected social cost would be 14 (care of 6 + expected accidents of 8), which is greater than if moderate care were taken.[61]

A moderate level of care is therefore preferred by society in this situation, and liability rules should be fashioned to reflect this preference. Tort law attempts to ensure the appropriate level of care by utilizing one of two general legal rules, either strict liability or negligence.[62] Under the rule of strict liability, an injurer must pay for any accident they cause, even if they acted as carefully as possible under the circumstances.[63] Therefore, an injurers' total costs will equal the total social costs: the costs of care plus the cost of the accident itself.[64] Since rational injurers will want to minimize their own costs they will take moderate care of 3 in the example above, thus also maximizing social welfare.[65]

The rule of negligence will achieve the same result as long as the "due care" standard is set correctly. Under the negligence rule, an injurer is held liable for accident losses when her level of care falls below a level known as "due care" set by the courts (or in some cases, set by the state, like speed limits).[66] If the level of due care is set to maximize social welfare, it will be set at moderate care of 3. Thus if the injurer takes no care and causes an accident she will have to pay for the entire cost of the accident, here 15, but if she takes care of 3, she will not have to pay even if she does cause an accident.[67] Therefore, the injurer would be wise to take moderate care, minimizing her total costs, and leading to the socially optimal outcome.

As this example shows, tort law aims to deter harmful conduct (i.e., using zero care instead of moderate) by raising the cost of particular behavior and lowering the costs of more beneficial behavior. However, many people are risk averse and do not wish to bear the full costs of their conduct. Injurers who are risk averse will purchase liability insurance to protect themselves from the potential costs of liability.

At first blush, allowing the purchase of insurance appears to create the ideal situation – the victim receives compensation for her injuries, while the injurer is protected from paying the full cost of the liability by virtue of having purchased the insurance. However, the existence of insurance may itself influence the incentives of injurers to prevent accidents, and thus the probability of harm being created.[68] Once an injurer has insured against a particular risk, she

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[59] *See* STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 179 (2004).
[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *See id.*
[64] *See id.*
[65] *See id.* at 180.
[66] *Id.*
[67] *Id.*
[68] *Id.* at 261.

may become less careful about avoiding the risk because she has already paid all that she will have to pay by purchasing the insurance up front.

This problem is commonly known in the field of law and economics as "moral hazard," defined as "the tendency for an insured party to take less care to avoid an insured loss than the party would have taken if the loss had not been insured, or *even to act intentionally* to bring about that loss."[69] A moral hazard is more than a mere psychological or ethical risk; it is a significant hazard that would influence the conduct of a reasonable person, causing them to "suffer less by a destruction of the property than would ordinarily be the case."[70]

Not all insurance leads to moral hazard, however. When an insurance company can observe the level of care taken by a purchaser of insurance the company can reduce the premiums to reflect the risk reduction that appropriate care creates.[71] Thus, insureds have an incentive to maintain a socially optimal level of care and the deterrent effect of tort law is preserved. However, if the insurance company cannot observe the level of care used by insureds, it will not be able to offer premium-related incentives to take care, thus leading to lower than optimal levels of care and moral hazard.[72]

As implied above, when a moral hazard exists, an insured party is less likely to avoid a risk because she knows that she will not bear the full cost of it materializing.[73] This decrease in risk-averse behavior causes a corresponding increase in total costs to society, working against the deterrence goal of tort law. A common real-world example of the moral hazard problem is illustrated by the insured property owner who exercises reduced care over her covered property.[74] For instance, when a car owner has theft insurance she may be more likely to leave her car unlocked or to park it in a high crime area.[75] This same car owner would likely exercise greater care to prevent the theft of her car if she had to pay for the loss of the car personally.[76] Thus, the moral hazard caused by the existence of her automobile insurance caused the car owner to exercise suboptimal caution in the use and protection of her car.[77]

Now, let us apply economic analysis and moral hazard theory to the game of baseball, America's beloved national past-time. A pitcher accidentally hitting a batter is a type of "bilateral" accident because both the injurer (the pitcher) and the victim (the batter) may take steps to prevent the accident from occurring. To avoid hitting the batter the pitcher can throw more slowly, aim for the center or outside of the plate, and avoid throwing curve balls or splitters that might get away from him. On the other hand, the batter can stand further from the plate and

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[69] Jacob Loshin, *Insurance Law's Hapless Busybody: A Case Against the Insurable Interest Requirement*, 117 YALE L. J. 474, 506 (2007) (citing KENNETH S. ABRAHAM, INSURANCE LAW AND REGULATION 201 (4th ed. 2005) at 7) (emphasis added).

[70] Dayna Bowen Matthew, *The Moral Hazard Problem with Privatization of Public Enforcement: The Case of Pharmaceutical Fraud*, 40 U. MICH. J. L. REFORM 281, 299 n.63 (2007) (quoting LEE R. RUSS & THOMAS F. SEGALLA, COUCH ON INSURANCE § 81:98 (3d ed. 2005)).

[71] SHAVELL, *supra* note 61, at 262.

[72] *Id.* at 263.

[73] Matthew, *supra* note 70, at 298-99 (citing Rickerford v. Westchester Fire Ins. Co., 186 So. 109 (La. Ct. App. 1939), reinstated on rh'g by, 187 So. 676 (La. Ct. App. 1939)).

[74] *Id.* at 299.

[75] *Id.*

[76] *Id.*

[77] *Id.*

"dig-in" less to avoid being hit by an inside pitch.[78] But in the end it is primarily the pitcher's ability and responsibility to avoid hitting the batter.[79]

When deciding whether to throw a pitch that is high and inside (and thus more likely to hit the batter) the pitcher faces a cost-benefit analysis. A primary benefit of throwing inside or even hitting a batter is that it may lower the probability of runs being scored against the pitcher in current and future pitching appearances. First, hitting a batter makes the batter more reluctant to lean close to the plate, reducing his effectiveness against pitches that are low and outside.[80] Second, batters might be fooled more easily by curveballs that give the illusion of being inside.[81] Third, batters might dig-in less, thus reducing their batting power.[82] A second type of benefit to pitching inside is retaliation. Pitchers might hit a batter in order to retaliate against the opposite team's pitcher beaning a teammate in the previous inning or as revenge for earlier home runs by the batter or his team.[83]

All of these benefits are weighed by the pitcher against the costs of hitting a batter. First, hitting a batter automatically puts him on base and advances any runner already on first base.[84] Second, the opposing pitcher may retaliate for the hit-batter by throwing at the offending pitcher's teammates.[85] Third, the offending pitcher and his manager may be ejected from the game and fined if the umpire believes the hit to be intentional and/or retaliatory.[86] Finally – and crucial to the moral hazard theory addressed in this paper – the opposing pitcher may retaliate for the hit-batter by throwing directly at the offending pitcher when he later comes up to bat, possibly causing the pitcher injury.[87]

However, American League pitchers do not face this significant final cost because they have been replaced in the batting order by the designated hitter. Since American League pitchers do not have to pay the *full* cost of their risky behavior, they can throw high and inside without fear of direct, physical retaliation (unless the batter charges the mound).[88] Because throwing

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[78] *See* Goff, Shughart & Tollison, *supra* note 6, at 556. The great New York Yankee shortstop Derek Jeter is a classic example of a batter who "digs in" and leans very close over the plate; hence, he gets hit by pitches considerably more often than normal batters.

[79] *See* Major League Baseball Rule 8.02(d) (if the umpire believes the pitcher has intentionally hit the batter with a pitched ball the umpire may eject the pitcher from the game).

[80] Goff, Shughart & Tollison, *supra* note 6, at 556.

[81] *Id.*

[82] *Id.*

[83] *Id.*

[84] *Id.*

[85] *Id.*

[86] Bradbury & Drinen, *supra* note 10, at 322. If the umpire believes that the pitcher has intentionally hit the batter the umpire may elect to expel the pitcher, or the pitcher and the manager, from the game or "may warn the pitcher and the managers of both teams that another such pitch will result in the immediate expulsion of that pitcher (or a replacement) and the manager." Major League Baseball Rule 8.02(d). "To pitch at a batter's head is unsportsmanlike and highly dangerous. It should be—and is—condemned by everybody. Umpires should act without hesitation in enforcement of this rule." Major League Baseball Rule 8.02(d) Comment.

[87] Goff, Shughart & Tollison, *supra* note 6, at 556.

[88] Statistics on charging the mound are not available, however it does appear to occur as retaliation for hits (or near hits) by pitches. *See* Associated Press, *Sexson Issued 6-game Suspension for Charging Mound Thursday*, ESPN, *available at* http://sports.espn.go.com/mlb/news/story?id=3389031 (last visited May 28, 2008). (Seattle Mariner Richie Sexson was suspended for 6 games and fined after he charged the mound after a pitch thrown by Texas Ranger Kason Gabbard passed him at eye height. The tension had apparently begun in the second inning when Seattle pitcher, Felix Hernandez, hit batter Gerald Laird, the pressure ratcheted up in the fourth inning when Hernandez hit a second batter, Ian Kinsler, who had homered in the second inning.) *See also* Fox Sports Northwest

high and inside has now become "cheaper" for these American League pitchers than their National League counterparts, they may participate excessively in the behavior – i.e., moral hazard exists in this situation because the victimized batter is the party who pays for the excess risky behavior, not the pitcher/injurer. Economists theorize that the effect of this moral hazard should be more hits-by-pitch in the American League than in the National League, where a pitcher has to take his turn at bat and face eye-for-an-eye retaliation.[89]

IV. Economic Analysis Put into Practice: The Designated Hitter Rule and Moral Hazard

Economists are always on the lookout for real-world situations which provide fertile ground to test economic theories like moral hazard. As Brian Goff noted, "[b]aseball supplies a natural experimental laboratory for testing bedrock economic theories about how changes in the rules of the game affect human behavior."[90] Baseball is an ideal real-world laboratory because it is governed by strict, well-known rules and absolutely everything is counted, tracked, and recorded. Statistics are kept on dozens of elements of the game, including hits-by-pitch (HBP).[91] The designated hitter rule is a particularly ideal subject for analysis because of its use in only one of the two major leagues, thus allowing the National League to represent the control group in a scientific study of the effect of the designated hitter rule in the American League. It is not surprising therefore that several economists and mathematicians have investigated the potential moral hazard created for pitchers by the introduction of the designated hitter rule.

Most recently the *New York Times Magazine* published a brief article entitled *The Designated Hitter as Moral Hazard*. The article discussed a paper presented at the Joint Mathematics Meeting which concluded that the designated hitter rule "increases the likelihood that any batter will be hit during a plate appearance between 11 and 17 percent."[92] This study joined several others, all examining the designated hitter rule's effect on pitchers.

A. The Moral Hazard Theory Supported: *Batter Up!*

The first such study was published in *Economic Inquiry* in July 1997 by three economists, Brian L. Goff, William F. Shughart II, and Robert D. Tollinson ("Goff"). In *Batter Up! Moral Hazard and the Effects of the Designated Hitter Rule on Hit Batsmen*, Goff argued that the designated hitter rule created a moral hazard for American League pitchers, causing them to be 10-15% more likely to hit batters with pitches than their National League counterparts.[93] For the purposes of the study, Goff ignored the principal-agent relationship between pitchers and managers, relationships between players that might influence the number

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video coverage, *available at* http://www.babeslovebaseball.com/2008/05/richie-sexson-flips-out.html (last visited June 10, 2008).

[89] *See, e.g.*, Goff, Shughart & Tollison, *supra* note 6, at 557.

[90] Brian L. Goff, William F. Shughart II & Robert D. Tollison, *Moral Hazard and the Effects of the Designated Hitter Rule Revisited*, 26 ECON. INQUIRY 688, 691 (Oct. 1998).

[91] Other common statistics include hits, batting average, home runs, runs scored, runs-batted-in, slugging percentage, on-base percentage, strikeouts, and earned-run average. For a listing of dozens of statistics, *see* http://sports.espn.go.com/mlb/statistics.

[92] Daniel H. Pink, *The Designated Hitter as Moral Hazard*, N. Y. TIMES MAG., Dec. 12, 2004, *available at* http://www.nytimes.com/2004/12/12/magazine/12DESIGNATED.html (last visited May 20, 2008).

[93] Goff, Shughart & Tollison, *supra* note 6, at 555.

of batters hit by pitches,[94] and the possibility that a pitcher's teammates might "bear the retaliation costs of throwing at opposing batters."[95]

As detailed above, Goff theorized that pitchers faced a cost-benefit analysis each time they took the mound, "weighing the expected benefits against the expected costs of hitting a batter."[96] Because the designated hitter rule lowers the cost of hitting a batter by removing the possibility of direct physical retaliation, Goff theorized that the expected number of batters hit by pitches would be higher in the American League than in the National League, where a pitcher has to take his turn at bat.[97]

Goff began his statistical analysis by compiling data on the number of American and National batters hit-by-pitches each year from 1901 through 1990, normalized by the number of at bats in each league during a given year.[98] They also looked separately at sub-periods 1920-1990 and 1947-1990 to take account of changes in the official baseball rules during those time periods. These particular dates were chosen because the American League began play in 1901, "spitball" pitches were outlawed in 1920, and many other important changes occurred after World War II, including racial integration of the game.[99] Goff's study found that the effect of the designated hitter rule was statistically significant in each time frame. In particular, "after the rule's introduction in 1973, between 44 and 50 more American League batters were hit by pitches in a typical season."[100]

The study examined several alternative variables that might account for some of the difference in HBP statistics between the two major leagues, including measures of pitcher control/ability, hitter ability, degree of competitiveness of games, the amount of reliance on relief pitching, and the financial rewards of winning.[101] When the regression analysis was run with these additional variables the estimated coefficient on the designated hitter rules was considerably larger than in the previous analysis.[102] Thus, Goff's study confirmed economists' suspicions that the designated hitter rule increased the likelihood that batters would be hit by pitches, supporting the conclusion that it indeed creates a serious moral hazard for pitchers.

B. The Moral Hazard Theory is Challenged

In the wake of Goff's study, several leading economists published their own studies contradicting Goff's findings. Two such articles were published in *Economic Inquiry* along with a follow-up on the Goff study in October 1998.

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[94] *Id.* at 556.
[95] *Id.* at 556 n.2.
[96] *Id.* at 556.
[97] *Id.* at 557.
[98] *Id.*
[99] *Id.* at 558.
[100] *Id.* This statistic controlled for differences in number of at-bats between the leagues.
[101] *Id.* at 559. Pitcher control/ability was defined by inter-league differences in bases on balls and strikeouts; home runs and slugging averages were used to define hitter ability; competitiveness of games was indicated by the yearly standard deviation of league winning percentages; amount of relief pitching was measured by number of saves; and game attendance was a proxy for the pecuniary returns to winning. *Id.*
[102] *Id.* at 560.

1. *Is it Pitchers' Moral Hazard, or Simply the Team's Cost-Benefit Calculation?*

In their article, *The Effect of the Designated Hitter Rule on Hit Batsmen*, economists Gregory Trandel, Lawrence White, and Peter Klein ("Trandel") argued that the higher HBP rate in the American League was not in fact due to moral hazard.[103] Trandel instead argued that the increased HBP's were due to the fact that the net benefits of hitting a designated hitter are far greater than those of hitting a pitcher.[104] Specifically, the authors noted that "[a] National League team that plunked the opposing pitcher (in retaliation for his throwing at one of its players) would be putting the opposing team's weakest hitter on base, sacrificing a very likely out."[105] The authors thus theorized that a better form of retaliation would be to plunk the opponent's best hitter (potentially the designated hitter), who would be more likely to create runs for his team if allowed to bat.[106] Retaliation against a great hitter would have the added benefit of serving as a better deterrent than threatening an average pitcher, whose potential injury would have a lesser overall effect upon the team.[107] Thus, Trandel theorized that the fact that American League pitchers do not bat "should have little (if any) effect on their willingness to hit opposing batters."[108]

Importantly, Trandel began with different assumptions than Goff. Where Goff assumed that the pitcher was acting on his own, Trandel began with the opposite conclusion – that the pitcher was an agent of his team's manager.[109]

Under this fundamental assumption, Trandel's proposed cost-benefit analysis would lead to designated hitters getting hit by pitches more often than pitchers. The economists found this to be statistically true in a sampling of years since the introduction of the designated hitter rule.[110] In fact, "[d]esignated hitters (typically good hitters, because fielding skills are not required for their job) are hit by pitches somewhat more frequently than are other batters, while pitchers (typically poor hitters, because pitching skills are much more important to their job) are hit much less frequently."[111]

Trandel's analysis showed that designated hitters have been hit at about 110% of the rate of other American League batters.[112] Because designated hitters get about 1/9 of American League at bats, this suggests that the total HBP rate in the American League should be 1% higher than the rate in the National League.[113] National League pitchers are hit about 40% as frequently as other National League batters.[114] Pitchers get 6-7% of the National League at bats, therefore the American League HBP rate should exceed that of the National League by 3-4%.[115] With

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[103] Gregory A. Trandel, Lawrence H. White & Peter G. Klein, *The Effect of the Designated Hitter Rule on Hit Batsmen: Pitcher's Moral Hazard or the Team's Cost Benefit Calculation? A Comment*, 36 ECON. INQUIRY 679 (Oct. 1998).
[104] *Id.* at 679.
[105] *Id.*
[106] *Id.*
[107] *Id.*
[108] *Id.*
[109] *Id.* at 680.
[110] *Id.* The years used in the statistical analysis were 1974, 1975, 1977, 1982-96. *See* Appendix, *id.* at 684.
[111] *Id.* at 680.
[112] *Id.*
[113] *Id.*
[114] *Id.*
[115] *Id.*

these two factors working together, the HBP rate in the American League should exceed that in the National League by 4-5% – without any moral hazard factoring into the equation.[116]

Examining the pre-designated hitter period of 1947 to 1972, Trandel found that the mean difference between the American and National League HBP rates was 2.7 hit-batters per team per year, with a standard deviation of 8.2.[117] After the implementation of the designated hitter rule (from 1973-98), the divide between the two leagues increased, with the average difference equal to 8.1 hit-batters per team per year.[118] Because the average hit-batsmen rate over the full 51-year period was 60, the change represented a 9% increase in hit-batsmen in the American League after the implementation of the designated hitter rule, exceeding the effect predicted by Trandel.[119]

However, Trandel then performed a regression analysis to determine whether the difference between the expected and actual increase in hit batsmen was statistically significant. He noted that the results were different than those found by Goff not only because they used a different mathematical model but also because they included the years 1991 through 1997, which witnessed a marked change in the pattern of HBP rates between the two leagues.[120] Including the additional years, Trandel found that the designated hitter rule led the HBP rate in the American League to exceed that in the National League by just over 8%.[121] However, they discovered that the coefficients on designated hitter were not statistically significantly different from zero,[122] meaning that the slighter greater HBP rate in the American League could be explained by other factors just as easily as insidious moral hazard.

Thus, Trandel found that their empirical results for the 1947 to 1997 period did not support Goff's theory that the designated hitter rule created a significant moral hazard for American League pitchers. Instead, Trandel concluded that "[t]o the extent that American League batters are (on average) more likely to be hit by pitches than are National League batters, the difference is largely because the AL batters are (on average) better hitters, and are thus less costly and more beneficial to hit."[123]

2. *The Hazards of Moral Hazard*

Trandel was not alone in attributing the difference in HBP rates between the leagues to the skills of the designated hitter as batter rather than to moral hazard. Groundbreaking economist Steven Levitt, in his article *The Hazards of Moral Hazard*, also argued that pitchers were far less likely to be hit by pitches than designated hitters, thus explaining the difference

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[116] *Id.*

[117] *Id.* In the field of probability and statistics, the "standard deviation" is a measure of how widely results vary from the average. When a result falls within two standard deviations of the mean, it is not considered statistically significant. *See, e.g.*, http://mathworld.wolfram.com/StandardDeviation.html.

[118] *Id.*

[119] *Id.*

[120] *Id.* at 682. Trandel notes that this change started in 1992 where the AL's HBP rate exceeded that of the NL by 15.8 (per 10,000 at bats). In 1993, this number dropped to 8.5, and in 1994 the NL rate exceeded the AL rate by 5.4. The NL once again led in 1995 with 4.8, but the AL rate was higher again in 1996, by 3.3. The biggest difference was seen in 1997 when the NL rate exceeded that of the AL by 14.5. *Id.* at 681, Table 1.

[121] *Id.* at 683.

[122] Id.

[123] *Id.*

between the two leagues.[124] Levitt further noted that Goff's study was unable to distinguish between moral hazard as an explanation for the difference in HBP rates in the two leagues and any other competing explanation.[125]

Levitt's study contends that 80% of the difference between the HBP rates in the two leagues can be explained by the compositional effect of replacing pitchers with designated hitters in the batting order.[126] Using data from 1993 through 1996 Levitt found that "National League batters are hit by a pitch once every 115.4 at bats and American League batters are hit every 114.5 at bats, suggesting little if any moral hazard once compositional differences are eliminated."[127]

In addition, Levitt argued that other factors challenge the plausibility of the moral hazard argument. First, the low rate at which pitchers are hit by pitches implies that pitchers are rarely punished for hitting an opposing batter.[128] In fact, a pitcher would be punished for hitting a batter only one in fifty times.[129] "For the moral hazard story to be empirically relevant, one would expect that pitchers who hit opposing batters must actually be punished."[130] But this punishment is not evidenced in the HBP statistics since pitchers represent only 2% of the total hit batters.[131]

Second, there was surprisingly no correlation between the number of batters an individual pitcher hits and the number of times that pitcher is himself hit by a pitch.[132] If retaliation was the motivation for the HBP rate, as the moral hazard theory suggests, there should be a positive correlation between these variables.[133] To investigate this relationship Levitt divided pitchers into four groups based on the number of times the pitcher hit a batter. He discovered that pitchers who hit opposing batsmen the least were themselves hit 0.00078 times per inning pitched.[134] Pitchers who hit opposing batters the most, six times as frequently as the group who hit them the least, were hit less frequently when batting, only .00057 times per inning pitched.[135] Levitt thus concluded that there was no evidence to support a retaliatory motive for pitchers hitting batters.[136]

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[124] Steven D. Levitt, *The Hazards of Moral Hazard: Comment on Goff, Shughart, and Tollison*, 36 ECON. INQUIRY 685 (Oct. 1998). Levitt has since come to enjoy enormous popular acclaim as the author of *Freakonomics*, one of the most widely read books of this decade in which he deftly uses economic theory to explain a myriad number of everyday puzzles. His work has been profiled on the television show 60 Minutes as well as in the New York Times Magazine.

[125] *Id.* at 685.

[126] *Id.*

[127] *Id.* This statistic was achieved by eliminating pitchers from the National League calculations so that the composition of the National League batters more closely matches that of the American League. *Id.* at 686. Levitt does note that the observed gap in hit batters is smaller in his sample than in that examined by GST, admitting that it is therefore unlikely that compositional effects alone can explain Goff's entire finding. *Id.* at 685.

[128] *Id.* at 685.

[129] *Id.* at 686.

[130] *Id.* at 687.

[131] *Id.*

[132] *Id.* at 686.

[133] *Id.*

[134] *Id.* at 687.

[135] *Id.*

[136] *Id.*

C. The Moral Hazard Theory Rises Again

1. *Moral Hazard and the Effects of the Designated Hitter Rule Revisited*

In response to the challenges made against the moral hazard theory, Goff reexamined his initial study, again finding that moral hazard did in fact exist.[137] Goff acknowledged that something changed in the 1990s, raising the HBP rate in the National League significantly, and changing somewhat the effect of the designated hitter rule.[138] However, he maintain that "better hitting in the American League does not explain inter-league differences in hit batsmen *prior* to 1990."[139] Furthermore, Goff argued that the designated hitter rule continues to create a significant difference between the leagues when events from the 90s that changed the National League are taken into account.[140]

First, Goff examined what exactly changed during the 90s to cause the National League HBP rate to meet – and even exceed – that witnessed in the American League. He noted that in 1993 "the number of batters hit by pitches soared in both leagues,"[141] but the increase in the National League was significantly greater than that found in the American League.[142] According to Goff it is this dramatic increase in the National League HBP rate that masks the real effect of the designated hitter rule in the 90s.[143]

Two primary events are identified to explain this unusual rise in HBP rate: (1) the expansion of the National League into Denver, Colorado and Miami, Florida during the 1993 season, and (2) the players' strike that shortened the 1994 season and cut into spring training in 1995.[144] The Colorado Rockies and Florida Marlins expansion teams "led to an influx of relatively inexperienced pitchers into the National League."[145] These younger, less-experienced, less-skilled pitchers would presumably be more likely to hit batters accidentally, thus raising the overall HBP rate. This would also affect the American League due to inter-league trading and free-agency, but not nearly to the same extent as it affected the National League pitching staff.[146] It is not as immediately clear why the impact of 1994's baseball strike would disproportionately affect National League versus American League HBP rates. Goff hypothesizes that although it would presumably have affected both leagues similarly in the long run, "the realized effects of the strike may have caused the marginal benefits and marginal costs of throwing at opposing batters to differ systematically across leagues in the short run."[147]

Next, Goff added the years 1991 through 1997 to his long-run time series data to reexamine the effect of the designated hitter rule on HBP rates. After performing a cointegration test for the period 1901-1997, Goff found that a fundamental difference is indeed evident between the pre-1972 and post-1972 periods.[148] Acknowledging that moral hazard could not

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[137] Goff, Shughart & Tollison, *supra* note 90.
[138] *Id.* at 688.
[139] *Id.*
[140] *Id.* at 689.
[141] *Id.*
[142] *Id.* at 690.
[143] *Id.*
[144] *Id.* at 690-91.
[145] *Id.* at 691.
[146] *Id.*
[147] *Id.*
[148] For a general explanation of cointegration tests, see Zhen Wei, An Introduction to Cointegration and ARCH, available at http://www.stanford.edu/~zhenwei/Presentation/cointegration_garch_wb.pdf.

account for the entire difference between the HBP rates of the American and National Leagues, Goff nevertheless concluded that the designated hitter rule allows American League pitchers to throw at opposing batters with greater impunity than their National League counterparts.[149]

2. *The Designated Hitter, Moral Hazard, and Hit Batters*

In 2004 the theory that the designated hitter creates a moral hazard for American League pitchers was resurrected by John Charles Bradbury and Douglas Drinen, an economist and a mathematician, from Sewanee, The University of the South. Bradbury and Drinen presented a paper to the Joint Mathematics Meeting arguing that the designated hitter rule increases the likelihood that a batter will be hit by a pitched ball by 11-17%.[150] In 2006, Bradbury and Drinen published an article in the *Journal of Sports Economics* in which they argue that moral hazard explains about half of the difference in HBP rate between the two leagues.[151]

The authors note that the American League HBP rate has exceeded that in the National League for all but four seasons between 1973 and 2003.[152] They note, however, that this does not mean that American League pitchers have been hitting these batters on purpose.[153] Rather, American League pitchers "may engage in activities such as pitching high and inside, that are more likely to result in hitting the batter."[154] The fact that American League pitchers are not "monitored" by the opposing pitcher becomes a moral hazard problem because the teammates and manager of the pitcher, as well as the opposing batter, may suffer as a consequence.[155]

Bradbury and Drinen acknowledge that there are alternate explanations for the difference in the HBP rates between the leagues, including the fact that pitchers are poor hitters who represent easy outs and are therefore unlikely to be hit by pitches which would advance them to first base.[156] However, they found that batters were 8% more likely to be hit by pitches in designated hitter games, explaining about half of the difference between the leagues.[157] The study further indicated that evidence from the 3,000 inter-league games shows a stronger moral hazard response to the designated hitter rule.[158] Finally, Bradbury and Drinen found evidence of "teams hitting batters as a weapon of retaliation."[159]

The authors also theorized about what changed in the 1990s to raise the HBP rate so dramatically in the National League. First, as Goff opined, the National League expansion in 1993 caused the league to take on more inexperienced players who were more likely to hit batters and to be hit by pitches themselves.[160] Second, Major League Baseball instituted the "double warning rule" in 1994, authorizing umpires to warn both teams if the umpire believes a pitcher hit a batter intentionally.[161] If a retaliatory hit occurs after this warning, the offending

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[149] *Id.* at 692.
[150] Pink, *supra* note 92. Bradbury and Drinen do not appear to have published the study presented at the conference, although they do refer to the study several times in their two published articles.
[151] Bradbury & Drinen, *supra* note 10, at 319.
[152] *Id.*
[153] *Id.* at 320.
[154] *Id.*
[155] *Id.*
[156] *Id.*
[157] *Id.* at 321.
[158] *Id.*
[159] *Id.*
[160] *Id.* at 322.
[161] *Id.*

pitcher and his manager are immediately ejected, and monetary fines and suspensions are also likely.[162] The new double warning rule significantly raised the cost of retaliating for hit-batters, thus lessening the National League pitchers' fear of direct retaliation by the opposing pitcher.[163] Ironically, because National League pitchers now faced a lower expected cost for hitting batters, they began acting more like their American League counterparts.[164]

Rather than using yearly statistics like the previous studies, Bradbury and Drinen utilized Retrosheet "game logs" to access game-level data on HBP and other statistics.[165] Thus, the authors could control for game-specific situations that were likely to influence the number of hit-batters in each game.[166] Because better batters are more beneficial to hit than weaker batters, the authors controlled for the batter's skill using the seasonal runs scored per game for each team.[167] In addition, since pitchers often hit batters accidentally, Bradbury and Drinen controlled for pitcher quality with two variables: (1) seasonal average runs allowed per game (to control for poor overall pitching) and (2) seasonal average walks per game (to control for wild pitches).[168] Moreover, since retaliation is central to the moral hazard hypothesis, they included two variables that might provoke pitchers to hit batters in retaliation: (1) the number of batters hit by the opposing team's pitchers in that game and (2) the number of home runs hit in the game by the opposing team.[169] Finally, they controlled for relative score difference[170] and absolute score difference.[171]

Controlling for all of these variables while analyzing the 1973 to 2003 time period, Bradbury and Drinen found that the designated hitter rule increased the likelihood of a batter being hit by a pitch by nearly 8%.[172] During the same time period the American League HBP rate has exceeded that of the National League by 15% – hence, roughly half the difference in HBP rates between the leagues can be attributed to the designated hitter rule.[173]

Bradbury and Drinen also noted that although they could not identify specific pitchers who hit batters being hit, they did find that "[e]ach batter that a team hits in a game increases the team's hit batters by 10% to 15%."[174] Thus, retaliation does appear to be a nontrivial factor in the number of hit-batters per game.

Finally, the authors examined inter-league games to see whether games played in American League versus National League ballparks (the former using designated hitter's) presented similar instances of moral hazard for pitchers. Analyzing all of the games played from

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[162] *Id.*
[163] *Id.*
[164] *Id.*
[165] *Id.* at 323. Retrosheet is a non-profit data-gathering project that has compiled game-specific data for almost all games from the early 1970s through the present. *See* www.retrosheet.org (last visited May 22, 2008).
[166] Bradbury & Drinen, *supra* note 10, at 323.
[167] *Id.*
[168] *Id.* at 323-24.
[169] *Id.* at 324.
[170] "Relative score is the score differential of the team of analysis minus the score of the opposing team. The score differential increases as the winning team scores more runs than the losing team," capturing the "sore loser" impact on the HBP rate. *Id.*
[171] The absolute score difference "captures the declining value of runs in the game regardless of the win-loss outcome. As the score difference grows, the cost of putting another runner on base by hitting a batter falls … as the win-loss consequences diminish, the likelihood of retaliation for hitting batters increases." *Id.*
[172] *Id.* at 325.
[173] *Id.* at 325-26.
[174] *Id.* at 326.

1997 through 2003, Bradbury and Drinen found that the designated hitter rule was responsible for slightly more than 4% more hit batters a game, controlling for other relevant factors.[175] During this period the American League HBP rate exceeded that of the National League by an average of slightly less than 4%, indicating that the designated hitter rule was responsible for the *entire* difference between the leagues.[176] Evaluating only the inter-league games, the designated hitter rule was "associated with an 11% increase in the incidence of hit batsmen."[177] Thus, when both National and American League teams use a designated hitter, "both are more apt to hit batters at a higher rate than without" the designated hitter.[178]

Thus, according to the Bradbury and Drinen study, the designated hitter rule largely explains the difference in the HBP rates between the two leagues[179] and directly incentivizes teams to hit batters as a form of retaliation, the crucial element in the moral hazard hypothesis.[180]

3. *Crime and Punishment in Major League Baseball*

Less than a year after the publication of their earlier study, Bradbury and Drinen published a second article using data from individual plate appearances to support their argument that the deterrent effect of requiring pitchers to bat explains 60-80% of the difference in HBP rate between the American and National Leagues.[181]

Bradbury and Drinen identified five categories of influences on HBP rate for which they controlled in their regression analysis: (1) deterrence, (2) batter quality, (3) pitcher quality, (4) retaliation, and (5) game situation.[182] Deterrence was measured by the presence or absence of the designated hitter rule.[183] Batter quality was measured by two variables: (1) season "OPS," the sum of the batter's on-base percentage plus slugging percentage, to control for the fact that better batters are more likely to be hit, and (2) a dummy variable equal to one if the pitcher was hitting, because pitchers tend to be less desirable batters to hit.[184] Pitcher quality was also measured by two variables: (1) the pitcher's OPS-allowed to hitters as a proxy for pitcher skill,

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[175] *Id.*
[176] *Id.*
[177] *Id.*
[178] *Id.*
[179] *Id.* at 327.
[180] *Id.*
[181] John Charles Bradbury & Douglas J. Drinen, *Crime and Punishment in Major League Baseball: The Case of the Designated Hitter and Hit Batters*, 45 ECON. INQUIRY 131 (Jan. 2007). The authors went on to reiterate arguments made above, namely that American League pitchers engage in riskier behavior like throwing inside and throwing faster pitches when designated hitters bat in their place because they face a different cost-benefit analysis than National League pitchers. Pitchers in both leagues face the same potential benefits when hitting a batter with a pitch, i.e., preventing the batter from hitting the ball and generating more than a single base hit, inflicting injury on a competitor, and decreasing the opposing team's willingness to stand close to the plate to hit outside pitches. Similarly, in both leagues the pitcher puts a runner on base when he hits a batter, increasing the opposing team's chance of scoring, and faces the possibility of ejection, fines, and suspensions for the pitcher and the manager, physical retaliation via assault against the pitcher on the mound, and retribution against teammates by the opposing team's pitcher. However, in the National League there is another cost that does not exist in the American League, namely "direct reciprocal retribution in the form of the current pitcher being intentionally plunked by the opposing pitcher." Id.
[182] *Id.*
[183] *Id.* at 135.
[184] *Id.*

and (2) the walk-rate of the pitcher, to control for pitcher quality.[185] To measure retaliation, two variables were used: (1) a dummy variable equal to one was used if a batter on the current pitcher's team was hit in the previous half-inning and (2) a dummy variable equal to one was used if the previous batter hit a home run.[186] They also tested specifically for retaliation against pitchers by creating a dummy variable for a pitcher batting when a batter was hit in the previous half inning – if retaliation occurs then the variable should be positive.[187] Finally, game situations were measured using several variables: the score, innings, number of outs, and base runners threatening to score.[188]

When controlling for all of these variables, Bradbury and Drinen concluded that the designated hitter rule led to 15-17% more hit-batters from 1989 to 1992.[189] During this time period the American League HBP rate exceeded that of the National League by 26% – thus approximately 60% of the difference in HBP rates was explained by the designated hitter rule.[190] The retaliation variables during this period showed that events likely to provoke retaliation did in fact actually increase the likelihood of a batter getting hit.[191] Pitchers were more likely to hit batters immediately after the opposing pitcher had hit a teammate, and pitchers were four times more likely to be hit themselves if they had just hit a batter.[192]

To ensure that it was the designated hitter rule and not some other inter-league difference that created these differences, Bradbury and Drinen also examined data from 1969, and 1972 to 1974. When the designated hitter rule was in effect, pitchers were 11-12% more likely to hit batters than when they did not enjoy the benefits of the rule.[193] In 1973 and 1974 American League pitchers hit batters at a rate 14% higher than National League pitchers, indicating that the designated hitter rule accounted for 80% of the difference between HBP rates in this sample.[194] Bradbury and Drinen's analysis also showed that the different HBP rates in the two leagues were not due to other league-specific differences, as the introduction of the designated hitter rule in 1973 directly caused the American League HBP rate to rise.[195]

Hence, by utilizing data on individual plate appearances rather than the game level data used in their previous article, Bradbury and Drinen once again demonstrated that the designated hitter rule created a moral hazard for pitchers. "Controlling for variables that proxy batter quality, pitcher quality, retaliation, and game situation, we find that the designated hitter rule increases the likelihood that any batter will be hit during a plate appearance between 11% and

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[185] *Id.*
[186] *Id.*
[187] *Id.*
[188] *Id.* Specifically, they looked at relative score (offense to defense), absolute relative score, inning, outs, man on first, man on second, man on third, men on first and second, men on first and third, men on second and third, bases loaded. *Id.* at 136, Table 1.
[189] *Id.* at 136.
[190] *Id.* at 137.
[191] *Id.* at 136.
[192] *Id.* at 136-37.
[193] *Id.* at 139.
[194] *Id.*
[195] *Id.* Bradbury and Drinen then discussed the changes in the 1990s that caused the National League HBP rate to rise precipitously, namely the National League expansion in 1993 and the introduction of the double warning rule in 1994. Their analysis was similar to that offered in their previous article.

17%," explaining 60% to 80% of the HBP differential between the leagues.[196] They also observed retaliation against plunking, a necessary component of the moral hazard theory.[197]

V. The Designated Hitter Rule on Balance: Moral Hazard, Other Incentives, Longballs and Managerial Strategy

The recent studies confirm that the designated hitter rule causes batters to be hit by pitches more often than would occur in the absence of the rule. However, the importance of the rule in controlling the HBP rate seems to vary substantially over the years. Bradbury and Drinen found that the designated hitter rule increased hits by pitch by 11-17% when they looked at 1989 to 1992, but by only 8% when they looked at the longer time period of 1973 to 2003.[198] Furthermore, the differential effect of the designated hitter rule has been mitigated significantly by the introduction of the double warning rule in both leagues. Ironically, the double warning rule appears to have introduced a similar moral hazard to the National League by removing a significant portion of the danger of direct physical retaliation for a plunking. In fact, the National League HBP rate has exceeded that of the American League three out of the last four years since the Bradbury and Drinen study.[199]

But the last remaining crucial question to address in this economic analysis is whether the moral hazard created (whether by the designated hitter rule or by the double warning rule) is actually a *problem*? Are players being hit by pitches more often than is appropriate or socially ideal? Are we better-off having pitchers themselves bat so that they do not intentionally hit opponents? Are there other incentives at work that deter pitchers from hitting batters unnecessarily? Finally, would Hammurabi's "eye-for-an-eye" form of justice (provided by eliminating the designated hitter rule) prove superior? Not necessarily.

First, there are significant costs associated with hitting batters that the aforementioned economic studies did not (or could not) take into account due to the constraints of statistics and mathematics. These costs deter pitchers from excessively hitting batters intentionally and from carelessly throwing risky pitches that are highly likely to hit batters.

A. Vicarious Teammate (and Managerial) Liability

In tort law, vicarious liability refers to the notion that actors other than the tortfeasor may be held liable for damages. For example, an employer may be held liable for injuries caused by their employees under the doctrine of respondeat superior, which literally translated means, "let the superior answer." The policy behind the rule is simply that imposing damage costs on another person (in this case, an employer) will incentivize the actor to exert greater control over his employee to ensure she is acting within legal bounds in the first place.

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[196] *Id.* at 143.
[197] *Id.*
[198] *See* Bradbury & Drinen, *supra* note 10, at 325, Bradbury & Drinen, *supra* note 181, at 143.
[199] To arrive at this conclusion the total HBP per season was divided by the total number of at bats for the season. 2007: NL 0.010527, AL 0.010384; 2006: NL 0.011683, AL 0.009924; 2005: NL 0.010826, AL 0.010778; 2004: NL 0.010675, AL 0.011482. Statistics on HBP from Major League Baseball, *available at* http://mlb.mlb.com/stats/historical/entry.jsp (last visited June 10, 2008). Statistics on at bats from THE EMERALD GUIDE TO BASEBALL, *supra* note 22, *available at* www.baseball-reference.com (last visited June 13, 2008).

Transitioning vicarious liability theory into the baseball arena, a primary potential cost for a pitcher who beans a batter is that some other member of the pitcher's team will be hit as retaliatory punishment for the beaning. This is possible with or without the designated hitter rule. However, the designated hitter is the most likely member of the team to be hit,[200] and therefore it is potentially a more significant fear for American League pitchers. While this may not seem to be as significant of a cost as that of being hit personally, there is a strong feeling of unity in team sports such as baseball. Hence, watching a teammate get hit is much like getting hit oneself.[201] In fact, the very idea that hits-by-pitch are retributive in nature supports this theory because it implies that the pitcher takes the hitting of a teammate so personally that he is willing to risk expulsion from the game to even the score.[202] Bradbury and Drinen have shown that each batter that a team hits in a game increases the other team's hit batters by 10-15%.[203] Thus, pitchers are more likely to hit someone with a pitch when a member of the pitcher's team has already been hit, proving that pitchers take the hit personally even when they are not the party receiving it. Since this is true, it is eminently reasonable to assume that the pitcher would similarly take a teammate's getting hit even more personally when it comes in retaliation for the pitcher's own actions.

More formally, since the mid 1990s, vicarious liability for a pitcher's intentional beaning of a batter falls onto that pitcher's manager. If an umpire feels that a pitcher has purposefully beaned an opposing player, the umpire is authorized to not only eject that pitcher from the game, but also the pitcher's manager. In theory, by holding one's manager vicariously liable, he will be incentivized to exercise greater control over his own pitcher and persuade him not to purposefully hit batters in the future. Furthermore, both the pitcher and his manager will likely face fines and suspensions, including the forfeiture of some salary. In effect, not just the pitcher but also his manager will face vicarious financial liability for the pitcher's "tortious" action. One might reasonably suppose this exposure to damages will work against further excessive hits-by-pitch.

B. Physical Retribution Still Exists

Furthermore, American League pitchers are not safe from all types of physical retaliation. None of the studies detailed throughout this article considered the fact that batters are capable of charging the mound to deal out retribution on the spot, rather than waiting for their pitcher to even the score against the offender. The potential for this type of direct retribution exists in both leagues to an equal degree. And when the batter rushes the mound it tends to precipitate the clearing of both benches – all the other players either try to break up the fight or get in on the action themselves. Being hit by a fastball traveling at 100 miles per hour is probably exceptionally painful, but it cannot be comfortable finding oneself at the bottom of a pile of

[200] Trandel, White & Klein, *supra* note 103, at 680.
[201] Some might even analogize to a parent-child situation: many if not most loving parents will tell observers that they experience more pain from watching their child suffer an injury than they would if they had experienced the injury directly.
[202] For example, many players feel a moral obligation to "protect" their teammates. When New York Yankee Roger Clemens threw at New York Mets rival Mike Piazza, many members of the Mets were outspoken in their desire to see Clemens get beaned the next time he batted.
[203] Bradbury & Drinen, *supra* note 10, at 326.

angry baseball players either. While there are no statistics on the number of times a player has rushed the mound in response to being hit by a pitch, it is not an uncommon occurrence.[204] After all, retaliation by pitch is not that common either, pitchers are only hit by pitches from 0.00057 to .00078 times per inning pitched.[205]

C. Reputational Loss Hurts

Another difficult-to-measure cost of hitting batters unnecessarily is the reputational effect it creates. No one wants to be known as a wild pitcher or "headhunter," as it violates the unwritten rules and spirit of the game.[206] While managers may sometimes ask a pitcher to brush a batter back from the plate, or even ask him to hit a batter (although this is strictly forbidden by the rules of Major League Baseball[207]), there are certainly times when a pitcher has either taken matters into his own hands or throws a wild pitch by accident. A pitcher who is known for not being able to control the ball or for having a nasty temper and regularly getting himself and his manager thrown out of games, might have trouble during his next contract negotiation.[208] At the very least, he will have trouble maintaining a positive image with the media and will suffer reputational loss as a consequence.

D. Chicks Dig the Longball

Moreover, there are substantial advantages to the use of the designated hitter rule that weigh against the negative moral hazard problem created. Economically, a negative externality like a moral hazard is not truly a problem if the benefits of the rule that created it outweigh the drawbacks. Added offense, the ability to watch great players extend their careers, and increased attendance weigh on the side of keeping the designated hitter rule in place despite a slight increase in hits-by-pitch.

As proof, one need only examine the positive impact of the designated hitter rule on the American League post-1973. Prior to its introduction, the American League had finished behind the National League in overall batting average for nine consecutive seasons.[209] With the institution of the designated hitter rule, the American League composite batting average jumped 20 points in a single year, from .239 in 1972 to .259 in 1973, surpassing the National League average for the first time in almost a decade.[210] American League batters have never looked

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[204] SportsCenter created a video montage of the 10 best mound charges caught on tape, *available at* http://flashwarner.com/2006/03/best_mound_charges.html (last visited June 10, 2008).
[205] Levitt, *supra* note 124, at 687.
[206] Roger Clemens, Bob Gibson and Pedro Martinez are all well known (and disliked) for their headhunting.
[207] *See* Major League Baseball Rule 8.02(d). (If the umpire believes that the pitcher has intentionally hit the batter the umpire may elect to expel the pitcher, or the pitcher and the manager, from the game or "may warn the pitcher and the managers of both teams that another such pitch will result in the immediate expulsion of that pitcher (or a replacement) and the manager.")
[208] Goff did note in a footnote that attendance was included in their calculations to test the "hypothesis suggested by one of the referees that National League pitchers have grown more fearful of being retaliated against because their salaries have increased over time relative to their American League counterparts." However, they were not able to use actual salary information and clearly were not privy to the inner thoughts of the American or National League pitchers. *See* Goff, Shughart & Tollison, *supra* note 6, at 559 n.5.
[209] The National League led the American League in composite batting average from 1964 through 1972. *See* The Baseball Almanac, *available at* http://www.baseball-almanac.com/hitting/hibavg4.shtml (last visited June 10, 2008).
[210] *See id.*

back. The American League has maintained a substantially higher overall batting average than the National League every year, a testament to the increase in offense created by placing a strong batter in the line-up.

This increase in offense makes fans happy. "Hitting is the baseball equivalent of heroin: fans get hooked on it."[211] Or, as Nike so succinctly stated during Mark McGwire's home run streak in the late 1990s: "Chicks dig the long ball."[212] In fact, everyone appears to dig the long ball, according to David Gassko, a former consultant to a major league team.[213] Gassko analyzed attendance records and home runs to determine whether slugging really does put fans in the seats. He first adjusted all the statistics used – attendance, home runs, and wins – for the league average, to correct for biases like attendance going up for wins (which tend to be strongly correlated with good hitting) and larger fan bases in cities like New York and Los Angeles.[214] He then ran a regression analysis attempting to predict attendance per game for each team-season based on a variety of factors including, wins, playoffs or World Series wins in the previous season, and of course home runs.[215] Gassko found that each home run hit directly put approximately 2,000 extra fans in the seats.[216] To ensure that this was related to home runs specifically and not just to runs overall, he re-ran the regression using adjusted runs instead of home runs, and found that the coefficient for runs was insignificant and that runs have no discernible effect on attendance.[217] Gassko's conclusion was clear: "Chicks dig the long ball – and so does everyone else."[218]

It's not just home runs that put fans in the seats, however. The presence of the designated hitter rule itself draws fans according to a study by economists Bruce Domazlicky and Peter Kerr.[219] Domazlicky and Kerr found that American League fans respond positively to increased offense and that an estimated 2,211 additional fans per opening can be attributed to the designated hitter rule.[220] The economists controlled for several non-baseball related variables, including the population of the metropolitan area in which the team played, average ticket prices, per capita income in the team's home city, the existence of another Major League Baseball club in the same town, and the existence of non-baseball professional sports teams in the same town.[221] They also controlled for several baseball related variables, including team winning percentage, games back (from the league leader), runs scored per year, the number of All-Star players on the team, the age of the stadium, and recent performance in a division

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[211] MCKELVEY, *supra* note 1, at 65 (quoting Thomas Boswell, *Time to End 9th-Bat Split*, WASH. POST, July 31, 1980, Sec. 6, 1).
[212] *See* http://www.youtube.com/watch?v=4ltD21rYWVw (last visited June 10, 2008). The Nike ad was so popular that it was listed on ESPN's top 25 sports ads of all time, number 10 for the ESPN expert panel, number 7 for the fans. *See* ESPN, *available at* http://sports.espn.go.com/espn/espn25/story?page=listranker/25bestcommercials (last visited June 10, 2008). T-shirts bearing the slogan are still available from Nike. *See* ESPN, *available at* http://sports.espn.go.com/espn/espn25/story?page=listranker/25bestcommercials (last visited June 10, 2008).
[213] *See* David Gassko, *Do Chicks Dig the Long Ball?*, THE HARDBALL TIMES, Jan. 31, 2008, *available at* http://www.hardballtimes.com/main/article/do-chicks-dig-the-longball/ (last visited June 10, 2008).
[214] *Id.*
[215] *Id.*
[216] *Id.*
[217] *Id.*
[218] *Id.*
[219] Domazlicky & Kerr, *supra* note 18.
[220] *Id.* at 67-68. Oddly enough, the same study found that National League fans do not respond to increased offense with higher attendance.
[221] *Id.* at 64.

championship.[222] Analyzing the 1969-80 baseball seasons, Domazlicky and Kerr found that "the increase of one run per game in the American League under the designated hitter led to increased attendance of 2,211 per opening."[223]

E. Don't Let Bonds Go Quietly into that Good Night

Furthermore, another goal and positive outcome of the designated hitter rule is that it has enabled teams to retain older star players who weakened defensively in their last years in the league.[224] Sports Illustrated summed it up perfectly in 1973, "New leaseholds on playing life will abound."[225] Willie Mays, a 22 season National League veteran and one of the greatest ballplayers of all time, retired in 1973 believing that he could have extended his career a few more years if his league had adopted the rule.[226] "Recalling his final season with the Mets, he said, 'But after I pinch-hit for the pitcher, I was through for the day … If the National League had the designated hitter rule, I could have played every day as a hitter. That would have been great.'"[227] The designated hitter rule provided this benefit to another former National League star and another one of baseball's all-time greatest players, Hank Aaron. Aaron ended his career with the Milwaukee Brewers, appearing in 85 games, 74 as designated hitter.[228] Aaron's two seasons with the Brewers added 22 home runs to reach his 755 home run record,[229] a record that was not broken until 2007 by Barry Bonds.[230] Bonds himself has suffered from a variety of physical ailments towards the tail end of his career, and there was much speculation prior to his steroid troubles that he might join an American League team to extend his playing career.[231]

Additionally, the designated hitter rule also provides an ideal position for sluggers returning from what otherwise might be career ending injuries. The 1972 Minnesota manager, Frank Quilici, noted that he would "be a fool to oppose [the designated hitter rule] with two $100,000 ballplayers … coming off serious operations … [i]t's a relief to know that if one of them doesn't respond to the point where he can play the field everyday we won't lose his bat."[232] Seattle Mariner Edgar Martinez was able to come back as a designated hitter after battling hamstring and knee injuries in 1993 and 1994 to become an All-Star again in 1995,[233] and

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[222] *Id.* at 65.
[223] *Id.* at 67.
[224] MCKELVEY, *supra* note 1, at 23 (quoting Lee MacPhail, the New York Yankees general manager in 1972, letter to McKelvey, 2003).
[225] *Id.* at 28 (quoting William Leggett, *The 10th Man Cometh*, SPORTS ILLUSTRATED, Feb. 5, 1973, 13).
[226] *Id.* at 44.
[227] *Id.* (quoting *Tom Van Arsdale is Traded to Hawks*, N. Y. TIMES, Nov. 9, 1974, Sec. 1, 36).
[228] *Id.* at 52.
[229] *Id.*
[230] *See* Dave Sheinin, *Bonds Sets Baseball's Home Run Record*, WASH. POST, Aug. 8, 2007, Sec. A, 1. An asterisk is listed next to Bonds' name due to his alleged steroid use, thus to some, Hank Aaron still holds the true home run record. Aaron himself congratulated Bonds, however, through a taped message played during the game in which Bonds broke the record. *Id.*
[231] *See* Associated Press, *Bonds Mum on Playing DH in 2007 – or Playing at All*, at http://sports.espn.go.com/mlb/news/story?id=2438887 (stating that Barry Bonds has "accepted the fact he could finish his career next year in the American League as a designated hitter – if he's still playing at all.")
[232] MCKELVEY, *supra* note 1, at 35 (quoting Wells Twombly, *Now the 10th Man*, N. Y. TIMES MAG., April 1, 1973, 19).
[233] MCKELVEY, *supra* note 1, at 132-33.

batting .356.[234] Martinez is today widely regarded as the greatest designated hitter of all time, and will soon be subject to the debate of whether he is worthy of baseball's Hall of Fame having rarely played in the field post-1995.

If money talks, the importance of retaining the designated hitter in the American League can perhaps best be summarized by statistics regarding designated hitter salaries.[235] Whether it is star power, fan base, or critical importance to the team, American League teams are willing to shell out the big bucks for their designated hitters. The average salary for a designated hitter in 2007 had risen to over $9 million[236] compared to a league average of just $2.874 million for all other players.[237] No general manager pays $9 million for an easily replaceable player.

F. Fight Night at the Stadium

Perverse as it is, fans might well enjoy watching a game with a few more hits-by-pitch. Though politically incorrect to admit, people enjoy watching the aggression and pain of others – after all, how else would hockey survive?[238] In the moments after a batter is hit by a pitch, the crowd holds its collective breath to see whether he will shake it off and take his base, or charge the mound to deal out immediate justice. There is little doubt that this lends a sense of drama to the game and anticipation to the crowd. The popularity of these altercations is perhaps best illustrated by the top ten list created by SportsCenter highlighting the ten best mound charges caught on film.[239] Fans enjoy the spectacle, they obtain pleasure from the drama, and like it or not, this creates social welfare. That is not at all to say that the hitting of a batter with a pitch is transformed into a "positive" action by the enjoyment of the fans, for of course a batter must suffer for the fans' enjoyment. Nevertheless, it is not unlikely that the enjoyment of thousands of fans summed together may be greater than the temporary suffering of the batter. Hence, it is possible that overall welfare of the group increases.

G. The Designated Hitter is an Option, Not an Obligation

Finally, and perhaps most importantly, it must be remembered that the designated hitter rule is not a required rule. Every American League team has the *option, but not the obligation*,

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[234] *See* Major League Baseball statistics for Edgar Martinez, *available at* http://mlb.mlb.com/stats/historical/individual_stats_player.jsp?c_id=mlb&playerID=118365&HS=True (last visited June 10, 2008).
[235] MCKELVEY, *supra* note 1, at 136.
[236] *See* U.S.A. Today data, *available at* http://www.lohud.com/apps/pbcs.dll/article?AID=/99999999/DATABASE02/80326004/-1/database (last visited June 10, 2008). The actual salaries of the 11 designated hitters listed were added together and divided by 11 by the author to find the average salary. This can be compared to the average first baseman's salary of $5.6 million. *Id.*
[237] *See* Major League Baseball Players Association website, at http://www.mlb.com/pa/info/faq.jsp#average.
[238] *See, e.g.*, Jamie Mottram, *Hockey Fights and the Grizzly Fans Who Love Them*, available at http://journals.aol.com/dcsportsguy/mrirrelevant/entries/2007/03/28/hockey-fights-and-the-grizzly-fans-who-love-them/3309 (quoting Hockey "blogfather" Eric McErlain interviews with fans, which concluded that "Fighting, for lack of a better word, is good.")
[239] The video is no longer available on ESPN's SportsCenter web site, but is *available at* http://flashwarner.com/2006/03/best_mound_charges.html (last viewed June 11, 2008).

to use a designated hitter.[240] Yet, every American League team indeed utilizes a designated hitter, with no one choosing to play by the traditional rules. As baseball writer Richard McKelvey notes, "[t]he designated hitter could hardly get a stronger endorsement."[241]

H. Other Negative Externalities: Loss of Managerial Strategy, Danger to the Batter

Nevertheless, in the interest of a completely balanced analysis, these hard-to-measure advantages provided by the designated hitter rule must be weighed not only against the potential moral hazard, but also against another large negative externality of the rule – the loss of managerial strategy in American League games. Baseball purists have long argued that the designated hitter rule unforgivably removes one of the most difficult decisions a manager must make, when to allow a pinch-hitter to hit for the pitcher, increasing the potential offense, but potentially decreasing the defense by removing a successful pitcher.[242] Some International League managers, who used the rule in the 1969 season, argued that it reduced their maneuverability in the use of relief pitchers.[243] For those who enjoy the high art of baseball strategy, this is indeed a significant cost of the designated hitter rule.

In addition, hitting a batter with a baseball traveling at 100 miles per hour can be extremely dangerous. The rules of Major League Baseball make it clear that hitting a batter in the head with a pitched ball is both unsportsmanlike and exceptionally dangerous.[244] Only one major league player has died as a result of being hit by a pitched ball, Ray Chapman of the Cleveland Indians, who was beaned in the head in 1920.[245] Other players' have had their careers ended by a fastball, like Tony Conigliaro of the Boston Red Sox, in 1967.[246] However, the modern helmet requirement and the requirement that balls be replaced early and often if they become smudged[247] have rendered this danger not as serious as it once was.[248]

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[240] *See* Major League Baseball Rule 6.10. "A hitter *may* be designated to bat for the starting pitcher and all subsequent pitchers in any game without otherwise affecting the status of the pitcher(s) in the game," (emphasis added).

[241] MCKELVEY, *supra* note 1, at 25 (quoting The Sporting News Official Baseball Guide for 1974, 283). In fairness, the fact that all American League teams use the designated hitter does not necessarily imply it is unquestionably "good." Rather, one could argue that even those teams opposed to the rule based on concerns over potential moral hazard or over loss of managerial strategy feel compelled to use it so as not to be placed at a competitive disadvantage.

[242] *See, e.g.*, MCKELVEY, *supra* note 1, at 24 (quoting The Sporting News Official Baseball Guide for 1974, 283) (National League President Chub Feeney "decries the loss of moments in pinch-hitting situations, when fans implore the manager to bring on Willie Mays" and does not like the prospect that "moves and countermoves of manages will be radically affected").

[243] *Id.* at 24 (quoting The Sporting News Official Baseball Guide for 1974, 283).

[244] *See* Major League Baseball Rule 8.02(d) Comment. ("To pitch at a batter's head is unsportsmanlike and highly dangerous. It should be – and is – condemned by everybody. Umpires should act without hesitation in enforcement of this rule.")

[245] *See* VOIGT, *supra* note 31, at 155.

[246] *See id.* at 268.

[247] *See id.* at 165. It is a violation of the rules to intentionally damage or discolor the ball, offenders shall be suspended automatically for 10 games. Major League Baseball Rule 3.02.

[248] Players are still injured of course, but generally not as severely. For example, Mets slugger Mike Piazza was hit in the head by a pitch in a 2005 game and suffered a concussion, but no apparently long term damage was done. *See* Marty Noble, *Piazza Takes Pitch to Head in Mets Loss: Mets Slugger Homers in Return, But Leaves with Concussion*, MLB.com, *available at*

VI. Conclusion

In sum then, it is crucial to consider all the benefits and all the costs in any responsible economic analysis of the designated hitter rule. While the balance of baseball statistical data indicate that some moral hazard was indeed created by allowing pitchers to escape their turn at bat, the problem of moral hazard appears to be abating somewhat in recent years.[249] Ironically, the advent of the double warning rule has created a similar problem in the National League, demonstrating that the removal of the designated hitter rule would not cure the moral hazard but merely change its source. Teams and fans clearly benefit from increased offense, but of course that must be weighed against the loss of some baseball strategy and danger to batters.

Perhaps then this is the type of situation where National and American League fans should just agree to disagree. Just as American states provide laboratories of experimentation for a wide variety of laws,[250] so too do the two major leagues provide an ideal place to try out new and different rules. There is simply no reason to require the leagues to play by uniform rules. American League fans enjoy the increased offense that the designated hitter rule provides and the ability to keep great players in the game longer. National League fans like prolonged pitchers duels and the chance to see the manager struggle with the decision to put in a pinch-hitter and remove a pitcher who is on a roll. Everyone appears to be happy, so we don't we all stop squabbling about the designated hitter rule and pass the cracker jacks.

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http://mlb.mlb.com/news/gameday_recap.jsp?ymd=20050910&content_id=1204845&vkey=recap&fext=.jsp&c_id=nym (last viewed June 11, 2008).

[249] The best evidence of this is the evening of league hit by pitch rates in the 2000s.

[250] *See* Brandeis, J., dissenting in New State Ice Co. v. Liebmann, 285 U.S. 262 (1932).