

Science & technology | Gambling and self-deception

# Hot to trot

Lucky streaks happen. But they are not the result of luck



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GAMBLERS, by definition, are optimists. They can win only by beating the odds, and—over the long term—the odds cannot be beaten. But what about the short term? Many gamblers believe winning streaks, known as “hot hands”, are real, and that if they are in such a streak it makes sense to keep on betting. Conversely, many also believe bad luck is sure to reverse itself not merely by reverting to the mean, as a statistician would predict, but to the extent that the gambler will recoup his losses. This is known as the gambler’s fallacy.

Non-gamblers might reasonably assume both approaches to be equally fantastical. But research by Juemin Xu and Nigel Harvey at University College, London, just published in *Cognition*, has shown that in some areas of gambling hot hands do actually exist. Conversely, and just as oddly, they found that in these same areas the gambler’s fallacy is yet more fallacious than a statistician would predict. Punters who continue to punt after losing do not even manage to revert to the mean.

Using the power of the internet to round up a huge sample, the two researchers examined 565,915 bets made by 776 people on sports such as horse-racing and football. Because these were online bets their timing could be established precisely. Ms Xu and Dr Harvey looked at winning and losing streaks up to six bets long.

The probability of a first bet winning was 48% and that of a follow-up winning again was 49%. After that, the streak took off. The third bet won 57% of the time. The fourth, if the third had won, won 67% of the time, the fifth, 72% of it and the sixth 75%. As for the losers, after ploughing their first bets, their success with their second slipped to 47% and thence held at 45%.

The explanation of the puzzle, Ms Xu and Dr Harvey found, was not that Lady Luck actually does smile on winners and frown on losers. Rather, as winners’ winning streaks increased in length they started choosing safer and safer odds, which led them to win more often, though less profitably. In contrast, those who had experienced a losing streak went for ever riskier bets, making it more likely the streak would continue.

Hot hands, then, are real. But they are created by a gambler's behaviour rather than by fortune's wheel. The gambler's fallacy, though, is made worse by his behaviour. The moral is to believe in maths, not luck, and probably not to bother betting in the first place.

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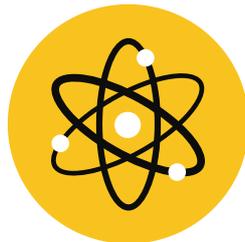
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