

Voting Paradoxes in the Real World

Example Materials

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Real World Example of Borda/Condorcet Paradox: 2014 Week 15 College Football Poll

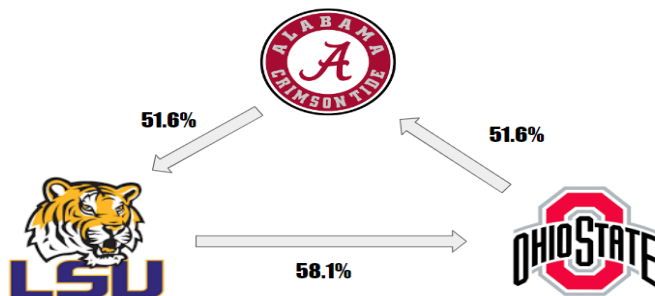
1		ALABAMA (25)	1426 Points
2		FLORIDA STATE (29)	1423 Points
3		OREGON (5)	1391 Points

- Florida State is the **Plurality Winner** as it received the most first place votes (29 vs 25 vs 5) but is the second in the Borda ranking
- Florida State is also the **Condorcet Winner**, since it is the pairwise winner against all other teams

Real World Example of Cycle Paradox: 2019 Week 10 College Football Poll

Teams >		Pollsters >	2019 Season ▾	Week 10 ▾	Pollster ▾	
1	 LSU (17)			8-0	Previous: 2 ▲ High: 1 - 17 Voters Low: 4 - 8 Voters	1476 Points
2	 ALABAMA (21)			8-0	Previous: 1 ▼ High: 1 - 21 Voters Low: 4 - 5 Voters	1474 Points
3	 OHIO STATE (17)			8-0	Previous: 3 High: 1 - 17 Voters Low: 4 - 10 Voters	1468 Points

Real World Example of Cycle Paradox: 2019 Week 10 College Football Poll



- 51.6% of pollsters ranked Alabama over Louisiana State (LSU)
- 58.1% of pollsters ranked Louisiana State (LSU) over Ohio State
- 51.6% of pollsters ranked Ohio State over Alabama

Frequency of Cycle Paradoxes in College Football Poll

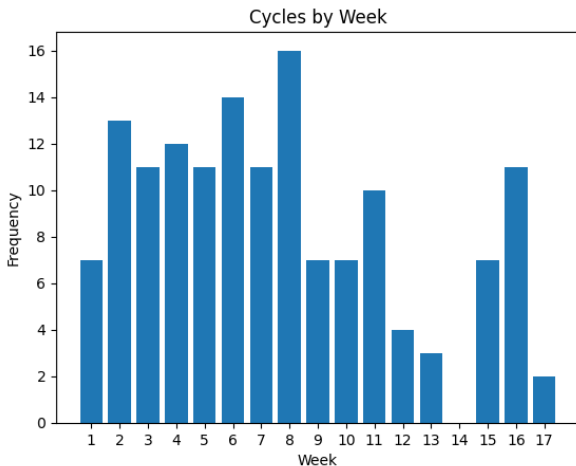


Figure: Chart of how often cycle paradoxes occurred by week

Frequency of Different Types of Cycles

- **Baseball MVP Voting Data (24 'elections')**

- 9 cycles of length 3
- 3 cycles of length 4
- 1 cycle of length 5
- Most extreme example (involve highest ranking teams, overall rank in parentheses): 2013 NL, Freeman (#5) > Kershaw (#7) > Votto (#6) > Freeman (#5)

- **College Football Poll Data (167 'elections')**

- 137 cycles of length 3
- 8 cycles of length 4
- 1 cycle of length 5
- 5-cycle example: Coastal Carolina > Ole Miss > Utah > Virginia Tech > Wisconsin > Coastal Carolina
- Most extreme example: 2019 Week 10, LSU (#1) > Ohio State (#3) > Alabama (#2) > LSU (#1)

Real World Examples of Condorcet Paradox: (Condorcet Winner is Different from Borda Winner)

- **2014, Week 15 college football poll:**
 - **Borda winner:** Alabama (Borda #1, 1402 points)
 - **Condorcet winner:** Florida State (Borda #2, 1398 points).
Florida State wins all pairwise comparisons.
- **2022, Week 6 college football poll:**
 - **Borda winner:** Alabama (Borda #1, 1523 pts)
 - **Condorcet winner:** Georgia (Borda #2, 1521 pts). Georgia wins all pairwise comparisons.

The above examples are the only instances of a Condorcet paradox in 211 “elections” in our data.

Real World Example of IIA Paradox: 2017 NL MVP Voting

RANK	PLAYER		RANK	PLAYER
1	Stanton		1	Votto
2	Votto		2	Stanton
3	Goldschmidt		3	Goldschmidt
4	Arenado		4	Arenado
5	Blackmon			

If the 5th ranked player (Blackmon) is removed from the ballots and the voting is recalculated, the top 2 players are swapped.

Frequency of IIA Paradoxes (Order of Top 3 Changed if 1 or 2 Lower Ranked Players/Teams Get Removed)

- **Baseball MVP Voting Data**

- 1 case if 1 player is removed
- 9 cases if 2 players are removed
- **Most extreme example:** 2017 NL, removing Blackmon (#5) causes Stanton (#1) and Votto (#2) to be reversed.

- **College Football Poll Data**

- 32 cases if 1 team is removed
- 146 cases if 2 teams are removed
- **Most extreme example:** 2022 week 10, removing Michigan (#4) causes Ohio State (#2) and Tennessee (#3) to be reversed.