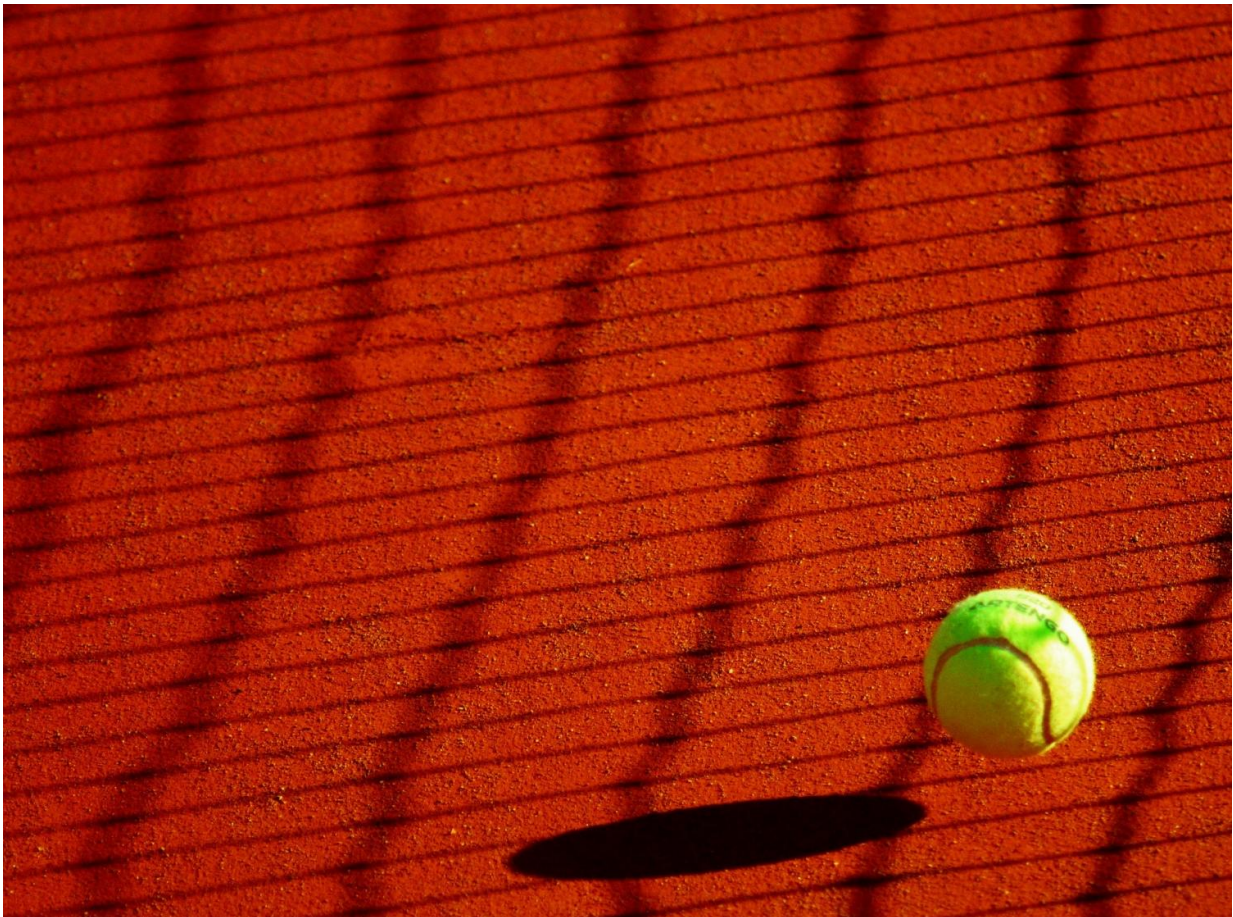


# ABBA sequence in tennis tiebreaking serves is proven to be fair

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Serving first does not impact winning in tennis tiebreaks that follow the ABBA sequence. In fact, the sequence should be considered in other

sequential contests, such as soccer penalty shootouts or even presidential debates, according to lead researcher Dr. Danny Cohen-Zada of Ben-Gurion University of the Negev (BGU).

The "Take a Chance on ABBA" paper examines the ABBA sequence, in which the first two serves between players A and B are mirror images of the next two serves, such that the sequence of the first four serves is ABBA. This order is used to break ties in tennis and is being tested by the International Football Association Board for use in soccer penalty shootouts. The current ABAB sequence used in penalty shootouts was found to be unfair, since it provides the first kicking team a significantly higher probability of winning.

"Our research shows that serving first in a tennis tiebreak does not provide an advantage to any of the players to win," says Dr. Cohen-Zada of the BGU Department of Economics. "In other words, a player who serves first in a tiebreak has the same probability to win as his opponent does, which is not the case in [penalty](#) shootouts."

"The purpose of this study was to test the ABBA sequence in a real tournament setting," says Dr. Alex Krumer of the Swiss Institute for Empirical Economic Research at the University of St. Gallen. "Based on the analysis of 1,701 men's and 920 women's tiebreak games from 72 men's and 135 women's tournaments, we found no significant effect of the order of serves in tennis tiebreaks. Thus, we affirm IFAB's initiative to take a chance on ABBA."

"Although our study examines the effect of the order of moves in [tennis](#), the order of actions is a potentially important determinant of performance in contest in general," says Dr. Offer Moshe Shapir of the Center for Business Education and Research at NYU Shanghai. "This is true, for example, in settings ranging from chess matches, [penalty shootouts](#) in soccer, or presidential candidate debates."

The findings, along with evidence on the effect of order of moves on performance in a range of other environments, suggest that contest designers of sequential tournaments in the areas of politics, sports, debates, etc., may consider adopting the ABBA sequence if fair play is an important goal.

Provided by American Associates, Ben-Gurion University of the Negev

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