**Tullock Contest Literature Review**

**Symm\_1\_1: Standard Tullock Contest**

The following table was generated from [Sheremeta (2013)](https://onlinelibrary.wiley.com/doi/10.1111/joes.12022).

Table

Description automatically generated

Though there is substantial variation in the overbidding percentage for each study referenced in the above table, ours is very much in line insofar as overbidding is present and the degree to which subjects overbid is substantial (> 25%). The original table also included 30 or so more experiments, but only the ones pictured above satisfied our “Matching” field, endowment = prize value, and number of contestants = 2.

**Symm\_1\_3: Win majority but choose single effort**

Avg Effort = 41 or 51% of prize or 37% higher than equilibrium

Equilibrium effort = 30

**Symm\_3\_1: Win majority and choose different efforts each time**

Avg Effort = 51 (or 17\*3 districts) or 64% of prize or 70% higher than equilibrium

Though there does not seem to be a perfectly comparable experiment, there are those that require subjects to win 2/3 contests. In **Mago, S.D., Sheremeta, R.M., & Yates, A.** (2010). “Best-of-three contests: Experimental evidence.” *ESI Working Paper* 10-22. *Retrieved from* [*http://digitalcommons.chapman.edu/esi\_working\_papers/109*](http://digitalcommons.chapman.edu/esi_working_papers/109)the researchers allow participants to bid up to 200 francs in 3 separate standard Tullock contests played against the same opponent. To win the competition, a participant must win 2/3 of those contests. The key difference between our design and Mago and Sheremeta (2010) is that our Symm\_3\_1 is simultaneous. Regardless, we believe this offers a reasonable comparison for our Symm\_3\_1 contest. We again find that the overbidding seen in our Symm\_3\_1 competition is in line with the overbidding in Mago and Sheremeta (2010) albeit not as extensive. Our Symm\_1\_3 also sees overbidding, though not as extensive. [Mago and Razzolini (2019)](https://www.sciencedirect.com/science/article/pii/S0167268119301179?casa_token=7rIxgW1mM_cAAAAA:w0t20mg1BstDwCZVF6IXn5gU_3Cx0I45V5ccSO1nBTVZcaEOoRQnkJPHTi1-MOYf6Cs564Y#sec0002), [Mago and Sheremeta (2017)](https://onlinelibrary.wiley.com/doi/full/10.1002/soej.12182?casa_token=m7apc8I8nQ8AAAAA%3AiyIhG3q5apZaa-1Yy0cT3_gRAi-TceWbyAbTZSdYRJ5ZQ-FkoYzYIqkfQwkJQAg4sJZvN0Ys6GY) and [Mago et al (2012)](https://ideas.repec.org/p/pra/mprapa/43031.html) find support for overbidding in multi-contest competitions. This generally supports our findings, though only insofar as overbidding is concerned; of the overbidding magnitude we make no comparisons with these studies.

**Gerry: One player needs to win one contest and the other must win two**

Avg Effort Adv = 37.8 or 47% more than prize or 26% more than equilibrium

Avg Effort Dis = 35.6 or 44% more than prize or 19% more than equilibrium

Though we did not find a close match to our gerrymandered map competition, there is supporting theory for the results we see. [Snyder (1989)](https://www.jstor.org/stable/1911056?seq=1#metadata_info_tab_contents) uses a theoretic approach to find that, if both parties face the same marginal cost of spending resources on political campaigns, parties spend less when advantaged, which supports our bidding behavior.