

## Key Takeaways From “The Perfect Bet” by Adam Kucharski

- Always bet against the favorite.
- The first degree of ignorance is we have all the necessary information, we just need to do a few simple calculations.
- The second degree of ignorance is when we know the physical laws but don't know the exact initial state of the object, or cannot measure it accurately.
- The third degree of ignorance is when we don't know the initial state of the object or the physical laws.
- Black Jack: the dealer must stand with a total of seventeen or higher.
- Odds improved if he took the value of the dealer's faceup card into account when making decisions.
- A player who simply copied the dealer's rules- always standing on seventeen or higher- could expect to lose 6% of the time.
- If he could record which cards had previously been dealt, it would help him anticipate what might come up next.
- Bet small amounts to limit your losses.
- It's easy to learn how to count cards, it's hard to learn how to get away with it.
- Computer-aided betting has been illegal in American casinos since 1986.
- The favorite-long-shot bias means top horses are often more likely to win than their odds suggest.
- Bias is larger at some racetracks than at others.
- If the public makes systematic and detectable errors in establishing the betting odds, it may be possible to exploit such a situation with a superior wagering strategy.
- Occam's razor: states that if you have to choose between several explanations for an observed event, it is best to pick the simplest.
- Coefficient of Determination: ranges from 0 to 1 and measures the explanatory power of a model.
- Fundamental Analysis: researching a company to its core.
- Technical Analysis: watching how people view the company over time.
- To predict the effect of the next shuffle, you only need to know the current order.
- Markov Chain: the random event is repeated several times.
- Kelly Criterion: wager a percentage of your bankroll equal to your expected profit divided by the amount you'll receive if you win.
- The more money on a horse actually reduces your profits.
- Smart gamblers, who know that both sport players are equally good, will therefore bet on the one with longer odds.
- Stocks would go down together as the market came under more stress.

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Taken directly out of the book

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- Markets often have short-term efficiencies.
- We take time to process information, we hesitate, we struggle with multiple tasks.
- Where humans falter, the robots are rising.
- Severe market disruptions can often be traced to one main trigger event.
- When speculating on share prices, investors are in effect trying to anticipate what everyone else will do. Prices don't necessarily rise because a company is fundamentally sound; they increase because other investors think the company is valuable.
- In high-frequency trading, it's quite the opposite: if you want to be quick, you need to keep things simple.
- Real life consists of bluffing.
- Bet if your card shows a very low or very high number, and check otherwise. Bluff only with your worst hands.
- Middling cards are trickier. Bluffing won't persuade someone with a decent card to fold, and it's not worth betting on the off chance that your mediocre card will come out on top in a showdown. The best option is to check and hope for the best.
- Balance the number of times you are honest and the number of times you bluff so that your opponent is indifferent to calling or folding.
- When experienced players had good hands, they would raise heavily to encourage their opponents to fold. This removed the risk of a weak hand turning into a winning hand when the communal cards were revealed.
- Zero-sum: winning players' profits equal to other players' losses.
  - Each person is trying to minimize the potential loss, which means if each plays the perfect strategy, it should minimize the maximum payoff for the opponent.
- Card counters get ahold of this information by keeping track of the cards that have been dealt, and hence which ones remain.
- Researchers found that when the feeling of regret was missing from patients' decision-making process, they struggled to master games involving an element of risk.
- Game theory relies on the assumption that all players are rational.
- People tend to pick strategies using “experience-weighted attraction”
- Players don't just need to anticipate how the perfect opponent behaves; they need to predict how any opponent will behave.
- Humans have plenty of flaws that can be exploited.

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- Players who’d just won a round would often stick with the same action in the next round, while the losing players had a habit of switching to the option that beat them.
- People’s brains tend to concentrate on a moving window of about six to seven previous responses.
- Try to memorize images as part of a journey.
- Nash Equilibrium: no single player will gain anything by picking a different strategy.
  - Players will lose out if they change their strategy unilaterally.
- Don’t play the cards, play the person.
- People who were lying generally took longer to start to speak after receiving the cue card.
- Good liars were also effective lie detectors.
- It takes a thief to catch a thief.
- Liars avoid eye contact.
- It is not clear that liars are noticeably more animated or shift posture when speaking.
- The face that invokes the most betting mistakes by our subjects has attributes that are correlated with trustworthiness.
- Some people could make a living from poker was surely evidence that the game involved skill.
- Unlikely events can happen if we look at a large enough group.
- The reason good players can win is that in poker, players have control over events.
- Poker players can change the outcome of the game with their betting. In poker, the wager is not in the same sense a wager on the outcome. It is the strategic choice that you are making. You are trying to influence the outcome of the game.
- It seemed that skill overtook luck after a relatively small number of hands.
- Poker was predominantly governed by skill rather than chance.
  - It did not count as gambling under federal law.
- New York State definition of gambling: depends in a material degree upon an element of chance.
- Everything should be made as simple as possible, but not simpler.
- Abstractions make a complex world easier to navigate.
- I think one of the things poker teaches you very well is that you can often make a good decision but not get a good result or make a bad decision and get a good result.

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- Successful wagers take patience and ingenuity.

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