1077-05-2473   **Joshua N Cooper** (`cooper@math.sc.edu`), Department of Mathematics, LeConte College, 1523 Greene St., Columbia, SC 29208, and **Aaron M Dutle*** (`dutle@mailbox.sc.edu`), Department of Mathematics, LeConte College, 1523 Greene St., Columbia, SC 29208. *Fair Duels, Bad Shots, and Thue-Morse.*

Consider a duel between two players, where each has probability p of hitting their opponent. They fire one at a time, according to the following rule. A player is allowed to continue firing until their probability of winning meets or exceeds the probability of their opponent winning, at which point the opponent is the next player. For each p, this determines a sequence of the two players. We show that as p tends to zero, this sequence converges to the Thue-Morse sequence, and highlight some connections to the problem of approximating the zero function by a power series with coefficients in $\{-1, 1\}$. (Received September 22, 2011)