

TERRY W. REILLY

September 20, 2009

City Clerk Merianne Nakagawa
333 W. Ocean Blvd. 14th Floor
Long Beach, CA 90802

Dear City Clerk Nakagawa,

Much has been made about the constitutionality and anomalies of Ranked Choice Voting (IRV). There is a huge body of evidence which describes what is known as the non-monotonicity effect. Plenty of examples and academic papers have been written describing this problem.^{1 2} Experts have defined Monotonicity as:

Monotonicity - as related to the ranking of candidates as:

Ranking a candidate higher, without changing the ordering of other candidates, can never cause the candidate to lose, nor ranking a candidate lower can never cause that candidate to win.

IRV (also known as Instant Runoff Voting - IRV) is Non-Monotonic. This poses severe problems arising in a candidate's and supporter's get-out-the-vote efforts (GOTV) as you never know when is the best time to stop, or how you should ask your supporters to rank you. In addition, when voters understand this complication, the foundation of our voting principals where a vote elevates that choice is no longer valid and puts the whole election process suspect.

We can look at this several ways:

3 candidates: Bob, Frank, Douglas

Number of voters 100 (can also be used as % or multiplied by 100 to accurately reflect an election,)
Showing two preferences is just for simplicity as the example will go no further than one vote transfer.

Consider it on a single election: This is how it looks prior to a big GOTV effort on Bob's part.

Number of votes	1st Preference	2nd Preference
39	Bob	Frank
35	Frank	Douglas
26	Douglas	Bob

With IRV, the candidate with the lowest votes is eliminated and the voters second choice is transferred to that candidate.

Number of votes	1st Preference	2nd Preference
39	Bob	Frank
35	Frank	Douglas
26		Bob

Therefore, Douglas is eliminated, thus transferring 26 votes to Bob. $39+26 = 65$ for Bob, 35 for Frank. Bob Wins.

¹ Non-Monotonicity and Instant Runoff Voting.pdf

² Irish Presidential Election of 1990.pdf

TERRY W. REILLY

But let's say Bob feels Frank and he are neck and neck, so prior to the election, he goes to a stronghold of Frank's support and meets with them, convincing them that he's the best choice, says Frank a great guy that they could put 2nd. He is successful in getting more votes from Frank supporters (who rank Frank 2nd). On election day it ends up looking like this:

Number of votes	1st Preference	2nd Preference
49	Bob	Frank
25	Frank	Douglas
26	Douglas	Bob

With IRV, the candidate with the lowest votes is eliminated and the voters second choice is transferred to that candidate.

Number of votes	1st Preference	2nd Preference
49	Bob	Frank
25		Douglas
26	Douglas	Bob

Frank is eliminated, thus transferring 25 votes to Douglas. $26+25 = 51$ for Douglas, 49 for Bob. **Douglas wins**

If Bob would have received 2 less converts from Frank, he would have won (Frank would have 27, no longer being the candidate with lowest votes, and Douglas's votes would have transferred to Bob)

This can also happen on a Second Term Election:

Suppose the votes are cast as follows of the first term:

Number of votes	1st Preference	2nd Preference
39	Bob	Frank
35	Frank	Douglas
26	Douglas	Bob

Number of votes	1st Preference	2nd Preference
39	Bob	Frank
35	Frank	Douglas
26		Bob

$39+26 = 65$ for Bob 35 for Frank. Bob is Elected.

Bob serves a full term and does a REALLY GREAT JOB!

Let's say in the next election, he has the same competitors (typical)

He has done such a great job in office that he persuades 10 voters (or %) who previously had Frank as their first choice, that he is better and they rank Bob as their 1st preference and Frank as their 2nd. This is how the election would look:

TERRY W. REILLY

Number of votes	1st Preference	2nd Preference
49	Bob	Frank
25	Frank	Douglas
26	Douglas	Bob

Because of the support that Frank lost due to more voters liking Bob as 1st instead (and raking Frank 2nd) Frank is eliminated, thus transferring 25 votes to Douglas.

Number of votes	1st Preference	2nd Preference
49	Bob	Frank
25		Douglas
26	Douglas	Bob

26+25 = 51 for Douglas, 49 for Bob. **Douglas wins**

Bob loses because he got more people to support her.

There are many more complex examples, with multiple matchups. But the fact it can happen on such a simple scale is quite revealing. This **has** happened in Aspen and will soon be the subject of a Federal Lawsuit.³ Remember, there have only been about 20 municipal elections with enough transparency that all the votes are available for analysis so that election scholars can determine if a candidate lost because of more votes as in the case of Aspen.

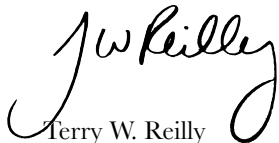
FairVote, the nations leading proponent of IRV (whose co-founder is now the Director of the Political Reform Program at the New America Foundation) admitted IRV is non-monotonic in the recent Minneapolis Federal Lawsuit⁴. The decision allows Minneapolis to use IRV as the suit was dismissed on the facial claim, but it did not address the constitutional issues, and allowed for future challenges once an example arrives. Hence the Aspen lawsuit since the candidate lost because he got too many 1st rank votes.

Some will argue a two election primary has the same effect, but an election is an election. A singular event, and should be treated as such. You win or loose that election by getting more or less votes. It should be that simple.

Some say the non-monotonicity effect is hidden and because of that fact it shouldn't be a problem, the candidate does not know their standing before the election, so "gaming" the system would be impossible. It's true it is hidden and that is what makes it even more troubling.

When a voter goes into the voting booth and pulls that lever, punches that chad, fills in that arrow, or touches that screen for the candidate, they believe they are helping that candidate win. It adds to their vote total. The election system you give them must do that. It is the foundation of our democracy.

Sincerely yours,



Terry W. Reilly

³ Minnesota Group takes aim at Aspen's election.pdf

⁴ Minnesota Supreme Court Admits Non-Monotonicity.pdf