

Sports excitement comes from 50/50 blend of skill and chance

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Media Contact: Warren R. Froelich, (619) 534-8564, wfroelic@ucsd.edu

SPORTS EXCITEMENT COMES FROM 50/50 BLEND OF SKILL AND CHANCE

In sports, how do you define excitement?

According to a study by a psychologist at the University of California, San Diego, it's an equal mix of skill and chance.

"No matter what the sport is, we found that there's just this right mix that creates excitement and uncertainty and interest in the game," said Nicholas Christenfeld, assistant professor of psychology at UCSD.

"This mix should be the same then in a football season, or a baseball season, or a tennis tournament, or a chess tournament."

In his study, published in today's issue of the journal Nature, Christenfeld discovered that successful professional sports--from baseball and football to tennis and chess--have evolved in an almost Darwinian fashion to create an optimal mix of skill and chance. To attract fans and keep their interest, sports whose outcomes generally rely less on skill have compensated over the years...often by playing more games. On the flip side, those sports whose individual outcomes closely reflect the skill level of the players, have evolved in such a way as to increase the role of chance.

"When you notice that these sports converge in a powerful way toward 50/50, skill to chance, it means fans care about it," Christenfeld said. "So the average sports fan cares about the reliability of the contest, as evidenced by the fact that you have this huge adaptation of sports toward this optimal level of reliability."

Christenfeld's conclusions are based on a reliability analysis of nine professional sports: baseball, hockey, soccer, basketball, football, rugby union, rugby league, tennis and chess. His goal was to assess how reliable a single game's result would be in predicting the outcome of a second game in a given sport. Toward this end, Christenfeld calculated the extent to which the outcome of half a season's games predicted the outcome of the other half, then adjusted that result for the number of games played. His analysis covered contests over three consecutive seasons.

For U.S. sports, baseball exhibited the lowest rate of reliability or predictability, while football had the highest rate of reliability.

Most fans intuitively sense this already, Christenfeld said.

"Baseball is the least reliable," he said. "It is the sport for which the underdog has the greatest chance of winning any particular game, whereas with football, if the favorite team doesn't win, you consider it a major upset."

"So, if a football team is 8-0 at the beginning of the season, you may have a reasonable expectation that this is a great team and that it might reach the Superbowl. But if a baseball team were 8-0, or even 16-0 at the beginning, you'd be crazy to predict that that team would be in the World Series."

To reach an optimal balance of skill to chance, Christenfeld showed how each sport in his study had adjusted its structure to reach an optimal blend by controlling the number of contests in a season. Football, for example, which is a highly reliable measure of skill, increases its chance component by playing a relatively small 16-game season. Baseball, with its low reliability based on skill, adjusts by playing a long 162-game season.

Interestingly, Christenfeld's analysis shows that to maintain the optimal balance between skill and chance, the outcome of a season of baseball is still not quite predictable enough, (that is, the balance is weighted too heavily toward chance) while basketball season outcomes are generally too predictable (that balance is weighted toward skill).

"Even in Chicago now, with the Bulls, the excitement is starting to pale a little," Christenfeld said. "People are saying let's get the regular season over with and get to the playoffs."

This imbalance could be adjusted by changing the number of games in the season (ie. increasing the number of games in the baseball season, or decreasing the number of games in the basketball season.) If changing the number of games isn't practical, other methods could be used.

For example, Christenfeld noted, to decrease the predictability in the basketball season, that sport should spread its talent better throughout the league. By contrast, Christenfeld's study suggests that for baseball, the talent has already been spread far too equitably.

"There are all sorts of things that could impact on reliability," Christenfeld said. "Things like salary caps, revenue sharing, the draft system, free agency--all of those have implications for the reliability or the outcome."

Christenfeld added that many other aspects of human endeavor--from dating to movie enjoyment--likely depend on some as-of-yet determined ratio between uncertainty and predictability.

"When you watch a movie you don't want to simply say, yeh I can see how the movie is going to end," he said. "On the other hand, you don't want to get the end and say I had no idea that any of that was going to happen, that the ending was entirely random.

"You clearly want it in between, where there is some predictability, yet some uncertainty. That's what generates excitement."

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