FROM THE MORGUE
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In this installment Nick the Greek, one of America's most famous gamblers, continues his lecture on probability theory's application in gambling. This series on Nick originally ran in the *Police Gazette* in 1969-70.

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The most successful Las Vegas gambler of all time (his winnings totaled $500,000,000) tells the basic fundamentals every bettor should know...

THE GAMBLING SECRETS OF NICK THE GREEK
Part 3

by Ted Thackrey, Jr.

"A man named John Scarne recently made a survey of the whole country and discovered that gambling is the biggest single industry in the United States. Did you know that?

"He claims people lay an average of $500,000,000,000 *a year* on the line in one form of gambling or another!

"Now, wouldn't you think the schools would pay a little more attention to a big business like that...?

"Look out there...." He pointed to the casino, where a few diehards were still plugging away at the Craps table.

"They are gambling. They are winning and losing. They are losing, most of them, at least a little more than they are winning. And I will give you 6-to-5 that not one of them could tell you exactly why.

"The people who really know these answers," said Nick, "are the casino owners. That's because they're businessmen, rather than gamblers. They know the odds—and the odds make them rich.

"Even the so-called professional gambler, the individual operator or high roller like me," he growled, "is one in a million if he really knows the true betting odds—as differentiated from casino odds—on any given gaming proposition."

As illustration, Nick took a half-dollar from his pocket.

"How many times," he inquired, "would you say this thing will come up heads in 100 tosses?"

The writer's pencil hesitated, and he thought the matter over, suspecting a trap. But there was none. "Maybe... 50 times," he replied finally. "Give or take one or two."

Nick nodded emphatically.

"The last thing you said," he agreed, "Shows you gave it a little thought. Not enough, really. But a little. It makes me even hope that maybe I'm not wasting my breath.

"You're right, both times.

"Because this coin has only two sides, it should come up heads half the time and tails the rest of the time. And, as you said, it won't *really* come out exact in 100 throws or in 1,000. But, basically, the odds are even.

"We'll go into the fact that it's never just exactly on the 50-50 mark later. There's a whole line of logic behind that. But for the moment, it's all right to assume 50 heads and 50 tails.

"Now—suppose you were tossing the coin for money, but against the operator of a casino. Could he pay you off at even money?"

"Well... I suppose...."

"Don't suppose. It would make me cry, and I only cry about important things. The answer is, no! He couldn't because he's got to pay for salaries, rent, electric bills, taxes, and all the rest. The whole expensive catastrophe.

"In short, he's in business to make money—not to take chances. So he's got to be sure the buck comes in. He's got to have what he'd call a 'percentage' or 'edge,' or he couldn't stay in business. And he gets his edge by never paying off at true odds.

"Your bet is really even money.

"But he'd pay off at, say, 90 cents on the dollar. That way he's got a 10 percent 'edge' going for him. You pay that edge, or percentage, for the use you could come on a winner. You could walk away with some of his money.

"But you're just one bettor. If he had a coin-toss game on his floor, he's got to figure that this edge of his is working all the time—with all the bettors. And what does this mean?

"Think this over: The individual bettor, placing—say—one wager every three minutes could conceivably make a total of 160 bets in the course of an eight-hour evening of gaming. He wouldn't, really. There'd be interruptions. But supposing he did.

"At the same time, the house is covering *all* the action for the same period.

"If there were only ten players in the casino, all betting just as often as was this hypothetical gambler, the house would be placing 2,600 *bets* in that same period!

"Now, as we've already agreed, odds can't be expected to work out immediately. You don't have a 100 percent expectancy of getting one head and one tail out of two tosses of the coin.

"Odds only work out *in the long run*.

"And the long run can't be specifically defined except as an *infinite number* of chances. Still, it is obvious that the casino's 'long run' is going to take a hell of a lot less actual time than the individual bettor's 'long run.'

"It's like the story of the six monkeys...."

The writer stopped scribbling and looked up. "Huh?"

STRANGE CASE OF ODDS

Nick waggled his cigar. "You know—the old idea that six monkeys, trained just to hit the keys of typewriters at random, would eventually come up with the complete works of Shakespeare...if they had an infinite amount of time to do their hitting."

"Oh. Yeah." The writer's eyes seemed a little glazed at this point, and his coffee cup was empty. Nick signaled the waiter for more and began a further explanation.

"Although nobody can really predict whether heads or tails will appear on the *next* toss of a coin," he said, "its chance of appearing—either way—is 1 out of 2.

"That is, it has a *probability* of 1 out of 2," said Nick.

"Taking it another step, a die with six sides, if it is perfectly symmetrical, yields a 1 in 6 chance of any given side coming up on the next throw. The probability is 1 out of 6.

"Getting a little closer to reality—the reality of a Craps table—with two dice having six sides each, the probability is calculated by multiplying the number of sides on one die by the number of sides on the other. Thus 6 times is 36 possible combinations...and the chance that any two numbers (two aces, two deuces, two treys, et cetera) will come up on your next throw is 1 out of 36.

"When an event is absolutely impossible," Nick went on, "we say it has a zero probability. When it is absolutely certain, it has a probability of one.

"All other possibilities range somewhere between these two extremes and are expressed as percentages.

"A 1 in 2 probability is .50, or 50 percent. Even odds.

"A 1 in 5 probability is .20, or 20 percent. Much less than even.

"And so on...."

Nick continued his explanation. "The fractions or decimals are used in calculating the probabilities, but for betting purposes the fraction is expressed in still another way. It's set forth in terms of the advantage of unfavorable chances of occurrence over favorable chances. This is called the 'odds' against a happening.

"Since the chances of any given side of a single die turning up on your next throw are 1 out of 6, odds against the throw are five chances that another side comes up, against one chance that it will turn up. Odds, then, are 5-to-1 against. When the probability is 1 out of 36, odds are 35-to-1."

PROVES POINT WITH DICE

Nick fished a pair of dice from his pocket and tossed them on the table.

"We could get thrown out for doing this in here rather than in the casino," he said.

"But...take a chance. Right?

"Now: Suppose you bet me $1 to my $35 that the aces will both be up on the next roll.

"This bet is at true odds.

"I can figure to have you win the bet only once in 36 tries, and, in the end, neither of us has a mathematical advantage over the other. Gamblers call this an even-up.

"But next time you're in the casino, take a look at the odds the management is offering. You will find this is a 31-for-1 bet; pays 30-to-1.

"Now do you see where the house edge is?"

The writer nodded slowly, the wheels of his mind turning with obvious reluctance. He took another sip of his coffee, and then began to scribble furiously. Nick watched him with no expression.

"The advantage," said the writer, "is 13 percent for the house."

For the first time in hours, Nick smiled.

"Who knows," he said, "you might get out of kindergarten after all...!"

Nick resumed his lecture....

The trouble with most bettors who venture into the casino for an evening's play is that the house percentage is extracted so quietly and evenly that they tend to forget it's even there. The fact that most of them don't know how to calculate house percentage is also a factor.

In the next issue Nick the Greek tells why winners are different from losers.