

[Home](#) | [Science in Society](#) | [News](#) | [Back to article](#)

Poker skills could sway gaming laws

04 April 2009 by [Celeste Biever](#)

Magazine issue [2702](#). [Subscribe](#) and get 4 free issues.



Looking more skilful by the day (Image: Nick Koudis/ Digital Vision/Getty)

IS POKER a game of skill or luck? For regular players that's a no-brainer, but showing that skill wins out has proven surprisingly difficult for mathematicians. Now two studies that tapped the vast amounts of data available from online casinos have provided some of the best evidence yet that poker is skill-based. Many hope that the results will help to roll back laws and court decisions that consider poker gambling, and therefore illegal in certain contexts.

Most players insist that poker is predominantly skill. "I depended solely on that skill for my food and rent," says Darse Billings, a former professional player who co-founded the Computer Poker Research Group at the University of Alberta in Edmonton, Canada. In many jurisdictions, however, poker websites and organised games are heavily regulated or even banned under gambling laws, partly because chance is considered the dominant factor.

Previous attempts to quantify the relationship between skill and chance have involved building theoretical models or playing software bots against each other. However, [Ingo Fiedler](#) and Jan-Philipp Rock at the University of Hamburg's Institute of Law and Economics in Germany argue that these methods fail to reflect real games, and this may explain why some courts and lawmakers have yet to be swayed by them. So over three months, the pair recorded the outcomes of 55,000 online players playing millions of hands of poker's most popular variant, "no-limit Texas hold 'em".

They reasoned that if skill dominated, this would eventually show itself over many hands, so they chose two factors to define this threshold. Firstly, they measured how much each player's winnings and losses fluctuated: the higher this variance, the greater the role of chance. Secondly, they measured the average value of a player's winnings or losses: highly skilled or terrible players would do noticeably better or worse than would be expected by chance alone.

Based on these factors, they found that the threshold at which the effects of skill start to dominate over chance is typically about 1000 hands, equivalent to about 33 hours of playing in person or 13 hours online, where the rate of play is brisker. So although chance plays a role, they suggest that because most players easily play this many hands in a lifetime, poker is more a game of skill (*Gaming Law Review and Economics*, DOI: [10.1089/glr.2008.13106](#)). "Our results should have greater impact on the legislators than the results of other studies; they refer to reality," says Fiedler.

The threshold at which the effects of skill start to dominate is typically about 1000 hands

However, [Sean McCulloch](#), a computer scientist at Ohio Wesleyan University in Delaware, says the results may fail to sway a judge or jury. "If you want to use a mathematical argument as the basis for legislation or court decisions, it has to be easy to explain, easy to follow and intuitive," he says.

McCulloch used an alternative method to explore skill and chance in poker, also based on real games. Together with Paco Hope of the software consultancy [Cigital](#) of Washington DC, he looked at 103 million hands of Texas hold 'em played at the PokerStars online site and calculated how many were won as the result of a "showdown" - in which players win thanks to their cards beating their opponents' cards - versus those that were won because all the other players folded. They argue that the latter hands must be pure skill, because no one shows their cards. Their [analysis](#), released on 27 March, revealed that 76 per cent of games did not end in a showdown, suggesting that skill is the dominant factor.

John Pappas of the Poker Players Alliance (PPA) in Washington DC says both studies are badly needed to help properly define the law. In many US states, judges and juries use a so-called "predominance test" to gauge skill and chance, based on the opinions of expert witnesses. Although courts in Pennsylvania, Colorado and South Carolina have all ruled this year that poker is a game of skill, not all courts do. "It would not be wise for any of us to rest on our laurels," Pappas says. The PPA expects the Cigital study will now be used as evidence to fight appeals against court rulings that decided poker is a skill game.

However, Preston Oade of law firm Holme Roberts and Owen in Denver, Colorado, who worked on a separate poker case in Colorado, cautions that the studies still may not persuade juries, as this is a "moral, political and social issue", as well as a mathematical one.

Pappas hopes the studies will help to persuade the US Congress to grant poker an exemption from the Unlawful Internet Gambling Enforcement Act, due to come into force in December 2009. The act will make it illegal in some states for banks to process transactions from gambling websites.