Ballot Exhaustion in RCV IRV - main

- A glossary of terms and definitions for RCV wasted votes
- Links - Exhausted Ballots
- Ranking Limit - RCV Ballot
- Exhausted Ballot - definition - same as Exhausted Choices, Inactive Ballots
- RCV IRV tabulation is confusing and lacks transparency
- “No-preference” Vote - STAR Voting - Automatic Runoff (second round / second step in tabulation) - examples
- Presentation: Exhausted Ballots
- Residual Votes - RCV IRV

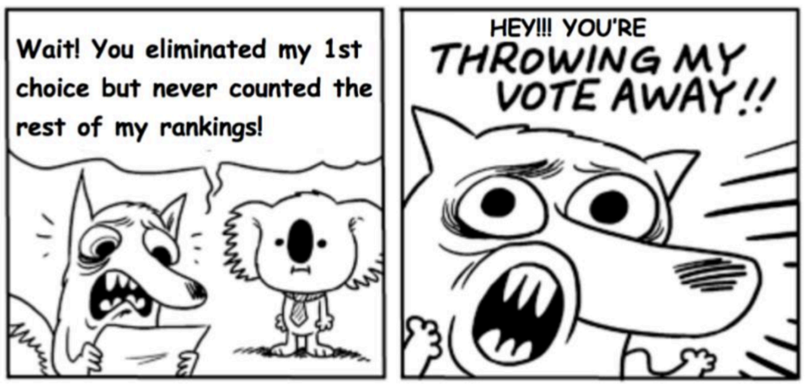
What title to use?

- Why does RCV discard a large fraction of information on so many ballots?
- The Math behind why RCV discards so much voter-preference ballot information (exhausted ballots)

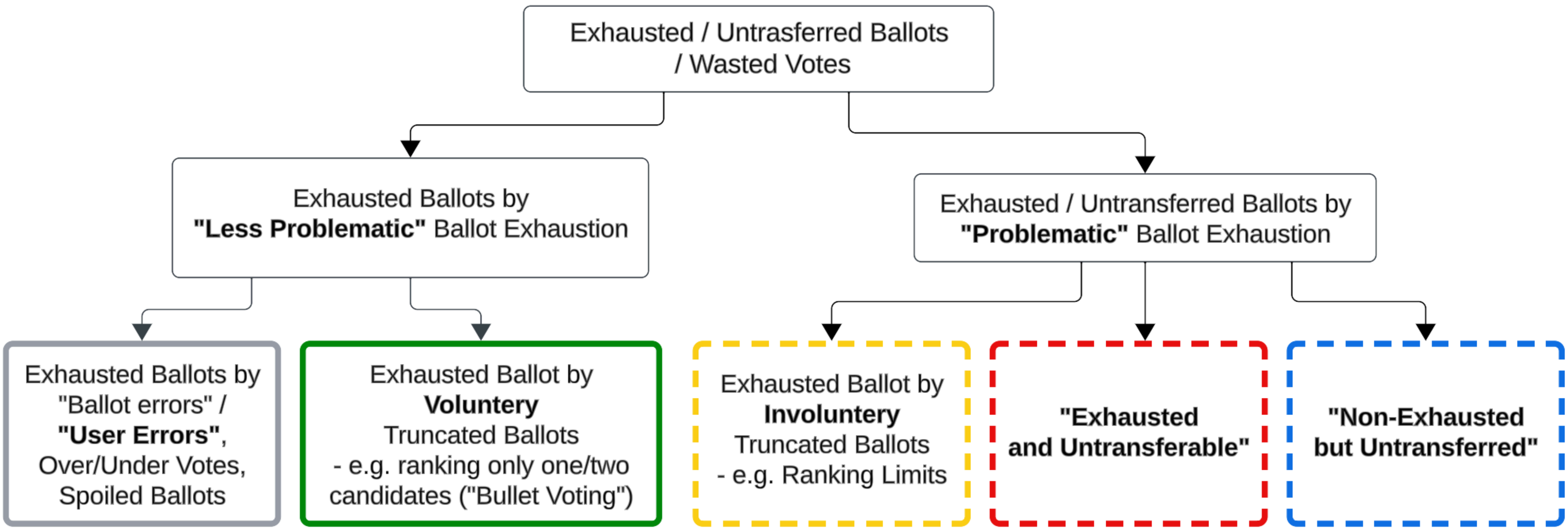
Claim / argument:

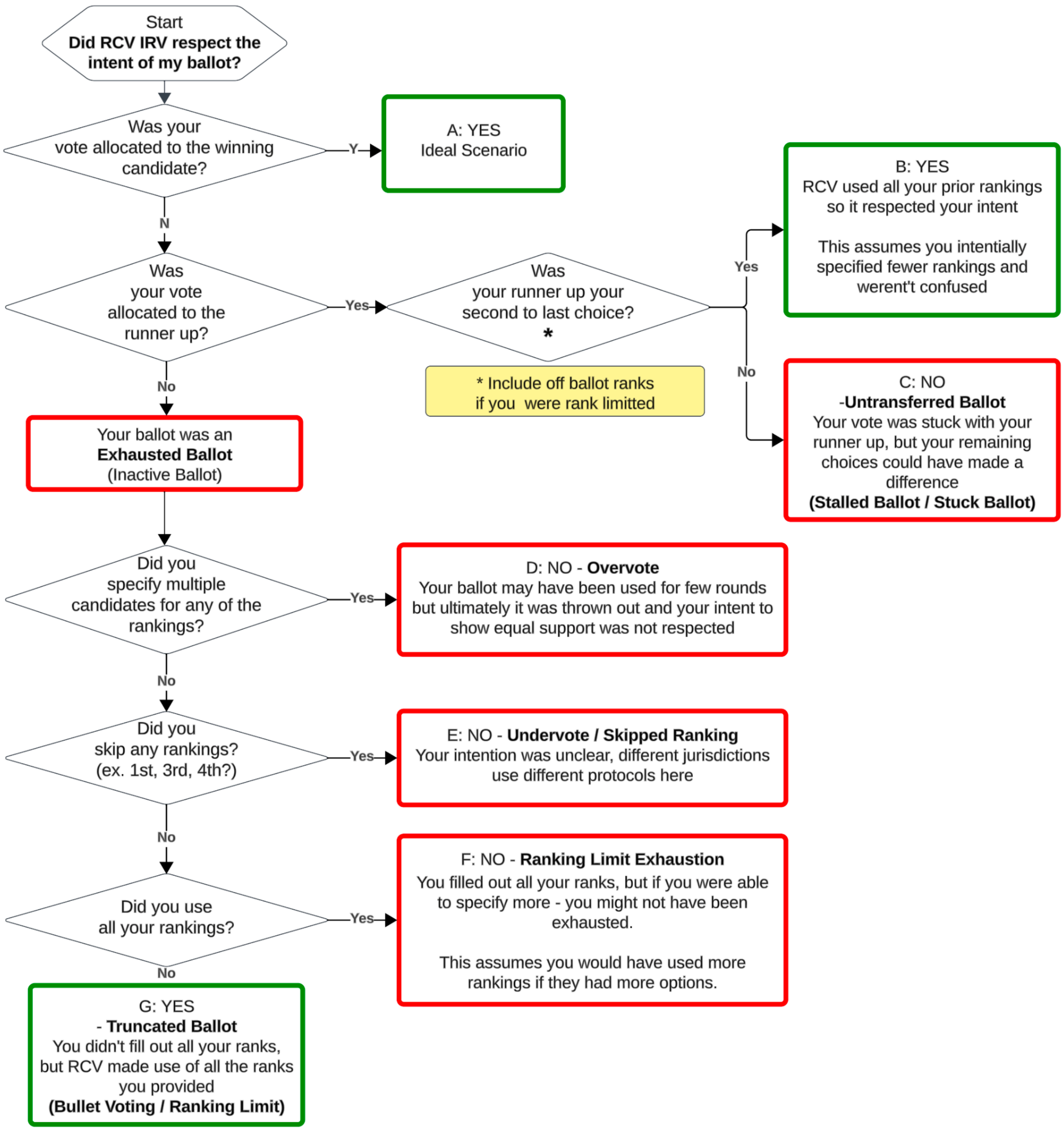
- Using RCV IR - some votes will not be counted - even if a voter fills out the ballot correctly and completely

Problem Statement:


Wait! You eliminated my 1st choice but never counted the rest of my rankings!
HEY!!! YOU'RE THROWING MY VOTE AWAY!!

RCV IRV has a problem with inactive/exhausted ballots - see boxes in red color below


Exhausted / Untrasferred Ballots / Wasted Votes
Exhausted Ballots by **"Less Problematic"** Ballot Exhaustion
Exhausted / Untransferred Ballots by **"Problematic"** Ballot Exhaustion
Exhausted Ballots by "Ballot errors" / **"User Errors"**, Over/Under Votes, Spoiled Ballots
Exhausted Ballot by **Voluntery** Truncated Ballots - e.g. ranking only one/two candidates ("Bullet Voting")
Exhausted Ballot by **Involuntery** Truncated Ballots - e.g. Ranking Limits
"Exhausted and Untransferable"
"Non-Exhausted but Untransferred"


Start
Did RCV IRV respect the intent of my ballot?
Was your vote allocated to the winning candidate?
Y
A: YES
Ideal Scenario
N
Was your vote allocated to the runner up?
Yes
Was your runner up your second to last choice? *
* Include off ballot ranks if you were rank limitted
Yes
B: YES
RCV used all your prior rankings so it respected your intent
This assumes you intentially specified fewer rankings and werent't confused
No
C: NO
-Untransferred Ballot
Your vote was stuck with your runner up, but your remaining choices could have made a difference
(Stalled Ballot / Stuck Ballot)
No
Your ballot was an Exhausted Ballot (Inactive Ballot)
Did you specify multiple candidates for any of the rankings?
Yes
D: NO - Overvote
Your ballot may have been used for few rounds but ultimately it was thrown out and your intent to show equal support was not respected
No
Did you skip any rankings? (ex. 1st, 3rd, 4th?)
Yes
E: NO - Undervote / Skipped Ranking
Your intention was unclear, different jurisdictions use different protocols here
No
Did you use all your rankings?
Yes
F: NO - Ranking Limit Exhaustion
You filled out all your ranks, but if you were able to specify more - you might not have been exhausted.
This assumes you would have used more rankings if they had more options.
No
G: YES
- Truncated Ballot
You didn't fill out all your ranks, but RCV made use of all the ranks you provided
(Bullet Voting / Ranking Limit)

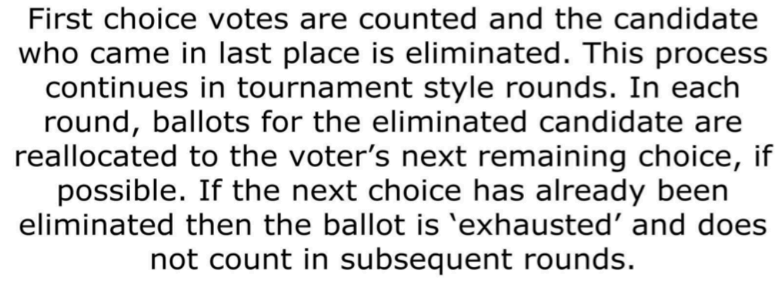
https://lucid.app/lucidchart/f523b9cf-56b6-45dc-82a7-55a26c0fd2aa/edit?viewport_loc=-625%2C-228%2C3072%2C1565%2C0_0&invitationId=inv_27f729a9-d3b1-4734-bb03-0404b91a5f9b

A: (no name needed)
B: (no name needed)
C: Untransferred Ballot? Stalled Ballot? Stuck Ballot?
D: Overvote
E: Undervote, Skipped Ranking
F: Ranking Limit Exhaustion
G: Truncated Ballot (Bullet voting is the most extreme version of this)

Introduction

In RCV, otherwise known as Instant Runoff Voting (IRV), the final contestants are determined by **successively eliminating** the candidate with the fewest remaining top-choice votes amongst the voters.

With each round of elimination, the votes of those with the eliminated candidate in top position transfer to the next choice on their ballot, if possible; this continues until one candidate is top-ranked on a majority of ballots that remain.



First choice votes are counted and the candidate who came in last place is eliminated. This process continues in tournament style rounds. In each round, ballots for the eliminated candidate are reallocated to the voter’s next remaining choice, if possible. If the next choice has already been eliminated then the ballot is ‘exhausted’ and does not count in subsequent rounds.

Voters whose 1st choice is eliminated in the first round will always have their 2nd choice counted (if they ranked a candidate 2nd), but voters whose down ballot rankings were eliminated before their 1st choice will have nobody left for their vote to transfer to.

These are known as 'exhausted' ballots.

In competitive elections voters who prefer strong underdog candidates are more likely to have their ballots exhausted, which puts them at a disadvantage. This can result in counter-intuitive and sideways election results.

Why does it matter?

Misleading and False Claims

Proponents of RCV IRV make the false claims

> “If your first choice is eliminated, your next choice will be counted”.

Another version:

> "If your **first** choice is eliminated, then your vote will transfer to your second choice."
>
> > If RCV advocates instead said "**next** choice", then their false claim would be less wrong.
>
> Additionally, there is inaccurate and misleading conflation of terms:
> - first **choice**
>   and
> - first **round**
>
> “If your first choice doesn’t win, your vote for your second-choice candidate is counted.”

RCV IRV "wastes" a vote because the method focuses on just the top-ranked candidate while the ballot information for lower-ranked candidates is ignored.

RCV IRV mistakenly assumes the candidate with the fewest top-ranked ballots is the least popular candidate in that counting round.

See more here: RCV False Claims

Incorrect Assumptions regarding ‘counting’ Ranks

Some voters assume that **all** ranks are used in RCV IRV (not true)
https://www.starvoting.org/rcv_v_star
Most voters who hear about **ranked voting** assume that the ballots are counted as in Ranked Robin; i.e. all the rankings are counted, and the candidate who is preferred overall wins.

- In fact, almost all jurisdictions that use ranked ballots actually tally them with the much more convoluted Ranked Choice Voting method instead.

- With Ranked Choice Voting, ballots are tallied in rounds, and in each round, only the voter's first choice (or top remaining choice) is counted. Candidates are eliminated in rounds, transferring votes to voters’ next choices, if possible. Some votes inevitably are unable to transfer, and the election is called when one candidate has a majority of ballots that are still in play. In most competitive elections, there will be many voters whose ballots are not able to be counted in the deciding round, even if their votes could have made a difference. These are called "exhausted ballots." Ranked Choice Voting elections are often oversold with claims that it's safe to vote for your honest favorite, that your vote won't be wasted, and that if your favorite is eliminated, your next choice will be counted. These claims are all objectively false.

In short, Ranked Choice Voting ignores relevant ballot data, which can skew the results in competitive races. Some voters whose favorites can't win will have their next choice counted. Some won't. This is fundamentally unfair and we can do better! See more Generic RCV

Majority preferred winners vs a majority of remaining ballots:

In order to guarantee majority preferred winners, voting methods need to narrow it down to the top 2 finalists.

RCV and STAR Voting use different methods for determining these finalists.
- RCV elects a winner who was preferred on a majority of **remaining** ballots in the final round of tabulation, but not all ballots are counted in the final round.
- STAR Voting Method counts all ballot data. Of voters who had a preference, STAR Voting elects the finalist preferred by the majority.

Problematic and non-problematic Ballot Exhaustion

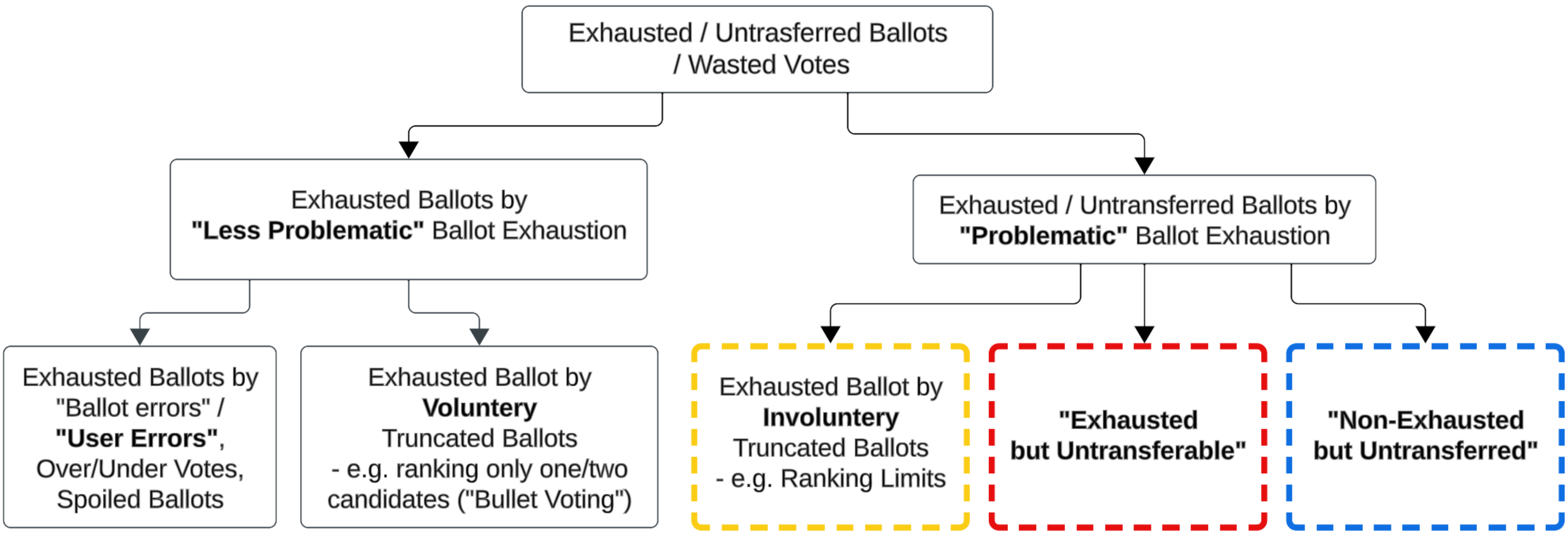

Exhausted / Untrasferred Ballots / Wasted Votes
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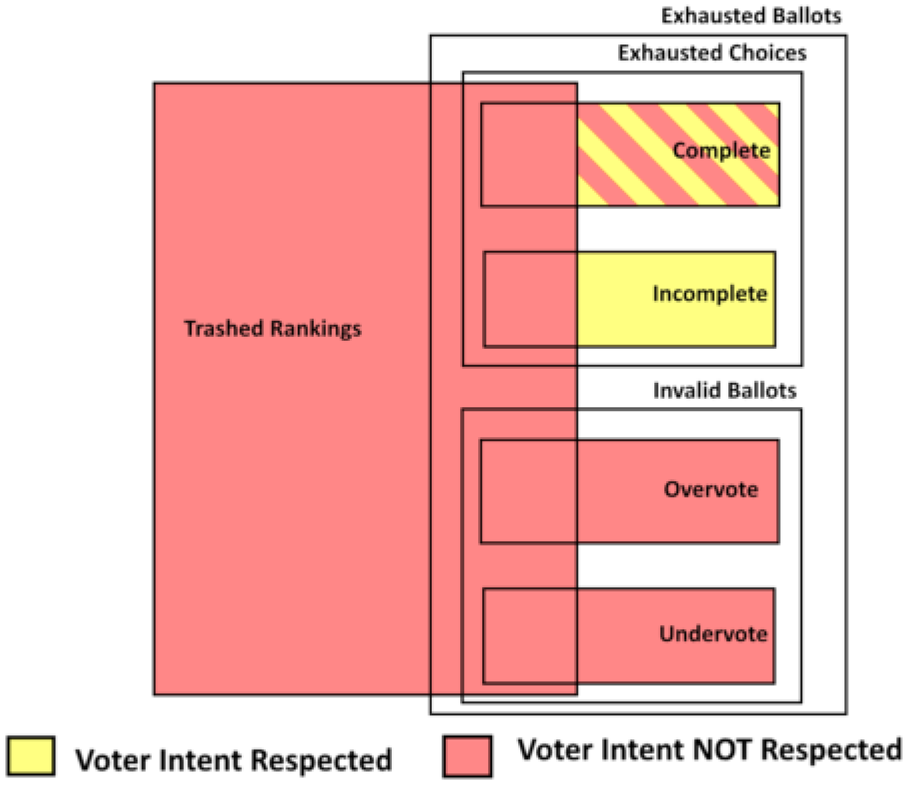
Figure 1 - Problematic Exhausted Ballots - Ranking Limit - RCV Ballot



Exhausted Choices is the same as Exhausted Ballot is the same as Inactive Ballots

Proponents of RCV IRV claim that Ballot Exhaustion non-problematic:

- Incorrect ballot markings (‘user errors’)
  Voter made a mistake filling out RCV Ballot - Spoiled ballots
  or
- Voter is bullet voting (selecting only one candidate - and thus making the ballot exhausted after the first round)
  - Bullet voting
  - ballot truncation

However, there is another type of Ballot Exhaustion that happens in the second tabulation round (and subsequent tabulation rounds) that is very different from ‘user errors’ or voting for one candidate only.

A voter may cast the correct ballot (free from “Ballot Errors”) and select all candidates (avoid truncation / ranking limits) - and yet some of the ranks are discarded.

- A glossary of terms and definitions for RCV wasted votes

Some ballots are not counted in the final round.
Counting stops before the election has narrowed it down to one candidate, so not everyone gets their next choice counted, even if their favorite is eliminated.

https://goodparty.org/political-terms/exhausted-ballot
Definition and meaning of exhausted ballot: An exhausted ballot is a type of ballot that is not counted towards the final vote tally in an election.

This can happen when a voter casts a vote for a candidate who has already been eliminated from the race, or when a voter casts multiple votes for the same office, which is known as overvoting.

In some cases, exhausted ballots may also be the result of a voter not properly filling out the ballot, such as by failing to properly mark their vote or by writing in a candidate who is not officially running for office.

Exhausted ballots can have a significant impact on the outcome of an election, particularly in races where there are multiple candidates or where the margin of victory is close.

This is especially true in elections where independent or third-party candidates are running, as their votes may be split among multiple candidates, making it more likely that some of these votes will be exhausted.

With RCV IRV, every vote does not count...

One of the greatest problems with RCV is “ballot exhaustion” — when a ballot is cast but does not count toward the end election result. This occurs when a voter Overvotes - RCV IRV , Overvotes - RCV IRV , or only ranks candidates that are no longer in contention on their ballot.
Ballot exhaustion leaves voters and voices **uncounted** — ballots are literally thrown in the trash because the RCV voting process renders their votes meaningless.
=
https://www.starvoting.org/wasted_votes

- An exhausted ballot in RCV is NOT COUNTED in the deciding round, even if it could have made a difference.

There are a number of types of exhausted ballots in RCV, and only some of them are problematic.

An exhausted ballot in RCV may be the same thing as a vote of no preference if the voter left multiple candidates blank because that was their honest vote.

It all comes down to voter intent. Voter intent should not be corrupted by the system. The system should count your vote and it should be able to make a difference if possible and help you gain representation, but in Ranked Choice Voting that's not necessarily the case. Exhausted ballots are only one example of types of wasted votes in RCV.

Most people are surprised to learn that the RCV algorithm doesn't actually count most of the rankings voters put down on their ballots. Which of your rankings will be counted and which are not depends on the order of elimination. As a result, it may not be safe to vote for your favorite in RCV, just like with traditional Choose-One Voting. Worse, in some cases, voting your conscience can actually backfire, resulting in a worse outcome than if you hadn't voted at all in RCV.

Exhausted Untransferable Ballots (same as Exhausted Choices?)
A ballot that cannot be counted in the deciding round of the election even though the voter ranked multiple candidates. In RCV, a voter's other choices may be eliminated before their first choice, so that by the time their favorite is eliminated the vote may have nowhere to transfer to. This is a type of exhausted ballot.

On average in competitive RCV elections over 10% of ballots are exhausted. In some cases, the eliminated candidate may have actually been the candidate preferred over all others, but because RCV doesn't count most of the rankings voters put down, it can fail to elect the most popular candidate.

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In the context of Ranked Choice Voting (RCV), there's a common misconception that all ranked choices are always counted. While this is true for many RCV methods (e.g. RCV Borda count, RCV Condorcet Count, RCV Ranked Pairs), it's not the case with RCV IRV.

RCV IRV, despite the claim that "If your first choice is eliminated, your next choice will be counted," doesn't always consider all ranks in subsequent rounds of tabulation. This leads to a phenomenon known as "Ballot Exhaustion," which includes both "**Exhausted Choices**" and "Exhausted Ballots."

Proponents of RCV often downplay ballot exhaustion as a minor issue, offering these explanations:

1. If your first-choice candidate is eliminated, your next choice will be counted.
2. If you make errors on your voting ballot (such as overvotes or undervotes), your ballot becomes exhausted, but this is considered the voter's responsibility
3. If you fail to rank all candidates (ballot truncation), your ballot becomes exhausted in the second or third round, rendering it inactive in subsequent rounds of tabulation (Ballot Exhaustion by Truncated Ballot)

However, it's essential to note that RCV IRV has other types of ballot exhaustion that proponents tend to overlook and avoid explaining.

Some voters assume that **all** Ranks are counted Ranked Choice Voting method - as is the case with majority of Ranked Choice Voting methods (e.g. RCV Borda count, RCV Condorcet Count, RCV Ranked Pairs, RCV MinMax, etc). See Name RCV - IRV / RCV confusing terminology / names

However, RCV IRV does not count all ranks - despite RCV IRV False Claim that “If your first choice is eliminated your next choice will be counted”.

- Misleading RCV IRV materials - Misconceptions and False Claims

It is not true that your second or third rank (candidate) will participate in the subsequent tabulation round.

RCV proponents explain “ballot exhaustion” as a very limited and harmless feature of RCV IRV.
A typical explanation (talking points) by RCV proponents is as follows:

- If your first choice is eliminated your next choice will be counted
- If you make errors on your voting ballot (overvotes, undervotes, etc) - your ballot is Exhausted (becomes inactive - but this is voters fault)
- If you fail to mark all candidates (ballot truncation) - your ballot is exhausted in the second/third round (inactive ballot in subsequent rounds of tabulation)

However, RCV Proponents ignore other types of Ballot Exhaustion that are problematic in RCV IRV Voting method.

RCV IRV proponents avoid and ignore explaining other types of Ballot Exhaustion.

Do we need a new term to explicitly address this specific Ballot Exhaustion type or we should use the existing term as used by FairVote - “Exhausted Choices”.

- Sources - where is the term “Exhausted Choices” used

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RCV is not truly “majoritarian” because of ballot exhaustion.

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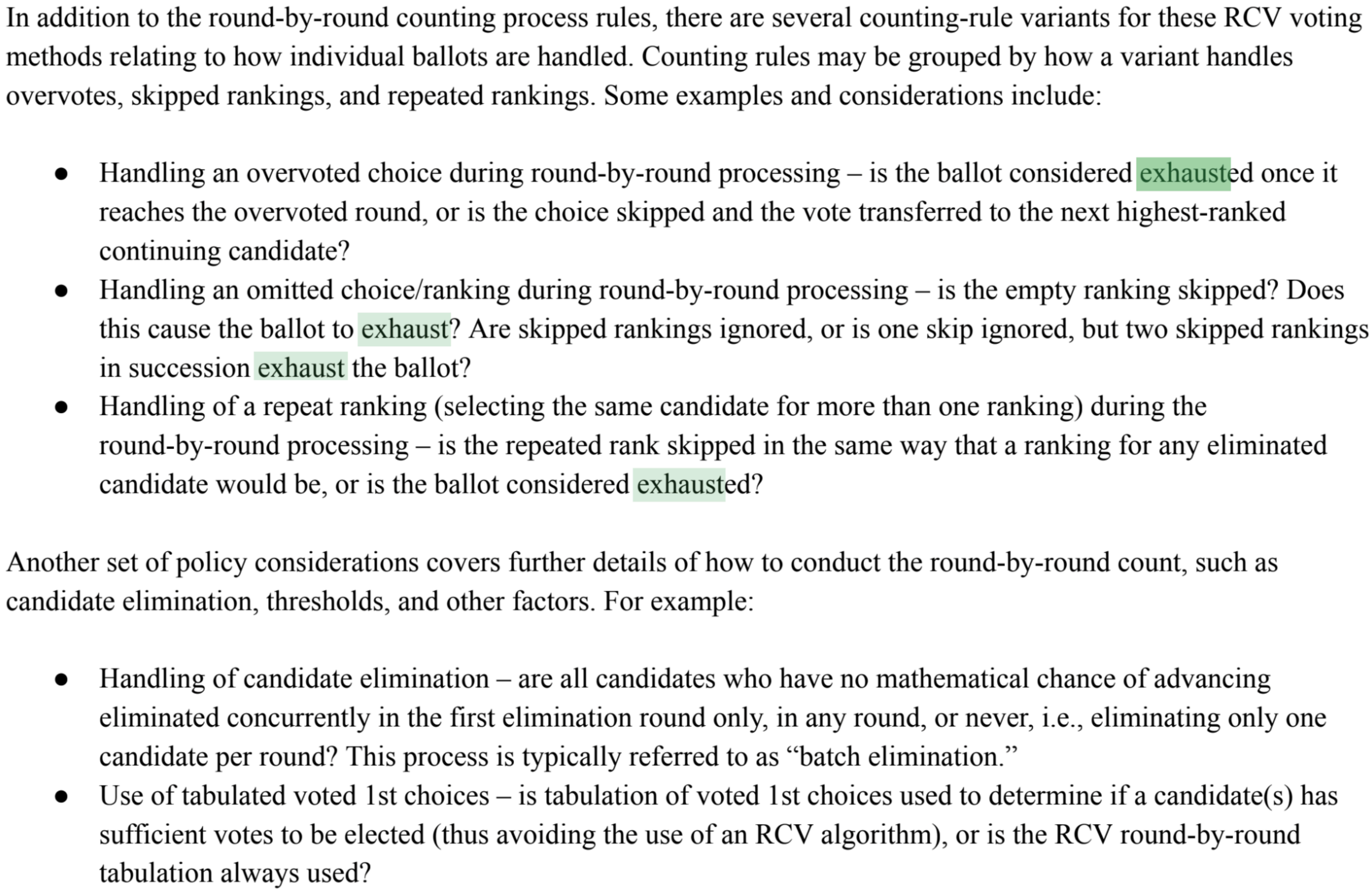
Studies

Technical spec



In addition to the round-by-round counting process rules, there are several counting-rule variants for these RCV voting methods relating to how individual ballots are handled. Counting rules may be grouped by how a variant handles overvotes, skipped rankings, and repeated rankings. Some examples and considerations include:

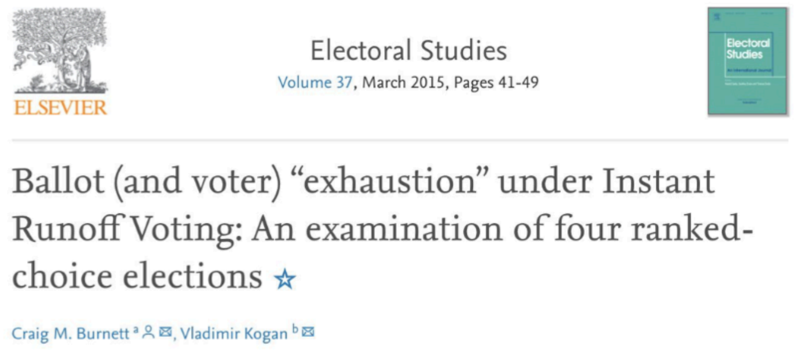
- Handling an overvoted choice during round-by-round processing – is the ballot considered exhausted once it reaches the overvoted round, or is the choice skipped and the vote transferred to the next highest-ranked continuing candidate?
- Handling an omitted choice/ranking during round-by-round processing – is the empty ranking skipped? Does this cause the ballot to exhaust? Are skipped rankings ignored, or is one skip ignored, but two skipped rankings in succession exhaust the ballot?
- Handling of a repeat ranking (selecting the same candidate for more than one ranking) during the round-by-round processing – is the repeated rank skipped in the same way that a ranking for any eliminated candidate would be, or is the ballot considered exhausted?

Another set of policy considerations covers further details of how to conduct the round-by-round count, such as candidate elimination, thresholds, and other factors. For example:

- Handling of candidate elimination – are all candidates who have no mathematical chance of advancing eliminated concurrently in the first elimination round only, in any round, or never, i.e., eliminating only one candidate per round? This process is typically referred to as "batch elimination."
- Use of tabulated voted 1st choices – is tabulation of voted 1st choices used to determine if a candidate(s) has sufficient votes to be elected (thus avoiding the use of an RCV algorithm), or is the RCV round-by-round tabulation always used?

https://drive.google.com/file/d/1VAblJl7ryZC3mzRgwNSaXyiU09Iia-1Z/view

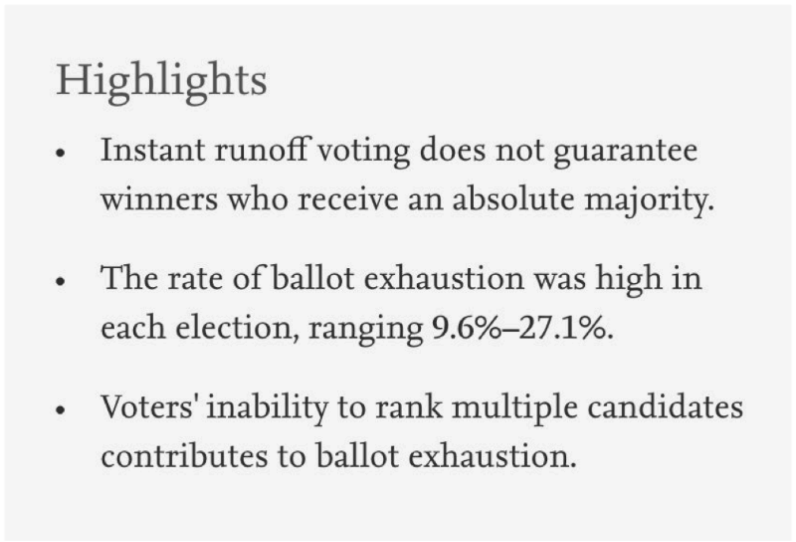
Year 2015



Electoral Studies
Volume 37, March 2015, Pages 41-49

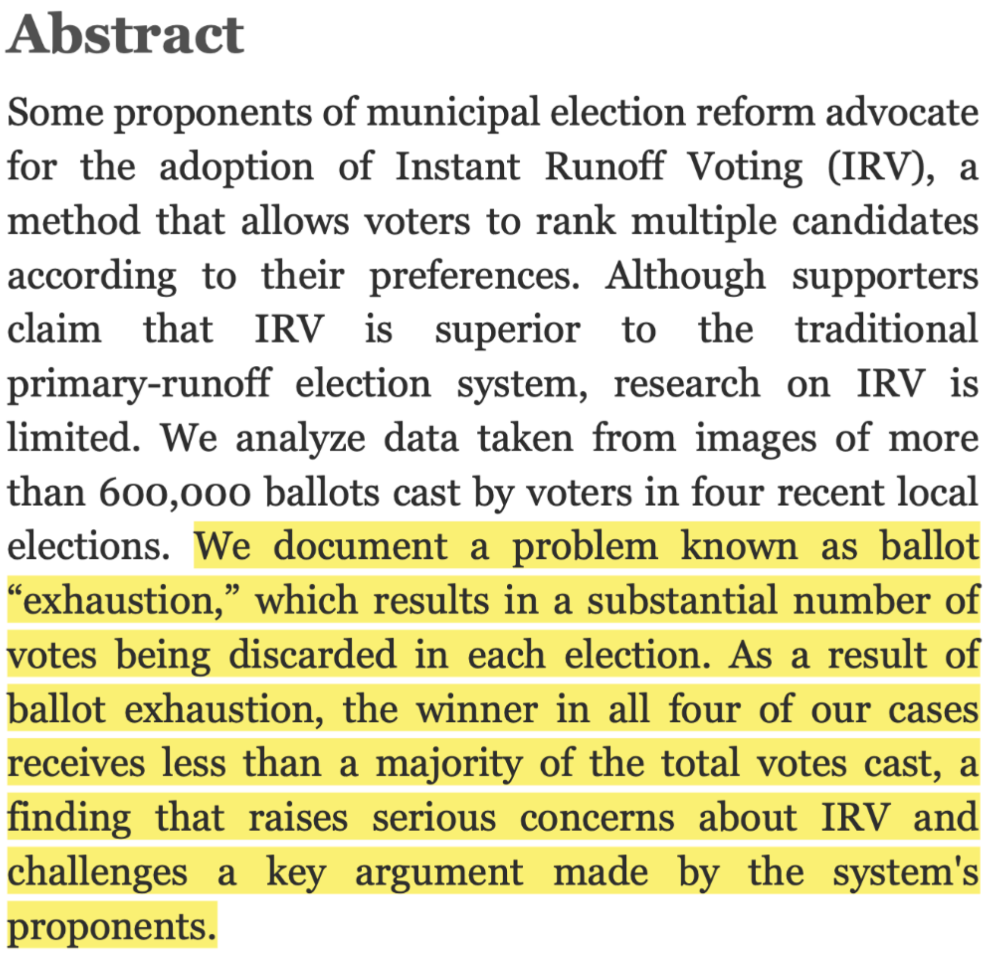
Ballot (and voter) "exhaustion" under Instant Runoff Voting: An examination of four ranked-choice elections ☆

Craig M. Burnett [a], Vladimir Kogan [b]



Highlights

- Instant runoff voting does not guarantee winners who receive an absolute majority.
- The rate of ballot exhaustion was high in each election, ranging 9.6%–27.1%.
- Voters' inability to rank multiple candidates contributes to ballot exhaustion.



Abstract

Some proponents of municipal election reform advocate for the adoption of Instant Runoff Voting (IRV), a method that allows voters to rank multiple candidates according to their preferences. Although supporters claim that IRV is superior to the traditional primary-runoff election system, research on IRV is limited. We analyze data taken from images of more than 600,000 ballots cast by voters in four recent local elections. We document a problem known as ballot "exhaustion," which results in a substantial number of votes being discarded in each election. As a result of ballot exhaustion, the winner in all four of our cases receives less than a majority of the total votes cast, a finding that raises serious concerns about IRV and challenges a key argument made by the system's proponents.

https://www.sciencedirect.com/science/article/abs/pii/S0261379414001395

* Note: This study looked specifically at elections in which a majority was not found in the first RCV round of tabulation.

RCV's ballot exhaustion, and ballot spoilage issues mean that some voters will get their votes discarded, and studies are clear that this happens to some types of voters more than others.

During municipal RCV elections in Minneapolis, MN, in 2009, "10.5 percent of the votes cast…were spoiled ballots or contained voter errors. And a higher incidence of spoiled ballots and voter error occurred in low-income, high-minority population areas".

Another study "examined 98 RCV elections from 2006 to 2019 and found that, on average, 10.8 percent of ballots casted were considered exhausted by the final round."

"In 2004, a similar percentage (9.7%) of ballots were invalidated in San Francisco's municipal RCV elections. When political scientists at UC Berkeley reviewed the election results, they detected a higher rate of spoiled ballots in districts with more racial minorities, senior citizens, immigrants, and low-income residents."

Official FairVote definition

https://fairvote.org/our-reforms/ranked-choice-voting-information/#_13-what-are-inactive-or-exhausted-ballots

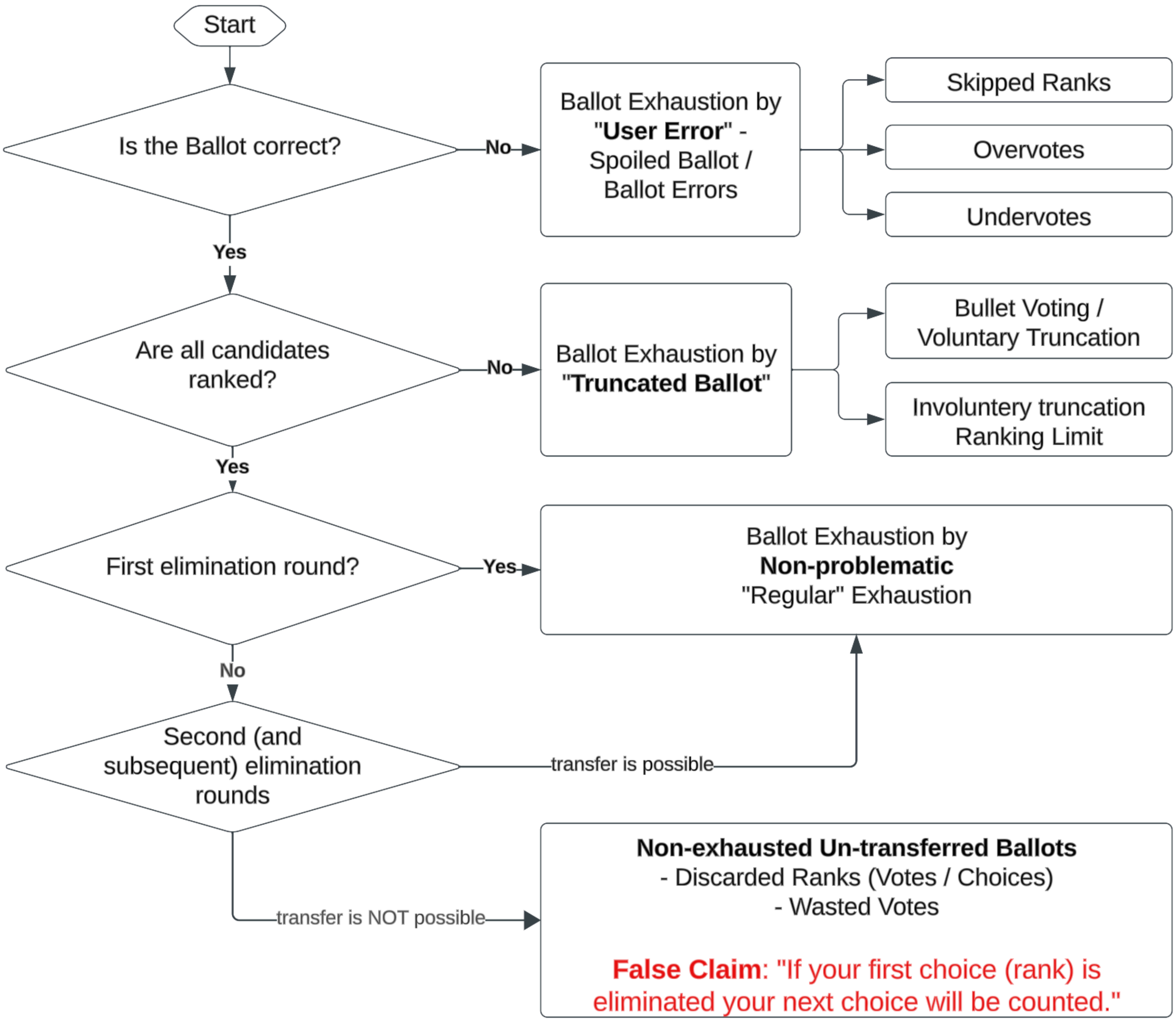
13. WHAT ARE INACTIVE OR "EXHAUSTED" BALLOTS?

An inactive or exhausted ballot counts for candidates in the first round but not in the final round. Ballots become inactive for the following reasons:

1. The voter doesn't rank all candidates, and all of their ranked candidates are eliminated during the round-by-round count. Also known as voluntary abstention, this is the most common source of inactive votes.
2. Election administrators limit voters to a certain number of rankings, such as three, and all of their ranked candidates are eliminated during the round-by-round count. This is known as involuntary exhaustion.
3. The ballot is disqualified due to error, such as giving multiple candidates the same ranking. This is the rarest source of inactive ballots; indeed ballot error rates are consistently low under RCV. See our Data on RCV page to learn more.

Definition

Ballot Exhaustion - Exhausted Choices and Exhausted Ballots (aka Inactive Ballots).
Since Ballot Exhaustion can happen due to multiple reasons - it is easier to explain different concepts using a flow chart.
A ballot is said to be "exhausted" when every candidate ranked by a voter has been eliminated and that ballot thus no longer factors into the election.

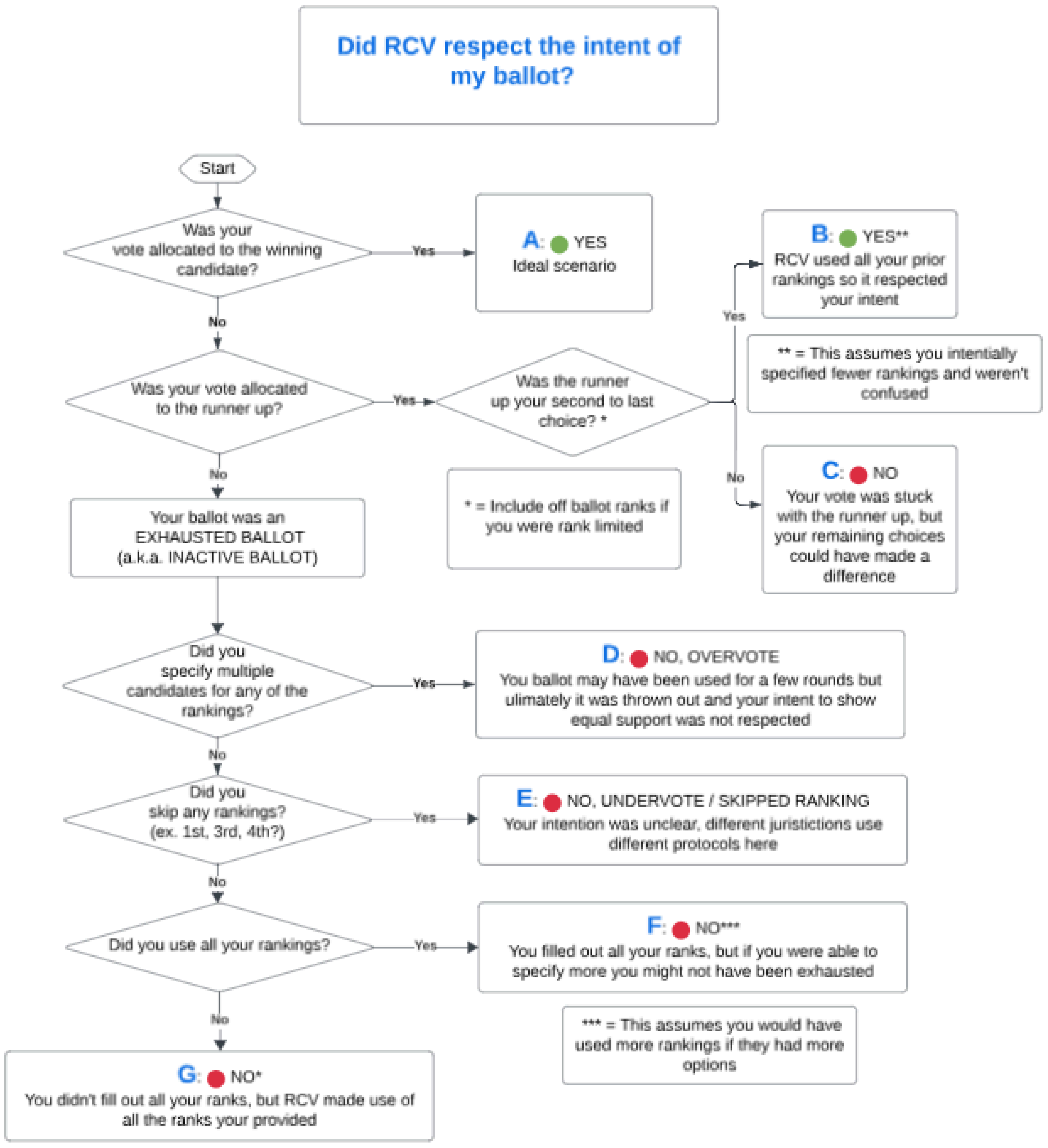

Start
Is the Ballot correct?
No
Ballot Exhaustion by "User Error" - Spoiled Ballot / Ballot Errors
Skipped Ranks
Overvotes
Undervotes
Yes
Are all candidates ranked?
No
Ballot Exhaustion by "Truncated Ballot"
Bullet Voting / Voluntary Truncation
Involuntery truncation Ranking Limit
Yes
First elimination round?
Yes
Ballot Exhaustion by Non-problematic "Regular" Exhaustion
No
Second (and subsequent) elimination rounds
transfer is possible
transfer is NOT possible
Non-exhausted Un-transferred Ballots
- Discarded Ranks (Votes / Choices)
- Wasted Votes
False Claim: "If your first choice (rank) is eliminated your next choice will be counted."

- https://lucid.app/lucidchart/f523b9cf-56b6-45dc-82a7-55a26c0fd2aa/edit?viewport_loc=-625%2C-228%2C3072%2C1565%2C0_0&invitationId=inv_27f729a9-d3b1-4734-bb03-0404b91a5f9b

Figure 2

Sara - Suggested Changes:

- Change "First Elimination Round" to "Ballot unable to transfer after 1st round?"
- If yes, go to truncated ballot section.
- If no go to Ballot unable to transfer in 2nd (and subsequent) elimination rounds with Y/N split.
- If Y: change "Ballot Exhaustion by Regular Exhaustion" to 1. go to truncated ballot section 2. "Next choice was already eliminated."
- If N: got to "Top choice loses in final round" with arrows to "Next choice was not counted." 1. go to truncated ballot section 2. "Non-exhausted Untransferred Ballots. Counting is discontinued even if winner does not have a true majority"


Did RCV respect the intent of my ballot?
Start
Was your vote allocated to the winning candidate?
Yes
A: ● YES
Ideal scenario
No
Was your vote allocated to the runner up?
Yes
Was the runner up your second to last choice? *
Yes
B: ● YES**
RCV used all your prior rankings so it respected your intent
** = This assumes you intentially specified fewer rankings and weren't confused
No
C: ● NO
Your vote was stuck with the runner up, but your remaining choices could have made a difference
* = Include off ballot ranks if you were rank limited
No
Your ballot was an EXHAUSTED BALLOT (a.k.a. INACTIVE BALLOT)
Did you specify multiple candidates for any of the rankings?
Yes
D: ● NO, OVERVOTE
You ballot may have been used for a few rounds but ulimately it was thrown out and your intent to show equal support was not respected
No
Did you skip any rankings? (ex. 1st, 3rd, 4th?)
Yes
E: ● NO, UNDERVOTE / SKIPPED RANKING
Your intention was unclear, different juristictions use different protocols here
No
Did you use all your rankings?
Yes
F: ● NO***
You filled out all your ranks, but if you were able to specify more you might not have been exhausted
*** = This assumes you would have used more rankings if they had more options
No
G: ● NO*
You didn't fill out all your ranks, but RCV made use of all the ranks your provided

NOTE from Arend: The above image is an attempt to separate all the ways your vote can be “wasted”, but it doesn’t make an attempt to add new terms.

Skipped ranks are called Undervotes by election officials.

Note that an undervote in Choose One Voting turns into a ballot that is not included in the tally while an undervote in RCV refers only to an individual ranking, so that RCV ballot may still be counted.

- https://lucid.app/lucidchart/f523b9cf-56b6-45dc-82a7-55a26c0fd2aa/edit?viewport_loc=-625%2C-228%2C3072%2C1565%2C0_0&invitationId=inv_27f729a9-d3b1-4734-bb03-0404b91a5f9b

An exhausted choice occurs when a voter ranks only candidates that are eliminated from contention. However, a distinction must be made between

- exhausted ballots in the first round of tabulation
  and
- the rest of the election merits clarification

It helps to ignore overvotes and undervotes in the first round of tabulation as Exhausted Ballots because voters could make the same mistake on a ballot in an election decided by plurality.

In other words, votes (Ranks) that are exhausted in the second and subsequent rounds of tabulation are purely a consequence of using ranked-choice voting method tabulation - these are “the problematic ballot exhaustion types”.

https://www.eac.gov/sites/default/files/glossary_files/Glossary_of_Election_Terms_EAC.pdf

Exhausted Ballot - refers to processing a ranked choice voting contest on a cast ballot, when that ballot becomes inactive and cannot be advanced in the tabulation for a contest because there are no further valid rankings on the ballot for **continuing** contest options.

Incorrect definition

What name should it be? Ballot exhaustion - type 1 or ‘non-problematic Ballot Exhaustion’

- If no candidate wins a clear majority, the one with the fewest first-place votes is eliminated, and his or her supporters’ second-place votes are counted.
- **If a supporter did not list a second choice**, that ballot is labeled “exhausted” and is thrown out.

A: This is not the fault of RCV or RCV Tabulation Algorithm - depends on the voter intent (either voter genuinely believes that only once candidate is OK or maybe lack of education).

Yes, this ballot is exhausted / eliminated from subsequent rounds - but this is not the ‘wasted vote / discarded ballot / trashed rank’.

Proponents of RCV IRV - defense:

Defense 1
In plurality, any vote not cast for the winner is “exhausted.”
So - what is the issue - the same happens in Plurality.
Response: ?

Defense 2
If you want to indicate your one favorite and stop there, just go right on doing that as before (“Plurality voting - choose one).
But if you do, don’t imagine that you’re somehow left “disenfranchised” if the top two candidates don’t include your favorite and your ballot is exhausted.
In fact, you’re left in exactly the same position as you would be under the old system – the only difference being that RCV gave you a chance to make a difference that you didn’t take.

Defense 3
https://www.rcv123.org/ranked-choice-voting-pros-cons#con8

Exhausted Choices occur when all the choices a voter has marked are eventually eliminated and their ballot has no active choices remaining.
We should note that because of inactive ballots, the "majority" 50% in RCV can refer to a majority of active ballots, and not necessarily to 50% of the original number of ballots cast.

It's true that an exhausted ballot/choice no longer makes a difference in an election. However, it's important to point out that the same thing also happens quite often in conventional elections.

Imagine three candidates in a conventional election. The polls closed at 7 pm and the first precincts reporting show the race with two candidates at 40% each, and one candidate is way behind with just 20%. The counting for the 40%/40% race will probably go long into the night, and the voters who supported the 20% candidate realize their candidate can't win, and their vote is not relevant to the ongoing count.

Whatever criticisms there are for exhausted or inactive RCV ballots, they should also be applied to the situation for conventional plurality elections we just described. In any race with more than two candidates, not every vote can matter right up until the finish line.

Response: ?

To do

Ideas for the “new term”

Do we need a new term or we can use “Exhausted Choices” (distinct from Exhausted Ballots)

First word
- Skipped
- Untransfered
- Trashed
- Discarded
- Uncounted
- Ignored
- Exhausted

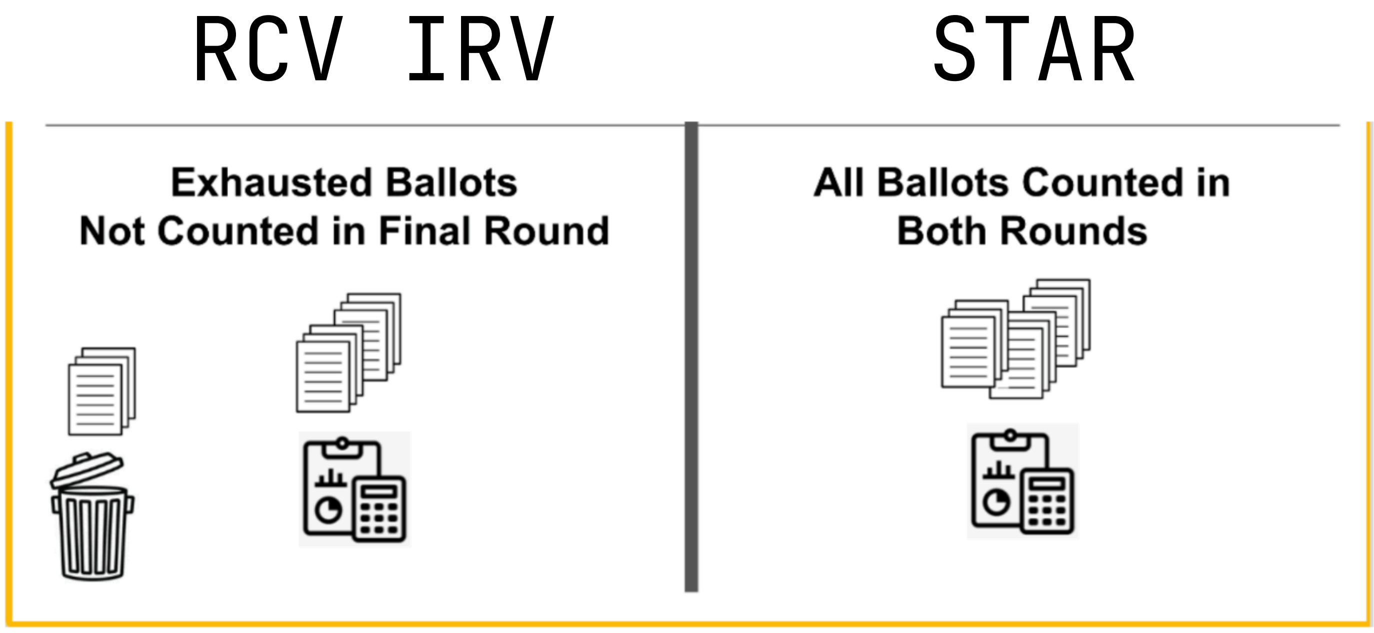
Second word
- Preferences
- Choices
- Rankings

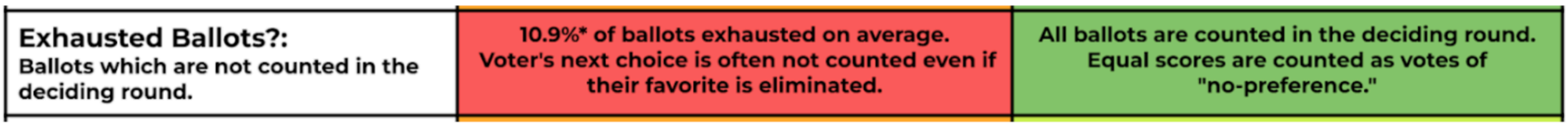
Untransfered

“Untransferred ballots” may be confusing:

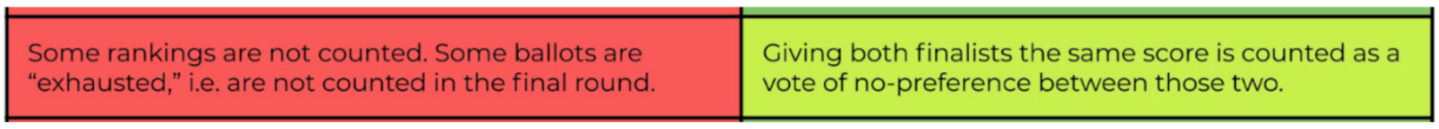
- Some ballots are partially transferred (say round 1 and round 2 - but it fails to transfer in round 3)
  https://youtu.be/yQ7Qd6O6xeM?t=896
- Are we trying to explain partial vs complete transfer (some ballots are not transferred due to user errors)

Update the graphic - create a new graphic?


RCV IRV
STAR
Exhausted Ballots Not Counted in Final Round
All Ballots Counted in Both Rounds



Exhausted Ballots?: Ballots which are not counted in the deciding round.	10.9%* of ballots exhausted on average. Voter's next choice is often not counted even if their favorite is eliminated.	All ballots are counted in the deciding round. Equal scores are counted as votes of "no-preference."



Some rankings are not counted. Some ballots are "exhausted," i.e. are not counted in the final round.	Giving both finalists the same score is counted as a vote of no-preference between those two.

How to explain - Challenges

- RCV IRV tabulation / elimination is complex
- Ballot Exhaustion is part of RCV Tabulation - elimination process (multiple rounds)
- It is hard to understand the difference between
  - Non-problematic Ballot Exhaustion
    and
  - Problematic Ballot Exhaustion
- Numerical examples would help with precision and accuracy - but this is mentally challenging / cognitive load - a lot of technical details / numbers (fine for Voting Method enthusiasts - but a general public or somewhat technical public).

https://thefga.org/research/ranked-choice-voting-a-disaster-in-disguise/
In traditional elections, every submitted ballot that follows the instructions is counted towards the result, but this isn't the case with RCV.

"Exhausted ballots" in RCV elections do not count towards the final tally. While many RCV ballots are thrown out due to voter error in following convoluted instructions, ballots that follow the instructions to the letter can also be thrown away because the voter ranked candidates who are no longer in contention.[10] As candidates are eliminated through multiple rounds of tabulation, voters have their ballots exhausted if they only ranked candidates that have been removed during successive rounds.[11]

In other words, for a voter's voice to fully count in every round of an RCV election, he must vote for all candidates on the ballot, even those he may not support.

Because of ballot exhaustion, winners of RCV races do not necessarily represent the choice of all voters who participated. RCV claims to protect majority rule, but in reality, **RCV creates an artificial majority** by eliminating the votes of the lowest-scoring candidates during successive tabulations. One study of Maine elections found that, of 98 recent RCV elections, 60 percent of RCV victors did not win by a majority of the total votes cast.[12]

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https://blogs.uofi.uis.edu/view/8598/1650413886
May not accurately reflect a real majority: In RCV elections, some ballots may become "exhausted."

Ballot exhaustion refers to the situation in RCV where a voter's ballot no longer counts towards the final result of the election because all of their ranked candidates have been eliminated, lowering the actual support for a candidate below a majority of voters.

What about the issue of ballot exhaustion? Experts expect that about 12% of ballots will be exhausted in a RCV election based on simulated RCV elections. This seems to be close on average, in the 2022 Alaska general election for their congressional seat, about 6% of ballots were exhausted. In the 2021 New York City Democratic Mayoral Primary, 15 % were exhausted. So, ballot exhaustion is a genuine problem, but the size of the problem varies depending on the election, we don't fully understand what explains this variation yet, and voters not filling out their ballots completely is a problem that also exists in our current system.

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https://fairvote.org/rcv_elections_and_runoffs_exhausted_votes_vs_exhausted_voters_in_the_bay_area/
Because "exhausted votes" is a new concept, some wonder if exhausted ballots affect who wins and loses in close races. If, for example, ten percent of ballots are exhausted, and the election margin was less than five percent, the winner may have a majority of all the non-exhausted votes, but not a majority of total votes counted in the first round. This leaves open the possibility that some other candidate was the true majority choice — and that, if voters who had their ballots exhaust were permitted to choose again, say in a runoff election among the two leading candidates, a different winner might emerge with a clear majority of votes cast in the runoff.

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https://www.honestelections.org/wp-content/uploads/2022/10/HEP-Ranked-Choice-Voting-Factsheet_2.pdf

MANUFACTURING A MAJORITY

- RCV’s signature promise is to deliver candidates that win true electoral majorities. But RCV’s version of “majority rule” is a mirage rendered by throwing out ballots and redistributing votes between candidates.
- In fact, so many ballots can be thrown out that winners sometimes do not secure a majority of the total votes cast in an election.

In the 2022 Alaska special congressional election, Democratic candidate Mary Peltola won with just 48.4% of the total votes cast.

11,222 ballots were “exhausted” after the first round of tabulation and thrown out. Peltola won 51.5% of the remaining votes.

DISENFRANCHISING VOTERS

This is not a fair argument:

- **Many voters do not rank multiple candidates in an election**, leading to their ballots being tossed out if their first-place pick is eliminated—effectively disenfranchising them.
- Ballot “exhaustion” is a euphemism for ballot erasure. RCV discounts these ballots as if the voter had never turned out in the first place.

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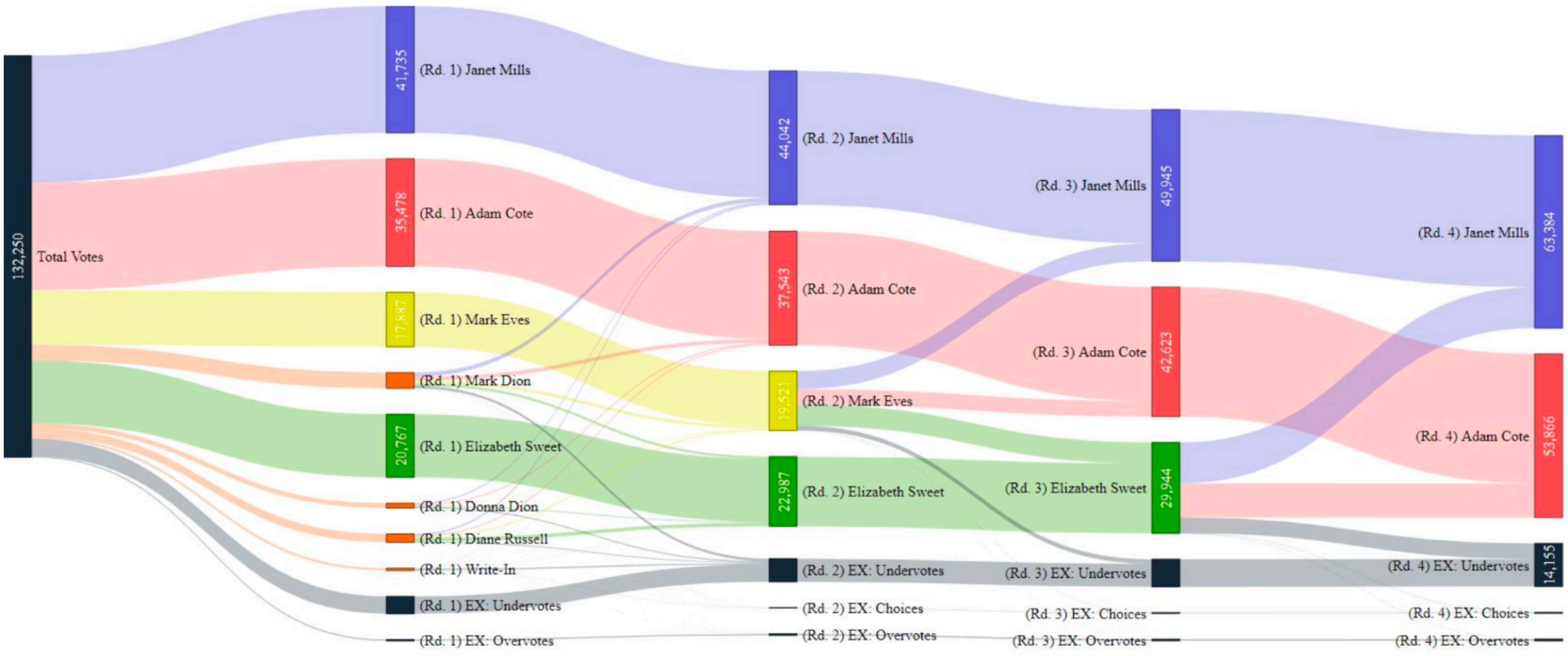
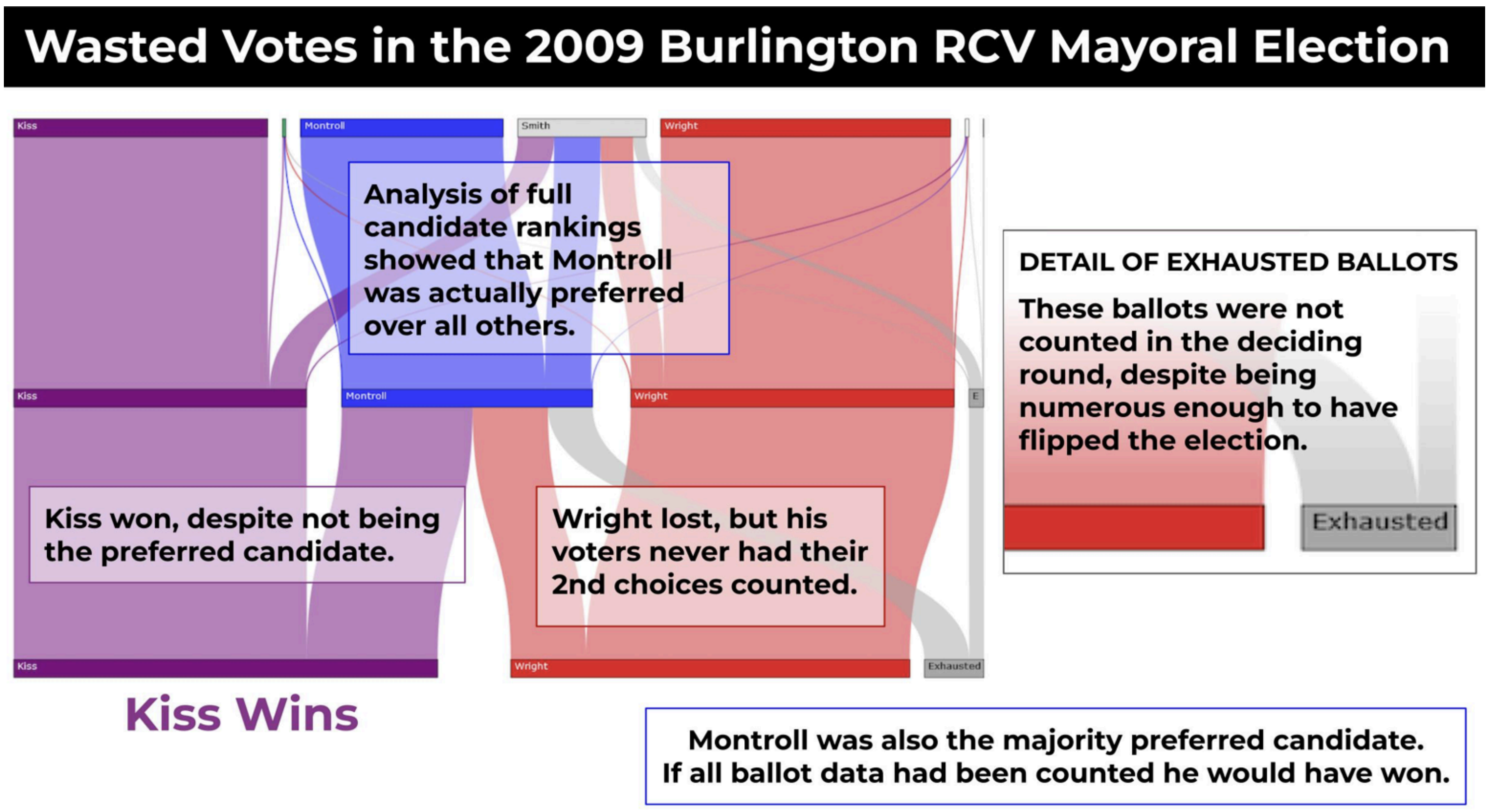


Exhausted ballots: The grey stream represents undervotes, spoiled ballots, and exhausted ballots which were not counted in the deciding round.

On average in RCV elections exhausted ballots represent just over 10% of ballots cast. In many cases (incuding here) that's enough to have flipped the election results.



Analysis of full candidate rankings showed that Montroll was actually preferred over all others.

Kiss won, despite not being the preferred candidate.

Wright lost, but his voters never had their 2nd choices counted.

DETAIL OF EXHAUSTED BALLOTS

These ballots were not counted in the deciding round, despite being numerous enough to have flipped the election.

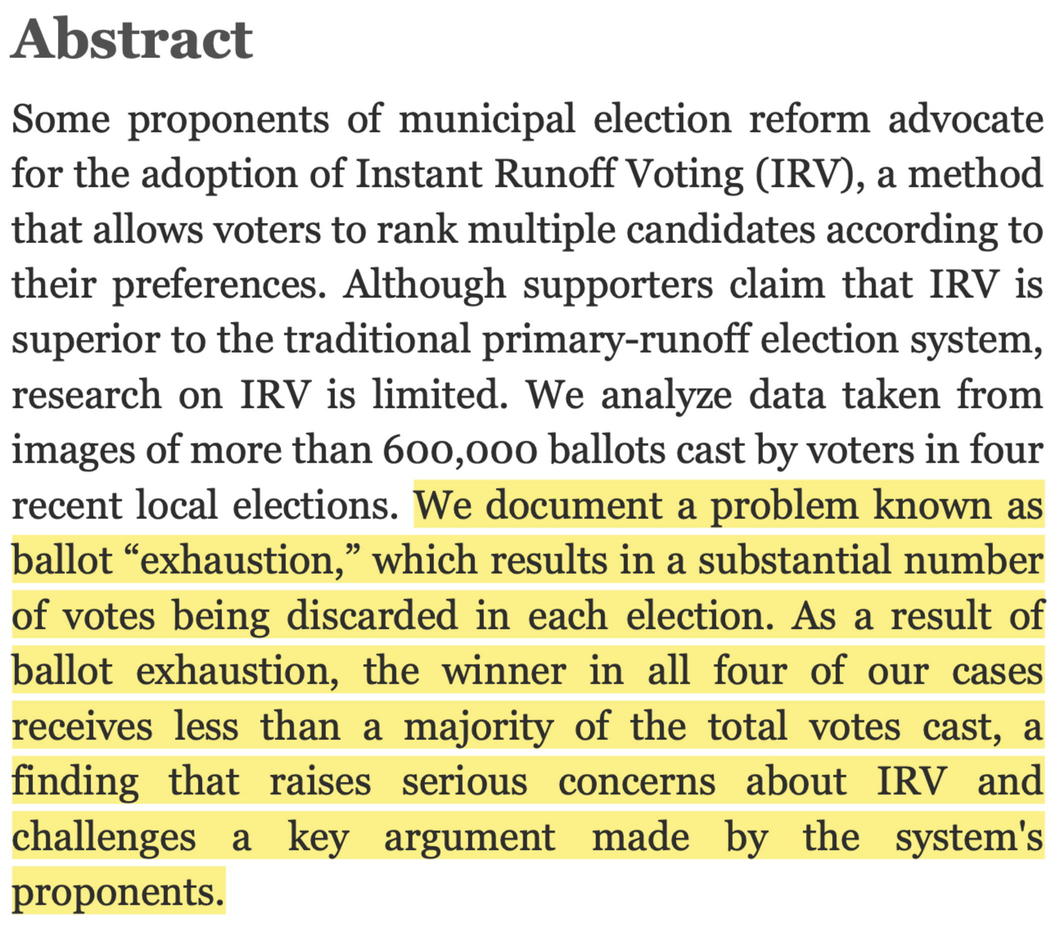
Montroll was also the majority preferred candidate. If all ballot data had been counted he would have won.

https://olis.oregonlegislature.gov/liz/2021R1/Downloads/PublicTestimonyDocument/17750

Q: Ok, but how common are these sideways outcomes in RCV?

A:

- Many RCV elections only publish the ballot data from the rankings which were actually counted, not the full data set.
- What we do know is that the more often we have competitive elections or multiple viable parties competing, the more often these system failures are likely to occur.
- Modeling shows these failures are likely to occur around 15% of the time in elections with 3 competitive candidates
- Those odds get worse the more candidates are competitive.

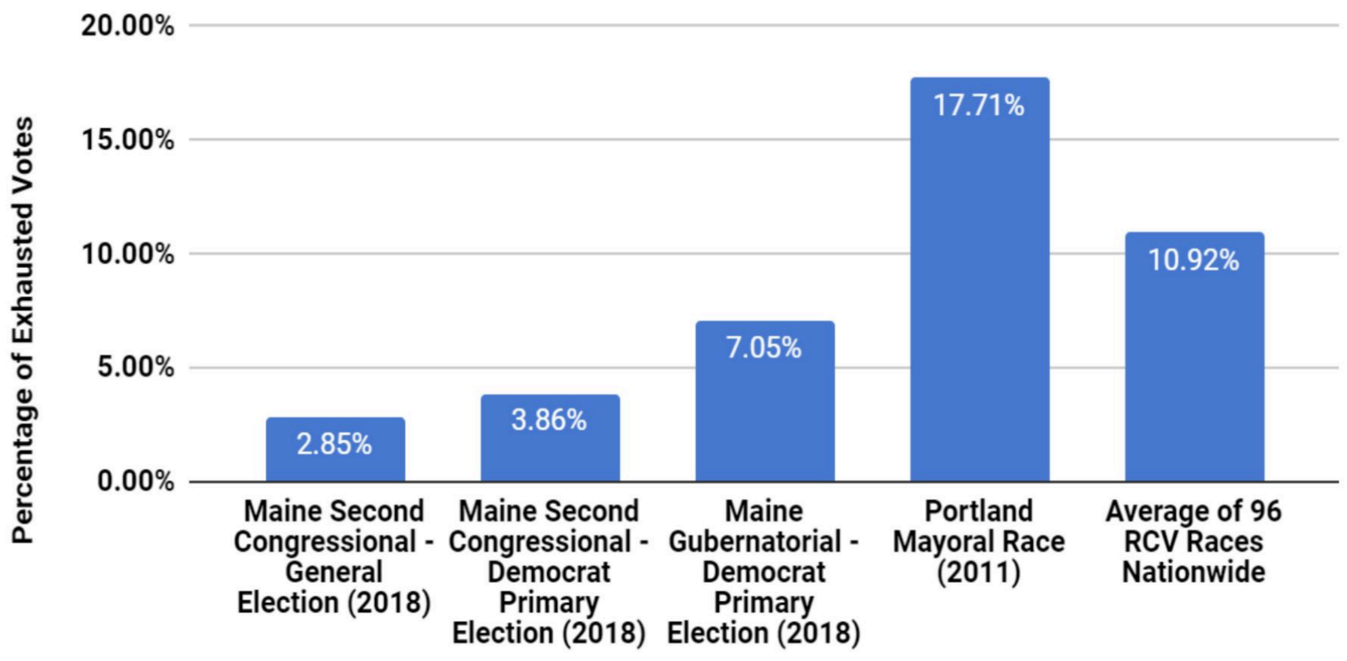


Abstract

Some proponents of municipal election reform advocate for the adoption of Instant Runoff Voting (IRV), a method that allows voters to rank multiple candidates according to their preferences. Although supporters claim that IRV is superior to the traditional primary-runoff election system, research on IRV is limited. We analyze data taken from images of more than 600,000 ballots cast by voters in four recent local elections. We document a problem known as ballot “exhaustion,” which results in a substantial number of votes being discarded in each election. As a result of ballot exhaustion, the winner in all four of our cases receives less than a majority of the total votes cast, a finding that raises serious concerns about IRV and challenges a key argument made by the system's proponents.

https://www.sciencedirect.com/science/article/abs/pii/S0261379414001395

Figure 1: Percentage of Exhausted Votes in Ranked-Choice Elections (Maine and Nationally)



Source: Maine Secretary of State, The Maine Heritage Policy Center

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https://electionlab.mit.edu/articles/unranked-choice

BALLOT EXHAUSTION

Finally, we examined how ballots were exhausted, or eliminated from counting. Ballots can become exhausted because they contain multiple blank rankings, a ranking with multiple candidates in one position, or because the **ballot’s remaining rankings are for eliminated candidates.**

Overall, 10.7 percent of ballots were eventually exhausted due to undervotes. 5,535, or 4.2 percent of all ballots cast, were completely blank.

This is lower than in some other studies, but enough to offer a good opportunity for further study. Rates for exclusion by overvote were similar to studies of RCV in other areas.

Exhaustion by candidate exhaustion is rare with so many ranking positions — only 265 ballots were exhausted this way.
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https://rankedchoiceedu.org/ballot-exhaustion
Absolute Majority & Exhausted Ballots
Ranked Choice Voting (RCV) has been promoted as a voting system that aims to achieve an "absolute majority" by ensuring that the winning candidate or option receives more than half of the total votes.

However, there are several factors that raise concerns about whether RCV truly achieves this goal and represents the choice of all participating voters.

One issue that affects the attainment of an absolute majority in RCV is the inclusion of exhausted ballots. These are ballots that do not count towards the final tally in RCV elections.

Even correctly filled-out ballots can be discarded if the ranked candidates are no longer in contention.

As candidates are eliminated through successive rounds of tabulation, voters who only ranked candidates that have been eliminated may have their ballots exhausted.

This means that for a voter's voice to be fully counted in every round of an RCV election, they must rank all candidates on the ballot, even those they may not support. The exclusion of exhausted ballots can impact the overall distribution of votes and potentially skew the outcome.

The issue of ballot exhaustion raises questions about whether RCV accurately represents the preferences of all participating voters.

While RCV claims to protect majority rule, it can create an artificial majority by eliminating the votes of the lowest-scoring candidates during successive tabulations. Elections conducted in Maine and Alaska, where RCV has been implemented, have found that a significant proportion of RCV victors did not win by a majority (50%+1) of the total votes cast. This raises doubts about the ability of RCV to truly achieve an absolute majority and accurately reflect the will of the electorate.

In addition to ballot exhaustion, errors such as duplicate votes, overvotes, and skipped ranks further impact the accuracy and inclusivity of RCV results.

These errors can occur when voters mistakenly give multiple candidates the same rank, rank the same candidate multiple times, or leave gaps in their ranking. These errors introduce complexities and potential inconsistencies in the tabulation process, which can undermine the fairness and accuracy of the election outcomes.

Considering these factors, the claim that RCV achieves an "absolute majority" may be called into question.

The inclusion of exhausted ballots, along with errors in the voting process, can affect the true representation of voter preferences and challenge the notion of achieving a clear majority in RCV elections.
It is essential to carefully evaluate the implementation and potential drawbacks of RCV to ensure that it indeed fulfills its claims of promoting majority rule and accurately reflecting the will of the voters.
Ranked-choice voting (RCV) is promoted as a system that ensures an "absolute majority" by considering voter preferences through multiple rounds of tabulation. However, the inclusion of exhausted ballots, which are not counted towards the final tally, raises concerns about whether RCV truly achieves its intended goal.
This section examines the issue of exhausted ballots in RCV and its potential impact on representation and voter participation. It also highlights specific examples from New York City and Alaska that shed light on this issue.
1. Exhausted Ballots in RCV:
Exhausted ballots refer to ballots that do not count towards the final vote tally in RCV elections. Even correctly filled-out ballots can be discarded if the ranked candidates are eliminated from contention. This exclusion of exhausted ballots can influence the distribution of votes and potentially skew the outcome of the election.
2. Representation Concerns in RCV:
The issue of ballot exhaustion raises questions about whether RCV accurately represents the preferences of all participating voters. Studies conducted in jurisdictions like Maine have found that a significant proportion of RCV victors did not win by a majority of the total votes cast. This raises doubts about the ability of RCV to achieve an absolute majority and accurately reflect the will of the electorate.
3. Errors and Inconsistencies in RCV:
Apart from exhausted ballots, errors such as duplicate votes, overvotes, and skipped ranks further impact the accuracy and inclusivity of RCV results. These errors can introduce complexities and potential inconsistencies in the tabulation process, undermining the fairness and accuracy of election outcomes.

Evaluating RCV's Impact on Representation:
The occurrence of exhausted ballots in both New York City and Alaska underscores the need for a comprehensive evaluation of RCV's impact on representation and voter participation. It is crucial to address the complexities and potential pitfalls associated with the system to ensure that every vote truly matters and contributes to the democratic process.

Exhausted ballots present a significant challenge in the implementation of ranked-choice voting. The exclusion of these ballots raises concerns about representation and the accurate reflection of voter preferences. When combined with errors and inconsistencies in the voting process, the claim of achieving an "absolute majority" through RCV becomes questionable. It is essential to thoroughly examine the impact of exhausted ballots and other challenges associated with RCV to refine the system, enhance its accuracy, and maintain trust in the democratic process.

Exhausted Ballots In Alaska
Impact of Exhausted Ballots and Voter Disenfranchisement in Alaska
The issue of exhausted ballots, where certain ballots do not contribute to the final vote tally, has been observed not only in Alaska but also in other jurisdictions that have implemented ranked-choice voting systems.

The first ranked-choice primary in New York City in 2021 serves as a notable example, with a significant proportion of "exhausted" primary ballots, raising concerns about the system's effectiveness in accurately reflecting voter preferences.

The presence of exhausted ballots highlights a potential flaw in ranked-choice voting, where a substantial portion of voters' choices may not ultimately count towards the final outcome. This raises concerns about voter disenfranchisement and the dilution of individual voices in the electoral process.

When combined with examples from Alaska, where a notable percentage of votes in key races were discarded as non-transferable, the issue of exhausted ballots becomes even more significant. It points to a broader trend of voter preferences not being adequately accounted for or accurately reflected in the final election outcomes.
The occurrence of exhausted ballots in both Alaska and New York City underscores the need for a comprehensive examination of the ranked-choice voting system and its potential impact on voter participation, comprehension, and the overall integrity of elections. It calls for a critical evaluation of the complexities and potential pitfalls associated with the system to ensure that every vote truly matters and contributes to the democratic process.
As jurisdictions continue to explore and implement ranked-choice voting, addressing the issue of exhausted ballots becomes crucial. It is important to develop solutions that minimize the occurrence of exhausted ballots and maximize the inclusion of voter preferences in the final election results. This necessitates ongoing research, public discourse, and a commitment to refining the ranked-choice voting system to enhance its accuracy, transparency, and ability to faithfully represent the will of the people.

Exhausted ballots in elections with ranked-choice voting have the potential to silence voters and undermine the principle of majority rule. It is essential to recognize this impact and strive for a voting system that truly represents the choice of all voters who participate, ensuring that their voices are not disregarded or invalidated during the tabulation process.
Other Findings on Exhausted Ballots and Majority Winner Using Rank Choice Voting
"Too often, proponents of ballot initiatives advance lofty claims to win support at the ballot box."
"In examining 96 ranked-choice voting races from across the country where additional rounds of tabulation were necessary to declare a winner, The Maine Heritage Policy Center concludes that the eventual winner failed to receive a true majority 61% of the time.'
"the claim that ranked-choice voting always provides a majority winner ... is false and deserves further scrutiny from voters."
"While candidates sometimes do receive a majority of the total votes cast, a winner is often declared only after a large number of exhausted ballots have been removed from the final denominator."

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https://rankedchoiceedu.org/why-rcv-does-not-work
Why Ranked Choice Voting Does Not Work

Using Ranked-choice voting, voters mark their ballots in order of preference – 1st choice, 2nd choice, 3rd choice, and so on. (Some voters don't vote for a 2nd, 3rd, or 4th choice, which disenfranchises and "Exhausts" their votes).

When electing a single candidate, first choices are tallied. If a candidate wins a majority among the first-choice votes, that candidate is the winner. (A candidate needs to receive 51% of the total votes).

If not, the candidate with the fewest first-choice votes is eliminated. (Voters who voted for this candidate have their votes "Exhausted").

The second choices from those ballots are then added to the remaining candidates. (Minus and Exhausted Ballots). This process continues until one candidate receives a majority of the final votes. (Exhausting voters votes and tabulating votes on the remaining ballots)

Rates of BE

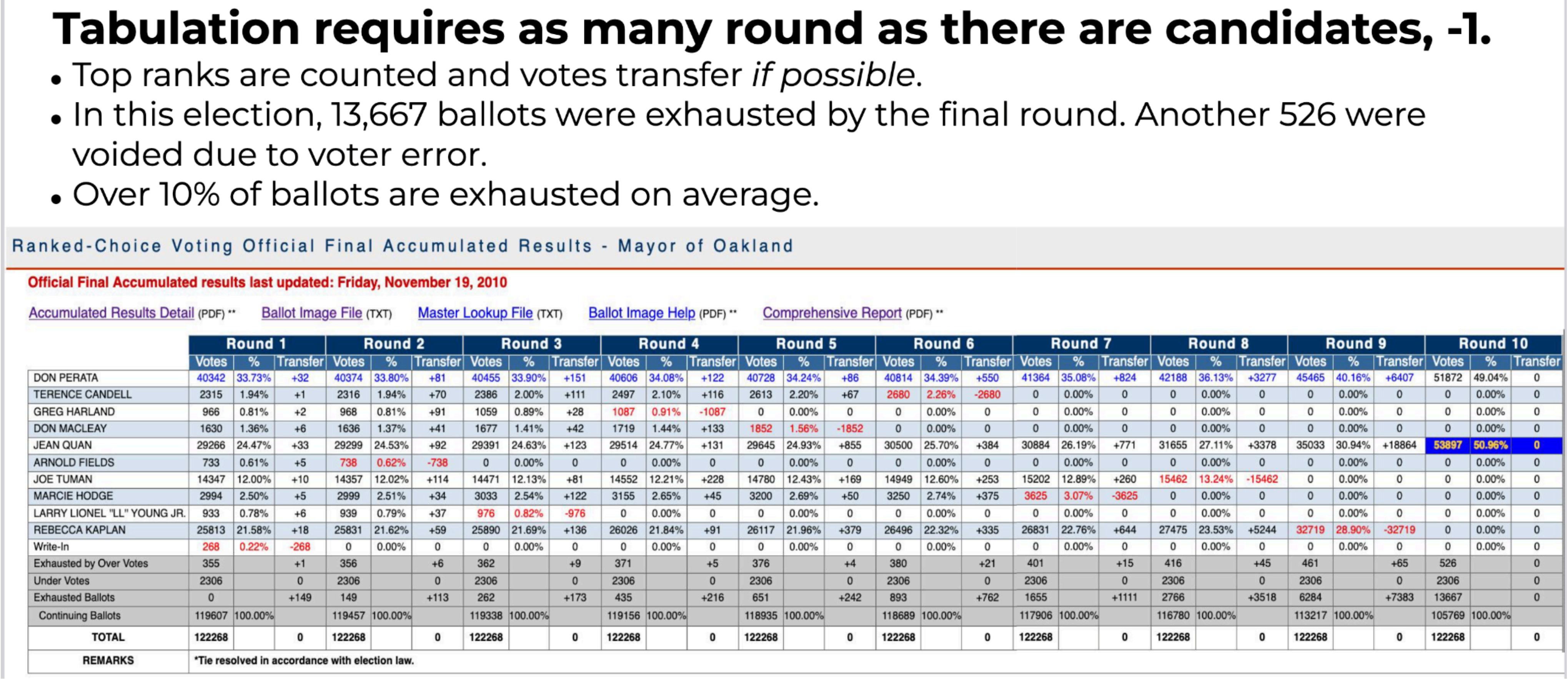
A 23 percent ballot exhaustion rate would be quite high, but it would not be without precedent.

In the 2011 San Francisco mayoral race, 27 percent of ballots did not rank either of the two candidates who reached the final round.

And on average, 12 percent of ballots were exhausted in the three ranked-choice special elections for City Council held this year in New York City.

Even a smaller percentage of exhausted ballots can be decisive in a close race.

Confusion and Lack of Transparency



Tabulation requires as many round as there are candidates, -1.

- Top ranks are counted and votes transfer *if possible*.
- In this election, 13,667 ballots were exhausted by the final round. Another 526 were voided due to voter error.
- Over 10% of ballots are exhausted on average.

Ranked-Choice Voting Official Final Accumulated Results - Mayor of Oakland

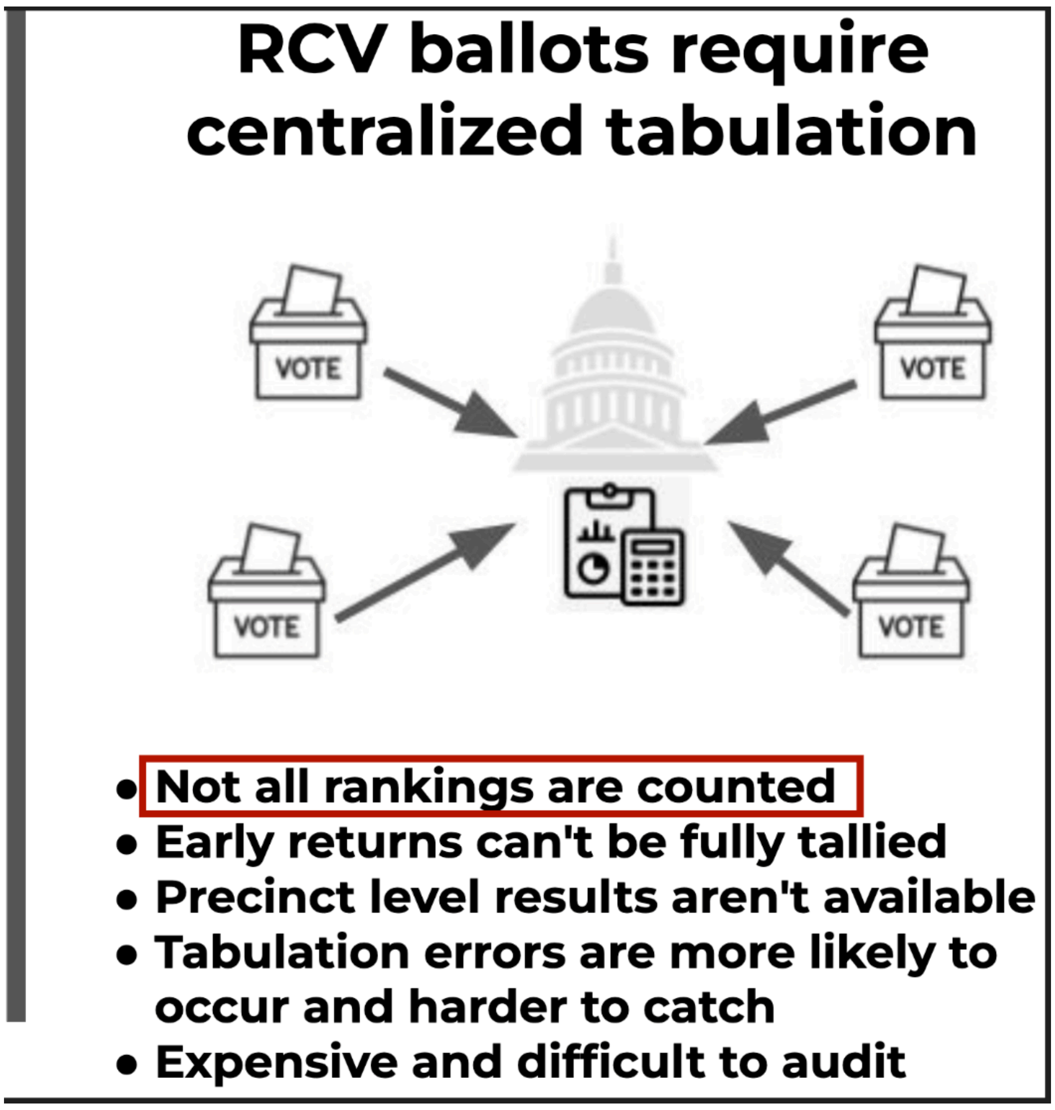
Official Final Accumulated results last updated: Friday, November 19, 2010

Accumulated Results Detail (PDF) ** Ballot Image File (TXT) Master Lookup File (TXT) Ballot Image Help (PDF) ** Comprehensive Report (PDF) **

	Round 1			Round 2			Round 3			Round 4			Round 5		
	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer
DON PERATA	40342	33.73%	+32	40374	33.80%	+81	40455	33.90%	+151	40606	34.08%	+122	40728	34.24%	+86
TERENCE CANDELL	2315	1.94%	+1	2316	1.94%	+70	2386	2.00%	+111	2497	2.10%	+116	2613	2.20%	+67
GREG HARLAND	966	0.81%	+2	968	0.81%	+91	1059	0.89%	+28	1087	0.91%	-1087	0	0.00%	0
DON MACLEAY	1630	1.36%	+6	1636	1.37%	+41	1677	1.41%	+42	1719	1.44%	+133	1852	1.56%	-1852
JEAN QUAN	29266	24.47%	+33	29299	24.53%	+92	29391	24.63%	+123	29514	24.77%	+131	29645	24.93%	+855
ARNOLD FIELDS	733	0.61%	+5	738	0.62%	-738	0	0.00%	0	0	0.00%	0	0	0.00%	0
JOE TUMAN	14347	12.00%	+10	14357	12.02%	+114	14471	12.13%	+81	14552	12.21%	+228	14780	12.43%	+169
MARCIE HODGE	2994	2.50%	+5	2999	2.51%	+34	3033	2.54%	+122	3155	2.65%	+45	3200	2.69%	+50
LARRY LIONEL "LL" YOUNG JR.	933	0.78%	+6	939	0.79%	+37	976	0.82%	-976	0	0.00%	0	0	0.00%	0
REBECCA KAPLAN	25813	21.58%	+18	25831	21.62%	+59	25890	21.69%	+136	26026	21.84%	+91	26117	21.96%	+379
Write-In	268	0.22%	-268	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
Exhausted by Over Votes	355		+1	356		+6	362		+9	371		+5	376		+4
Under Votes	2306		0	2306		0	2306		0	2306		0	2306		0
Exhausted Ballots	0		+149	149		+113	262		+173	435		+216	651		+242
Continuing Ballots	119607	100.00%		119457	100.00%		119338	100.00%		119156	100.00%		118935	100.00%	
TOTAL	**122268**		**0**	**122268**		**0**	**122268**		**0**	**122268**		**0**	**122268**		**0**
REMARKS	***Tie resolved in accordance with election law.**														

	Round 6			Round 7			Round 8			Round 9			Round 10		
	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer	Votes	%	Transfer
DON PERATA	40814	34.39%	+550	41364	35.08%	+824	42188	36.13%	+3277	45465	40.16%	+6407	51872	49.04%	0
TERENCE CANDELL	2680	2.26%	-2680	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
GREG HARLAND	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
DON MACLEAY	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
JEAN QUAN	30500	25.70%	+384	30884	26.19%	+771	31655	27.11%	+3378	35033	30.94%	+18864	53897	50.96%	0
ARNOLD FIELDS	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
JOE TUMAN	14949	12.60%	+253	15202	12.89%	+260	15462	13.24%	-15462	0	0.00%	0	0	0.00%	0
MARCIE HODGE	3250	2.74%	+375	3625	3.07%	-3625	0	0.00%	0	0	0.00%	0	0	0.00%	0
LARRY LIONEL "LL" YOUNG JR.	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
REBECCA KAPLAN	26496	22.32%	+335	26831	22.76%	+644	27475	23.53%	+5244	32719	28.90%	-32719	0	0.00%	0
Write-In	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0
Exhausted by Over Votes	380		+21	401		+15	416		+45	461		+65	526		0
Under Votes	2306		0	2306		0	2306		0	2306		0	2306		0
Exhausted Ballots	893		+762	1655		+1111	2766		+3518	6284		+7383	13667		0
Continuing Ballots	118689	100.00%		117906	100.00%		116780	100.00%		113217	100.00%		105769	100.00%	
TOTAL	**122268**		**0**	**122268**		**0**	**122268**		**0**	**122268**		**0**	**122268**		**0**

RCV IRV results are confusing and not transparent.
Additionally, RCV ballots require Central Tabulation (security / risk of single point of failure)



RCV ballots require centralized tabulation

VOTE
VOTE
VOTE
VOTE

- Not all rankings are counted
- Early returns can't be fully tallied
- Precinct level results aren't available
- Tabulation errors are more likely to occur and harder to catch
- Expensive and difficult to audit

Questions

What is the most effective way to explain this topic?
This is a complex topic. Audience must already understand the RCV IRV tabulation.

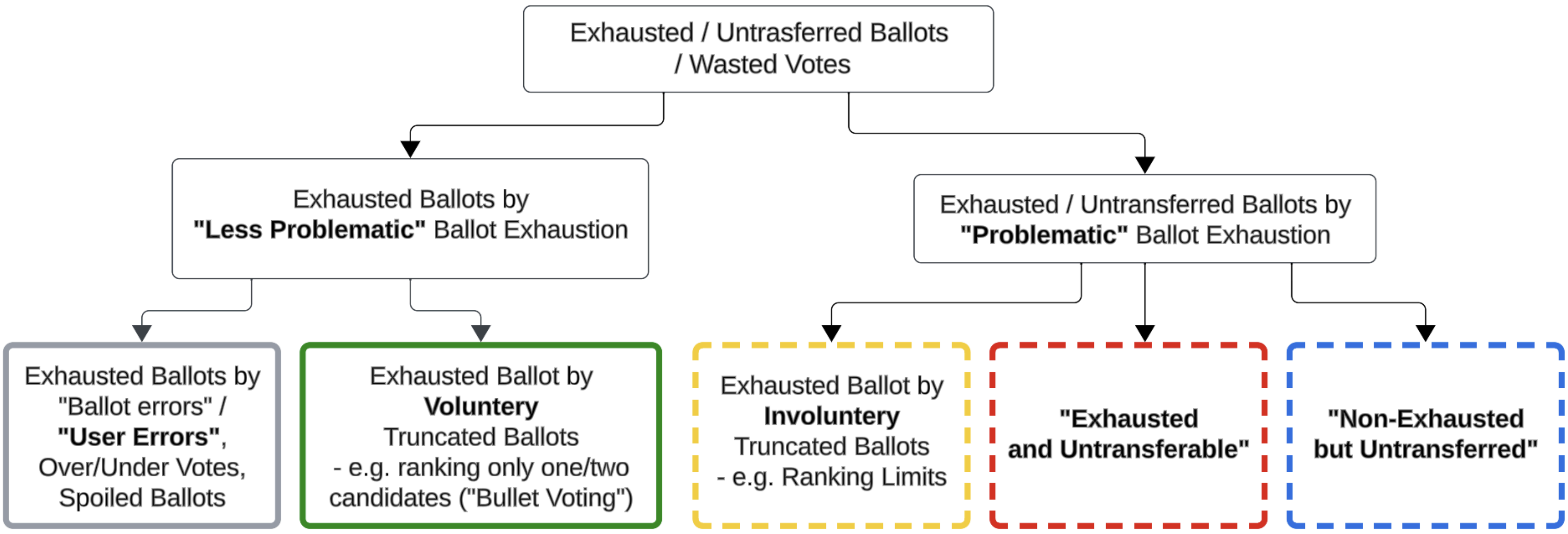
Structure presentation on at least two levels:
General audience:
- Somebody who does not understand RCV IRV well
- Somebody is new to voting / wants simple language

Voting enthusiast:
- What is the appropriate level here?
- Explaining the confusing aspects of RCV IRV, how does the tabulation and elimination work?
  RCV IRV tabulation is confusing and lacks transparency

Technical / professional level:
- Numerical examples - for each type of Ballot Exhaustion
- What else would be different on this level?

We need 4 examples - green, yellow, red and blue box

https://arxiv.org/pdf/2301.12075.pdf


Exhausted / Untrasferred Ballots / Wasted Votes
Exhausted Ballots by "Less Problematic" Ballot Exhaustion
Exhausted / Untransferred Ballots by "Problematic" Ballot Exhaustion
Exhausted Ballots by "Ballot errors" / "User Errors", Over/Under Votes, Spoiled Ballots
Exhausted Ballot by Voluntery Truncated Ballots - e.g. ranking only one/two candidates ("Bullet Voting")
Exhausted Ballot by Involuntery Truncated Ballots - e.g. Ranking Limits
"Exhausted and Untransferable"
"Non-Exhausted but Untransferred"

https://lucid.app/lucidchart/f523b9cf-56b6-45dc-82a7-55a26c0fd2aa/edit?viewport_loc=-625%2C-228%2C3072%2C1565%2C0_0&invitationId=inv_27f729a9-d3b1-4734-bb03-0404b91a5f9b

Partial Ballots = “Voluntarily Truncated Ballots”.
Unfortunately the article above is not providing the number of Ballots/Ranks for ‘red box’, ‘blue box’.

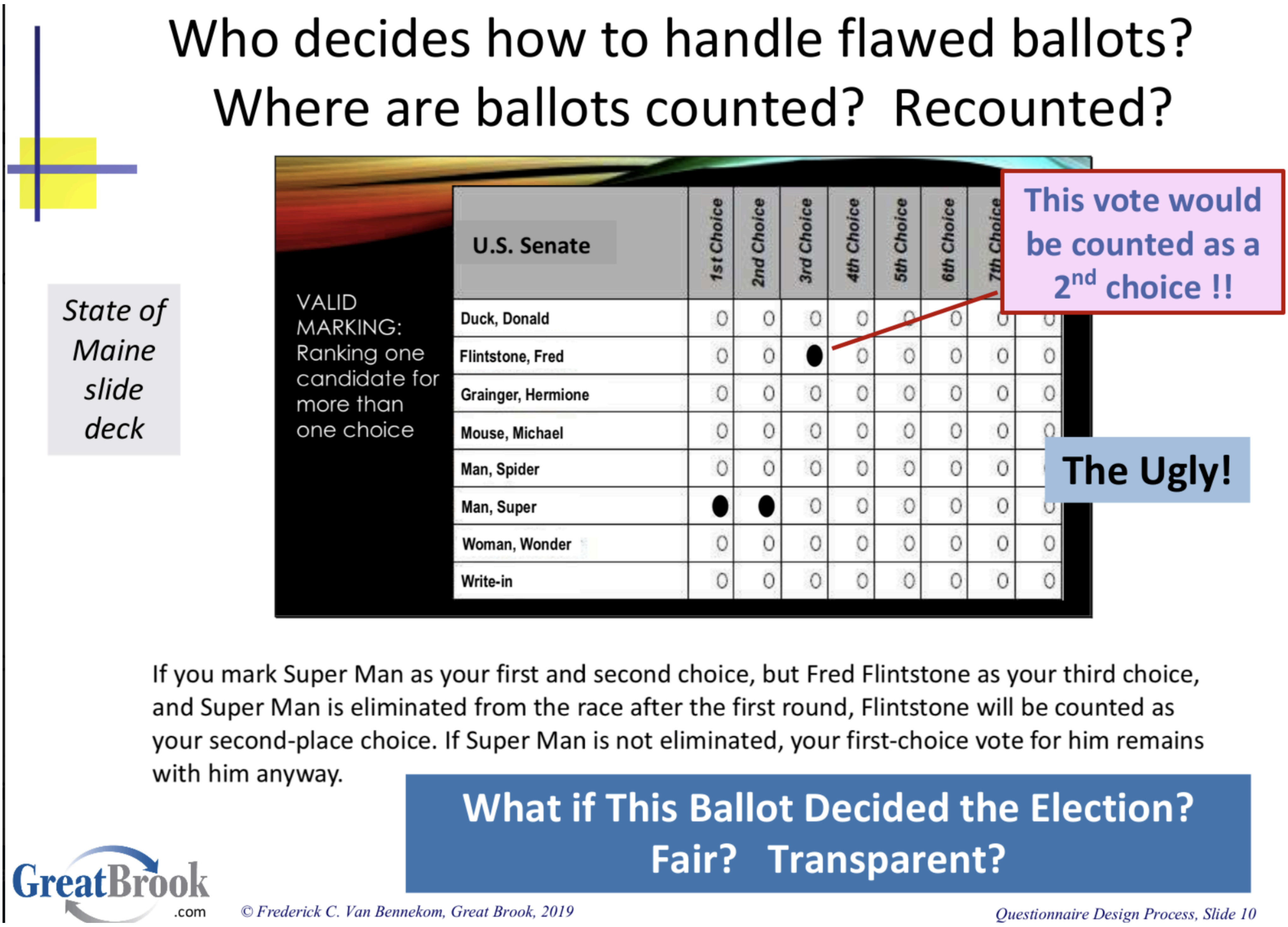
We need three small, contrived, illustrative elections to demonstrate each ‘problematic’ box separately (avoid ‘Less Problematic’ Exhausted Ballots - this would be a distraction from the perspective of this article)).
Assumptions:

- ranking limit 3 (or 5 if easier to re-create)
- number of candidates 5 (or less if easier)
- all voters correctly rank all the ballots (no spoilers, no bullet voting)
- all voters rank all ranks within Ranking Limit (3 or 5)

I asked for help:

- https://www.votingtheory.org/forum/topic/427/problematic-ballot-exhaustion-examples-rcv-irv

Keep it? Reuse it



Who decides how to handle flawed ballots?
Where are ballots counted? Recounted?

State of Maine slide deck

VALID MARKING: Ranking one candidate for more than one choice

U.S. Senate	1st Choice	2nd Choice	3rd Choice	4th Choice	5th Choice	6th Choice	7th Choice	
Duck, Donald	○	○	○	○	○	○	○	○
Flintstone, Fred	○	○	●	○	○	○	○	○
Grainger, Hermione	○	○	○	○	○	○	○	○
Mouse, Michael	○	○	○	○	○	○	○	○
Man, Spider	○	○	○	○	○	○	○	○
Man, Super	●	●	○	○	○	○	○	○
Woman, Wonder	○	○	○	○	○	○	○	○
Write-in	○	○	○	○	○	○	○	○

This vote would be counted as a 2nd choice !!

The Ugly!

If you mark Super Man as your first and second choice, but Fred Flintstone as your third choice, and Super Man is eliminated from the race after the first round, Flintstone will be counted as your second-place choice. If Super Man is not eliminated, your first-choice vote for him remains with him anyway.

What if This Ballot Decided the Election?
Fair? Transparent?

GreatBrook .com

© Frederick C. Van Bennekom, Great Brook, 2019

Questionnaire Design Process, Slide 10

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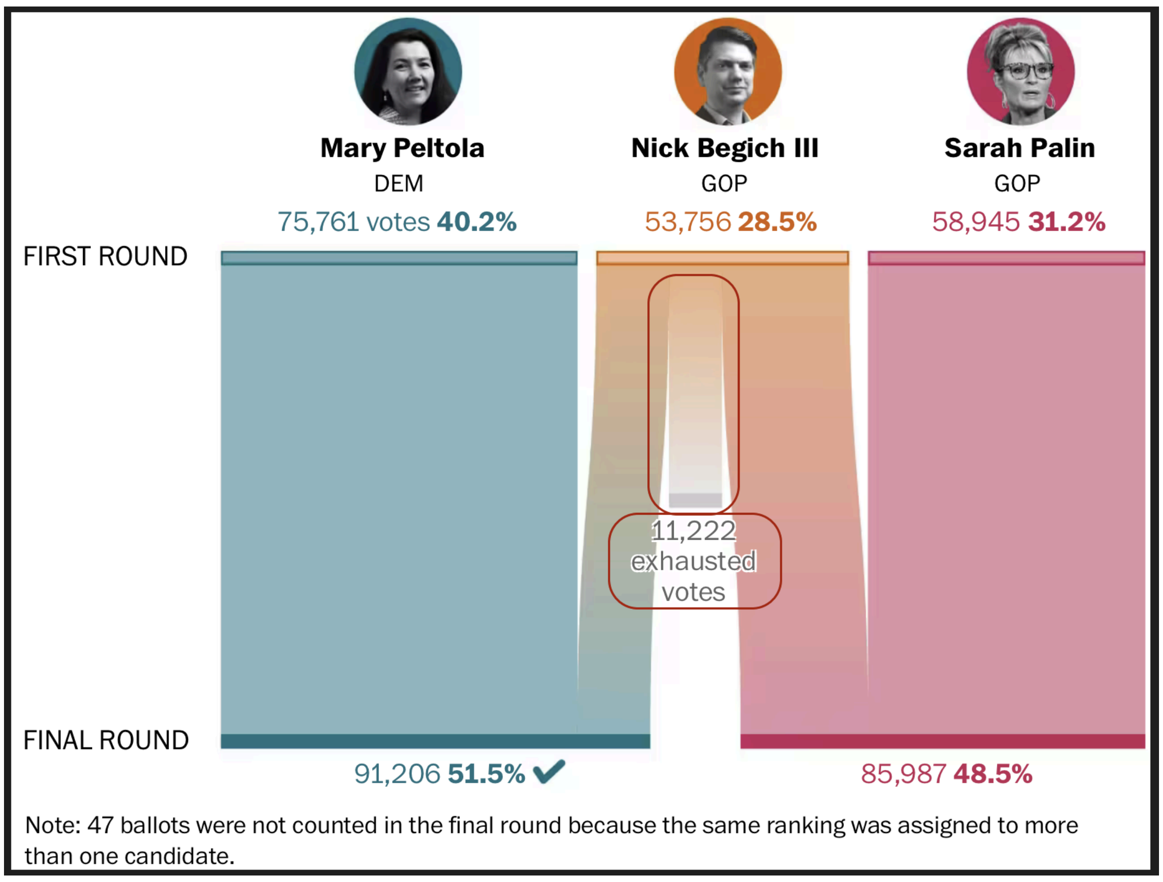

Note: 47 ballots were not counted in the final round because the same ranking was assigned to more than one candidate.

https://www.washingtonpost.com/elections/2022/08/31/ranked-choice-totals-alaska-peltola/

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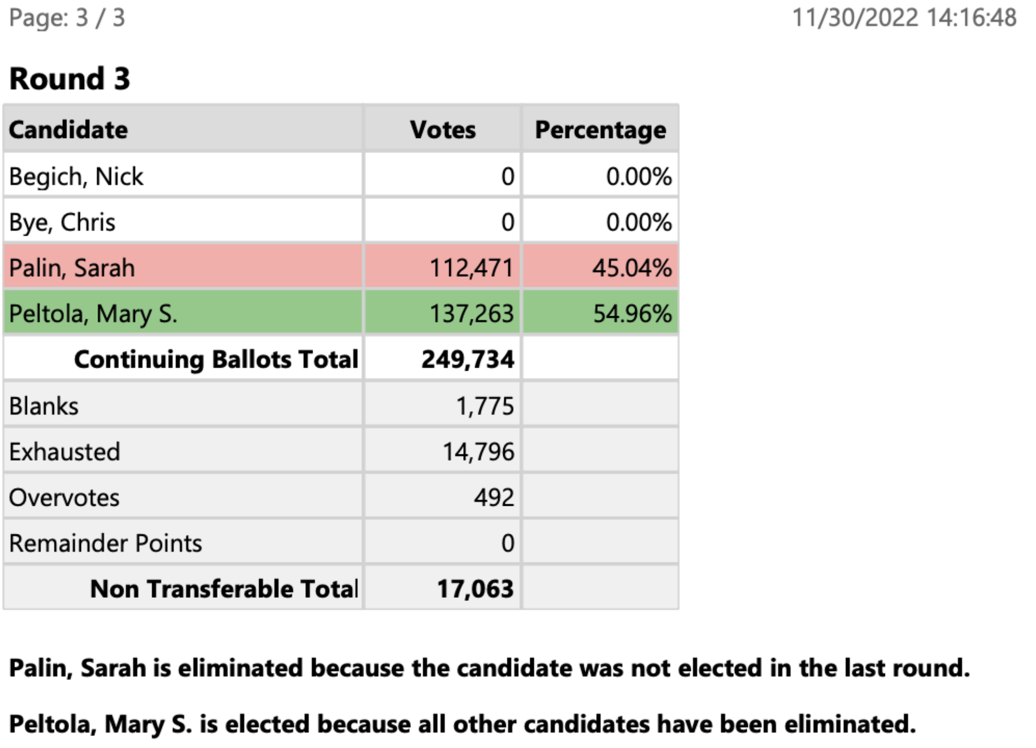

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Round 3

Candidate	Votes	Percentage
Begich, Nick	0	0.00%
Bye, Chris	0	0.00%
Palin, Sarah	112,471	45.04%
Peltola, Mary S.	137,263	54.96%
Continuing Ballots Total	**249,734**	
Blanks	1,775	
Exhausted	14,796	
Overvotes	492	
Remainder Points	0	
Non Transferable Total	**17,063**	

Palin, Sarah is eliminated because the candidate was not elected in the last round.

Peltola, Mary S. is elected because all other candidates have been eliminated.

https://www.elections.alaska.gov/results/22GENR/US%20REP.pdf

=

- Proponents of RCV IRV avoid talking about these problematic Exhausted Ballots since it is exposing important weaknesses of RCV IRV - ‘Wasted Ballots’ Wasted Ballots / Wasted Votes - RCV IRV , producing a False Majority and the need for Central Tabulation
- Lack of clarity - lack of transparency
  RCV IRV tabulation is confusing and lacks transparency
- Voters are confused and angry (often RCV IRV is repealed) and voter’s trust in the electoral reform is undermined
- RCV IRV is being oversold under the false claims - in this case - “If your first choice is eliminated your next choice will be counted”
  - RCV False Claims2
  - RCV False Claims1

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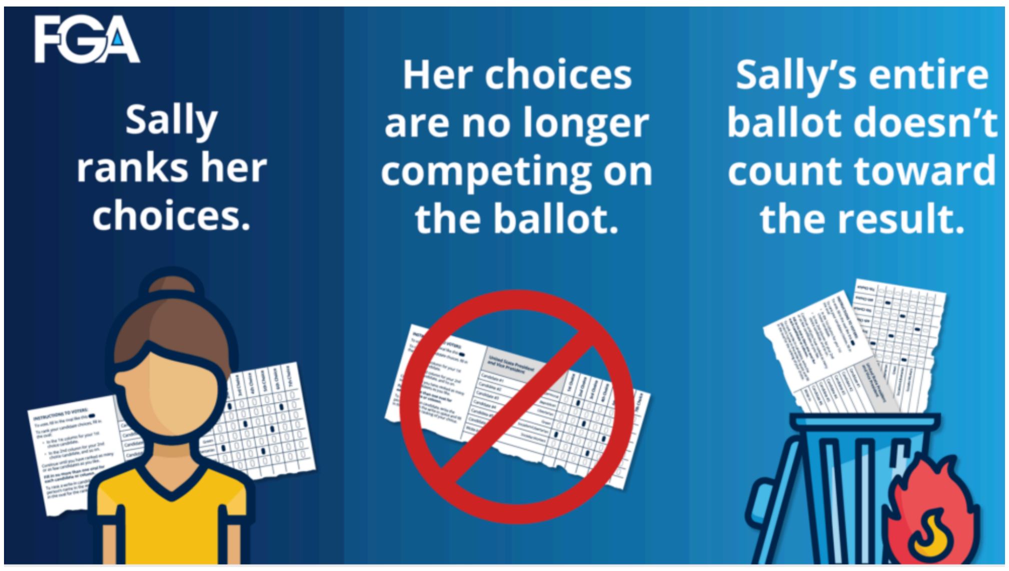
FGA
Sally ranks her choices.
Her choices are no longer competing on the ballot.
Sally’s entire ballot doesn’t count toward the result.

https://thefga.org/ranked-choice-voting-is-a-disaster/

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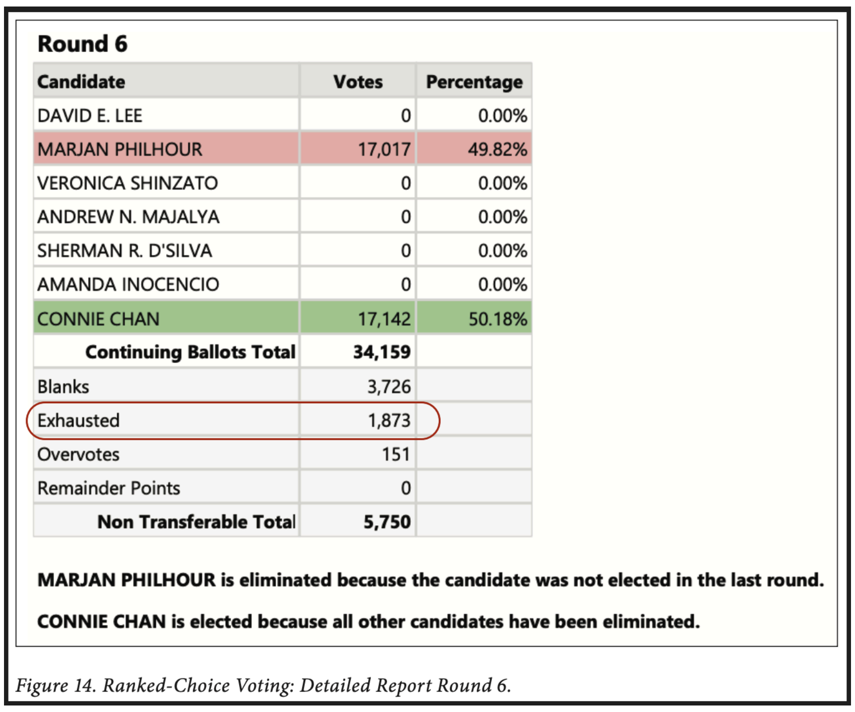


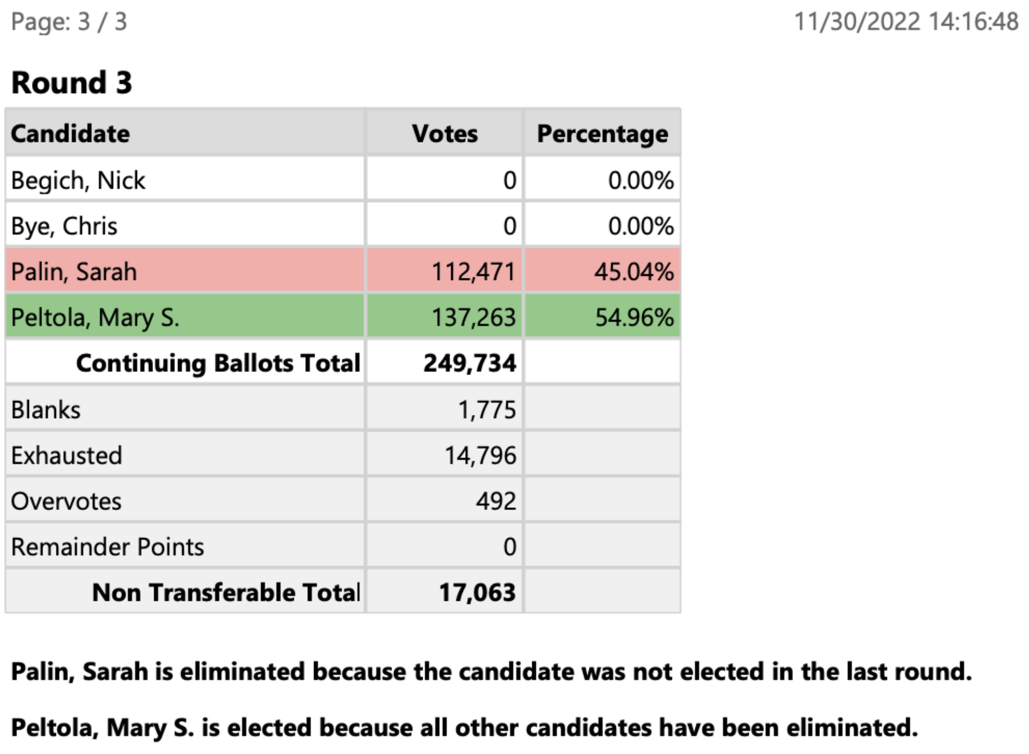
Round 6

Candidate	Votes	Percentage
DAVID E. LEE	0	0.00%
MARJAN PHILHOUR	17,017	49.82%
VERONICA SHINZATO	0	0.00%
ANDREW N. MAJALYA	0	0.00%
SHERMAN R. D'SILVA	0	0.00%
AMANDA INOCENCIO	0	0.00%
CONNIE CHAN	17,142	50.18%
Continuing Ballots Total	**34,159**	
Blanks	3,726	
Exhausted	1,873	
Overvotes	151	
Remainder Points	0	
Non Transferable Total	**5,750**	

MARJAN PHILHOUR is eliminated because the candidate was not elected in the last round.

CONNIE CHAN is elected because all other candidates have been eliminated.

Figure 14. Ranked-Choice Voting: Detailed Report Round 6.



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Round 3

Candidate	Votes	Percentage
Begich, Nick	0	0.00%
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Blanks	1,775	
Exhausted	14,796	
Overvotes	492	
Remainder Points	0	
Non Transferable Total	**17,063**	

Palin, Sarah is eliminated because the candidate was not elected in the last round.

Peltola, Mary S. is elected because all other candidates have been eliminated.

https://drive.google.com/file/d/1e7Vt31QpVQz--fqjVtnho03v29ODKTGe/view

`Two first ranks skipped ("Blanks") - wasted ballot`

=

you're recommending the "Round robin" voting system, which I have always called the Copeland system -- the candidate who wins the most races, wins. I think it's misleading to describe the method that way, since that rule produces ties in *most* elections which have no Condorcet winner. Specifically, if there is a Condorcet paradox with 3 candidates, and none of the two-way races are tied, then the number of losses has to be 1, 1, 1, so there is a Copeland tie. If there are 4 candidates, no Condorcet winner, and no two-way ties, the number of losses has to be either 3, 1, 1, 1, or 2, 2, 1, 1, so again there will be a Copeland tie. On page 21 of https://arxiv.org/ftp/arxiv/papers/1606/1606.04371.pdf , I report the results of a simulation which counted the number of ties for any number of candidates up to 10, again assuming no Condorcet winner and no ties in the two-way races. In 10,000 trials for each number of candidates, there were over 5000 ties for each number of candidates from 5 to 10. I see that Borda is your method for breaking ties. Thus it's more accurate to say that you're recommending Borda than recommending Copeland or "ranked robin." But my paper at https://arxiv.org/abs/1807.01366 found Borda to be highly inferior to minimax, and Borda isn't Condorcet-compliant.

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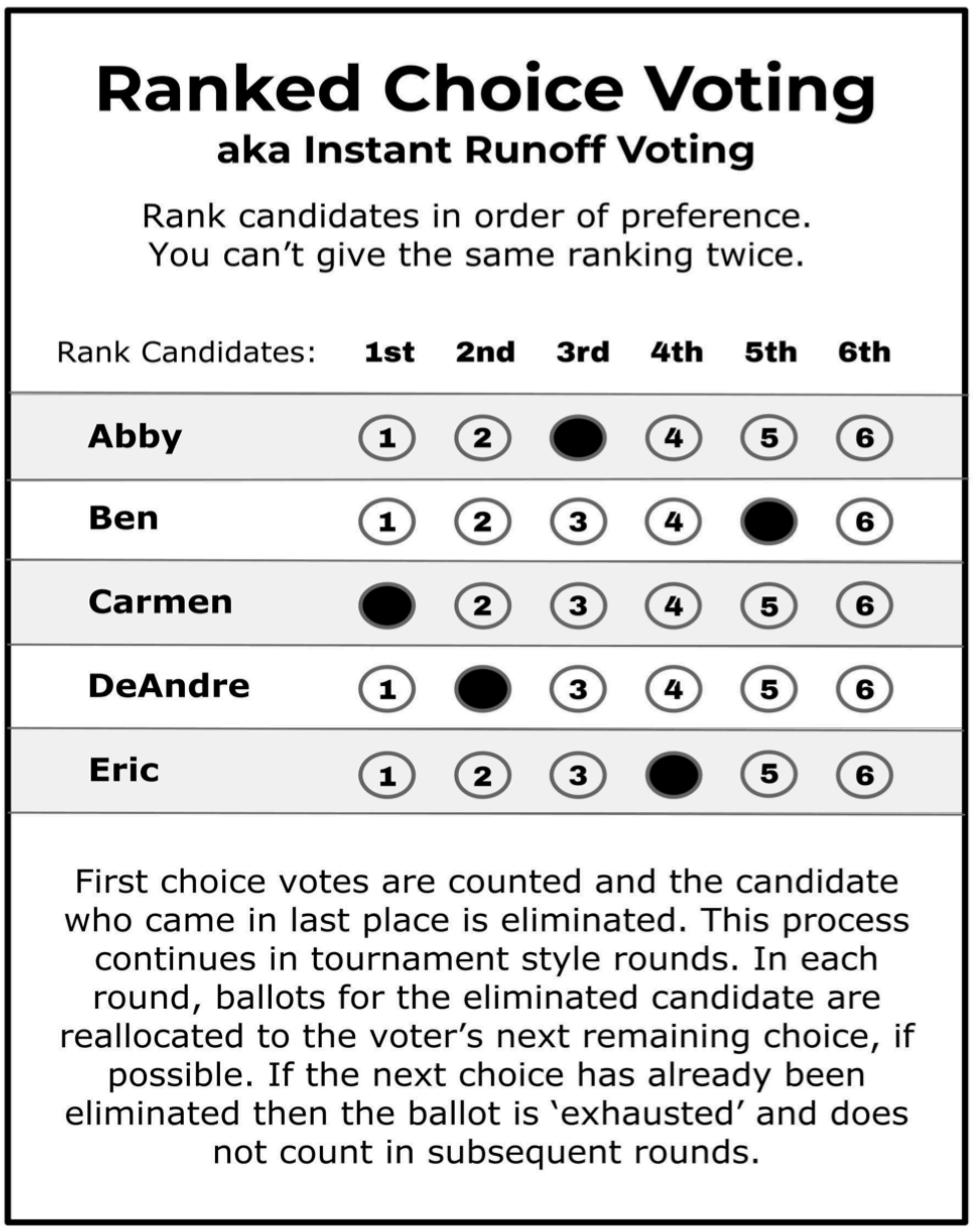
What does it mean?

- https://fairvote.org/how_ranked_choice_voting_survives_the_one_person_one_vote_challenge/

"...Voters aren't casting a ballot for more than one candidate. They are expressing their preferences and only their choice in the final round of tabulation counts toward the results. ..."

RCV Ballot example



Ranked Choice Voting

aka Instant Runoff Voting

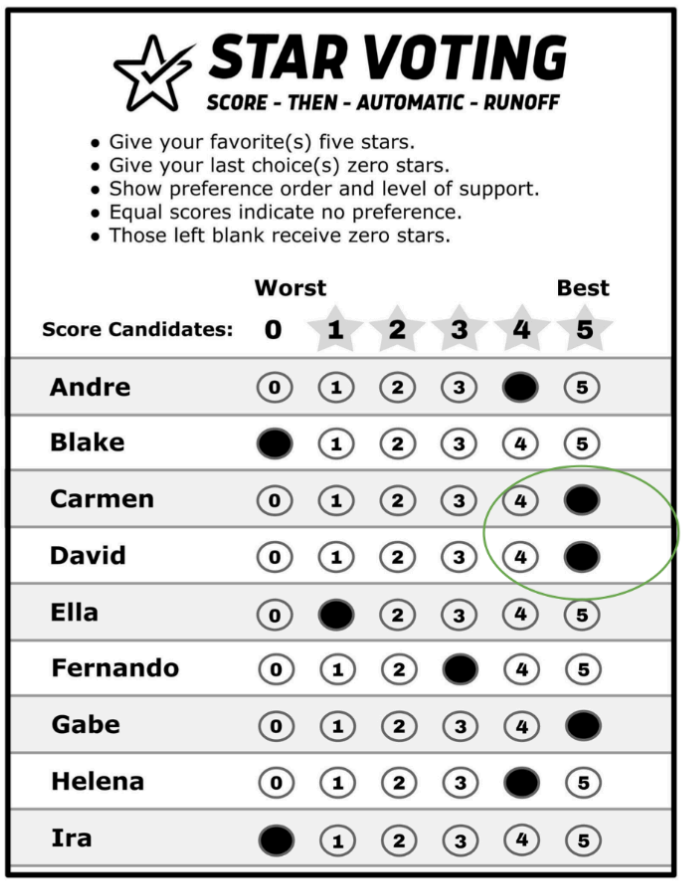
Rank candidates in order of preference.
You can't give the same ranking twice.

Rank Candidates:	1st	2nd	3rd	4th	5th	6th
Abby	①	②	●	④	⑤	⑥
Ben	①	②	③	④	●	⑥
Carmen	●	②	③	④	⑤	⑥
DeAndre	①	●	③	④	⑤	⑥
Eric	①	②	③	●	⑤	⑥

First choice votes are counted and the candidate who came in last place is eliminated. This process continues in tournament style rounds. In each round, ballots for the eliminated candidate are reallocated to the voter's next remaining choice, if possible. If the next choice has already been eliminated then the ballot is 'exhausted' and does not count in subsequent rounds.

STAR Voting Ballot example - “no-preference” votes in the STAR runoff

- With STAR, voters can score as many or as few candidates as they want because ***equal scores are allowed.***
- Allowing voters to give equal scores in STAR helps **prevent spoiled ballots,** and it's also key for *eliminating vote-splitting* between similar candidates and **maintaining election accuracy in larger fields of candidates**.
- Ballots counted as no-preference in the runoff ***are counted*** in both the scoring round and the runoff, and they **do make a difference** to help advance these voter's candidates who were more preferred.



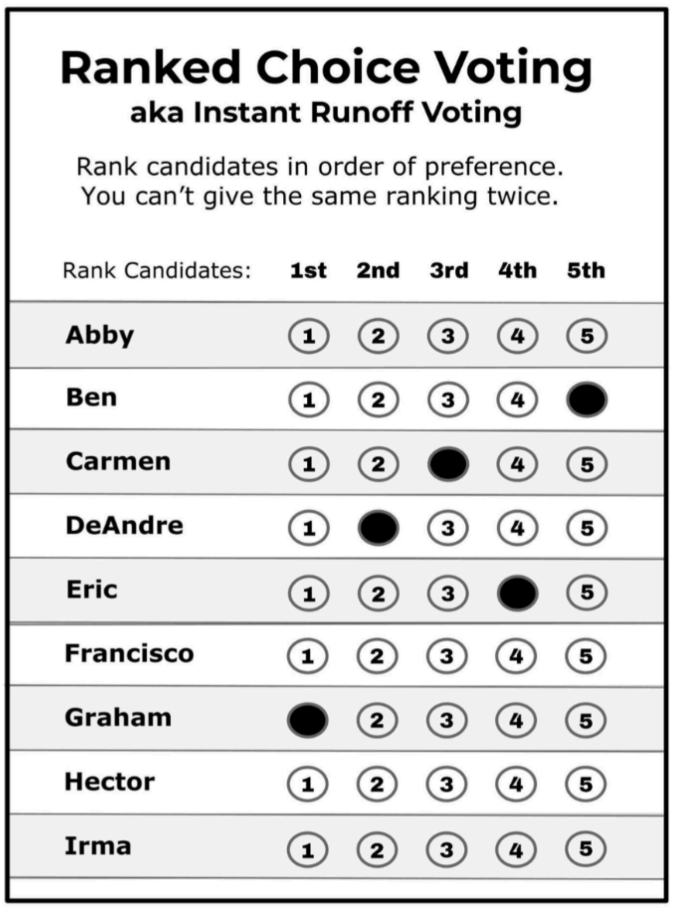
STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

- Give your favorite(s) five stars.
- Give your last choice(s) zero stars.
- Show preference order and level of support.
- Equal scores indicate no preference.
- Those left blank receive zero stars.

	Worst				Best
Score Candidates:	0	1	2	3	4	5
Andre	0	1	2	3	●	5
Blake	●	1	2	3	4	5
Carmen	0	1	2	3	4	●
David	0	1	2	3	4	●
Ella	0	●	2	3	4	5
Fernando	0	1	2	●	4	5
Gabe	0	1	2	3	4	●
Helena	0	1	2	3	●	5
Ira	●	1	2	3	4	5

Automatic Runoff (second round / second step in tabulation) - examples

WASTED VOTES - RCV IRV Ballot Limitations

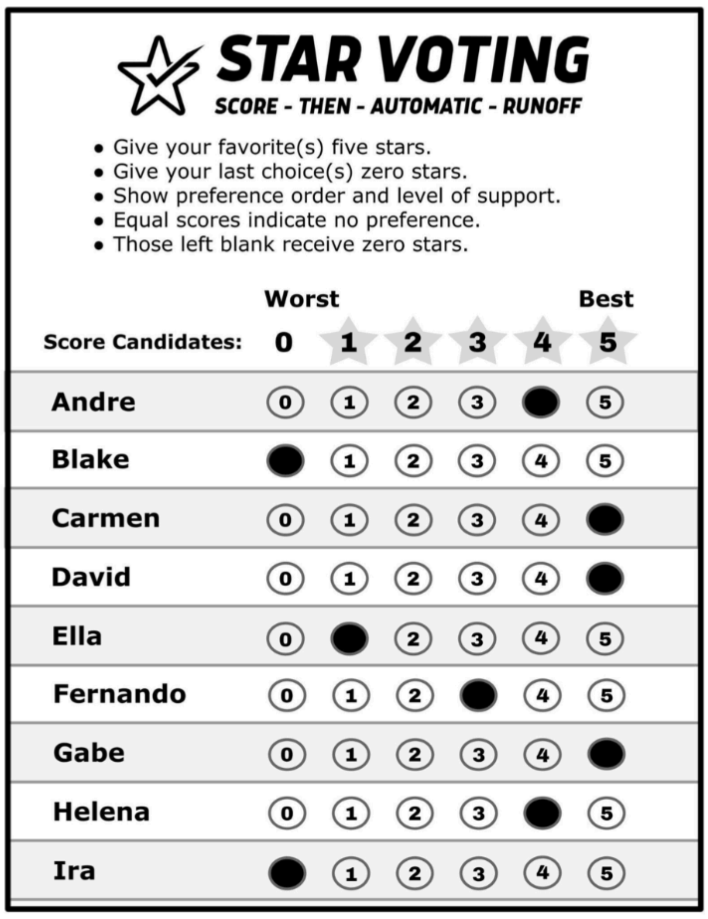


Ranked Choice Voting
aka Instant Runoff Voting

Rank candidates in order of preference.
You can’t give the same ranking twice.

Rank Candidates:	1st	2nd	3rd	4th	5th
Abby	1	2	3	4	5
Ben	1	2	3	4	●
Carmen	1	2	●	4	5
DeAndre	1	●	3	4	5
Eric	1	2	3	●	5
Francisco	1	2	3	4	5
Graham	●	2	3	4	5
Hector	1	2	3	4	5
Irma	1	2	3	4	5

- RCV ballots only allow voters to rank a limited number of candidates.
- Limiting the number of ranks in RCV helps prevent spoiled ballots, but increases the number of exhausted ballots in races with large fields of candidates.
- With STAR, voters can score as many or as few candidates as they want because equal scores are allowed.



STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

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	Worst				Best
Score Candidates:	0	1	2	3	4	5
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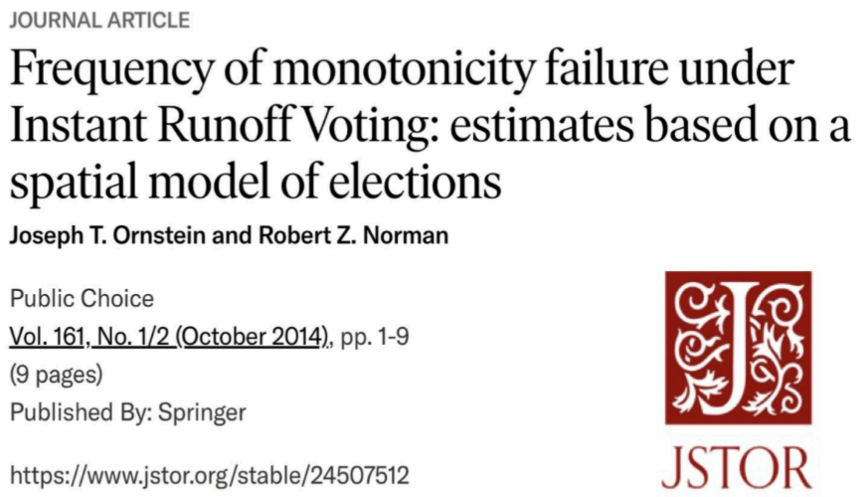
David	0	1	2	3	4	●
Ella	0	●	2	3	4	5
Fernando	0	1	2	●	4	5
Gabe	0	1	2	3	4	●
Helena	0	1	2	3	●	5
Ira	●	1	2	3	4	5

Paradoxical results (Non-monotonicity) and Exhausted Ballots



JOURNAL ARTICLE

Frequency of monotonicity failure under Instant Runoff Voting: estimates based on a spatial model of elections

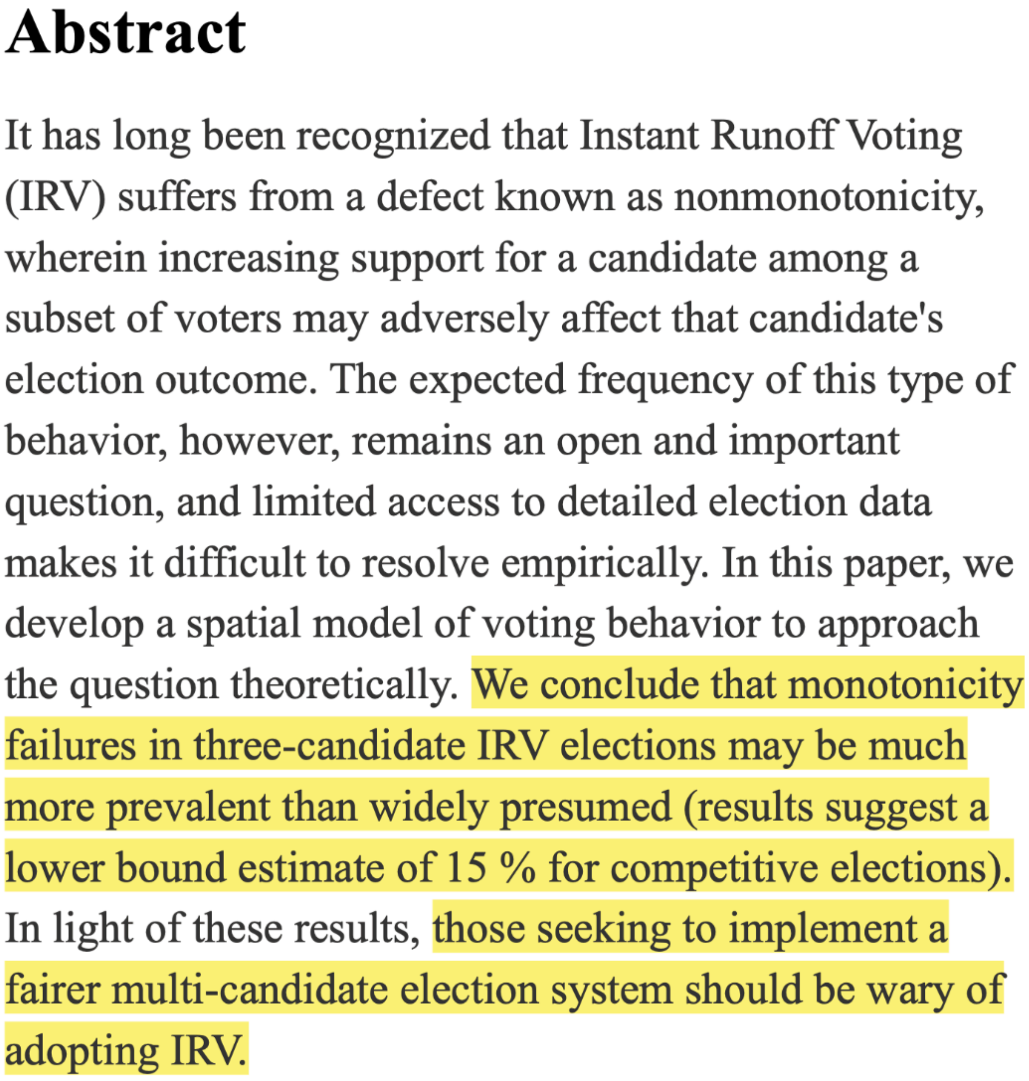
Joseph T. Ornstein and Robert Z. Norman

Public Choice
Vol. 161, No. 1/2 (October 2014), pp. 1-9
(9 pages)
Published By: Springer

https://www.jstor.org/stable/24507512

"Instant Runoff Voting (IRV) suffers from a defect known as nonmonotonicity, wherein *increasing support* for a candidate among a subset of voters may *adversely affect* that candidate's election outcome"

https://www.jstor.or/gstable/24507512?seq=1

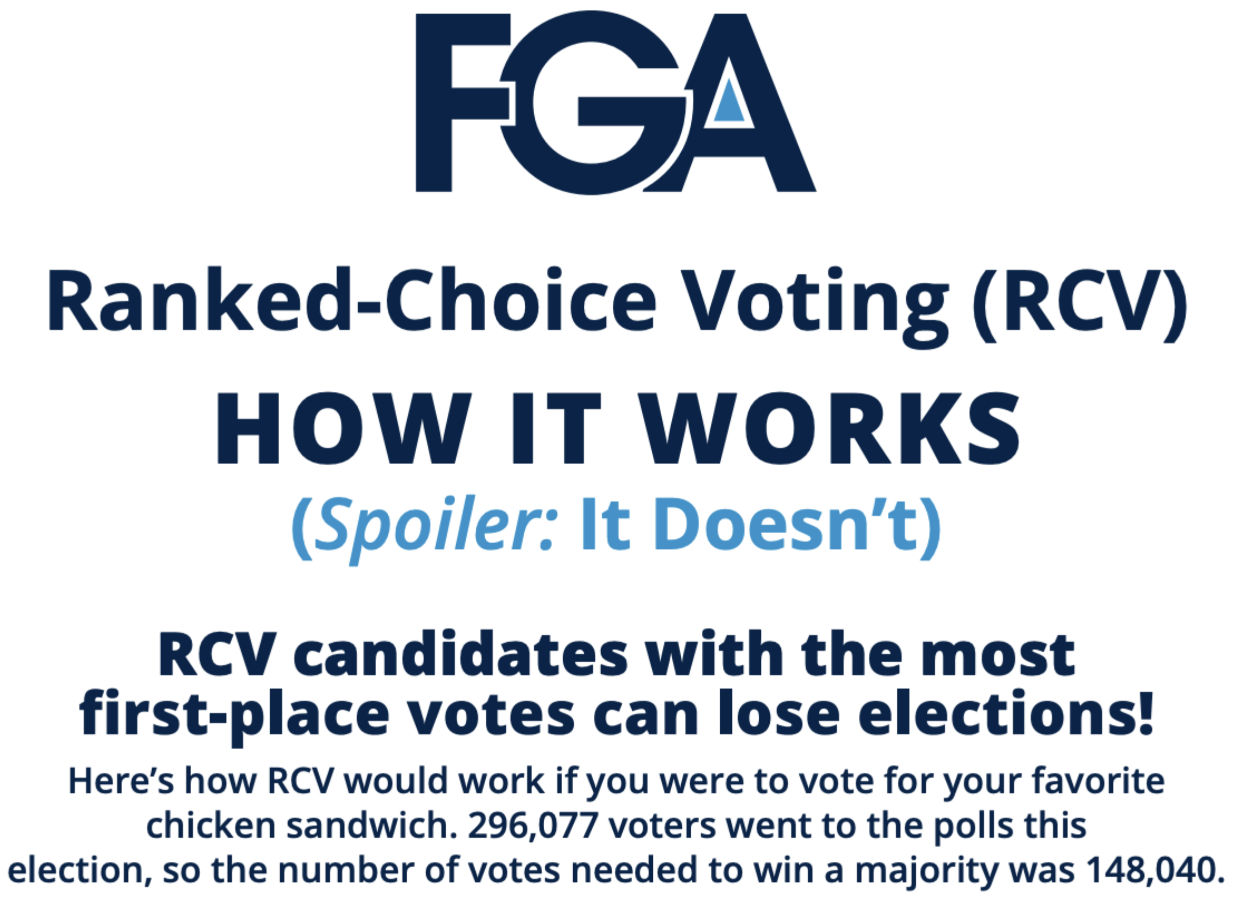


Abstract

It has long been recognized that Instant Runoff Voting (IRV) suffers from a defect known as nonmonotonicity, wherein increasing support for a candidate among a subset of voters may adversely affect that candidate's election outcome. The expected frequency of this type of behavior, however, remains an open and important question, and limited access to detailed election data makes it difficult to resolve empirically. In this paper, we develop a spatial model of voting behavior to approach the question theoretically. We conclude that monotonicity failures in three-candidate IRV elections may be much more prevalent than widely presumed (results suggest a lower bound estimate of 15 % for competitive elections). In light of these results, those seeking to implement a fairer multi-candidate election system should be wary of adopting IRV.

- Monotonic vs non-monotonic - main
- Monotonicity criterion - nonmonotonicity - non-monotonic voting system
- Upward Monotonicity Paradox - RCV IRV
- Downward Monotonicity Paradox - RCV IRV

FGA



Ranked-Choice Voting (RCV)

HOW IT WORKS

(*Spoiler:* It Doesn't)

RCV candidates with the most first-place votes can lose elections!

Here's how RCV would work if you were to vote for your favorite chicken sandwich. 296,077 voters went to the polls this election, so the number of votes needed to win a majority was 148,040.

https://thefga.org/wp-content/uploads/2023/05/Ranked-Choice-Voting-explainer-one-pager-4-6-2023.pdf

Ranked-Choice Voting (RCV)

HOW IT WORKS

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Here's how RCV would work if you were to vote for your favorite chicken sandwich. 296,077 voters went to the polls this election, so the number of votes needed to win a majority was 148,040.

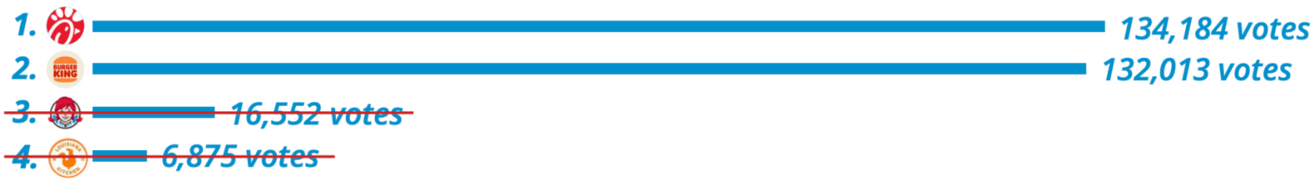
ROUND #1: Here's How You Voted

Candidate	1st Choice	2nd Choice	3rd Choice	4th Choice
Chick-fil-A	●	○	○	○
Burger King	○	○	●	○
Wendy's	○	●	○	○
Popeyes	○	○	○	●

Once all the results are tallied, **none of the candidates reach 148,040 votes** (50%+1). Both Wendy's and Popeyes receive fewer than 10% of the votes, so they are eliminated. Chick-fil-A and Burger King remain in the running for round #2.

In this round, 6,453 ballots were exhausted and do not count.*

RESULTS



The 6,453 ballots that were immediately tossed were due to overvotes and undervotes on the initial ballot. Any remaining ballots that were tossed in Round #1 were not continued because the voter did not rank the 1st or 2nd place candidate after the other two were eliminated.

RCV candidates with the most first-place votes can lose elections! Here's how RCV would work if you were to vote for your favorite chicken sandwich. 296,077 voters went to the polls this election, so the number of votes needed to win a majority was 148,040.

*The 6,453 ballots that were immediately tossed were due to overvotes and undervotes on the initial ballot. Any remaining ballots that were tossed in Round #1 were not continued because the voter did not rank the 1st or 2nd place candidate after the other two were eliminated.