

## **Another part of the swamp**

GORDON TULLOCK

*Center for Study of Public Choice, George Mason University, Fairfax, VA 22030*

Suppose that I am engaged in a game with nine other people in which the prize for each round is \$100. I think that they will use the Hillman strategy. Instead of taking the trouble to compute the strategy,<sup>1</sup> I simply play ninety-five regularly. I should receive the same return as if I had been playing the Hillman strategy. I would win most games, but I'd only make \$5 when I won, and when his strategy put somebody in the range above 95 I'd lose, the two would balance.

Although this would be true for me, for other people, the world would have changed radically. They would lose almost all the money that they bet. Following the Hillman rules, any one of them could expect to win less than once in every two hundred plays, and they would net less than five dollars on that victory. This would not even come close to compensate them for their losses on their less than \$95 bets.<sup>2</sup>

My strategy provides another change in their world. Since I am not going to play above ninety-five, returns to plays above ninety-five are now somewhat higher than they would be if I were following the Hillman rules. One of my opponents by playing 96 could guarantee himself a positive profit even if a very small one. Under the circumstances, it seems extremely unlikely that they would continue playing the Hillman rules. They could simply drop out of the game which would mean that I begin making positive profits, or they could recalculate their strategy. For any such recalculation there is a pure strategy for me which does as well as their strategy but imposes losses on them or (sometimes 'and') a pure strategy which gives me a profit while imposing costs on them.<sup>3</sup>

Hillman's equilibrium is an equilibrium which attracts people simply because it is an equilibrium. A maximizing player who, among other things, has the right to stop playing right after a coup, can certainly do better in the sense that he doesn't have to bother to calculate. Further, if he plays a reasonably well selected pure strategy, his opponents have the choice of losing very large sums of money, dropping out of the game, which improves our basic player's net profits, or recalculating their strategy. If they recalculate the strategy and our stratigizing player duplicates their calculations, he

certainly will have at least short term opportunities for profits. Once again there is no true equilibrium if we assume that the parties are all attempting to maximize their return.

#### NOTES

1. And I have not bothered to compute it in writing this note.
2. The situation is even worse. Sometimes two of my opponents would simultaneously bet more than \$95, and then one would lose.
3. For those to whom this proposition is not intuitively obvious, I offer a challenge. Send me a recalculated strategy together with a \$10 check. If I can't produce a pure strategy which does as well or better while imposing costs on other players, I will return the check and send one of my own with it. Otherwise, I cash the check.