Any two cards can lose

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Recently I have been reflecting on two conversations with friends. I hope you find the outcomes below of some interest.

The advertising industry has repeatedly demonstrated the power of slogans in our lives. A message that is heard over and over often slips into our subconscious and affects us in subtle ways. Our automatic responses may be influenced and we may begin to question beliefs we have held for years.

A phrase that is repeated frequently in hold'em country is: "Any two cards can win." One time after it was stated, in the midst of a game in which I was playing, my poker-playing friend from northern Michigan, Don Kreher, spontaneously piped up, "No, that should be 'any two cards can lose!' "

I found his comment to be one of those wonderful and rare moments of verbal perfection. I love clever plays on words or ideas. The power of his word play arose from the simplicity. All Don did was change one word and the entire meaning and thrust of the slogan is inverted. It is a wonderful expression and one of my reasons for discussing it here is to give credit to Don for introducing the phrase into my experience. Someone else may have said it earlier but as far as I know, he is the creator of the slogan.

Upon reflection I believe that the two slogans—"Any two cards can win" and "any two cards can lose"—deserve to be treated more seriously than just verbal jokes. There are times when I hear someone say "Any two cards can win" and I believe there is some serious content intended. So if we actually look at the two slogans seriously, there is a major difference between them. The implications of treating "Any two cards can win" seriously are dangerous. A player who takes this slogan to heart is going to be placing his bankroll in jeopardy. There will be times when he has dramatic success, but in the long run, and not so long normally, he will bear the financial and emotional brunt of following the slogan. I mention the emotional aspect because anyone following the slogan "Any two cards can win" is going to have expectations of winning in situations where such expectations are unjustified.

On the other hand, the slogan "Any two cards can lose" has no implications towards playing weak hands. In addition, it induces a healthy emotional response when strong hands let you down. After all, any two cards can lose. I know which slogan I recommend.

The other topic of conversation was about the actual use of mathematics in poker. It's clear to me that people's opinions about this are strongly coloured by their understandings of what mathematics is. The mathematics studied through

high school and first year university is computational and "small problem" oriented. If this is the extent of someone's exposure to mathematics, then it is completely understandable that they are unfamiliar with the power of mathematics in real-world applications. I'll mention two of my non-poker favorites and then return to poker.

I've done consulting work on scheduling for organizations that have shift workers. The problems are complicated by varying demands over the shifts and union rules. Nevertheless, the problem of producing schedules is a mathematical problem and has led to the development of an area of mathematcs that studies these problems. Many people would not think of this kind of problem as being amenable to mathematical techniques.

An area of mathematics with vast applications is optimization. Consider the humble leaf in the plant world. If one makes the assumption that nature is an optimizer—that is, that nutrients will be delivered to the leaf in the most efficient way—one gets a differential equation whose solution turns out to be an actual leaf shape that occurs in nature. By varying certain assumptions, the solutions to the varying differential equations turn out to actually occur in nature. I find that fascinating.

Turning back to poker, it is optimization that leads me to see many facets through a mathematical lens that others would dismiss as not being mathematics. For example, suppose I have an opponent who almost always starts massaging his wedding ring finger when the flop badly misses his hand. The person I was discussing this with saw this as a "people skill" issue and that was it. I certainly agree that observing the behaviour is a people skill issue, but now you have to think optimally. For example, is the behaviour 100% reliable? If it is, he is your only opponent, and any bet will induce him to fold, then your play is easy. But if you believe the tell is only 75% reliable, you must consider the pot size, the number of other opponents, and the reliability of the tell.

I see the above as mathematics in action. It may explain why I believe mathematics has a bigger role in poker than some might say.