Evolution Reinforces Cooperation with the Emergence of Self-Recognition Mechanisms: an Empirical Study of the Moran process for the Iterated Prisoner's Dilemma - Online Materials

Owen Campbell

This document contains graphical materials accompanying the manuscript entitled: **"Evolution Reinforces Cooperation with the Emergence of Self-Recognition Mechanisms: an Empirical Study of the Moran process for the Iterated Prisoner's Dilemma"**.

- Figures 1-12 show the fixation probability x_1 for each strategy. The mean and error bars are shown against the collection of all opponents.
- Figures 13-24 show the fixation probability x_{N-1} for each strategy. Again, the mean and error bars are shown against the collection of all opponents.
- Figures 25-27 show the ranks of each strategy according to mean absorption probability across all population sizes.

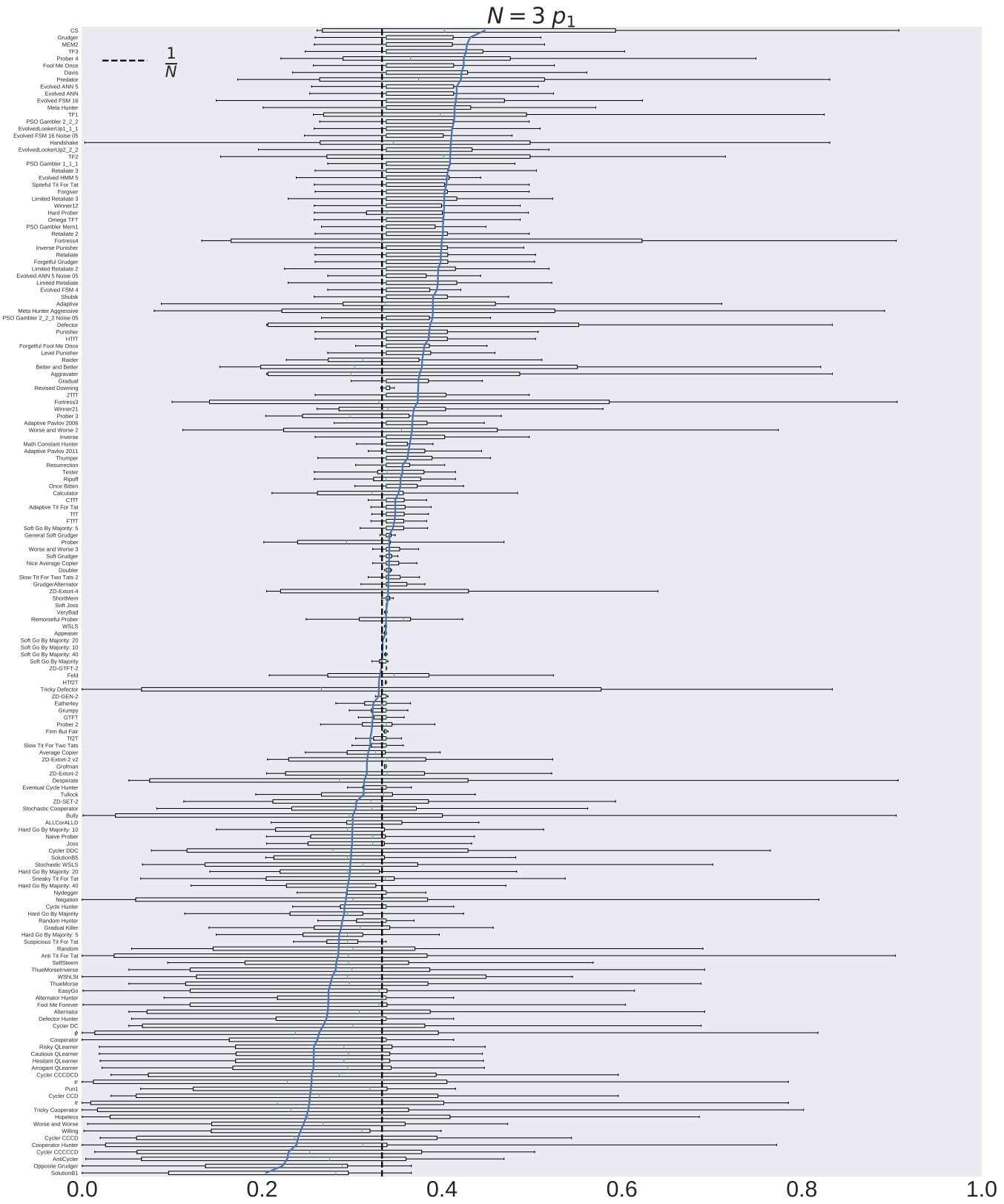

Figure 1: The fixation probabilities x_1 for $N = 3$

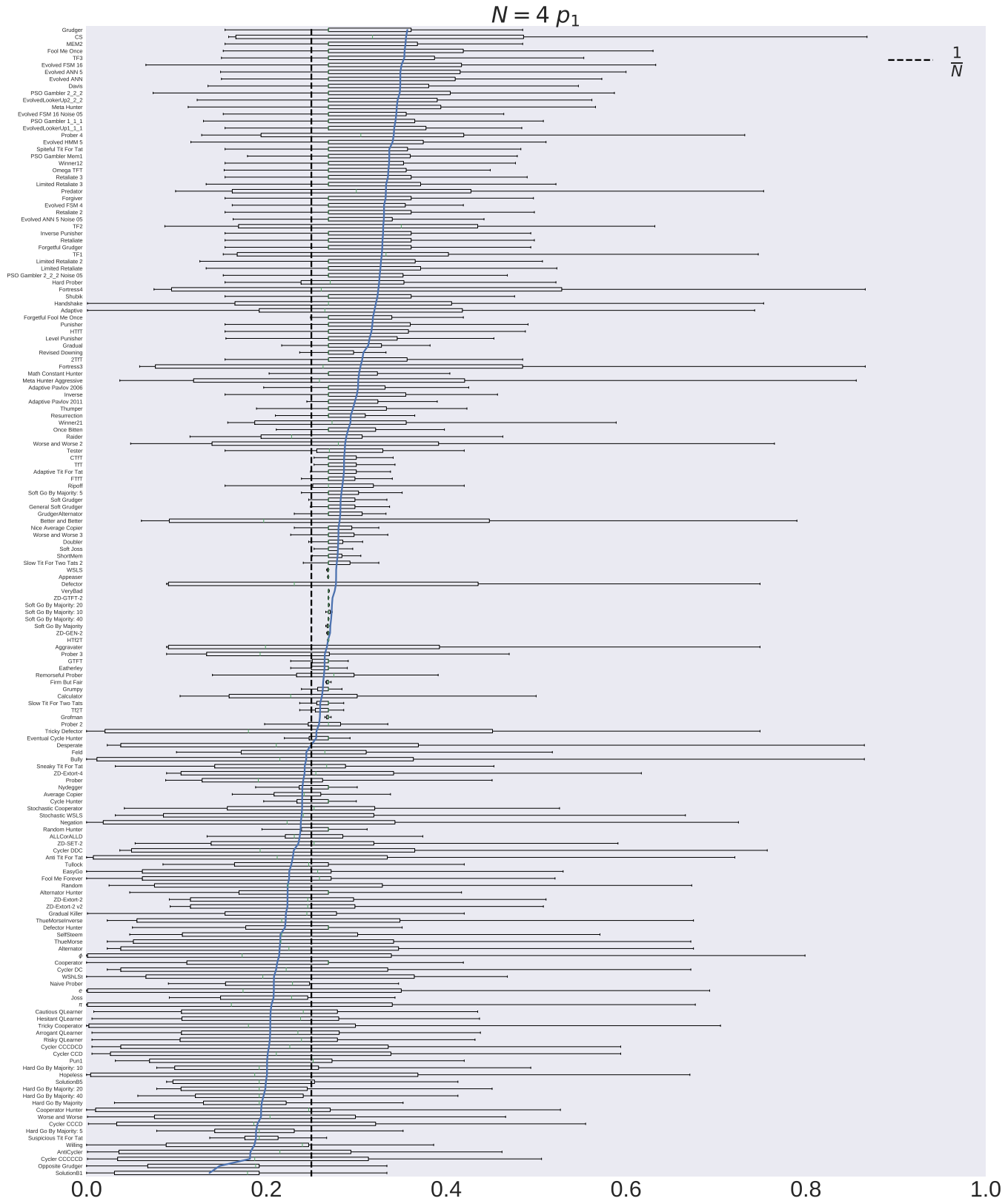

Figure 2: The fixation probabilities x_1 for $N = 4$

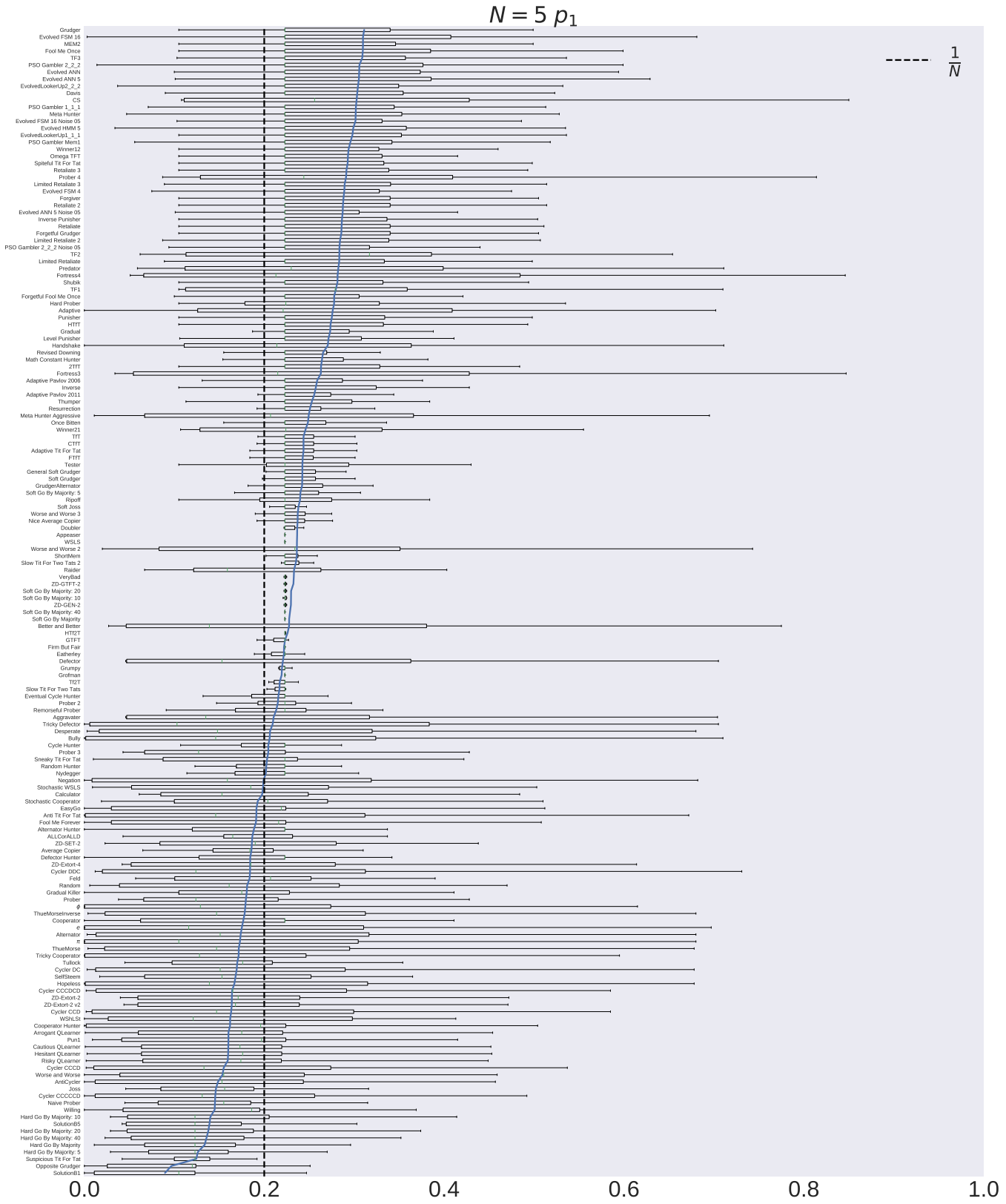

Figure 3: The fixation probabilities x_1 for $N = 5$

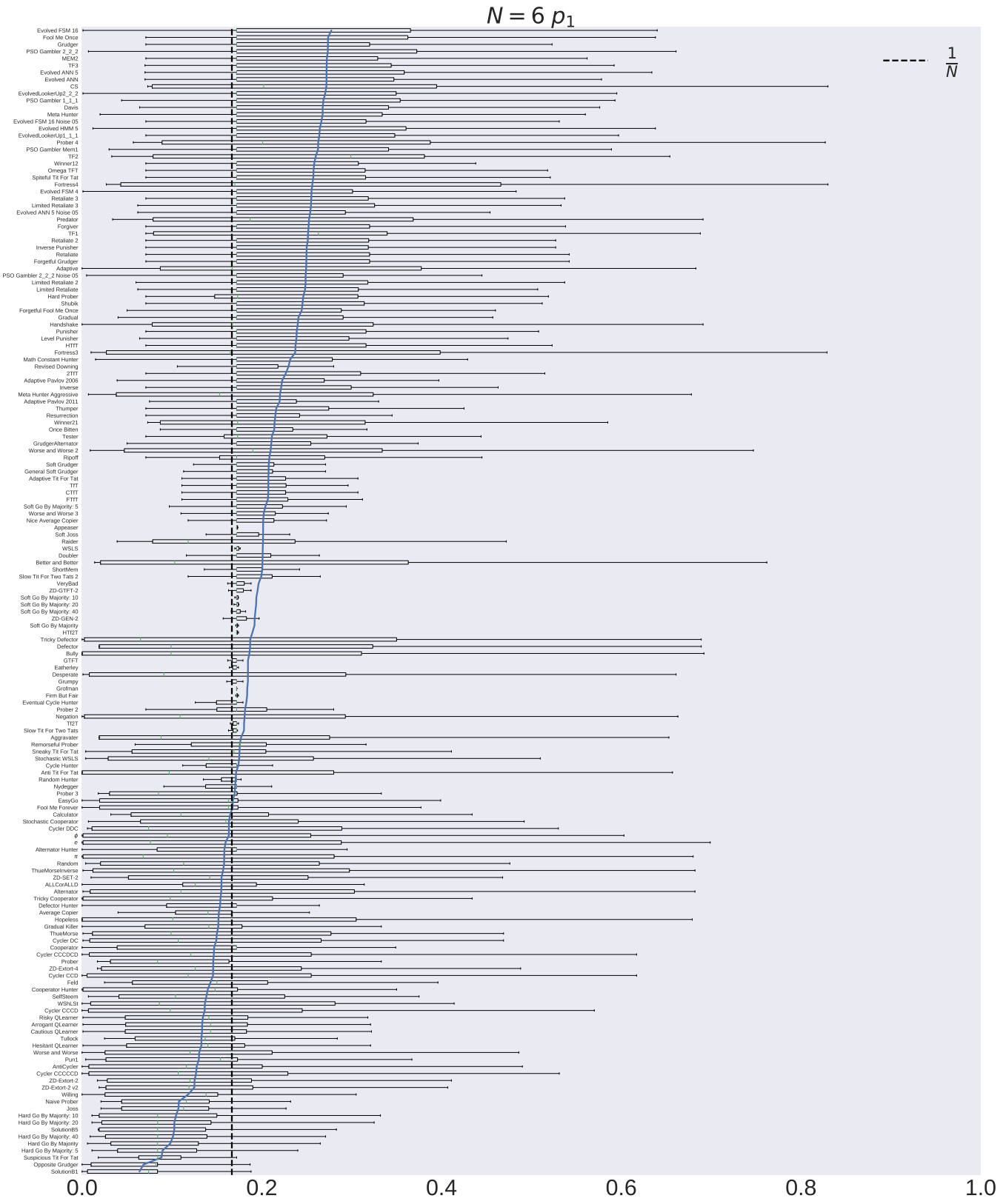

Figure 4: The fixation probabilities x_1 for $N = 6$

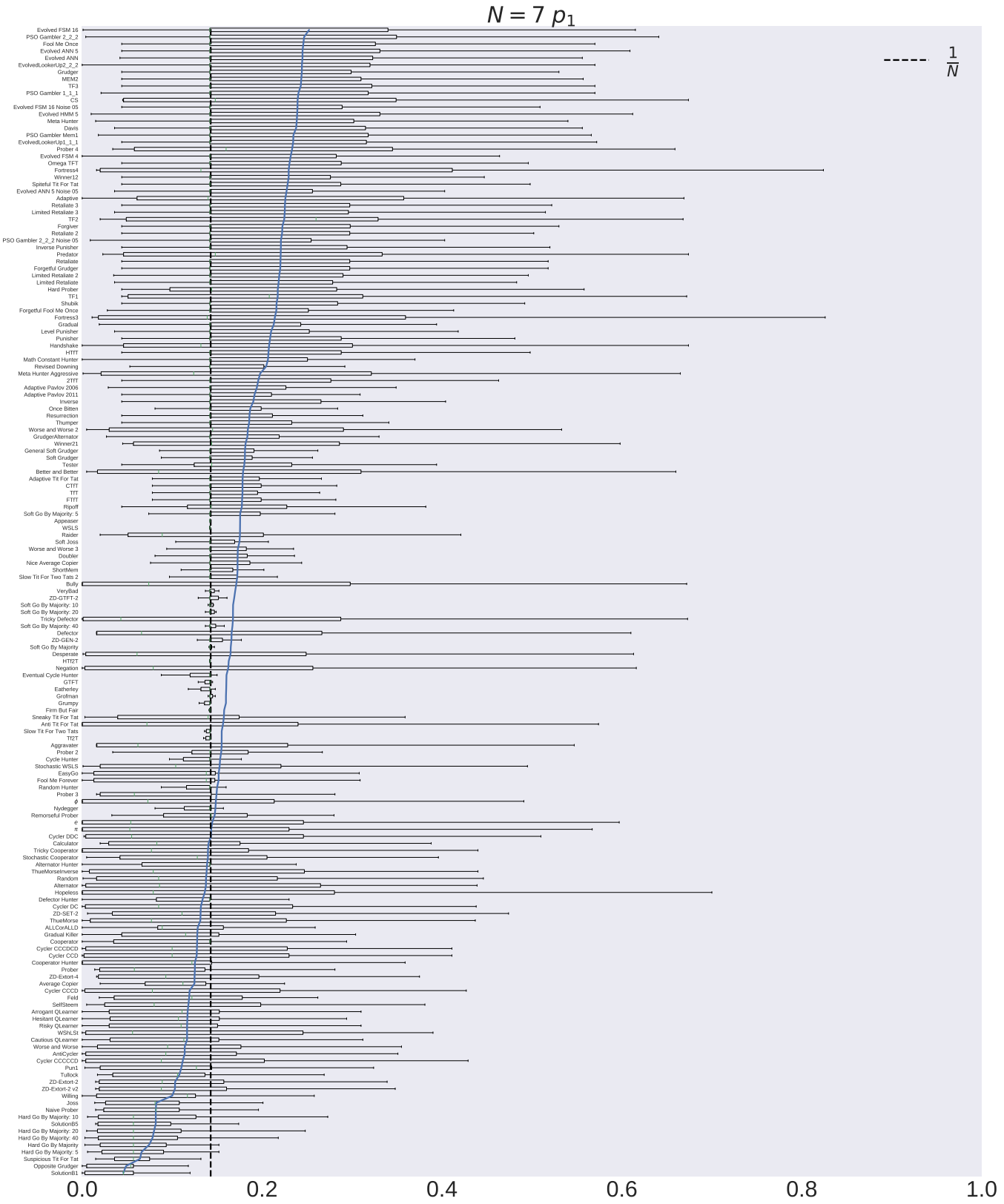

Figure 5: The fixation probabilities x_1 for $N = 7$

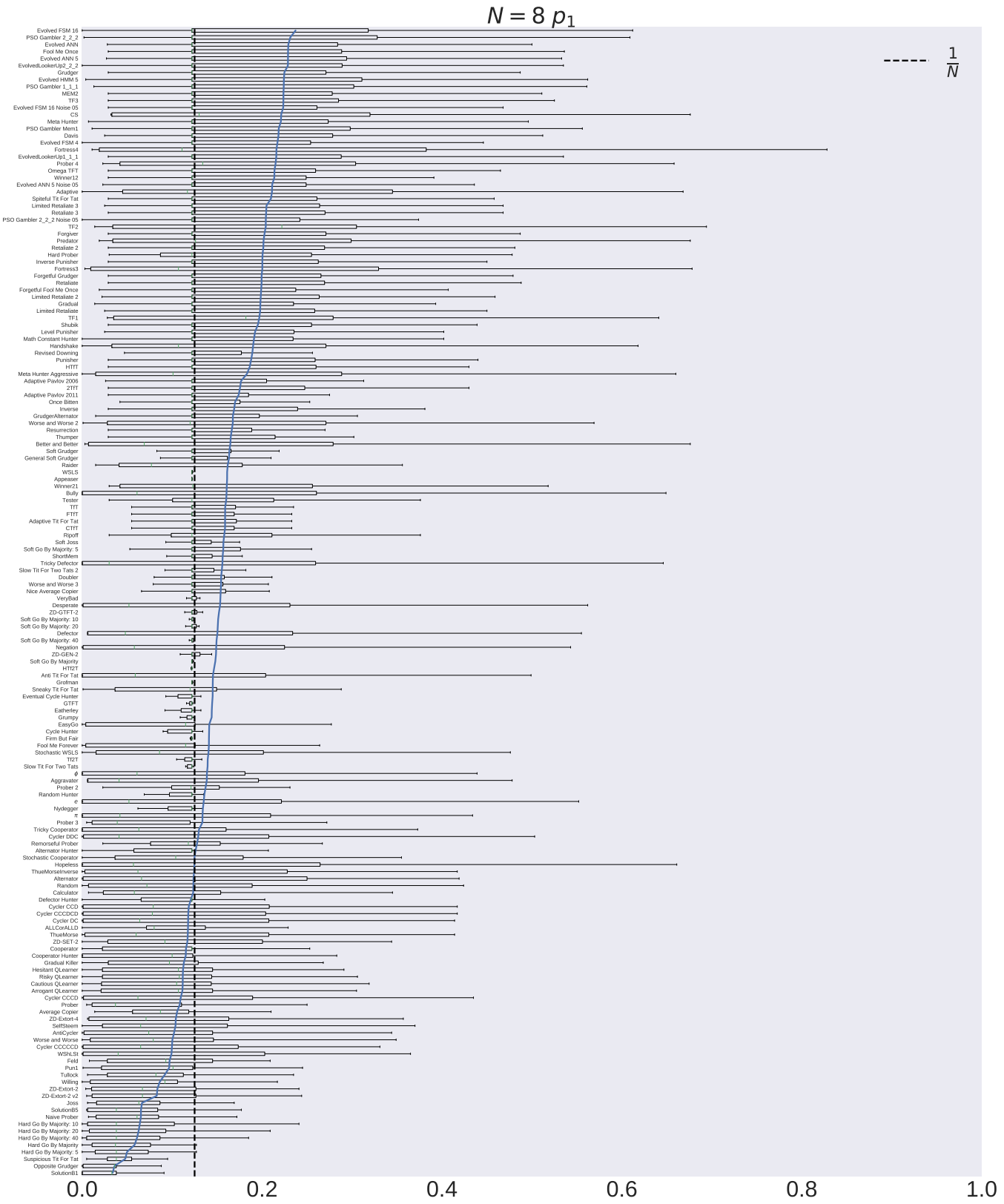

Figure 6: The fixation probabilities x_1 for $N = 8$

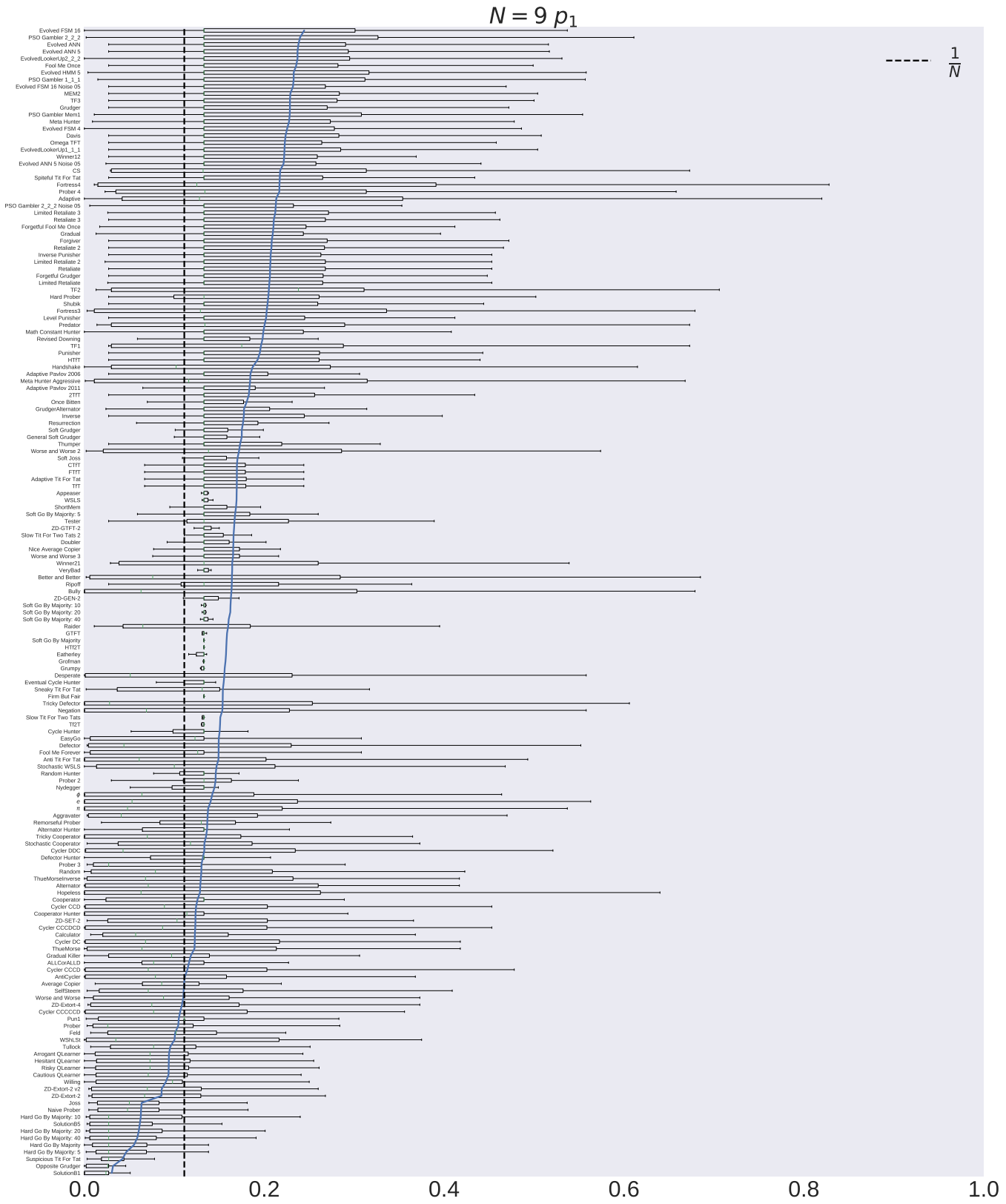

Figure 7: The fixation probabilities x_1 for $N = 9$

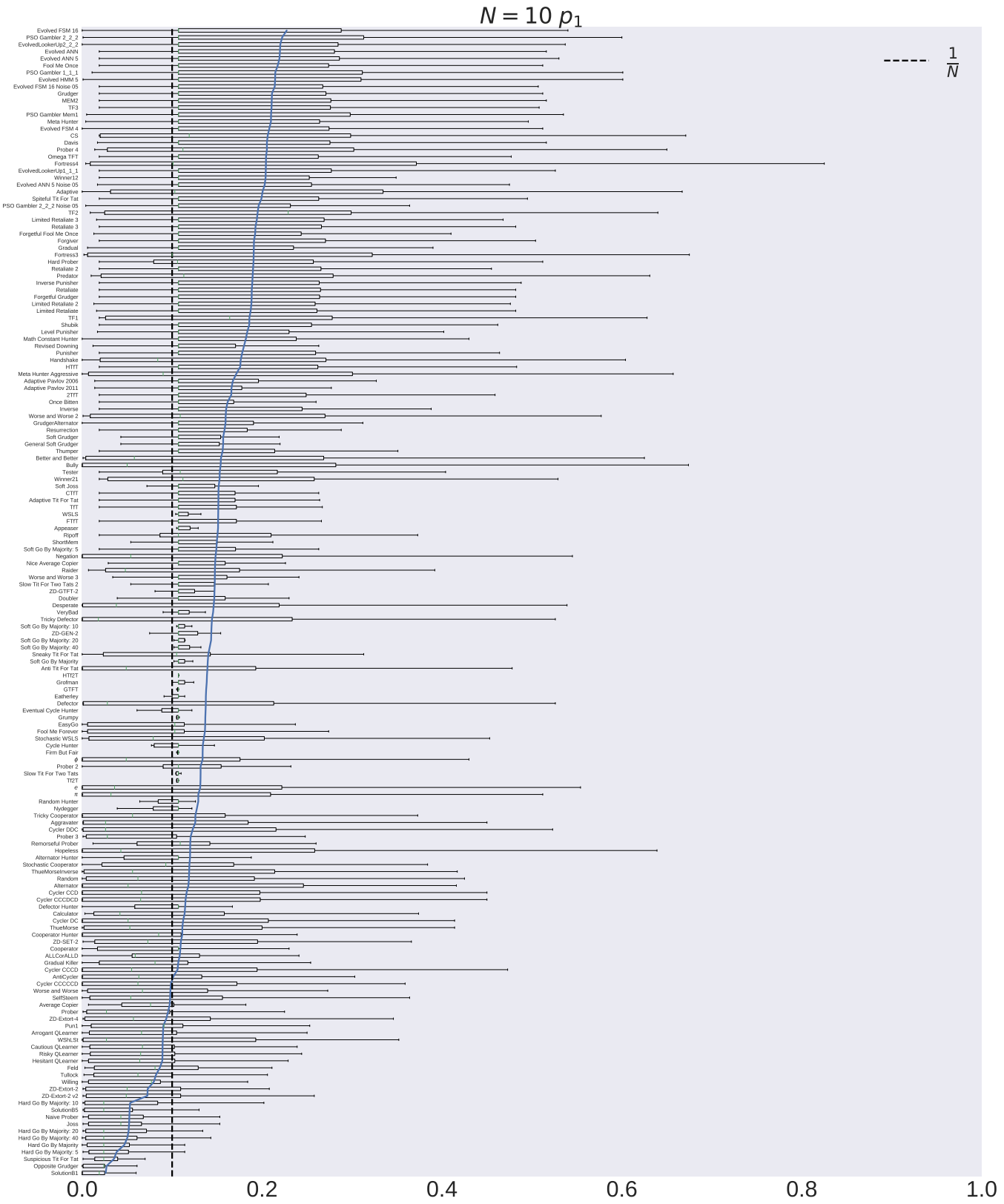

Figure 8: The fixation probabilities x_1 for $N = 10$

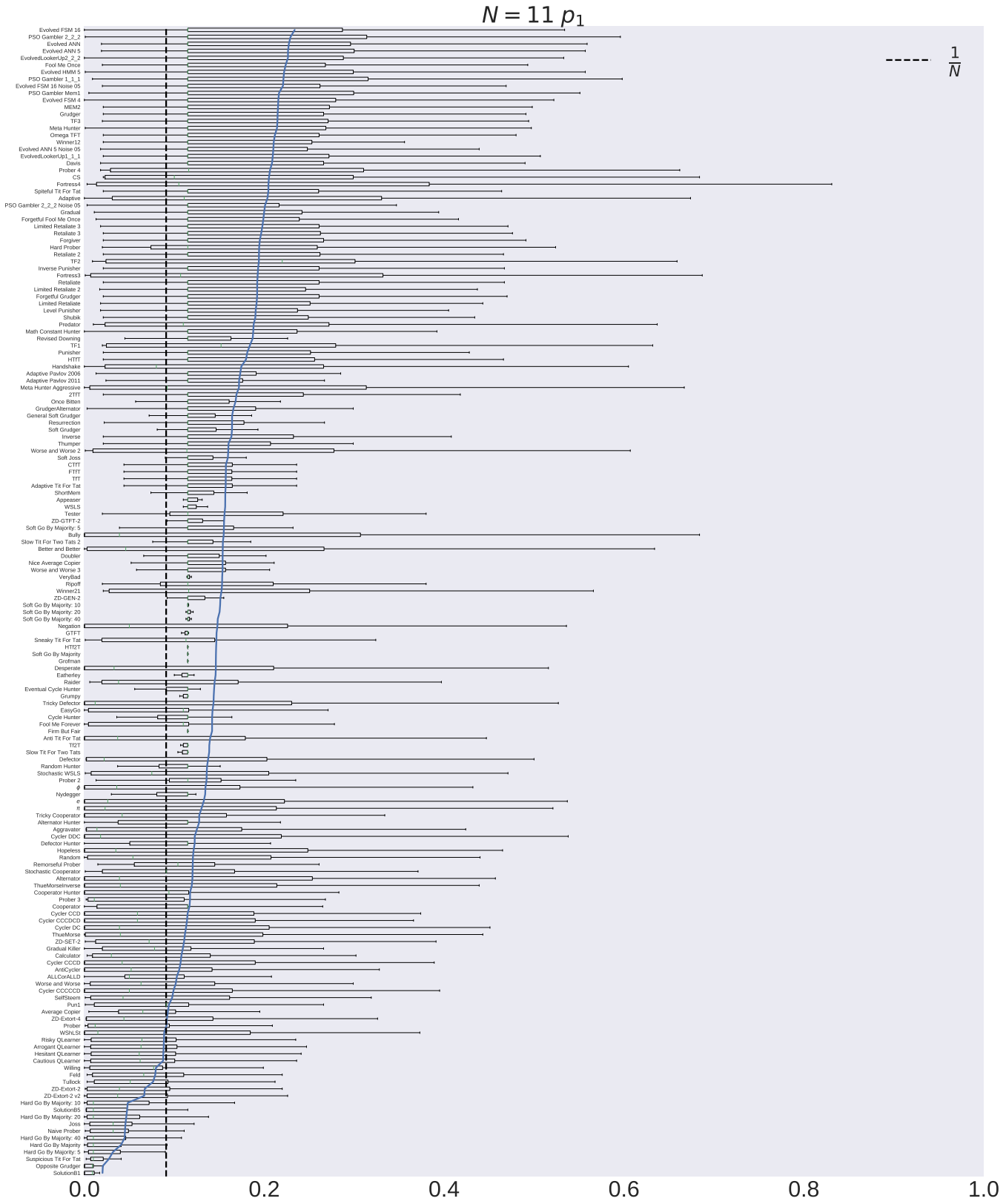

Figure 9: The fixation probabilities x_1 for $N = 11$

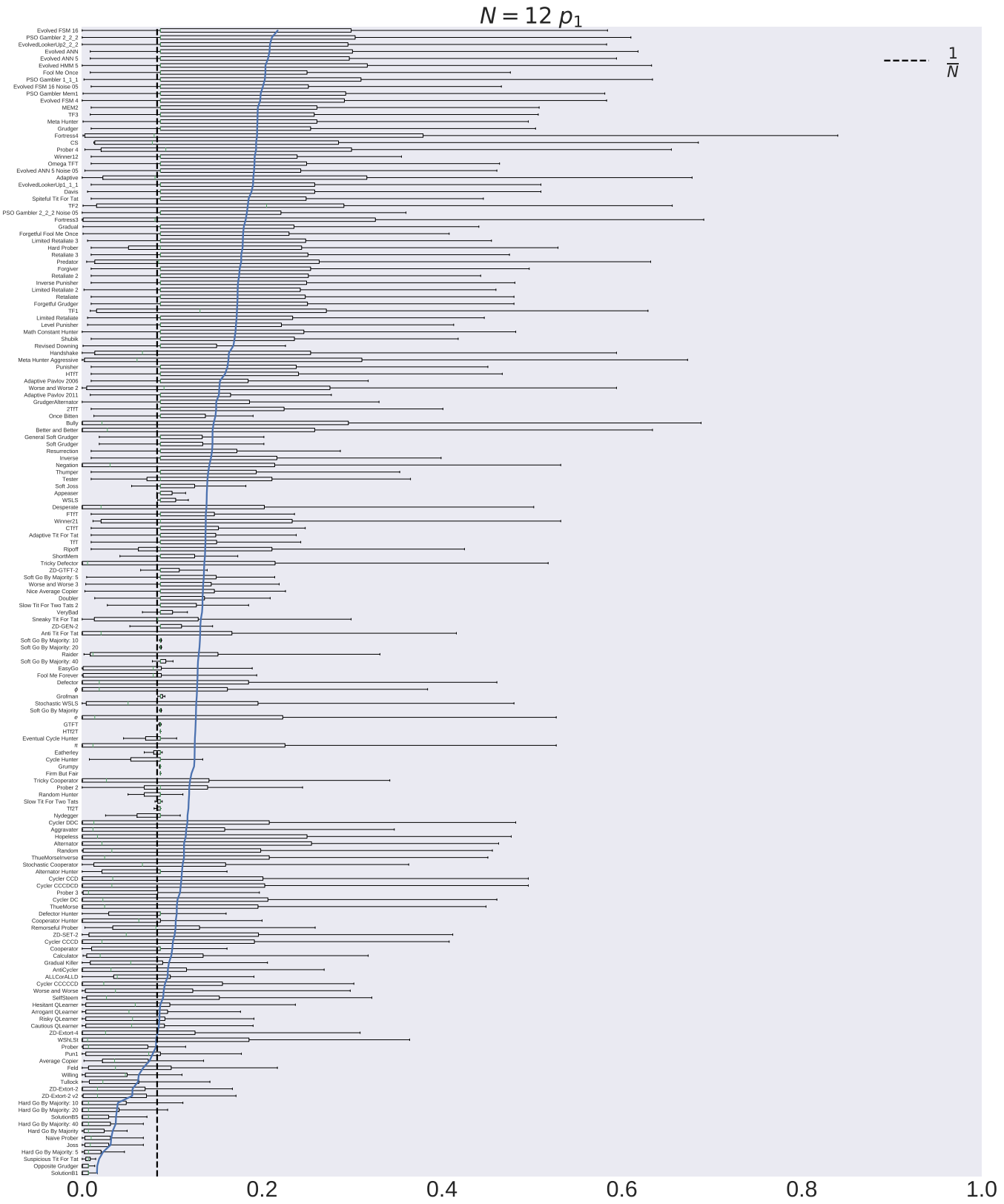

Figure 10: The fixation probabilities x_1 for $N = 12$

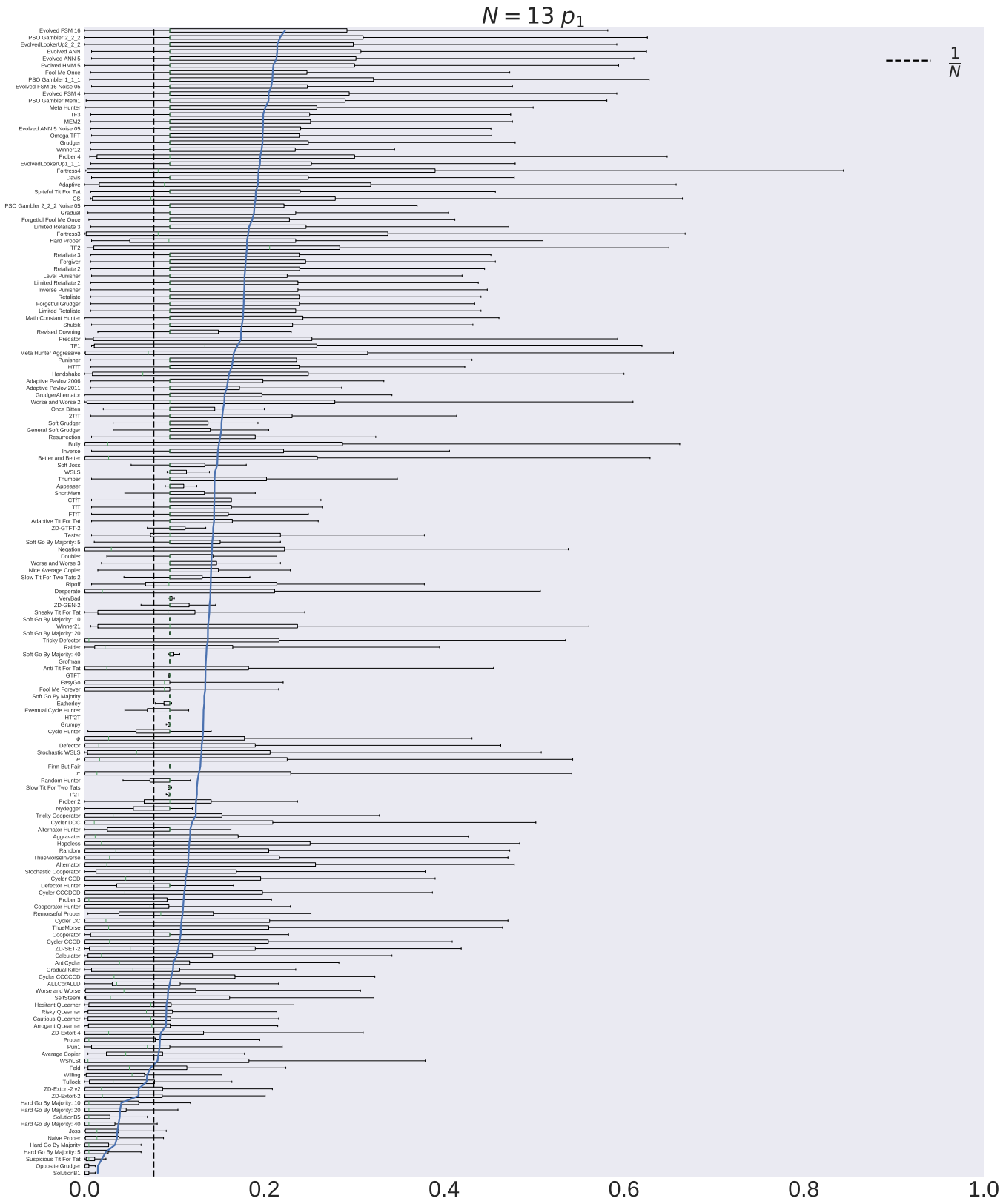

Figure 11: The fixation probabilities x_1 for $N = 13$

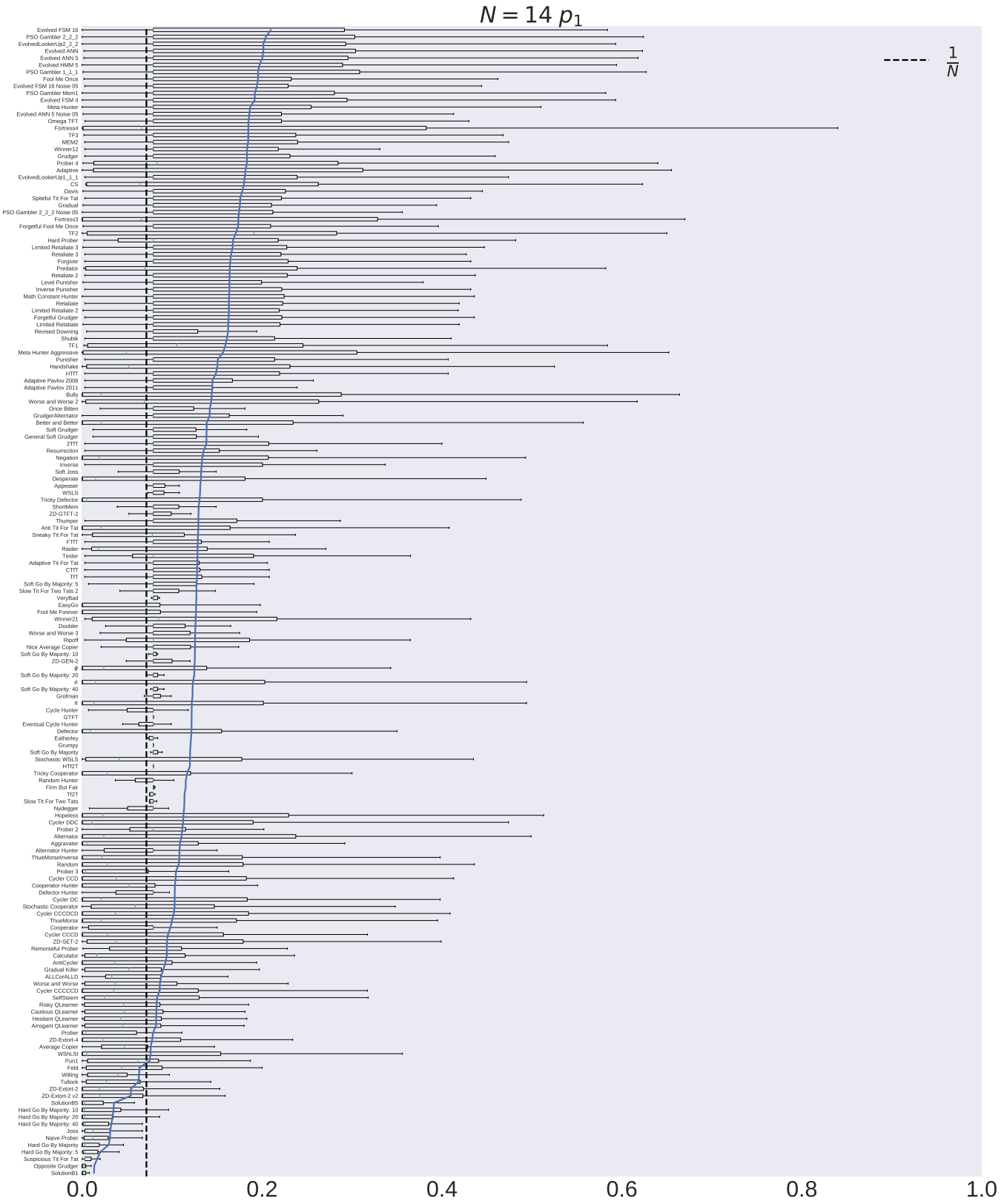

Figure 12: The fixation probabilities x_1 for $N = 14$

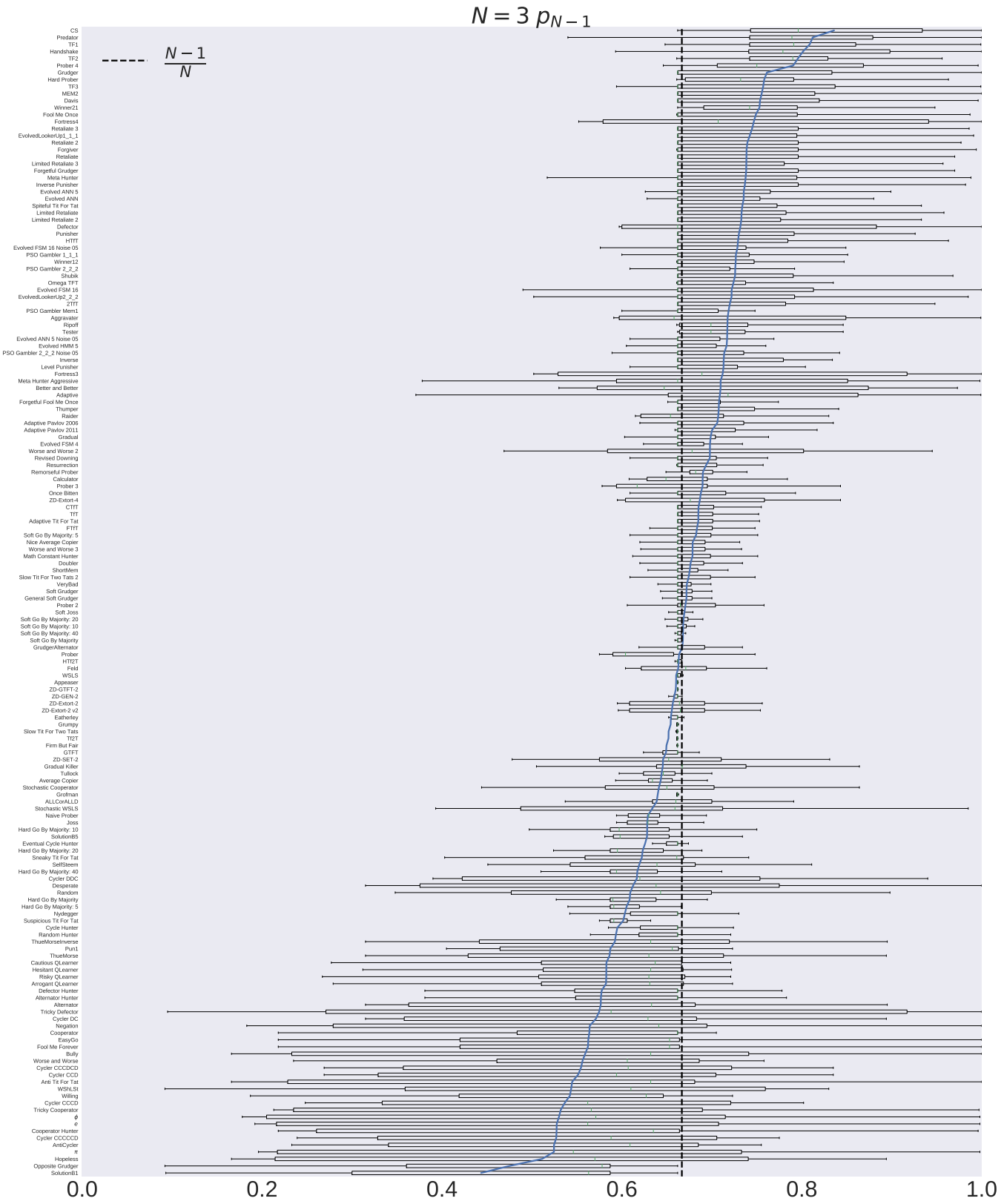

Figure 13: The fixation probabilities x_{N-1} for $N = 3$

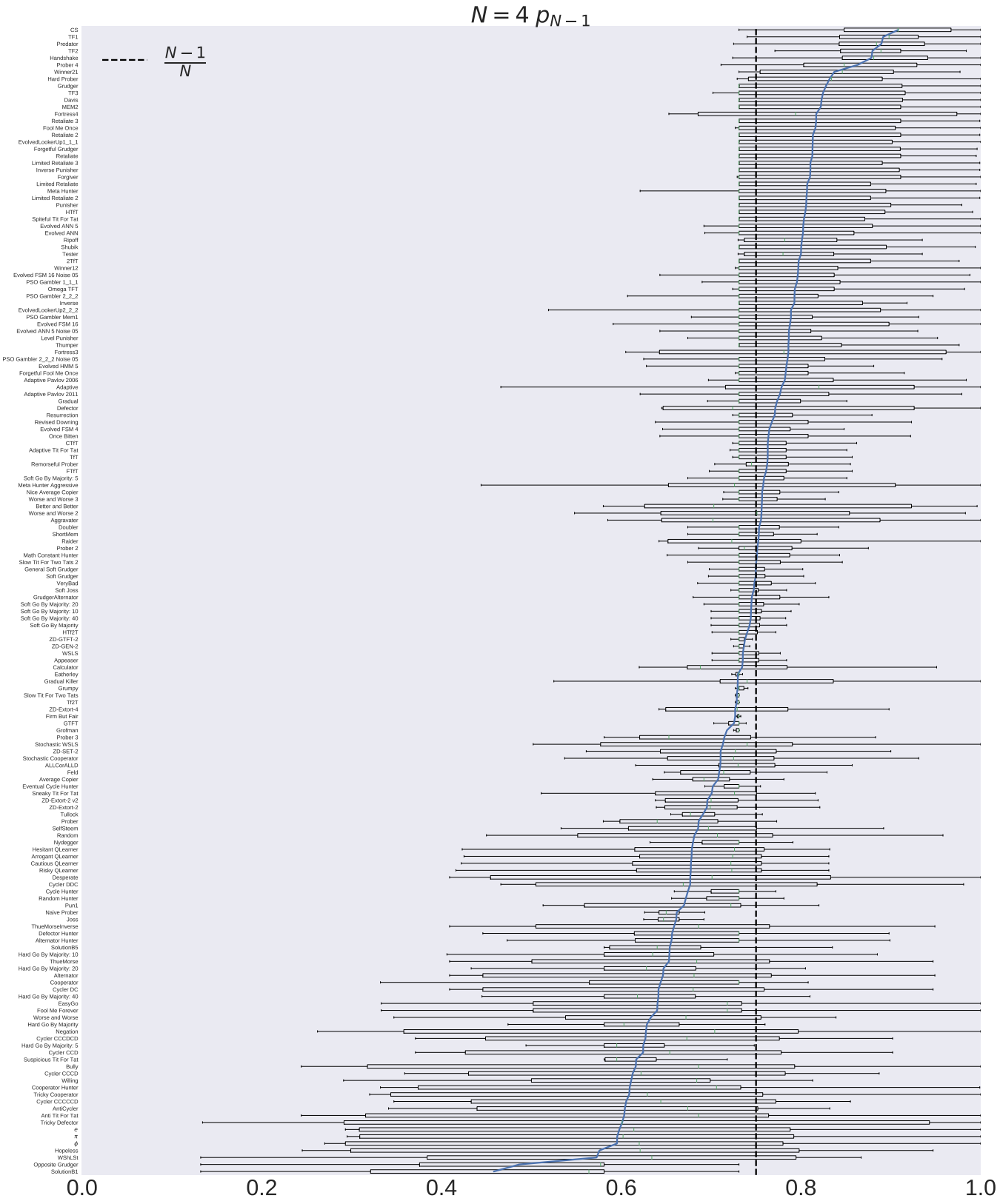

Figure 14: The fixation probabilities x_{N-1} for $N = 4$

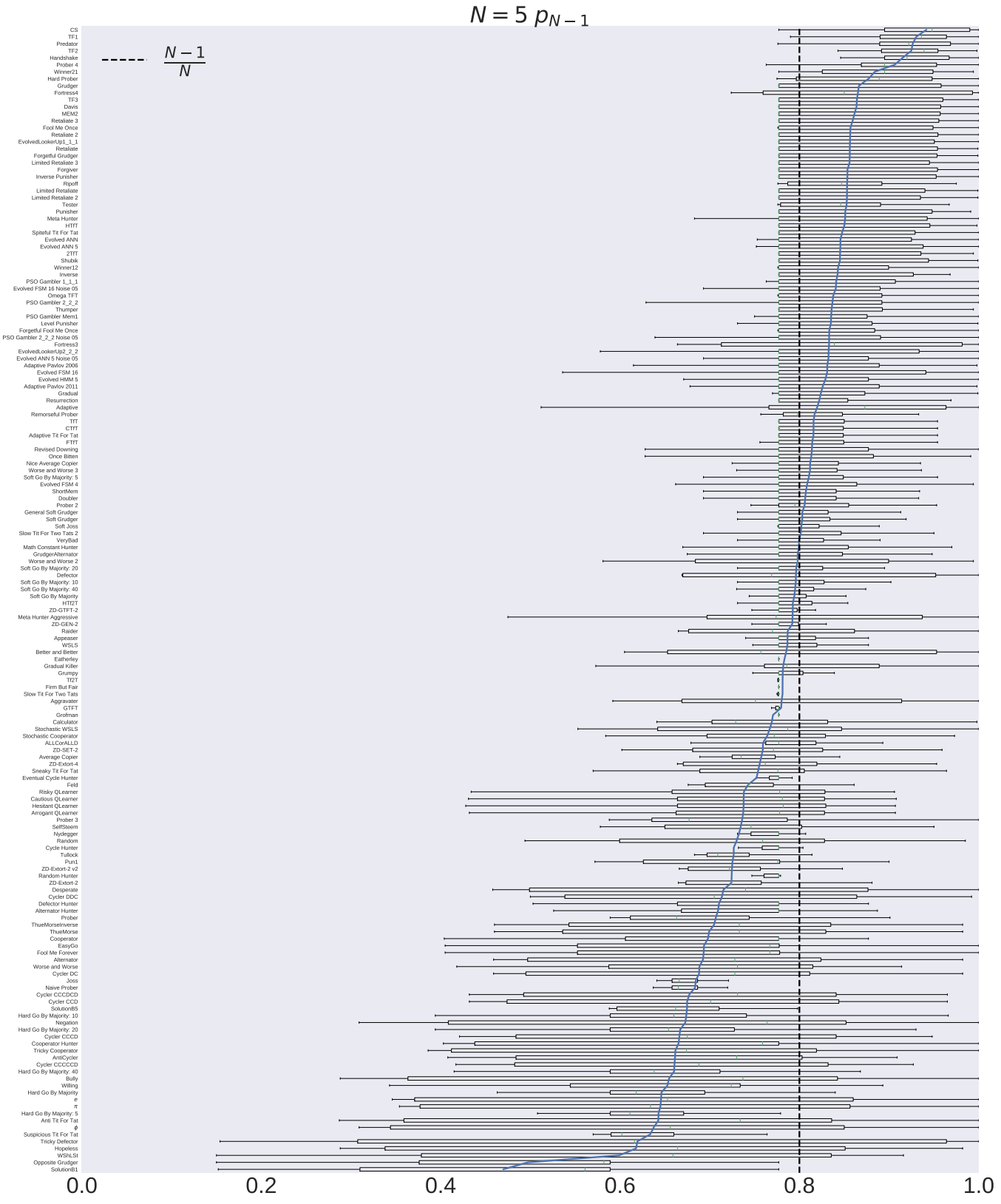

Figure 15: The fixation probabilities x_{N-1} for $N = 5$

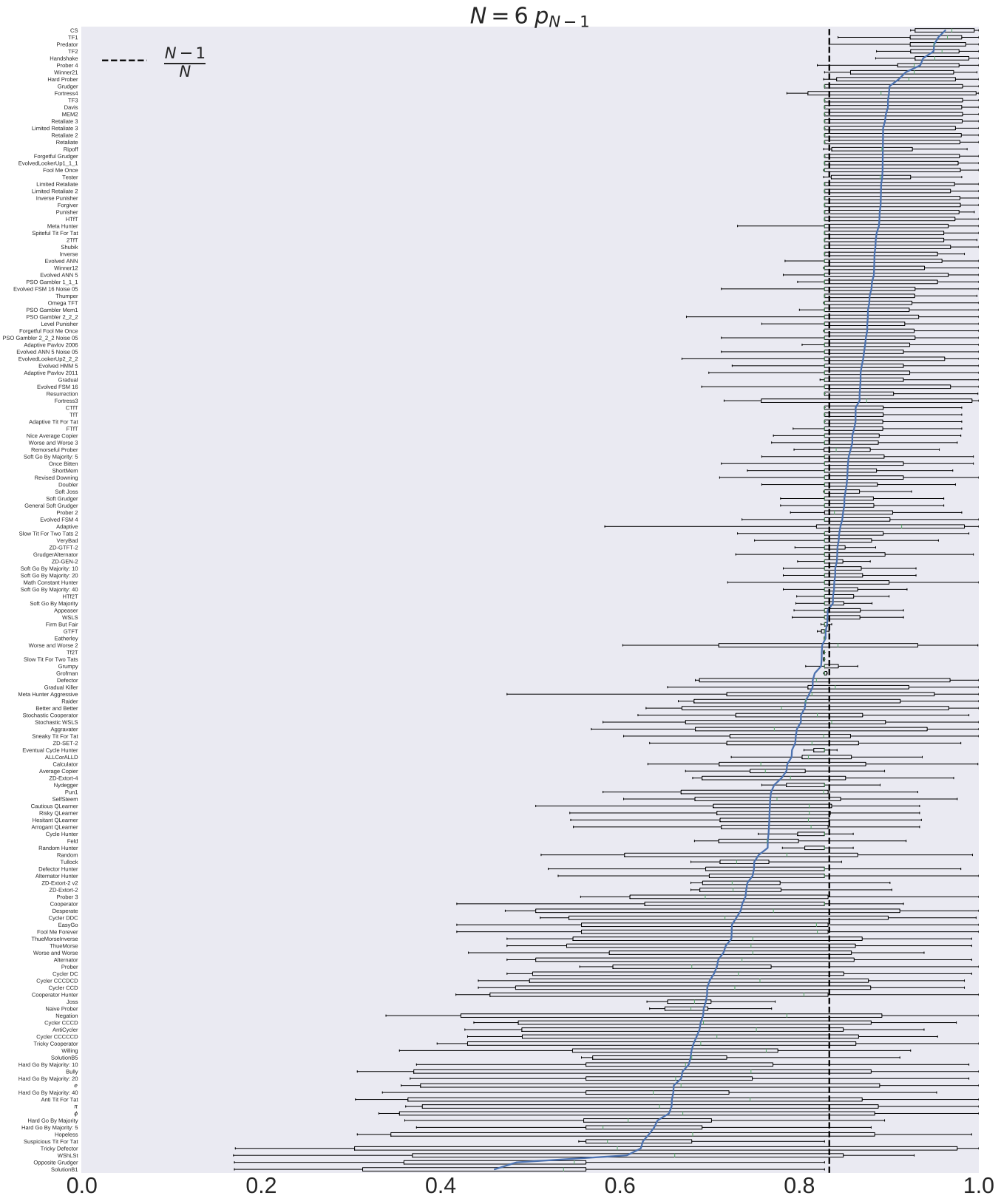

Figure 16: The fixation probabilities x_{N-1} for $N = 6$

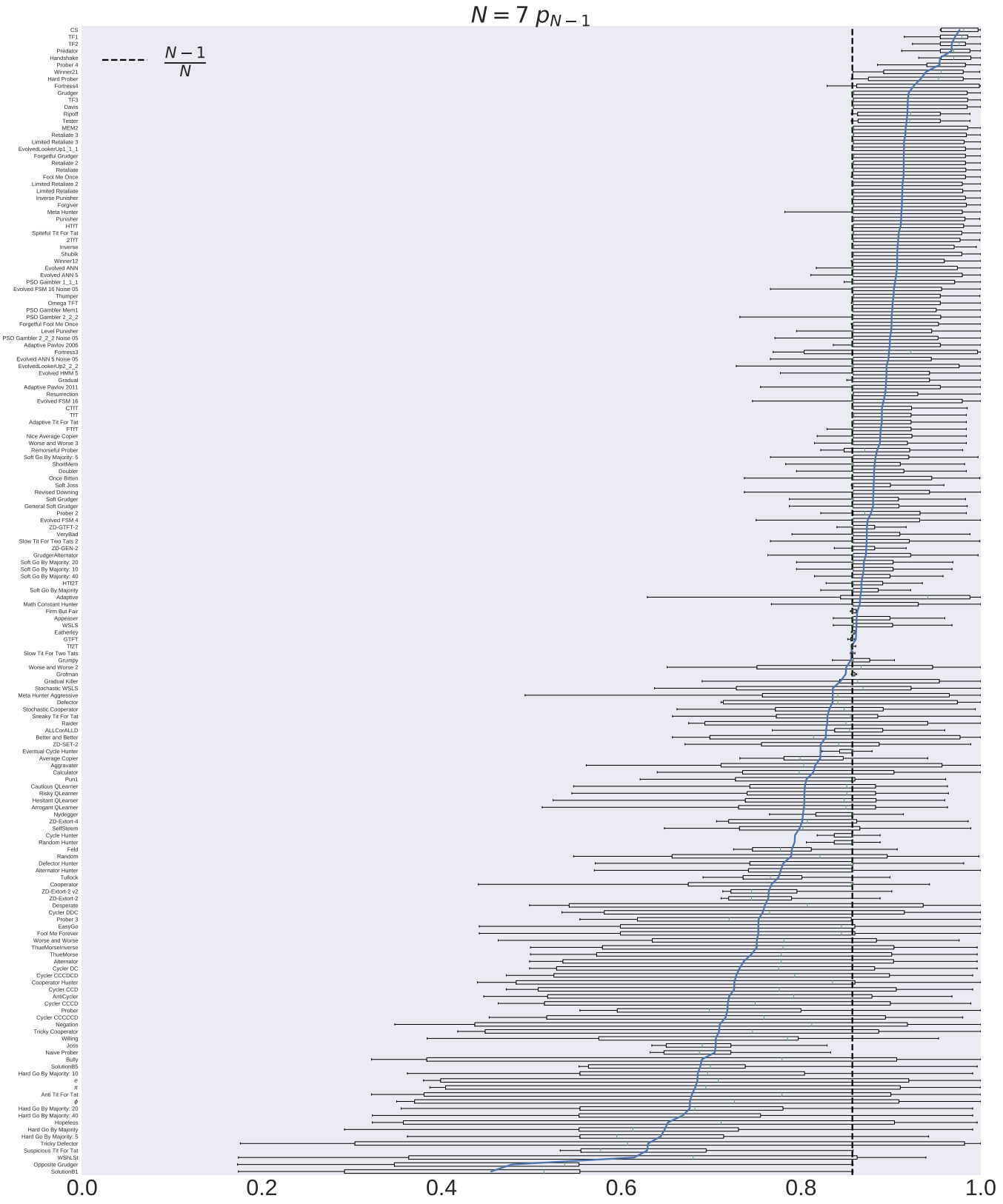

Figure 17: The fixation probabilities x_{N-1} for $N = 7$

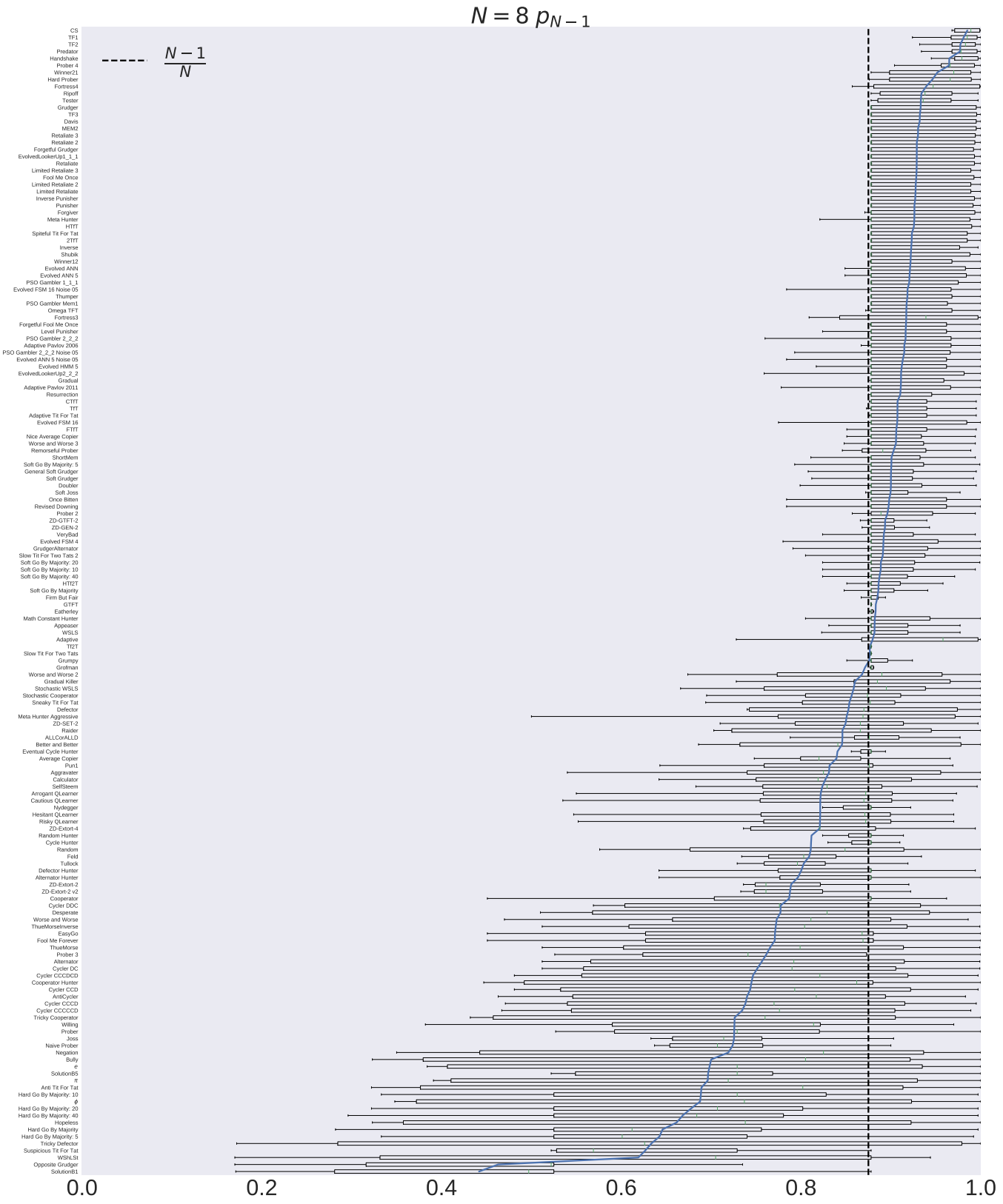

Figure 18: The fixation probabilities x_{N-1} for $N = 8$

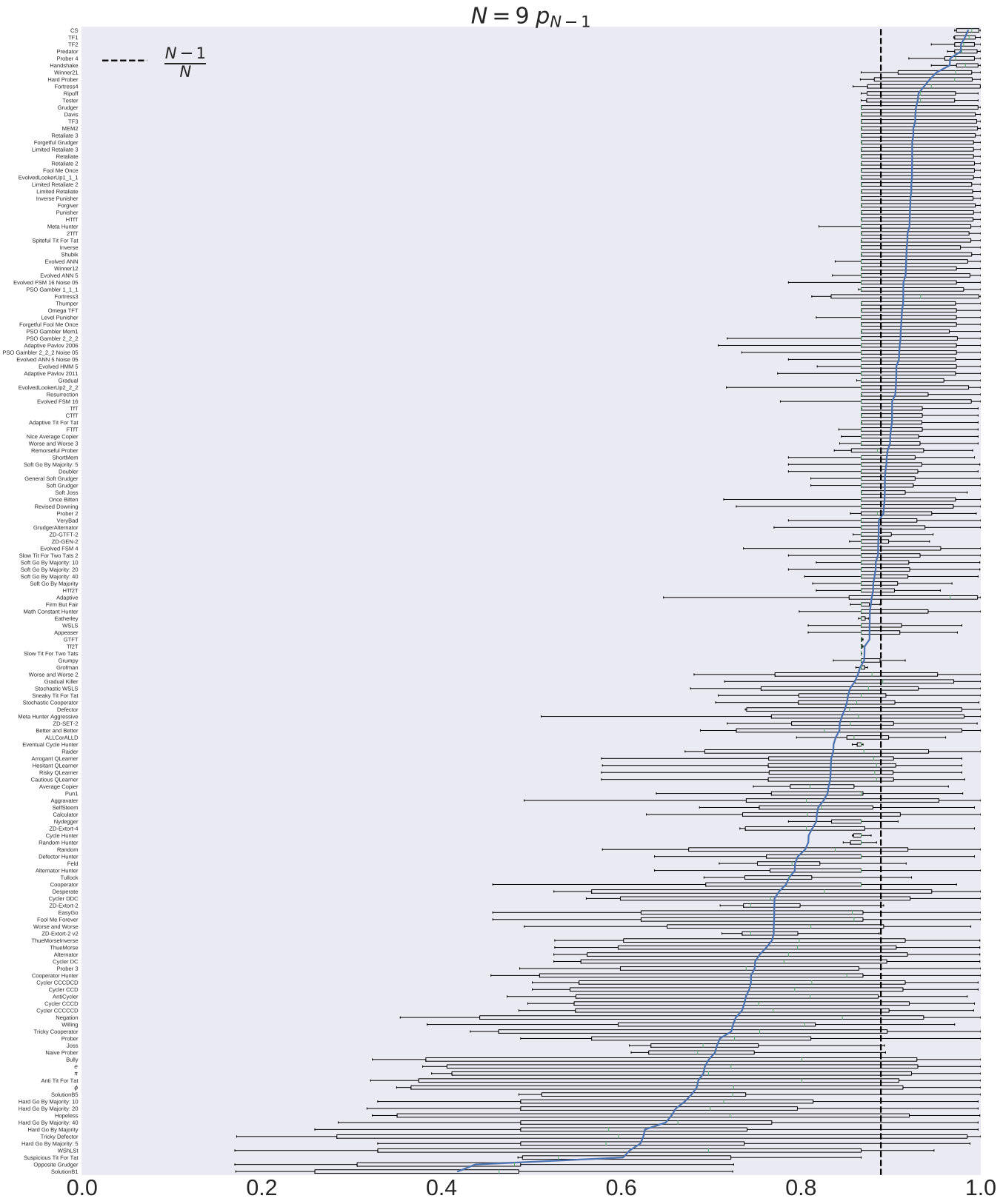

Figure 19: The fixation probabilities x_{N-1} for $N = 9$

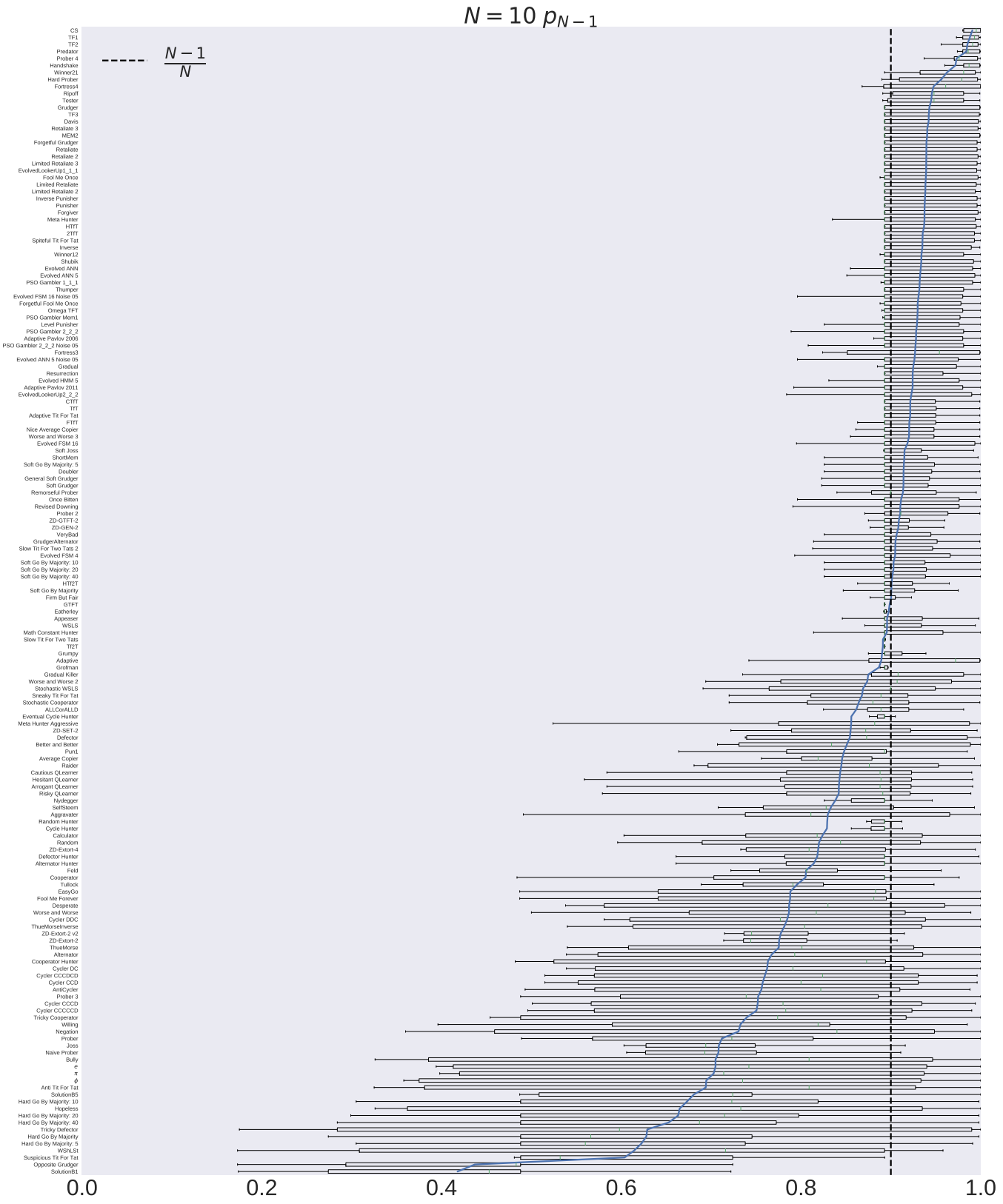

Figure 20: The fixation probabilities x_{N-1} for $N = 10$

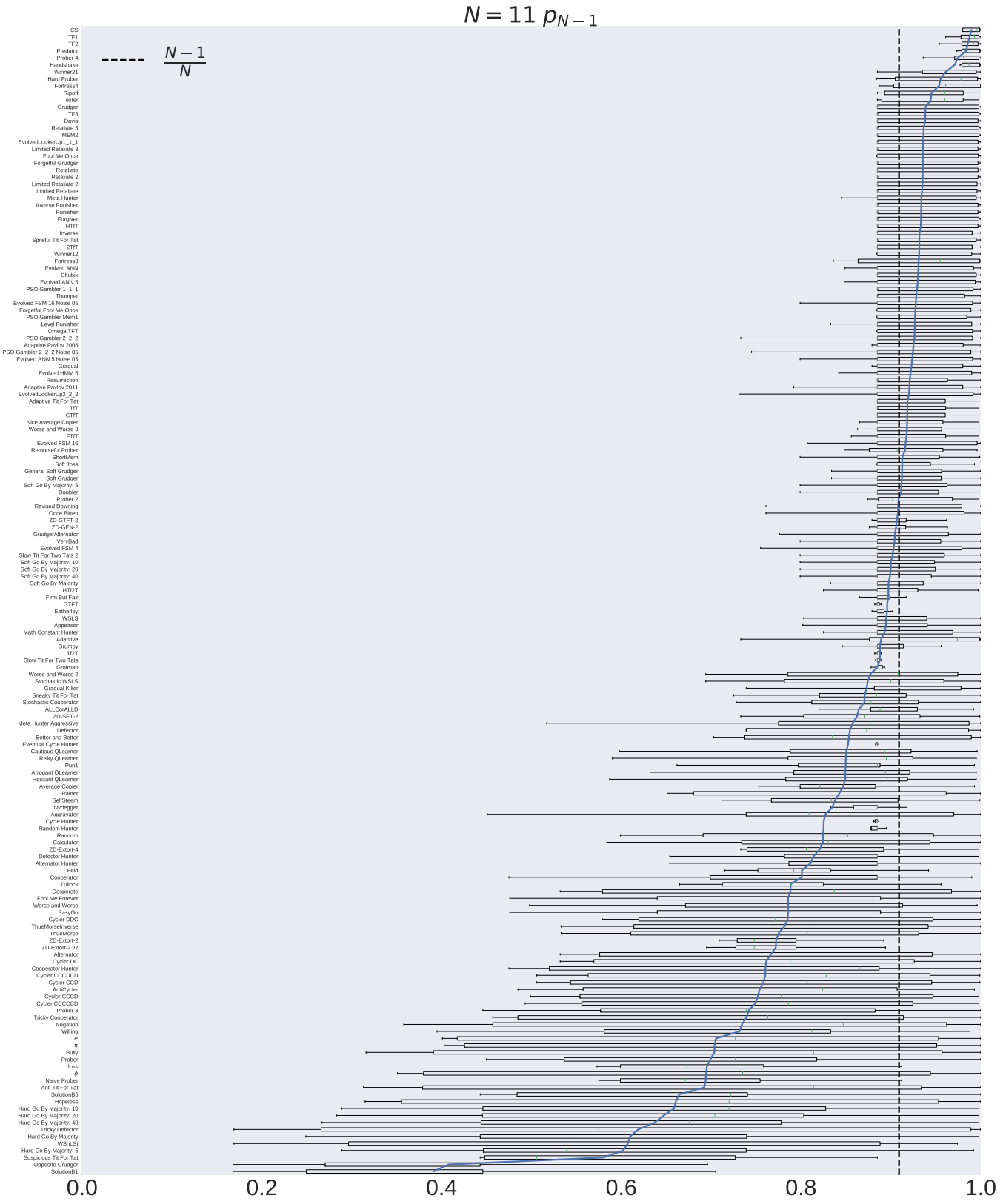

Figure 21: The fixation probabilities x_{N-1} for $N = 11$

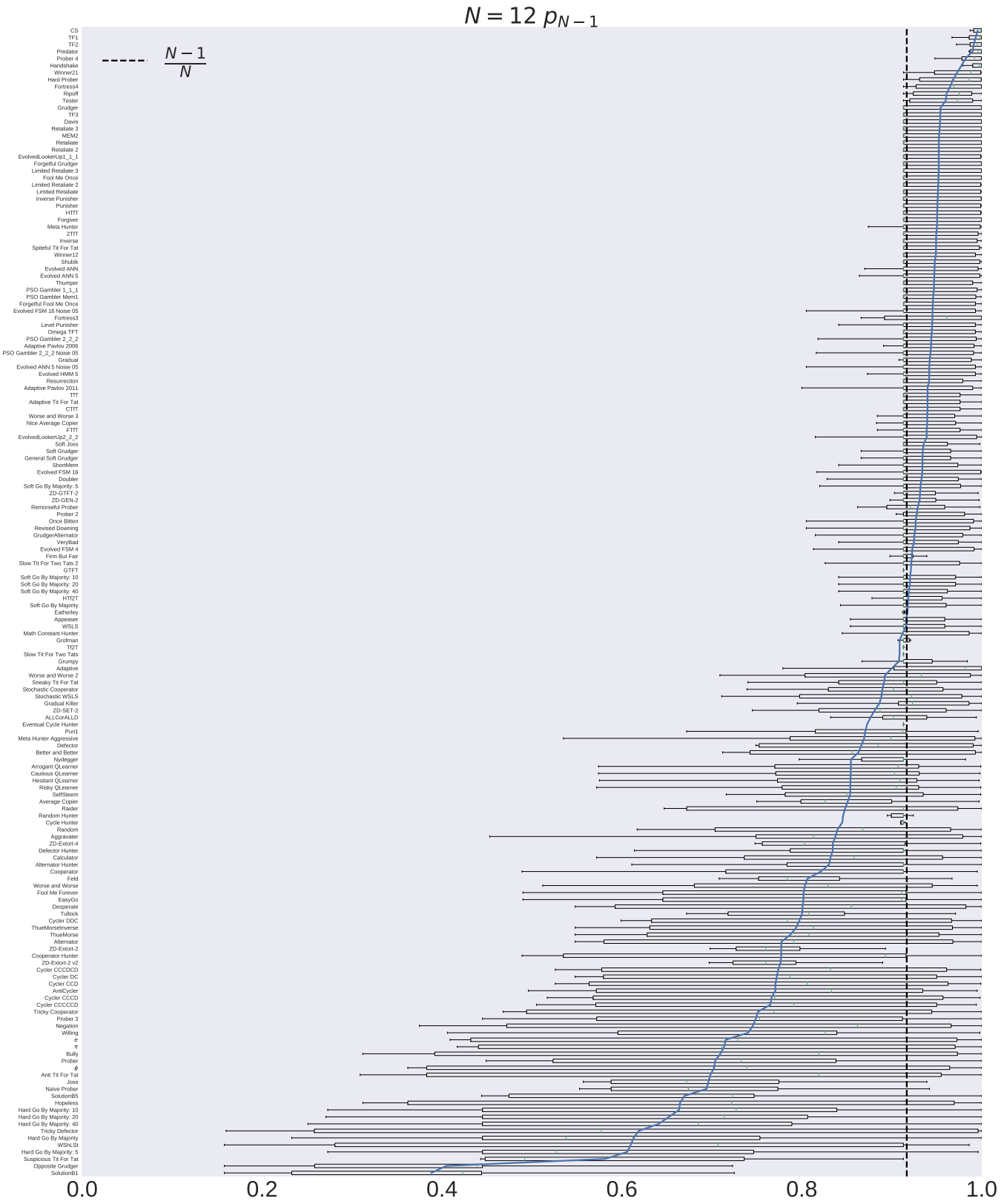

Figure 22: The fixation probabilities x_{N-1} for $N = 12$

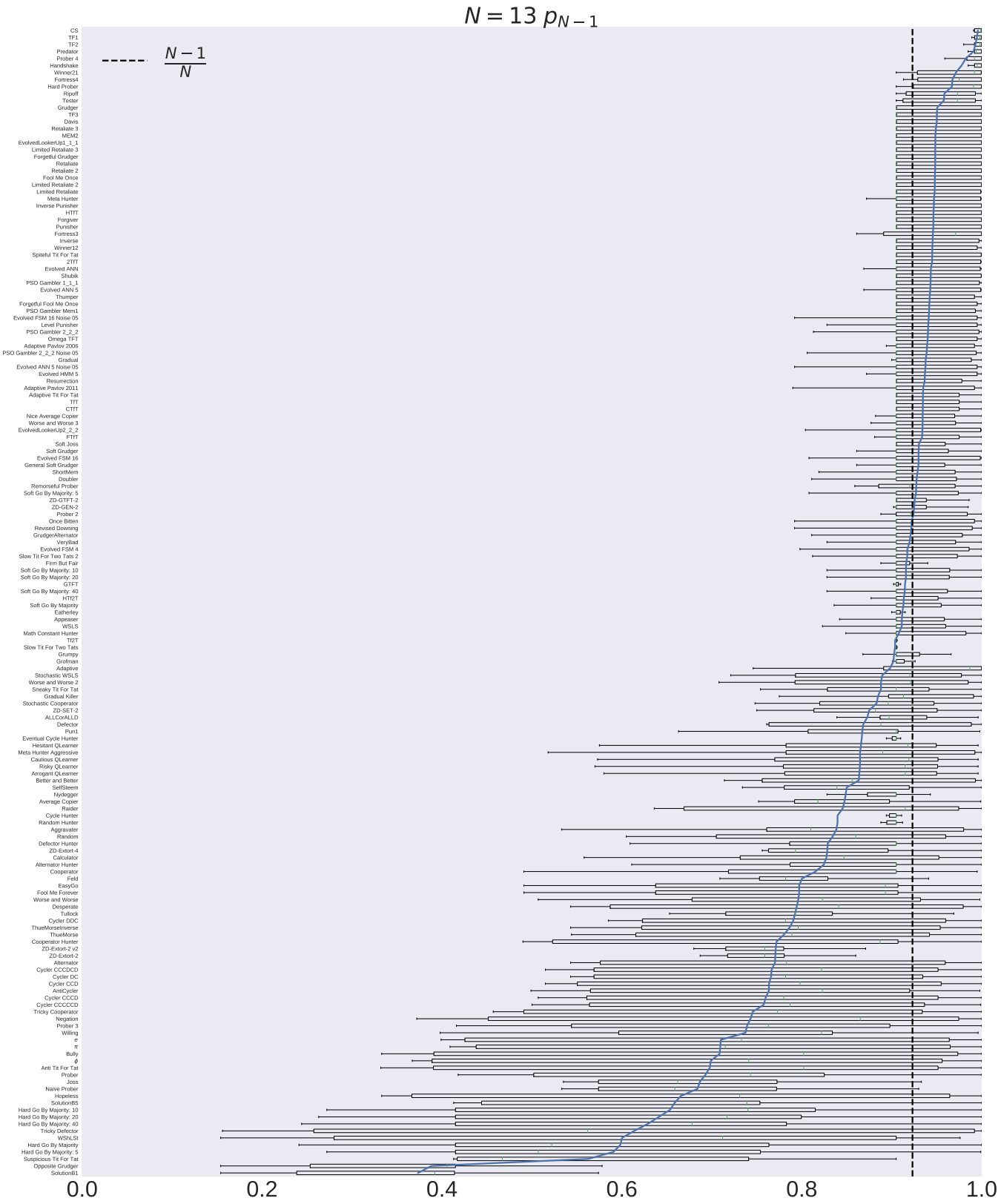

Figure 23: The fixation probabilities x_{N-1} for $N = 13$

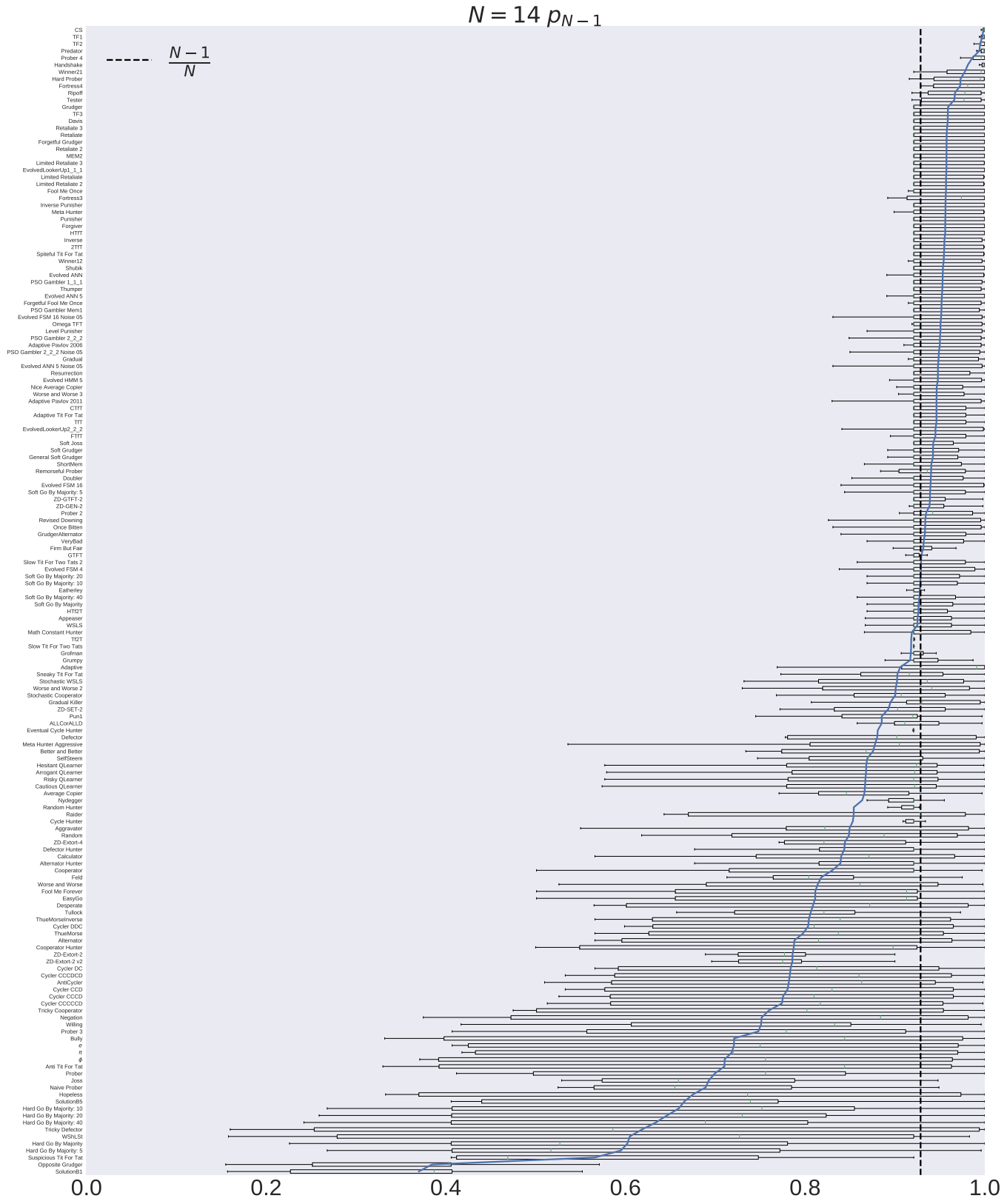

Figure 24: The fixation probabilities x_{N-1} for $N = 14$

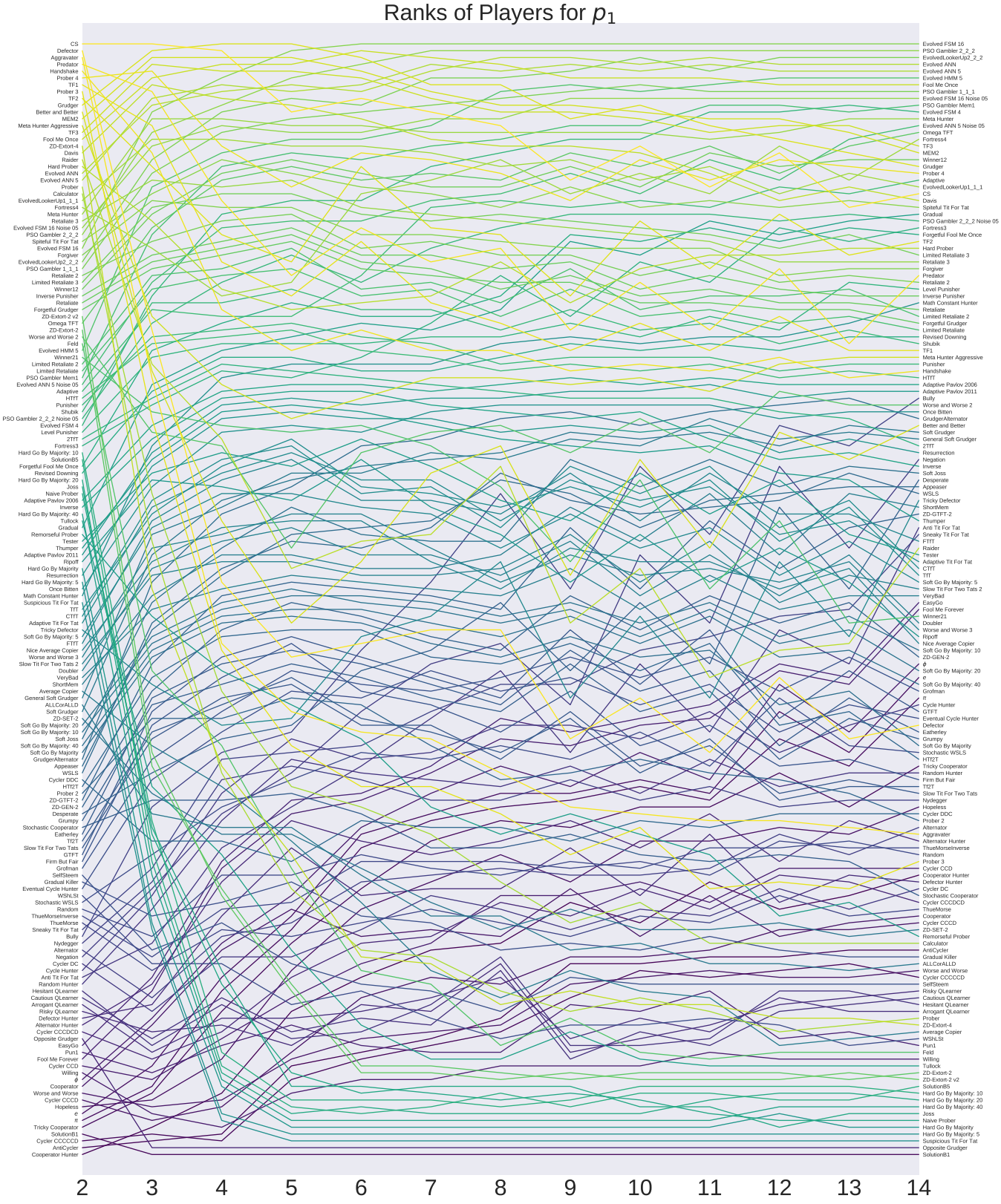

Figure 25: **Invasion**: Ranks of all strategies according to x_1 for different population sizes.

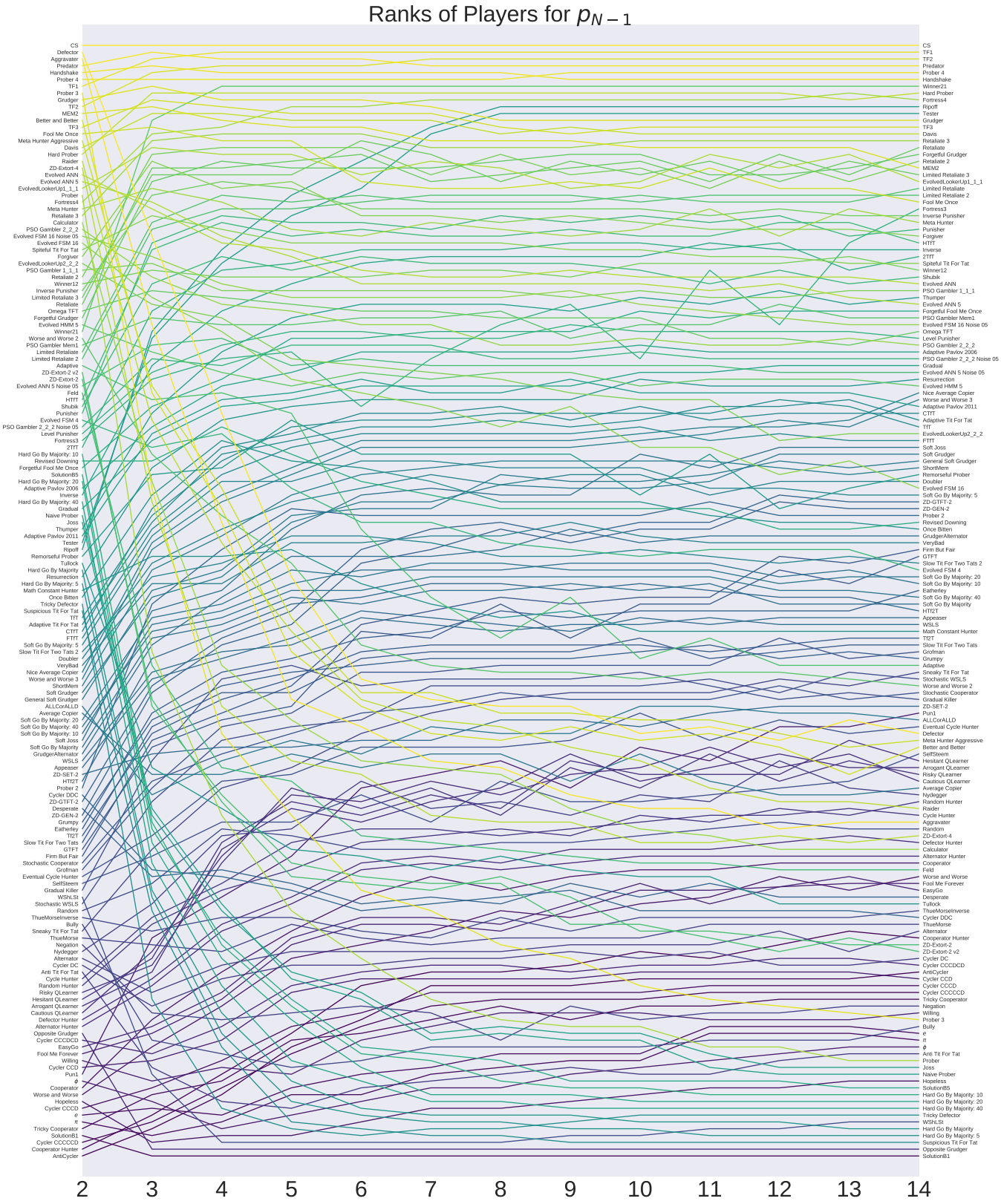

Figure 26: **Resistance**: Ranks of all strategies according to x_{N-1} for different population sizes.

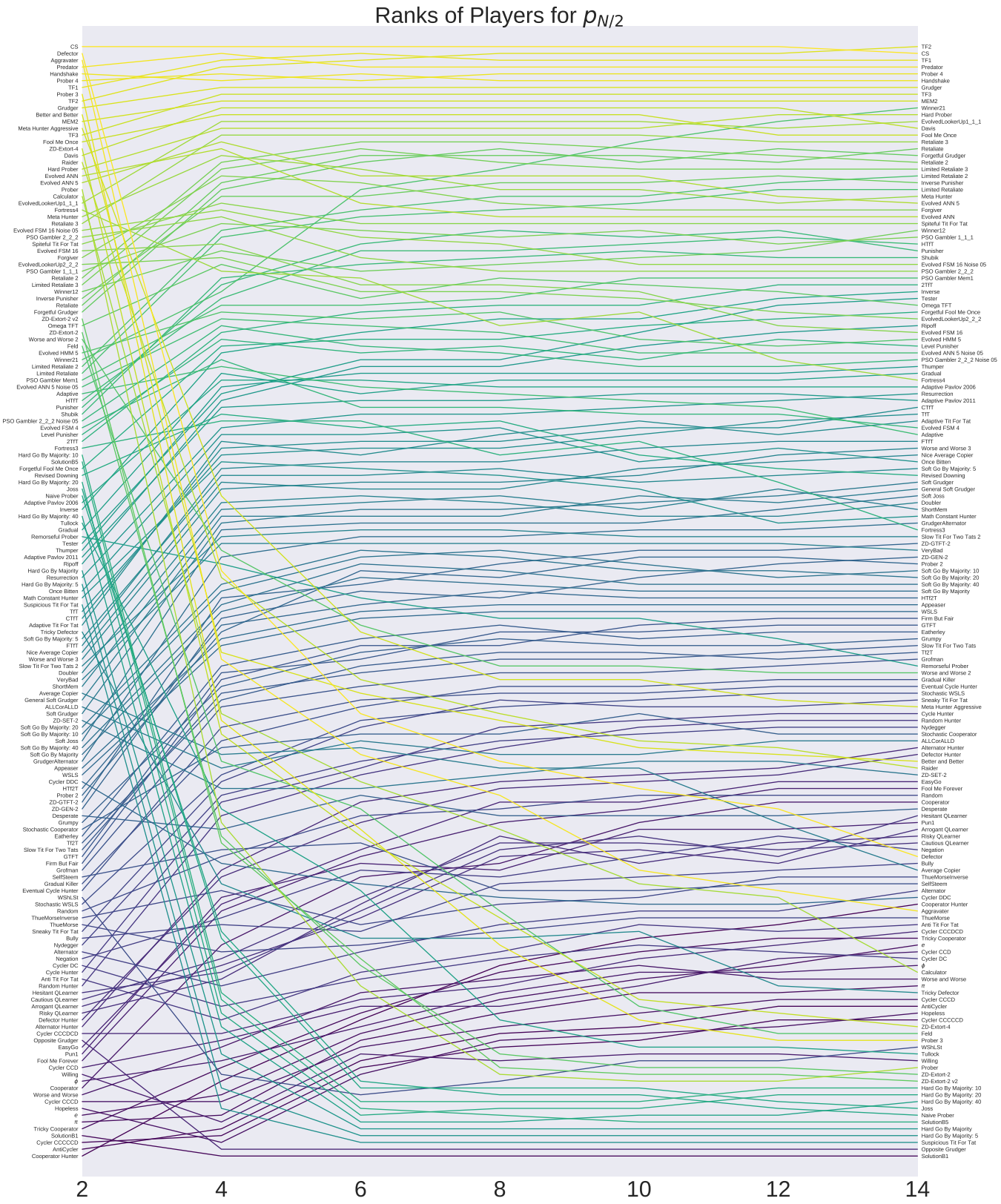

Figure 27: Fixation ranks of all strategies according to $x_{N/2}$ for different population sizes.