

COORDINATION VOTING GAME

This game illustrates strategic voting in single member plurality elections, where voters of two similar parties have an incentive to coordinate on either of their parties in order to beat their commonly least preferred party.

Technology: This game works best with Personal Response System (PRS) technology, where each student can vote on their personal device and you can display the aggregated results in real time.

If you do not have access to PRS technology, you can ask students to write down the party for which they vote, collect their votes and then write on the whiteboard how many students voted for each party.

The game: Three parties are competing in a single-member district. The party with the most votes wins. If all voters vote sincerely, party A receive the most votes and wins the elections. However, voters who most prefer party B and voters who most prefer party C both most dislike party A. Since there are more B and C voters together than voters A, if B and C voters successfully coordinate on either B or C, their joint votes beat party C.

The game thus illustrates that in equilibrium voters of party B (or C) vote strategically for their second ranked party C (or B) to maximise their payoff. This results in a two party contest, with one party (B or C) being completely deserted by all of their voters.

How to proceed:

1. Divide students into three groups, such that one group has the highest number of students, but the two other groups combined have higher number of students than the first. For example, if you have 14 students in the class, you can create one group of 6 and two groups of 4 students each. Note: students should not be aware in what group are other students.
2. Assign the same payoff structure to all students in each group. The group with the most students has a payoff structure of type A, while the other two groups are assigned types B and C. The description of each type is shown below. You can print it out and distribute to students.
3. Tell the students that the goal of the game is to maximise their payoff. Tell them that they will be asked to vote and that the party with the most votes will be announced the winner. Each individual student will receive the respective payoff based on who won the elections. For example, if a student is assigned type A and party A receives the most votes this student receive a payoff of 2.
4. Ask the students to vote and immediately display the number of votes cast for each party (using PRS or pen and paper)
5. Announce the winner of this election.

6. Ask students to calculate their payoffs based on their assigned type and the winner. For example, if party A wins, type A students receive 2 points, while types C and B receive 0 points.
7. Ask the students to note their earned payoff.
8. Proceed to another round of elections. First, ask each student to pass their payoff structure (type) to their neighbour on either left or right. This is easiest if students are arranged in a semi-circle.
9. When all students are assigned new set of preferences, repeat steps 3-8 as many times as you like. After few rounds, students will start coordinating on either party B or C. When some coordination is achieved and candidate A loses, you can stop the game.
10. If students struggle to coordinate, you can make it easier by announcing that either party B or C has been consistently ahead in the most recent poll or to assign more students to group B(C) than to group C(B). Note, however, that group A still needs to have most students.
11. Finish the game with a discussion. You can ask students whether they believe that the results apply in real elections. You can also explore why some students did not vote strategically even when incentivised to do so (if there were any such students).

Useful resources:

Morton, R. B., & Rietz, T. A. (2007). Majority requirements and minority representation. *NYU Ann. Surv. Am. L.*, 63, 691.

<http://www.biz.uiowa.edu/faculty/trietz/papers/RUNOFF.pdf>

This research solves and tests the coordination voting game in single-member plurality and majority elections.

Evans, G., Curtice, J., & Norris, P. (1998). New Labour, new tactical voting? The causes and consequences of tactical voting in the 1997 general election. *British Elections & Parties Yearbook*, 8(1), 65-79.

This research discusses a real case application of the coordination game, where Liberal and Labour voters successfully coordinated against the incumbent Conservatives in the 1997 general elections in the UK.

Below are three payoff structures. Each student should be assign one type, with type A being the most populous in the class, while types B and C jointly more populous than type A.

You can print the following descriptions and distribute one of them to each student.

TYPE A

Preferences		Payoffs
1 st	A	2
2 nd & 3 rd	B, C	0

You most prefer party A. If party A wins, you gain 2 points.

You are indifferent between party B and C. If either party wins, you do not gain any points.

TYPE B

Preferences		Payoffs
1 st	B	2
2 nd	C	1
3 rd	A	0

You most prefer party B. If party B wins, you gain 2 points.

Your second best shot is party C. If party C wins, you gain 1 point.

You most dislike (like the least) party A. If party A wins, you do not gain any points.

TYPE C

Preferences		Payoffs
1 st	C	2
2 nd	B	1
3 rd	A	0

You most prefer party C. If party C wins, you gain 2 points.

Your second best shot is party B. If party B wins, you gain 1 point.

You most dislike (like the least) party A. If party A wins, you do not gain any points.