Exhibit 1

Demonstration Ballot – City/County of San Francisco – November 2, 2004

This stub should be removed BEFORE the ballot is placed into the voting device or absentee envelope.

DEMONSTRATION BALLOT / BALOTA DE MUESTRA /模擬選票

CONSOLIDATED GENERAL ELECTION / ELECCIONES GENERALES CONSOLIDADAS /聯合普選
CITY AND COUNTY OF SAN FRANCISCO / CIUDAD Y CONDADO DE SAN FRANCISCO/ 三藩市市縣
NOVEMBER 2, 2004 / 2 DE NOVIEMBRE DE 2004 / 2004年11月2日

DEMONSTRATION BALLOT / BALOTA DE MUESTRA / 模擬選票

CONSOLIDATED GENERAL ELECTION / ELECCIONES GENERALES CONSOLIDADAS / 聯合普選
CITY AND COUNTY OF SAN FRANCISCO / CIUDAD Y CONDADO DE SAN FRANCISCO / 三藩市市縣
NOVEMBER 2, 2004 / 2 DE NOVIEMBRE DE 2004 / 2004年11月2日

CONGRESSIONAL DISTRICT 6, SENATE DISTRICT 6, ASSEMBLY DISTRICT 12, SUPERVISORIAL DISTRICT 00, BART DISTRICT 9

INSTRUCTIONS TO VOTERS: Mark your first choice in the first column by completing the arrow pointing to your choice, as shown in the picture. To indicate a second choice, select a different candidate in the second column. To indicate a third choice, select a different candidate in the third column. To vote for a qualified write-in candidate, write the person's name on the blank line provided and complete the arrow.

INSTRUCCIONES PARA LOS ELECTORES: Para marcar su primera opción en la primera columna, complete la flecha que apunta hacia su selección, tal como se indica en la imagen. Para indicar una segunda opción, seleccione un candidato distinto en la segunda columna. Para indicar una tercera opción, seleccione un candidato distinto en la tercera columna. Para votar por un candidato calificado no listado, escriba el nombre de la persona en el espacio en blanco provisto, y complete la flecha.

選民指南：在第一列中標記你的第一個選擇，將指向你的選擇的箭頭畫線連接起來，如圖所示。標記第二個選擇時，在第二列中選擇一位不同的候選人。標記第三個選擇時，在第三列中選擇一位不同的候選人。投選合格寫入候選人時，在提供的空位上填寫此人的姓名，並將箭頭畫線連接起來。

MEMBER, BOARD OF SUPERVISORS / MIEMBRO, CONSEJO DE SUPERVISORES / 市參議員
DISTRICT 00 - DISTRITO 00 - 第00選區

VOTE YOUR FIRST, SECOND AND THIRD CHOICES / VOTE POR SU PRIMERA, SEGUNDA Y TERCERA SELECCIÓN / 投票第一、第二和第三選擇

FIRST CHOICE PRIMERA SELECCIÓN 第一選擇	SECOND CHOICE SEGUNDA SELECCIÓN 第二選擇	THIRD CHOICE TERCERA SELECCIÓN 第三選擇
Vote for One Vote por Uno 第一選擇	Vote for One - Must be different than your first choice Vote por Uno - Debera ser diferente de su primera selección 第二選擇 / 必須與第一個選擇不同	Vote for One - Must be different than your first and second choices Vote por Uno - Debera ser diferente de su primera y segunda selección 第三選擇 / 必須與第一個選擇和第二個選擇不同
ELEANOR ROOSEVELT 艾蒙諾・羅斯福 Incumbent Titular 現任者	**ELEANOR ROOSEVELT** 艾蒙諾・羅斯福 Incumbent Titular 現任者	**ELEANOR ROOSEVELT** 艾蒙諾・羅斯福 Incumbent Titular 現任者
CESAR CHAVEZ 西薩・查瓦茲 Labor Organizer Organizador Laboral 勞工組織者	**CESAR CHAVEZ** 西薩・查瓦茲 Labor Organizer Organizador Laboral 勞工組織者	**CESAR CHAVEZ** 西薩・查瓦茲 Labor Organizer Organizador Laboral 勞工組織者
WALTER LUM 沃爾特・林 Publisher Editor 出版商	**WALTER LUM** 沃爾特・林 Publisher Editor 出版商	**WALTER LUM** 沃爾特・林 Publisher Editor 出版商
JOHN HANCOCK 約翰・漢考克 Physician Médico 醫生	**JOHN HANCOCK** 約翰・漢考克 Physician Médico 醫生	**JOHN HANCOCK** 約翰・漢考克 Physician Médico 醫生
MARTIN LUTHER KING, JR. 小馬丁・路德・金 Minister Pastor 牧師	**MARTIN LUTHER KING, JR.** 小馬丁・路德・金 Minister Pastor 牧師	**MARTIN LUTHER KING, JR.** 小馬丁・路德・金 Minister Pastor 牧師
ANNA MAE PICTOU AQUASH 安娜・梅・皮克拉・阿夸斯 Indigenous Rights Organizer *Organizadora para Derechos Indígenas* 土著權益組織者	**ANNA MAE PICTOU AQUASH** 安娜・梅・皮克拉・阿夸斯 Indigenous Rights Organizer *Organizadora para Derechos Indígenas* 土著權益組織者	**ANNA MAE PICTOU AQUASH** 安娜・梅・皮克拉・阿夸斯 Indigenous Rights Organizer *Organizadora para Derechos Indígenas* 土著權益組織者
WRITE-IN / NO LISTADO / 寫入	WRITE-IN / NO LISTADO / 寫入	WRITE-IN / NO LISTADO / 寫入

VOTE BOTH SIDES OF EACH BALLOT CARD
VOTE EN AMBOS LADOS DE CADA BALOTA
請在每張選票前後兩面投票

Card 2 of 3
Front

Exhibit 2
City & County of San Francisco
Charter Section 13.102
Instant Runoff Elections.

CITY AND COUNTY
OF SAN FRANCISCO
1996 CHARTER

Codified through
Ordinance 102-09, File No. 090543,
approved June 23, 2009.
(Supplement No. 23)

ARTICLE XIII: ELECTIONS
SEC. 13.102. INSTANT RUNOFF ELECTIONS.
(a) For the purposes of this section: (1) a candidate shall be deemed "continuing" if the candidate has not been eliminated; (2) a ballot shall be deemed "continuing" if it is not exhausted; and (3) a ballot shall be deemed "exhausted," and not counted in further stages of the tabulation, if all of the choices have been eliminated or there are no more choices indicated on the ballot. If a ranked-choice ballot gives equal rank to two or more candidates, the ballot shall be declared exhausted when such multiple rankings are reached. If a voter casts a ranked-choice ballot but skips a rank, the voter's vote shall be transferred to that voter's next ranked choice.
(b) The Mayor, Sheriff, District Attorney, City Attorney, Treasurer, Assessor-Recorder, Public Defender, and members of the Board of Supervisors shall be elected using a ranked-choice, or "instant runoff," ballot. The ballot shall allow voters to rank a number of choices in order of preference equal to the total number of candidates for each office; provided, however, if the voting system, vote tabulation system or similar or related equipment used by the City and County cannot feasibly accommodate choices equal to the total number of candidates running for each office, then the Director of Elections may limit the number of choices a voter may rank to no fewer than three. The ballot shall in no way interfere with a voter's ability to cast a vote for a write-in candidate.
(c) If a candidate receives a majority of the first choices, that candidate shall be declared elected. If no candidate receives a majority, the candidate who received the fewest first choices shall be eliminated and each vote cast for that candidate shall be transferred to the next ranked candidate on that voter's ballot. If, after this transfer of votes, any candidate has a majority of the votes from the continuing ballots, that candidate shall be declared elected.
(d) If no candidate receives a majority of votes from the continuing ballots after a candidate has been eliminated and his or her votes have been transferred to the next-ranked candidate, the continuing candidate with the fewest votes from the continuing ballots shall be eliminated. All votes cast for that candidate shall be transferred to the next-ranked continuing candidate on each voter's ballot. This process of eliminating candidates and transferring their votes to the next-ranked continuing candidates shall be repeated until a candidate receives a majority of the votes from the continuing ballots.
(e) If the total number of votes of the two or more candidates credited with the lowest number of votes is less than the number of votes credited to the candidate with the next highest number of votes, those candidates with the lowest number of votes shall be eliminated simultaneously and their votes transferred to the next-ranked continuing candidate on each ballot in a single counting operation.

(f) A tie between two or more candidates shall be resolved in accordance with State law.
(g) The Department of Elections shall conduct a voter education campaign to familiarize voters with the ranked-choice or, "instant runoff," method of voting.
(h) Any voting system, vote tabulation system, or similar or related equipment acquired by the City and County shall have the capability to accommodate this system of ranked-choice, or "instant runoff," balloting.
(i) Ranked choice, or "instant runoff," balloting shall be used for the general municipal election in November 2002 and all subsequent elections. If the Director of Elections certifies to the Board of Supervisors and the Mayor no later than July 1, 2002 that the Department will not be ready to implement ranked-choice balloting in November 2002, then the City shall begin using ranked-choice, or "instant runoff," balloting at the November 2003 general municipal election.
If ranked-choice, or "instant runoff," balloting is not used in November of 2002, and no candidate for any elective office of the City and County, except the Board of Education and the Governing Board of the Community College District, receives a majority of the votes cast at an election for such office, the two candidates receiving the most votes shall qualify to have their names placed on the ballot for a runoff election held on the second Tuesday in December of 2002.
(Added March 2002) (Former Section 13.102 added November 1996; repealed March 2002)

Exhibit 3
FairVote.Org – Who Uses IRV?

Where IRV is Used
United States Elections
San Francisco
International Elections
Student Elections
Organizations & Corporations
Robert's Rules of Order on IRV

IRV in the News...

Who Uses IRV?

IRV Animation

IRV is used on the municipal, state, and national level in governments around the world, as well as by non-governmental organizations and corporations.

U.S. governments currently using IRV:

- Arkansas (adopted 2005, first used 2006; overseas voters in runoffs)
- Aspen, CO (adopted 2007, first used 2009; mayor and multi-seat variation for city council)
- Burlington, VT (adopted 2005, first used 2006; mayoral elections)
- Hendersonville, North Carolina (adopted 2007 and 2009 as pilot; multi-seat variations for city council)
- Louisiana (adopted and first used 1990s; overseas and military voters in federal and state runoffs)
- Pierce County, WA (adopted 2006, first used 2008; county executive, county council and most other county offices)
- San Francisco, CA (adopted 2002, first used 2004; mayor, Board of Supervisors and most city offices)
- South Carolina (adopted and first used 2006; overseas voters in federal and state runoffs)
- Takoma Park, MD (adopted 2006, first used 2007; mayor and city council)

Upcoming (as of March 2009) implementations:

- Berkeley, CA (adopted 2004; scheduled for November 2010 for mayor and city council)
- Memphis, TN (adopted 2008; scheduled for 2011 for mayor and several other city offices)
- Minneapolis, MN (adopted 2006; scheduled for November 2009 for mayor and city council)
- Oakland, CA (adopted 2006; scheduled for November 2010 for mayor and city council)
- Springfield, IL (adopted 2007; scheduled for November 2011 for overseas voters)
- Telluride, CO (adopted 2008; scheduled for November 2011 for mayoral elections)

Advisory, Option or Contingent Measure in the United States:

- Ferndale, MI (adopted 2004)
- Santa Clara County, CA (adopted 1998)
- San Leandro, CA (adopted 2000)

- Santa Fe, NM (adopted 2008)
- Sarasota, FL (adopted 2007)
- Vancouver, WA (adopted 1999)

*Ann Arbor (MI), New York (NY), Yonkers (NY) and Cary (NC) have used IRV in the past.

**Cambridge (MA) uses a similar ranked voting system for its city council elections, but it is the choice voting method of proportional voting where each of the nine winners needs a little more than 10% of the vote. *Davis (CA) passed an advisory measure in 2006* in favor of this system.

Exhibit 4
Pierce County, WA
Ordinance No. 2009-1 (Elimination of Instant Runoff Voting)

Pierce County

Office of the County Council

930 Tacoma Avenue South, Room 1046
Tacoma, Washington 98402-2176
(206) 798-7777
FAX (206) 798-7509
1-800-992-2456

TO: Janice Shabro, Auditor
Gerry Horne, Prosecuting Attorney

FROM: Denise D. Johnson, Clerk of the Council

DATE: February 12, 2009

SUBJECT: **TRANSMITTAL -- ORDINANCE NO. 2009-1 (ELIMINATION OF INSTANT RUFFOFF VOTING)**

At the February 10, 2009 Council meeting, the Pierce County Council passed Ordinance No. 2009-1, which proposes Pierce County Charter amendments be submitted to the voters for the November 2009 General Election. The Council requests the Prosecuting Attorney write an appropriate ballot title for said election.

A certified copy of the Ordinance is attached for your records. Please see the Ordinance for specifics.

If you have any questions, please contact me at extension 6065 or Susan Long at extension 6068.

Attachments

c: Lori Augino
Susan Long
Doug Vanscoy

Pierce County

Office of the County Council

930 Tacoma Avenue South, Room 1046
Tacoma, Washington 984022176
(253) 798-7777
FAX (253) 798-7509
1-800-992-2456
www.piercecountywa.org/council

STATE OF WASHINGTON)
)
COUNTY OF PIERCE)

I, Denise D. Johnson, Clerk of the Pierce County Council, do hereby certify that the attached is a full, true, and correct copy of the following document:

ORDINANCE NO. 2009-1

The original of this document is currently located in the Office of the County Council, 930 Tacoma Avenue South, Room 1046, Tacoma, Washington 98402.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of Pierce County, Washington, this 12th day of February, 2009.

PIERCE COUNTY COUNCIL
PIERCE COUNTY, WASHINGTON

Denise D. Johnson
Denise D. Johnson
Clerk of the Pierce County Council

Sponsored by: Councilmembers Barbara Gelman, Roger Bush, Joyce McDonald, and Timothy M. Farrell
Requested by: Pierce County Council

File No. 440

ORDINANCE NO. 2009-1

An Ordinance of the Pierce County Council Proposing an Amendment to Article 4, "Elections," of the Pierce County Charter to Eliminate Instant Runoff Voting and Restore the Primary Election for County Elected Offices; Requesting the Auditor to Submit this Amendment to the Voters at the November 2009 General Election; and Requesting the Prosecuting Attorney to Draft an Appropriate Ballot Title.

Whereas, Section 8.50 of the Pierce County Charter (Charter) grants authority to the County Council (Council) to propose Charter amendments to be submitted to the voters at the next November general election occurring at least 90 days after filing; and

Whereas, Section 8.60 of the Charter requires a minimum of two-thirds affirmative vote of the Council to enact an ordinance proposing Charter amendments; and

Whereas, an Ordinance proposing Charter amendments is not subject to the veto power of the Executive; and

Whereas, pursuant to Section 8.50(1) of the Charter, "...an amendment which embraces a single or interrelated subject may be submitted as a single proposition even though it is composed of changes to one or more articles."; and

Whereas, in November 2006, the voters of Pierce County adopted Charter amendments to require the use of Instant Runoff Voting (IRV) for certain county elective offices, thereby eliminating the primary system for those races; and

Pierce County Council
930 Tacoma Ave S. Rm 1046
Tacoma, WA 98402

Whereas, IRV was first used in Pierce County during the November 2008 General Election; and

Whereas, the cost of running the IRV portion of the 2008 General Election was $1,692,663; and

Whereas, the IRV portion of the 2008 General Election provided to be expensive, complicated and confusing, and the results of the IRV races were not available for weeks following the election date; and

Whereas, 66 percent of the 90,738 voters responding to the Auditor's survey indicated that they did not like IRV; and

Whereas, the Council finds that amendments to the Charter to eliminate instant runoff voting and to restore the primary election for county elected offices will serve the needs and best interests of the citizens of Pierce County; **Now Therefore,**

BE IT ORDAINED by the Council of Pierce County:

Section 1. The Pierce County Council hereby proposes a Charter amendment as set forth in Exhibit A, which is attached hereto and incorporated herein by reference, for submittal to the voters at the November 2009 General Election.

Section 2. The Pierce County Prosecuting Attorney is hereby requested to draft an appropriate ballot title for the proposed Charter amendments set forth in Exhibit A.

Pierce County Council
930 Tacoma Ave S, Rm 1046
Tacoma, WA 98402

Section 3. This Ordinance shall be filed with the Auditor immediately upon adoption for submittal to the voters at the November 2009 General Election.

PASSED this 10th **day of** February, **2009.**

ATTEST:

Denise D. Johnson

Denise D. Johnson
Clerk of the Council

PIERCE COUNTY COUNCIL
Pierce County, Washington

Roger Bush

Roger Bush
Council Chair

Signature not required, per Section 8.60 Pierce County Charter

Pat McCarthy
Pierce County Executive
Approved _____ Vetoed _____, this _____ day of _____, 2009.

Date of Publication of Notice of Public Hearing: January 20, 2009

Effective Date of Ordinance: February 20, 2009

Pierce County Council
930 Tacoma Ave S, Rm 1046
Tacoma, WA 98402

Only those portions of Article 4 of the Charter – Elections that are proposed to be amended are shown. Remainder of text is unchanged.

Section 4.10 -- Election Procedures

The elections of all County officials, ~~except~~including judges and the Prosecuting Attorney, shall be conducted ~~using instant runoff voting~~according to the state election method. ~~The County Auditor shall implement by July 2008 an instant runoff voting protocol according to these guidelines:~~

~~(1) The ballot shall allow voters to rank a number of choices in order of preference equal to the total number of candidates for each office; however, if the voting system, vote tabulation system, or similar or related equipment used by the County cannot feasibly accommodate choices equal to the total number of candidates running for each office, then the Auditor may limit the number of choices a voter may rank to no fewer than three.~~

~~(2) The instant runoff shall be conducted in rounds. In each round, each voter's ballot shall count as a single vote for whichever continuing candidate the voter has ranked highest. The candidate or candidates whose combined vote totals are less than the next lowest candidate after each round shall be eliminated and their votes redistributed. This process of eliminating candidates and transferring their votes to the next ranked continuing candidates shall be repeated until a candidate receives a majority (fifty percent plus one) of the votes from the continuing ballots. The candidate receiving the majority (fifty percent plus one) of votes from the continuing ballots will be deemed elected at the time of certification.~~

~~(3) The County Council may adopt additional regulations consistent with this subsection and RCW 29.A.53 (excluding the expiration dates) to implement these standards.~~

~~**4.15 -- Instant Runoff Voting (IRV) Candidacies**~~

~~(1) To be placed on the ballot for an IRV office, a candidate must present to the Auditor no later than the end of filing week petition statements supporting the candidacy with original signatures of no less than 25 persons qualified to vote for the office the candidate is seeking. The County Council may change the signature number requirement by ordinance so long as the same number applies to all candidates.~~

~~(2) The County central committee of each major political party may determine which candidates may use their party label for each partisan County level office.~~

~~(3) The Minor Party County Executive Committee, or, if there is none, the Minor Party State Executive Committee of each minor party who files with the State Public Disclosure Commission shall determine which candidates may use their party label for each partisan county level office.~~

~~(4) All candidates meeting the foregoing qualifications will appear directly on the general election ballot. There will be no publicly financed primary for affected County level offices.~~

~~(5) On or before the last day for filing a declaration of candidacy as a candidate for a partisan IRV county level office, anyone qualified to assume office if elected may file a declaration of candidacy as an "Independent."~~

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Tacoma, WA 98402

~~(6) Any candidate who files a declaration of candidacy as an independent for a partisan IRV county level office shall be placed on the ballot under the title "Independent."~~

~~(7) Any candidate who files a declaration of candidacy for a non partisan IRV county level office shall be placed on the ballot under the title "Non Partisan" (NP).~~

~~(8) Anyone who files a declaration of candidacy for an IRV county level office shall pay the filing fee required for a declaration of candidacy.~~

~~**Section 4.20 Independent Candidates**~~

~~(1) On or before the last day for filing a declaration of candidacy as a candidate, anyone qualified to assume office if elected may file a declaration of candidacy as an "Independent".~~

~~(2) Any candidate who files a declaration of candidacy as an independent shall be placed on the ballot under the title "Independent."~~

~~(3) Anyone who files a declaration of candidacy as an Independent shall pay the filing fee required for a declaration of candidacy.~~

Pierce County Council
930 Tacoma Ave S. Rm 1046
Tacoma, WA 98402

Exhibit 5
City of Aspen, CO
Resolution No. 64 (Advisory Questions Regarding Instant Runoff Voting)

1Xa

RESOLUTION NO. 64
(Series of 2009)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ASPEN, COLORADO, SUBMITTING TO THE ELECTORATE OF THE CITY OF ASPEN AT THE NOVEMBER 3, 2009, SPECIAL ELECTION AN ADVISORY QUESTIONS REGARDING INSTANT RUNOFF VOTING.

WHEREAS, the City Council is authorized pursuant to Section 5.7 of the Aspen Home Rule Charter to, on its own motion, submit questions to a vote of the electorate.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ASPEN, COLORADO, THAT:

Section 1.

The following question relating to Instant Runoff Voting shall be placed on the ballot at the November 3, 2009 election:

Shall the City of Aspen Retain Instant Runoff Voting Procedures for the Election of Mayor and City Council Members?

Yes: _____

No: _____

INTRODUCED, READ AND ADOPTED by the City Council of the City of Aspen on the ____ day of August, 2009.

_____
Michael C. Ireland, Mayor

RESOLUTION NO. 64
(Series of 2009)

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ASPEN, COLORADO, SUBMITTING TO THE ELECTORATE OF THE CITY OF ASPEN AT THE NOVEMBER 3, 2009, SPECIAL ELECTION AN ADVISORY QUESTIONS REGARDING INSTANT RUNOFF VOTING.

WHEREAS, the City Council is authorized pursuant to Section 5.7 of the Aspen Home Rule Charter to, on its own motion, submit questions to a vote of the electorate.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ASPEN, COLORADO, THAT:

Section 1.

The following question relating to Instant Runoff Voting shall be placed on the ballot at the November 3, 2009 election:

Do you support the retention of Instant Runoff Voting Procedures for the Election of Mayor and City Council Members?

Yes: _____

No: _____

INTRODUCED, READ AND ADOPTED by the City Council of the City of Aspen on the ____ day of August, 2009.

_____
Michael C. Ireland, Mayor

COMPLETE BILL HISTORY

BILL NUMBER : A.B. No. 1121
AUTHOR : Davis
TOPIC : Elections: ranked voting.

TYPE OF BILL :

Active
Non-Urgency
Non-Appropriations
Majority Vote Required
Non-State-Mandated Local Program
Fiscal
Non-Tax Levy

BILL HISTORY
2009

Sept. 10 Read third time, passage refused. (Ayes 20. Noes 19. Page 2394.)
Sept. 3 Read third time, passage refused. (Ayes 19. Noes 19. Page 2173.) Motion to reconsider made by Senator Hancock. Reconsideration granted. (Ayes 36. Noes 0. Page 2173.)
Aug. 25 Read second time and amended. Ordered to third reading.
Aug. 24 From committee: Amend, and do pass as amended. (Ayes 7. Noes 4.) (August 17).
July 14 Read second time, amended, and re-referred to Com. on APPR.
July 13 From committee: Amend, do pass as amended, and re-refer to Com. on APPR. (Ayes 3. Noes 2.) (July 7).
July 2 From committee chair, with author's amendments: Amend, and re-refer to committee. Read second time, amended, and re-referred to Com. on E., R., & C.A.
June 11 Referred to Com. on E., R., & C.A.
June 2 In Senate. Read first time. To Com. on RLS. for assignment.
June 1 Read third time, passed, and to Senate. (Ayes 45. Noes 30. Page 1886.)
May 29 From committee: Do pass. (Ayes 10. Noes 6.) (May 28). Read second time. To third reading.
May 20 In committee: Hearing postponed by committee.
May 13 In committee: Set, first hearing. Hearing canceled at the request of author.
Apr. 29 Re-referred to Com. on APPR.
Apr. 28 Read second time and amended.
Apr. 27 From committee: Amend, do pass as amended, and re-refer to Com. on APPR. (Ayes 5. Noes 1.) (April 21).
Mar. 26 Referred to Com. on E. & R.
Mar. 2 Read first time.
Mar. 1 From printer. May be heard in committee March 30.
Feb. 27 Introduced. To print.

BILL ANALYSIS

|SENATE RULES COMMITTEE | AB 1121|
|Office of Senate Floor Analyses |
|1020 N Street, Suite 524 |
|(916) 651-1520 Fax: (916) |
|327-4478 |

THIRD READING

Bill No: AB 1121
Author: Davis (D), et al
Amended: 8/25/09 in Senate
Vote: 21

SENATE ELECTIONS, REAP. & CONST. AMEND. COMM. : 3-2, 7/7/09
AYES: Hancock, DeSaulnier, Liu
NOES: Walters, Strickland

SENATE APPROPRIATIONS COMMITTEE : 7-4, 8/17/09
AYES: Kehoe, Corbett, Leno, Oropeza, Price, Wolk, Yee
NOES: Cox, Denham, Walters, Wyland
NO VOTE RECORDED: Hancock, Runner

ASSEMBLY FLOOR : 45-30, 6/1/09 - See last page for vote

SUBJECT : Elections: ranked voting

SOURCE : Californians for Electoral Reform

DIGEST : This bill authorizes the Secretary of State to approve up to 12 counties to use a ranked voting system. Counties that opt to participate will be required to obtain approval of the voters, and acquire a voting system that is capable of conducting an election using ranked voting. This pilot program will sunset January 1, 2019, but allows cities and counties previously authorized to conduct ranked voting elections under the bill to be allowed to conduct such elections until January 1, 2024.

CONTINUED

ANALYSIS : Existing law provides procedures for the nomination of candidates for elective offices in general law cities. It specifies the procedures for the conduct of the election, the canvass of ballots, and certification of persons elected to office. Related provisions require the holding of a runoff election if no candidate has been elected at the municipal election. Existing law provides that a vacancy in an elective office may be filled by appointment at a special election or at the next regular municipal election. Under existing law, the Secretary of State is the chief elections officer of the state and is required to administer the provisions of the Elections Code.

Ranked voting is a system whereby voters rank the candidates for office in order of preference, and the ballots are counted in rounds that, in the case of a single-winner election, simulate a series of runoffs until only two candidates remain, with the one having the greater number of votes being declared the winner, or in the case of multiple-winner elections, until all seats have been filled. This bill outlines the specific method for counting ballots after a ranked voting election. Ranked voting may be used for a single-winner election such as Mayor or City Attorney, or for elections that elect multiple candidates such as members of a city council. To be an eligible candidate for the use of ranked voting, a city or county must first get approval by the voters. The Secretary of State will then approve each request in the order of its receipt until the maximum number of cities and counties for each section of the state is reached. In addition, the city or county must have a voting system that is capable of conducting an election using ranked voting that has been approved by the Secretary of State.

This bill authorizes 12 cities or counties to participate with not more than four cities or counties located in each of the northern, central, and southern regions of California. However, if more than one city or county approves the use of ranked voting in a single election and the authorization of those cities or counties would exceed the maximum number allowed, then all of those cities and counties will be authorized.

This bill requires cities and counties that opt to use ranked voting in a local election to conduct a voter education and outreach campaign through the use of public service announcements to familiarize voters with ranked voting in English and in every language in which a ballot is provided to voters in that county.

This bill provides that a city or county that is been approved to use a ranked voting system shall be permitted to use that system until January 1, 2024, unless a later statute is enacted to extend that date. This bill also defines the term "sets of candidates" to mean "a continuing candidate and all other continuing candidates with the same or fewer votes than that candidate", and make other technical changes.

Lastly, this bill requires local election officials that opt to participate will be required to make a summary report and a comprehensive report available to public after each ranked voting election. Cities and counties will also be required to report on the success of using a ranked voting system during an election to the Legislative Analyst's Office (LAO). This report will include the costs to conduct the ranked voting election, voter turnout, and the number of ballots that were not counted and the reason those ballots were rejected. The LAO, in turn, will compile the data and report to the Legislature, making recommendations on whether the pilot should be expanded, and any improvements that should be made.

Comments

Purpose of the bill . Today, only charter counties or charter cities can use ranked voting. Only 108 of the state's 478 cities are charter cities, and only 14 of the 58 counties are charter counties. According to the author's office, over half of all Californians live in a general law city, a general law county, or both, and thus are denied the opportunity to participate in ranked voting. In addition, the author's office notes that there are no statewide standards for how ranked voting elections should be conducted, which can create the possibility of inconsistent implementations, as well as place additional burdens on local officials.

The author states, "Instant Runoff Voting (IRV) ensures that the winner on a single-winner election has the support of the majority of voters in a single election. By eliminating the need for a costly runoff election it saves local governments a lot of money-about $2 million per election in San Francisco alone. IRV also eliminates vote-splitting and spoiler effects, both of which undermine the public's confidence in the political process."

Prior legislation . AB 1294 (Mullin), 2007-08 Session, which would have allowed any city, county, or district to conduct a local election using ranked voting, was vetoed due to the Governor's concerns over what he believed was the drastic change to voters represented by ranked voting, the lack of experience with this method (except in San Francisco), and the lack of SOS certification of voting machines with instant run-off or choice voting capability.

FISCAL EFFECT : Appropriation: No Fiscal Com.: Yes Local: No

SUPPORT : (Verified 9/2/09)

Californians for Electoral Reform (source)
Asian American Action Fund of California
Asian Americans for Civil Rights and Equality
California Common Cause
Californians for Electoral Reform
Cities of Davis, Hermosa Beach, and Menlo Park
FairVote
Latinos for America
League of California Cities
League of Women Voters of California
Los Angeles Chamber of Commerce
New America Foundation
Supervisor David Campos, San Francisco Board of Supervisors
Supervisor Eric Mar, San Francisco Board of Supervisors
Supervisor Ross Mirkarimi, San Francisco Board of Supervisors
Warren Slocum, Chief Elections Officer and Assessor-County Clerk-Recorder, San Mateo County

ASSEMBLY FLOOR :

AYES: Ammiano, Arambula, Beall, Blumenfield, Brownley, Buchanan, Caballero, Charles Calderon, Carter, Chesbro, Coto, Davis, De La Torre, De Leon, Eng, Evans, Feuer, Fong, Furutani, Galgiani, Hall, Hayashi, Hernandez, Hill, Huber, Huffman, Jones, Krekorian, Lieu, Bonnie Lowenthal, Ma, Mendoza, Monning, Nava, V. Manuel Perez, Portantino, Price, Ruskin, Salas, Saldana, Solorio, Swanson, Torlakson, Torrico, Bass

NOES: Adams, Anderson, Bill Berryhill, Tom Berryhill, Blakeslee, Conway, DeVore, Duvall, Emmerson, Fletcher, Fuller, Gaines, Garrick, Gilmore, Hagman, Harkey, Jeffries, Knight, Logue, Miller, Nestande, Niello, Nielsen, John A. Perez, Silva, Smyth, Audra Strickland, Tran, Villines, Yamada

NO VOTE RECORDED: Block, Cook, Fuentes, Skinner, Torres

DLW:mw 9/2/09 Senate Floor Analyses

SUPPORT/OPPOSITION: SEE ABOVE

**** END ****

Exhibit 7

New America Foundation – Instant Runoff Voting, Making Your Vote Count

NEW AMERICA FOUNDATION

INSTANT RUNOFF VOTING: MAKING YOUR VOTE COUNT

OVERVIEW

California's winner-take-all electoral system is responsible for polarized politics, a balkanized legislature and declining voter turnout. Advanced electoral systems like instant runoff voting offer voters the opportunity for better choices at the ballot box, improved political debate and broader-based politics.

THE PROBLEM

Loss of Moderates. *Party primaries in* California empower the political extremes and discourage moderates, creating a Legislature that is unable to reach compromise and is therefore subject to gridlock. Primaries are low turnout elections mostly restricted to registered party voters. Candidates can win their party's nomination with low percentages of the vote, relying on a narrow core of voters for victory. This makes it much more difficult for candidates with politically moderate views to reach a general election.

Spoiler candidacies. Winner-take-all elections also are vulnerable to "spoiler" candidacies, where like-minded voters supporting different candidates run the risk of splitting their vote and helping to elect a rival. This dynamic makes it virtually impossible for a serious candidate to run outside of the two major parties, leaving voters with a choice of candidates that is limited to those who have won favor with traditional party stakeholders. This in turn alienates voters who get tired of voting for the "lesser of two evils," instead of voting for the candidates they really like.

Mudslinging campaigns. Winner-take-all elections encourage negative campaigns, where the winning strategy becomes driving voters away from your opponent through mudslinging rather than building coalitions and consensus. Runoff elections in particular are certain to produce mudslinging campaigns that turn off voters, lower public trust in government and damage the eventual officeholder. The winner of a divisive runoff faces a much more difficult time rebuilding the public trust that is essential for strong leadership.

THE SOLUTION: INSTANT RUNOFF VOTING (IRV)

How it works

Instant runoff voting (IRV) elects candidates who win majority support in a single election. Voters rank candidates in order of preference: a first ranking for your favorite candidate, a second ranking for your next-favorite, and so on. If a candidate wins a majority of first rankings, he or she wins. If not, the "instant runoff" begins.

The candidate with the least number of first rankings is eliminated. Supporters of the eliminated candidate give their vote to their second ranking, i.e. their runoff choice. All ballots are recounted, and if a candidate has a majority, that's the winner. If not, the process repeats until one candidate has majority support (To view a Web-based demonstration of how IRV ballots are counted, visit www.fairvote.org/?page=1668).

The Benefits

Discourages mudslinging. IRV discourages negative campaigns because candidates know they often cannot win without support from supporters of other candidates. In other words, winners need

to be listed as the second or third choice on ballots cast for other candidates. The result is a major shift in traditional campaign strategy. In San Francisco, where California's first instant runoff election was held in November 2004, the most contested districts saw candidates endorsing their opponents, sharing slate mailers and co-sponsoring fundraisers. One *New York Times* headline read: "New Runoff System in San Francisco Has the Rival Candidates Cooperating." Such coalition-building in the midst of a campaign is certain to benefit the eventual winner during the process of governing, especially compared to the destructive attacks in a traditional runoff.

Empowers the political center. Candidates who can build coalitions by attracting support beyond their core supporters are more likely to be successful. In party primaries, candidates would need to win with a majority of votes, so politically moderate candidates would have a greater chance to reach the general election.

Eliminates spoilers. With IRV, if your first choice can't win your vote moves to your second choice. This eliminates the "spoiler" effect and liberates voters to choose the candidates they really like instead of being forced to vote for the "lesser of two evils." The result is that elections will more accurately reflect the level of support for all candidates. This in turn will attract a higher caliber of alternative candidates, giving voters a broader range of choices.

Gives voters more choice. Among the biggest problems with today's politics is the lack of viable choices on the ballot. Not surprisingly, the Legislature does not reflect the diversity of the electorate. Instant runoff voting would inspire greater participation and trust by offering voters a wider range of higher quality choices. Perhaps most important, instant runoff voting could help restore public trust in government and encourage greater participation.

Eliminates costly and divisive runoffs, which are used in many local elections, saving millions of tax dollars in unnecessary election expenses and sparing candidates the burden of raising money for two elections instead of one.

Background

Instant runoff voting is new to California, but it's widely used elsewhere. It has been used in San Francisco for the 2004 and 2005 local elections. Louisiana and Arkansas use IRV for military overseas voters. In Utah, the Republican Party has used IRV to nominate candidates for Congress and Governor to ensure their choices have support from a majority of GOP voters. IRV has been used for decades to elect the President of Ireland and Australia's national House of Representatives. It is also used to elect the Mayor of London.

IRV has broad, bipartisan support. It has been endorsed by Republican Sen. John McCain as well as Democratic National Committee Chairman Howard Dean. In California, it has also received support from the state Democratic Party as well as good government and minority advocacy groups like Common Cause, League of Women Voters, California PIRG, the Greenlining Institute, Asian Law Caucus, Chinese for Affirmative Action, and Southwest Voter.

Interest is spreading quickly in California. Three charter cities and one charter county in the Bay Area are making plans to follow San Francisco's lead, with voters in Berkeley scheduled to use IRV in November 2006. Los Angeles City Council members also voted near-unanimously to study the San Francisco experience with IRV. San Diego has established a task force to evaluate using IRV for local races.

Exhibit 8

Minnesota Voters Alliance, et al., v. The City of Minneapolis, et al.

State of Minnesota Supreme Court A09-182 (July 11, 2009)

STATE OF MINNESOTA

IN SUPREME COURT

A09-182

Hennepin County

Magnuson, C.J.

Minnesota Voters Alliance, et al.,

Appellants,

vs.

The City of Minneapolis, et al.,

Respondents,

Mark Ritchie, in his official capacity as the Secretary of State for the State of Minnesota or his successor, et al.,

Defendants,

FairVote Minnesota, Inc., intervenor-defendant,

Respondent.

Filed: June 11, 2009
Office of Appellate Courts

Erick Gregg Kaardal, Mohrman & Kaardal, P.A., Minneapolis, Minnesota, for appellants.

Susan Lee Segal, Minneapolis City Attorney, Lisa Marie Needham, Assistant City Attorney, Peter W. Ginder, Assistant City Attorney, Minneapolis, Minnesota, for City of Minneapolis respondents.

James E. Dorsey and Nicole M. Moen, Fredrikson & Byron, P.A., Minneapolis, Minnesota; and

Keith J. Halleland, Halleland, Lewis, Nilan & Johnson, P.A., Minneapolis, Minnesota, for respondent FairVote Minnesota, Inc.

SYLLABUS

Instant Runoff Voting as adopted in Minneapolis is not facially invalid under the United States or Minnesota Constitution, and does not contravene any principles established by this court in *Brown v. Smallwood*, 130 Minn. 492, 153 N.W. 953 (1915).

Affirmed.

OPINION

MAGNUSON, Chief Justice.

This is a declaratory judgment action challenging the constitutionality of the instant runoff voting (IRV) election methodology adopted by the City of Minneapolis for its municipal elections. Appellants Minnesota Voters Alliance, a nonprofit organization, and six Minneapolis voters contend that the IRV method violates their rights to vote, to associate for political purposes, and to equal protection under both the United States and the Minnesota Constitutions. On cross-motions for summary judgment, the district court ruled that IRV does not infringe on appellants' constitutional rights and rejected the challenge to IRV. We affirm.

The City of Minneapolis conducts municipal elections in odd-numbered years, electing officers for the positions of Mayor, City Council, the Minneapolis Park and Recreation Board (Park Board), and the Minneapolis Board of Estimate and Taxation (Board of Estimate). The elections for Mayor and City Council are single-seat elections. The Park Board has six commissioners representing individual park districts. These commissioners are elected in single-seat elections. The Park Board also has three at-large commissioners. Two of the at-large commissioners are elected in a two-seat election

every four years, and the other at-large commissioner is elected in a single-seat election two years later. The Board of Estimate includes two members elected city-wide every four years in a multiple-seat election.[1]

Prior to the change to IRV, Minneapolis city elections used a nonpartisan primary and general election format. For a single-seat election, all qualifying candidates ran in the same nonpartisan primary, and the top two vote-getters in the primary election qualified to be on the general election ballot. In a single-seat election, whether primary or general, each voter was allowed to vote for one candidate for that office. In multiple-seat elections, each voter was allowed to vote for as many candidates as there were seats to fill. For example, in a two-seat election, the top four vote-getters in the primary would qualify for the general election ballot, and the top two vote-getters in the general election would be elected.

On November 6, 2006, the voters in the City of Minneapolis voted on a referendum to approve of a new methodology for municipal elections. The question on the ballot read:

> Should the City of Minneapolis adopt Single Transferable Vote, sometimes known as Ranked Choice Voting or Instant Runoff Voting, as the method for electing the Mayor, City Council, and members of the Park and Recreation Board, Library Board, and Board of Estimate and Taxation without a separate primary election and with ballot format and rules for counting votes adopted by ordinance?

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[1] The Board of Estimate also includes other city officials separately elected to their positions.

Voters approved the referendum by a 65-35 percent margin. Based on the referendum, the Minneapolis City Charter was amended to read as follows:

> Section 5B. Voting Method. The elected officers shall be elected by the method of Single Transferable Vote, sometimes know as Ranked Choice Voting or Instant Runoff Voting. The City Council shall, by ordinance, establish the ballot format and rules for counting the votes. The method shall be used for the first municipal election after adoption and all subsequent elections unless the City Council certifies, by ordinance, no later than four months prior to the election, that the City will not be ready to implement the method in that election. Such certification must include the reasons why the City is not ready to implement the method.

Minneapolis City Charter, ch. 2, § 5B.

On April 18, 2008, the City Council passed a comprehensive ordinance detailing the procedures for conducting municipal elections under the IRV method. The ordinance prescribes the method of counting votes for single- and multiple-seat elections. Minneapolis, Minn., Code of Ordinances (MCO) ch. 167 (2008).

In general terms, the IRV methodology eliminates the process of separate primary and general elections in favor of a single election in which voters may rank all candidates for a particular office in order of the voters' preference. Counting of the ballots then simulates a series of runoff elections, each narrowing the field of candidates until a candidate achieves the designated threshold number of votes to be elected.

In both single-seat and multiple-seat elections, all candidates are listed on the ballot, and each voter can rank the candidates in order of preference. MCO § 167.20 (definition of "Ranked-choice voting"). A voter may rank as many or as few candidates as she chooses.

In both single-seat and multiple-seat elections, a threshold is calculated to determine the number of votes needed for a candidate to win the election. Threshold is defined by the ordinance.

> Threshold means the number of votes sufficient for a candidate to be elected. In any given election, the threshold equals the total votes counted in the first round after removing partially defective ballots, divided by the sum of one (1) plus the number of offices to be filled and adding one (1) to the quotient, disregarding any fractions. Threshold = (Total votes cast)/ (Seats to be elected +1) +1.

MCO § 167.20. Thus, in a single-seat election, the threshold is a majority of the votes cast (total votes cast, divided by 1 seat plus 1, or 2, plus 1 more vote). In multiple-seat elections, however, the threshold is less than a majority of votes. The threshold required for election is not adjusted in subsequent rounds when the number of votes cast may decrease because not all voters continued to rank candidates, but continues to be based on the total number of votes counted in the first round. The vote-counting methodology operates somewhat differently for single-seat and multiple-seat elections.

Single-Seat Elections

Initially, all first-choice votes are counted. *See* MCO § 167.60(a)(1)(a). If any candidate receives the threshold number of votes (a majority), that candidate is elected and no additional rounds are counted. *Id.* If no candidate receives the threshold number of votes in the first round, the candidate who received the lowest number of first-choice votes is eliminated, and a second round of counting proceeds. MCO § 167.60(a)(1)(a)-(d). In the second round, the first-choice votes of all the continuing candidates are counted and the second-choice votes of the voters for whom the eliminated candidate was

the first choice are counted and allocated to the continuing candidates. *Id.* If allocation of those second-choice votes does not give any of the continuing candidates the threshold number of votes, a third round is triggered. *Id.* Once again, the candidate who received the fewest votes in the previous round is eliminated and her votes are allocated to the continuing candidates based on the next ranked choice on those ballots. *Id.* Additional "instant runoff" rounds continue in this same way until a candidate achieves the threshold number of votes. *Id.* If only two candidates remain and neither achieves the threshold amount, the candidate with more votes wins. MCO § 167.60(a)(1)(e).

Only one vote, or candidate ranking, is counted for each ballot in each round of counting votes. MCO § 167.60(a)(1)(a). A voter may choose to rank only his first-choice candidate and indicate no subsequent rankings. In that event, his vote will count in the first round and any subsequent rounds in which the first-choice candidate has not been eliminated. *See id.* But if the voter's single ranked candidate has been eliminated, the voter's ballot does not count in any subsequent rounds. MCO § 167.60(a)(2). A voter may also skip a single ranking, indicating, for example, first- and third-choice candidates, but no second choice. In that event, if the voter's first-choice candidate is eliminated, in the next round, when the voter's second choice would be counted, the third choice is counted. *Id.* If a voter skips two rankings, the ballot is treated as exhausted. *Id.*

Multiple-Seat Elections

In multiple-seat elections, such as those for the Park Board and Board of Estimate in which two seats are filled, the basic counting methodology is the same.[2] A threshold number of votes needed to win a seat is calculated using the same formula used for a single-seat election (total votes divided by total seats plus 1, plus 1 more vote). *See* MCO § 167.70. In a two-seat election, for example, the threshold is one-third of the total votes cast plus one vote (total votes cast, divided by 2 seats plus 1, or 3, plus 1 vote). *See* MCO § 167.20. Voters may rank all candidates on the ballot in order of their preferences, and serial runoff rounds are counted until the seats have been filled. MCO § 167.70(a)(1)(a). In any round in which no candidate reaches the threshold, the candidate who received the fewest votes is eliminated for the next round, with that candidate's votes allocated to the voters' next ranked choices. MCO § 167.70(a)(1)(f). Thus, in the first round, all first-choice votes are counted, and if no candidate reaches the threshold amount, the candidate with the fewest votes is dropped for the next round. *Id.*

The difference in methodology for multiple-seat elections, as compared to single-seat elections, occurs when one candidate receives the threshold number of votes and one or more seats remain to be filled. When that occurs, the votes that the winning candidate received above the threshold are deemed to be "surplus" votes. MCO § 167.70(a)(1)(d)-(e); *see also* MCO § 167.20 (definition of "Surplus"). Those surplus votes are reallocated

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[2] The referendum adopting IRV included elections for the Library Board, but there are no longer elections for that board because in 2008, the Minneapolis Public Library System merged with the Hennepin County Library System.

to the subsequent-choice candidates listed on the ballots of those who voted for the winning candidate. MCO § 167.70 (a)(1)(e). The subsequent-choice votes are allocated among the other candidates in the proportion of the winning candidate's total first-choice votes that were surplus. MCO § 167.20 (definition of "Surplus fraction of a vote"). That is, if one-third of the winning candidate's votes were surplus, the equivalent of one-third of the total votes is allocated to the subsequent-choice candidates on those ballots.

Plaintiffs, appellants here, Minnesota Voters Alliance and six Minneapolis voters filed the complaint in this case on December 20, 2007, in Hennepin County District Court and filed an amended complaint on August 28, 2008. The defendants, respondents here, are the City of Minneapolis and its Mayor, R.T. Rybak (collectively "the City"). FairVote Minnesota, Inc., an organization that supports IRV, intervened as a defendant and is also a respondent here.[3] Both sides moved for summary judgment. In an order and memorandum filed January 13, 2009, the district court, the Honorable George McGunnigle, denied plaintiffs' motion for summary judgment and granted the motions of the City and FairVote.

Plaintiffs appealed to the court of appeals, and the City then petitioned for accelerated review in this court, which plaintiffs did not oppose. We granted accelerated review, with an expedited briefing and argument schedule.

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[3] The initial complaint also named Secretary of State Mark Ritchie and other officials as defendants, but they have never appeared in the action and were not named in the amended complaint.

I.

This case was decided in the district court on cross-motions for summary judgment, based on the parties' separate statements of undisputed facts. None of the parties contend that there is a genuine issue of material fact that would preclude summary judgment. Accordingly, the question presented is which parties are entitled to judgment as a matter of law. Minn. R. Civ. P. 56. We review issues of law de novo. *E.g.*, *Miller v. One 2001 Pontiac Aztek*, 669 N.W.2d 893, 895 (Minn. 2003).

Appellants assert constitutional challenges to the City Charter and ordinance provisions that provide for IRV. The Charter and ordinance are presumed constitutional, and the burden of proving that they are unconstitutional is on the appellants. *See City of St. Paul v. Dalsin*, 245 Minn. 325, 329, 71 N.W.2d 855, 858 (1955).

Because IRV has not yet been implemented, appellants challenge the municipal law on its face, rather than as applied. "[A] plaintiff can only succeed in a facial challenge by 'establish[ing] that no set of circumstances exists under which the Act would be valid,' *i.e.*, that the law is unconstitutional in all of its applications." *Wash. State Grange v. Wash. State Republican Party*, 128 S. Ct. 1184, 1190 (2008) (quoting *United States v. Salerno*, 481 U.S. 739, 745 (1987)); *see also Soohoo v. Johnson*, 731 N.W.2d 815, 821 (Minn. 2007) (stating that a facial challenge to the constitutionality of a statute requires a showing that no set of circumstances exists under which the statute would be valid).

Appellants argue that the IRV methodology violates their right to vote, right to political association, and right to equal protection under one-person, one-vote principles.

They argue that because these are fundamental rights, the ordinance is subject to strict scrutiny, and can only survive if it is narrowly tailored to serve compelling governmental interests.

The United States Supreme Court has recognized that states have authority to establish their own election processes, *see, e.g.*, *Wash. State Grange*, 128 S. Ct. at 1191, and that election regulations typically impose some level of restrictions on the right to vote and the concomitant right to political association, *see Anderson v. Celebrezze*, 460 U.S. 780, 788 (1983).[4] *See also Clayton v. Kiffmeyer*, 688 N.W.2d 117, 128 (Minn. 2004). Courts do not apply strict scrutiny simply because legislation imposes *some* burden on the right to vote. *Burdick v. Takushi*, 504 U.S. 428, 433-34 (1992); *Clayton*, 688 N.W.2d at 129. Rather, strict scrutiny is reserved for circumstances where the state imposes a "severe" restriction on the right to vote. *Wash. State Grange*, 128 S. Ct. at 1191; *Clayton*, 688 N.W.2d at 129. If a statute imposes only modest burdens, then "the State's important regulatory interests are generally sufficient to justify reasonable, nondiscriminatory restrictions" on election procedures. *Anderson*, 460 U.S. at 788. Courts must evaluate the burdens, if any, imposed by the state's regulation and then "weigh the asserted injury to the right to vote against the 'precise interests put forward by the State as justifications for the burden imposed by its rule.' " *Crawford v. Marion*

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[4] For simplicity, the rights to vote and to associate for political purposes will generally be referred to collectively as the right to vote in this opinion, unless separate reference to the right to association is warranted by the discussion.

County Election Bd., 128 S. Ct. 1610, 1616 (2008) (quoting *Burdick*, 504 U.S. at 434); *see also Clayton*, 688 N.W.2d at 129.

II.

We first examine the burdens that appellants contend IRV imposes on the right to vote. Appellants argue that IRV burdens the right to vote in several ways:

- by giving some votes more weight than others,
- by diluting some votes for the benefit of another,
- by allowing the second choice of one voter to harm the first-choice vote of another voter,
- by reallocating proportional "surplus" second-choice votes of voters who voted for a winner while second-choice votes of voters for continuing candidates are not counted,
- by allowing fractions of a vote to go to different candidates, and
- by creating the possibility that casting a vote for a preferred candidate may harm the chances for that candidate to win office.

The first four assertions comprise appellants' argument that IRV weights some votes more heavily than others. The fifth assertion (fractional votes) relates to the proportional reallocation of surplus votes in multiple-seat elections; and the final assertion relates to appellants' argument that IRV burdens the right to vote because it is non-monotonic.

We address these contentions in turn, in light of the legal standards that govern facial constitutional challenges.

A. Unequal weighting of votes.

1. Counting second- and subsequent-choice votes after candidates are eliminated.

The first three ways in which appellants claim IRV burdens the right to vote are variations of appellants' contention that under IRV some votes count more in determining the outcome of an election than others. This contention focuses primarily on the method for counting votes in second and subsequent rounds in which the candidate who garnered the fewest votes in the previous round has been eliminated and subsequent choices of those who had voted for the eliminated candidate are counted.

The central premise of appellants' unequal weighting argument is that in the second round, first-choice votes cast for continuing candidates were exhausted in the first round and have no further opportunity to affect the election. Appellants claim that, in contrast, voters who cast their first-choice vote for the eliminated candidate get a second chance to influence the election by having their second-choice votes, for a different candidate, counted in the second round. Appellants assert that the same is true in subsequent rounds—voters for continuing candidates have exhausted their ability to affect the election, while voters who had selected the next eliminated candidate get yet another opportunity, as their next choice is counted.

Like the district court, we reject the central premise of appellants' unequal weighting argument: that the vote for a continuing candidate is exhausted in the first round in which it is exercised and then is not counted and is of no effect in subsequent rounds. On the contrary, the vote for a continuing candidate is carried forward and

counted again in the next round. Just because the vote is not counted for a *different* candidate in the new round (as is the vote originally cast for an eliminated candidate), does not mean that the ballot was exhausted, that the vote for the continuing candidate is not counted in the subsequent rounds, or that the voter has lost the ability to affect the outcome of the election. *See Stephenson v. Ann Arbor Bd. of Canvassers*, No. 75-10166 AW (Mich. Cir. Ct. Nov. 1975) (rejecting a claim that an IRV system for election of mayor gave more weight to votes of some voters than others because those who voted for an eliminated candidate had their second choice counted while the second choice of voters whose candidate remained in the race were not counted).[5] Indeed, it is only because votes for continuing candidates are carried forward and combined with subsequent-choice votes of voters for eliminated candidates that any candidate can eventually win.

Moreover, this aspect of the IRV methodology is directly analogous to the pattern of voting in a primary/general election system. In a nonpartisan primary election, each voter's vote counts in determining which two candidates survive to reach the general election. In essence, those primary votes are the voters' first-choice ranking of the

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[5] Although there are a number of additional cases from other jurisdictions involving challenges to various forms of IRV, primarily dating from the early to mid-20th century, they addressed different issues and are not particularly helpful here. Most often the issue was whether *any* use of ranked voting for multiple candidates was permissible or whether a system that allowed only sequential ranking of candidates in a multiple-seat race violated the right to vote in "each election." *See, e.g.*, *Maynard v. Bd. of Dist. Canvassers*, 47 N.W. 756, 760 (Mich. 1890) (holding constitution by implication forbids any voter to cast more than one vote for any candidate for any office); *Reutener v. City of*

(Footnote continued on next page.)

candidates. As a result of the primary, all but the top two candidates are eliminated. Then, in the general election, voters who voted for candidates eliminated in the primary are allowed to cast another ballot, which necessarily will be for a different candidate—presumably, their second choice. This is no different than the counting of the second-choice votes of voters for eliminated candidates in instant runoff voting. At the same time, in the general election, voters who voted in the primary for either of the two surviving candidates are allowed to vote again, and they are most likely to vote again for their choice in the primary (unless, perhaps, they were voting strategically in the primary and did not vote for their actual first choice in an effort to advance a weaker opponent for their first choice to the general election). This is the equivalent of the continuing effect of the first-choice votes for continuing candidates in instant runoff. A vote in the general election still counts and affects the election, even though it is for the same candidate selected in the primary. Appellants attempt to distinguish the primary/general election system on the basis that those elections are separate, independent events, but the effect in terms of the counting of votes is the same.

Appellants argue that our decision in *Brown v. Smallwood*, 130 Minn. 492, 153 N.W. 953 (1915), is binding precedent that compels the conclusion that IRV is unconstitutional. In *Brown*, we held unconstitutional a preferential cumulative voting system that the City of Duluth adopted for municipal elections. *Id.* at 502, 153 N.W. at

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(Footnote continued from previous page.)
Cleveland, 141 N.E. 27, 33 (Ohio 1923) (rejecting challenge that preferential voting system for multiple-seat election violates right to vote "at all elections").

957. Appellants contend that the IRV system violates the principles articulated in *Brown* in two ways. First, they assert that in ranking multiple candidates, the voter has impermissibly cast more than one vote. Second, appellants argue that a voter's vote for a continuing candidate is impermissibly exhausted in the first round and then unfairly opposed by subsequent choices of voters for eliminated candidates. Neither contention has merit.

The first assertion, that the ranking of multiple candidates improperly allows a voter more than one vote, is based on a broad interpretation of *Brown* that would preclude any form of ranked-choice voting under the Minnesota Constitution. We do not understand *Brown* to establish such a sweeping proscription. Indeed, we expressly disclaimed such intent in *Brown*:

> Men of serious purpose have given thought to the preferential and other systems of voting and are of the opinion that the prevailing system of voting by ballot is not effective. . . . *Our concern is with the constitutionality of the act before us and not with the goodness of other systems* or with defects in our own.

Id. at 501-02, 153 N.W. at 957 (emphasis added). Consistent with that stated focus on the "act before us," we identified specific characteristics of the Duluth system that offended constitutional requirements. As we explain below, those characteristics resulted from the cumulative vote-counting method of the Duluth system. They are not universal to preferential voting systems, and are not present in the IRV system challenged here.

Appellants' second point is that *Brown* prohibits the unequal weighting of votes that appellants perceive to occur in the Minneapolis IRV system. We did state in *Brown* that the word "vote" as used in the Minnesota Constitution has "never meant that the

ballot of one elector, cast for one candidate, could be of greater or less effect then [sic] the ballot of another elector cast for another candidate. It was to be of the same effect." *Id.* at 498, 153 N.W. at 956. We went on, however, to explain more fully the nature of our concern:

> It was never thought that with four candidates one elector could vote for the candidate of his choice, *and another elector could vote for three candidates against him.* The preferential system directly diminishes the right of an elector to give an effective vote for the candidate of his choice. *If he votes for him once, his power to help him is exhausted. If he votes for other candidates he may harm his choice*, but cannot help him. *Another candidate may vote for three candidates opposed to him.*

Id. at 498, 153 N.W.2d at 956 (emphasis added).

An examination of the preferential voting system at issue in *Brown* reveals the basis for these specific concerns. The Duluth system permitted ranking of multiple candidates. 130 Minn. at 496, 153 N.W. at 955. The voter could indicate for each candidate that he was the voter's first choice, second choice, or an "additional" choice. *Id.* at 496, 153 N.W.2d at 955. In the first round, all first-choice votes were counted. If no candidate garnered a majority of the first-choice votes, all second-choice votes were added to the tally for each candidate. *Id.* at 496, 153 N.W.2d at 955. No candidate or votes were eliminated. Rather, each candidate would be credited with the cumulative total of his or her first and second-choice votes. If no candidate garnered a majority of those cumulative votes, all the "additional" choice votes for each candidate were then added to their totals, and the candidate with the most cumulative votes won the election. *Id.* at 496, 153 N.W.2d at 955. Under this system, the total votes counted could exceed the total number of ballots cast.

The Minneapolis IRV system differs from the Duluth system in ways that are significant. Because votes were cumulated in the Duluth system, after the first round a voter could have more than one vote counted at the same time. Under IRV, only one vote per voter can be counted in each round, just as in serial primary/general elections a voter may vote only once per election. Second, under the Duluth system, if a voter voted for second- or additional-choice candidates, those votes did in fact work against the voter's own first-choice candidate in subsequent rounds, because each voter is actually voting more than once as votes are accumulated. In IRV, a voter's subsequent choices are not counted unless the voter's higher-choice candidate has been eliminated (or elected, in a multiple-seat race), so a voter's subsequent choices cannot count against his first-choice candidate. Under the Duluth system, if a voter chose not to make more than a first-choice vote, so as not to hurt his first-choice candidate in subsequent rounds, the result was that the voter's one first-choice vote could be opposed not only by the first, but also by the second- and additional-choice votes of another voter, all at the same time, because of the cumulative counting system. In IRV, a first-choice vote for a continuing candidate may compete against a second or third choice of another voter, but only one at a time, and each time each voter's vote counts only as a single vote.

The cumulative vote-counting system in *Brown* made it possible that the ballot of one elector "could be of greater or less effect then [sic] the ballot of of another elector," and that "one elector could vote for the candidate of his choice, and another elector could vote for three candidates against him." *Brown*, 130 Minn. at 498, 153 N.W. at 956. Under the Duluth system, if a voter "votes for [the candidate of his choice] once, his

power to help him is exhausted. If he votes for other candidates he may harm his choice, but cannot help him. Another elector may vote for three candidates opposed to him." *Id.* at 498, 153 N.W.2d at 956.

The characteristics of the Duluth system that we found fatal in *Brown* do not exist in the IRV methodology, at least with respect to this facial constitutional challenge. Contrary to the suggestion of appellants at oral argument, those characteristics are not irrelevant factual differences, divorced from the "principles" we enunciated in *Brown.* Rather, the principles of *Brown* arise from and are defined by the cumulative voting system at issue in that case. This relationship is made abundantly clear by our repeated reference to the characteristics of cumulative voting each time we discussed our constitutional concerns in *Brown*, 130 Minn. at 498, 501, 153 N.W. at 956-57, and especially by our reiteration of the rationale for striking down the Duluth system in our ruling on petition for reargument, *id.* at 508, 153 N.W. at 959-60. Accordingly, we conclude that the Minneapolis IRV system does not contravene the principles we articulated in *Brown.* Nor does the system of counting subsequent choices of voters for eliminated candidates unequally weight votes. Every voter has the same opportunity to rank candidates when she casts her ballot, and in each round every voter's vote carries the same value.

2. Reallocation of "surplus" votes in multiple-seat elections.

Another aspect of appellants' claim that IRV unconstitutionally weights some votes more than others is based on the method for counting of votes in multiple-seat elections. Specifically, appellants contend that the reallocation of "surplus" votes gives

the voters for a winning candidate a second opportunity to influence the outcome of the election by counting their second-choice votes for the next seat, while all voters for non-winning and non-eliminated candidates have only one opportunity to influence the election, because only their first-choice vote is counted.

As in a single-seat election, in a multiple-seat race, each voter may rank some or all of the candidates in order of preference, and a threshold number of votes needed to win is calculated based on the total first-choice votes cast and the number of seats to be filled. When a candidate in a multiple-seat election receives the threshold number of votes needed to win, all votes received by the winning candidate in that round of counting above the threshold number are considered "surplus" votes. MCO § 167.20. Rather than counting those surplus votes simply as additional votes for the winning candidate, the surplus votes are redistributed to the next-choice candidates. MCO § 167.70(a)(1)(e).

For example, if 100 votes is the threshold number needed to win, and Candidate A receives 200 first-choice votes in the first round, there are 100 surplus votes and therefore 100 second-choice votes to be reallocated. Instead of selecting 100 of the Candidate A first-choice ballots to treat as surplus for reallocation of their second-choice votes, the IRV system considers the second-choice votes on all of the Candidate A first-choice ballots and then reallocates those second-choice votes on a proportional basis. *Id.* In the example, the 100 surplus votes are proportionally 50 percent of the 200 total first-choice

votes cast for the Candidate A.[6] Accordingly, all of the second-choice votes on the Candidate A ballots are tallied and each second-choice candidate receives 50 percent of the second-choice votes cast for him or her. Mathematically, this is the equivalent of counting one-half of each of the 200 first-place votes for Candidate A for that candidate (giving her the 100 votes needed to win) and one-half of each of the second-choice votes on those ballots for the second-choice candidates (representing the 100 surplus votes).

Appellants contend that this reallocation of surplus votes gives the voters for a winning candidate a second opportunity to influence the outcome of the election by counting their second-choice votes for the next seat, while all voters for non-winning and non-eliminated candidates have only one opportunity to influence the election, because only their first-choice vote is counted. This, appellants argue, is another example of IRV improperly weighting some votes more than others.

But reallocation of surplus votes will not inevitably occur in every multiple-seat election. For example, if in the first round a sufficient number of candidates receive at least the threshold number of votes to fill all the available seats, the election is over. MCO § 167.70(a)(1)(a) ("If the number of candidates whose vote totals equal or exceed the threshold is equal to the number of seats to be filled, the tabulation is complete."). In that circumstance, there would be no additional rounds and no reallocation of surplus votes.

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[6] Total first choice votes received (200) less threshold needed to win (100) = surplus votes (100). Surplus votes (100) = 50% of total votes (200). *See* MCO § 167.20.

Addressing the circumstances in which surplus votes are reallocated, the City and FairVote respond that the reallocation of surplus votes for a winning candidate does not constitute giving extra weight, or an extra opportunity to influence the election, to the voters for the winning candidate. They assert that each voter's ballot counts only for one vote in each round, and this is true for reallocation of surplus votes as well.

We need not resolve whether respondents' claim—that surplus vote reallocation in multiple-seat races allows each voter but one full vote in each round—is accurate, and negates appellants' claim of weighting some votes more than others. This is a facial challenge, and appellants can succeed only if they have demonstrated that IRV violates constitutional principles in every application. *See Wash. State Grange v. Wash. State Republican Party*, 128 S. Ct. 1184, 1190 (2008). Because reallocation of surplus votes would not be needed if, in a multiple-seat election, all open seats were filled in the first round, appellants' claim of unequal weighting because of surplus vote reallocation does not even arise in every application of the IRV system. In a facial challenge, once a constitutional application is identified, it is inappropriate to speculate regarding other hypothetical circumstances that might arise, and we decline to do so. Accordingly, appellants have failed to carry their burden in this facial challenge IRV as applied in multiple-seat races.

B. Counting proportional surplus votes.

Appellants additionally contend that the reallocation of fractions of votes to different candidates violates constitutional principles. As explained, the reallocation of fractions of votes results from the proportional distribution of second-choice surplus

votes in multiple-seat elections. Appellants argue that counting fractions of votes is improper for two reasons. First, they contend that *Brown v. Smallwood* requires that each vote, and every vote, must count as a numerical one, not a fraction of one. Second, appellants argue that distributing the surplus portion of a vote to the second-choice candidate interferes with the voter's right to political association.

Because these arguments challenging fractional votes are premised on the reallocation of surplus votes in multiple-seat elections, and because there is a circumstance in which there would be no need for reallocation of surplus votes in a multiple-seat election, we need not resolve the question of whether appellants' legal theories about fractional votes have any merit in order to uphold IRV on its face.

C. Non-Monotonicity.

Finally, appellants argue that the fact that IRV is non-monotonic requires a conclusion that the system violates voters' right to vote and is therefore unconstitutional. A voting system is "monotonic" if voting for a preferred candidate or giving a preferred candidate a higher ranking, with the order of other candidates' ranking remaining the same, cannot hurt the preferred candidate's chances of winning. An election methodology is "non-monotonic" if the opposite is true. That is, a system is non-monotonic if voting for a preferred candidate or ranking the preferred candidate higher, without changing the order of ranking other candidates, can hurt the preferred candidate's chances of winning.

The parties agree, and the district court found, that the Minneapolis IRV system is non-monotonic. Notably, the district court also found that the City's nonpartisan

primaries, which IRV is intended to replace, are also non-monotonic. Although the parties agree that the IRV system is non-monotonic, they disagree significantly whether that has any ramifications for the constitutionality of the system.

Appellants cite no case authority that applies monotonicity as a legal standard. Instead, they simply assert that when casting a vote for a preferred candidate may harm that candidate's chances to win, the system necessarily burdens the right to vote and is unconstitutional.

Respondents contend that monotonicity is merely a mathematical concept, and not a constitutional requirement. They explain that monotonicity is one of several characteristics identified by economist Kenneth Arrow as desirable in a democratic election system. *See generally* Kenneth Arrow, *Social Choice and Individual Values* (1951). Arrow proved mathematically, in what is known as Arrow's Theorem, that no voting system can satisfy all of the desired conditions that he identified. Respondents contend that because no election system can comply with all the characteristics, it is inappropriate to use any of them as a constitutional requirement. In particular, respondents point out that, as the district court found, even the Minneapolis primary/general election system was non-monotonic, and therefore the fact that IRV is non-monotonic cannot be fatal. Appellants respond that a plurality election system is monotonic, in that each additional vote for a candidate in such a system can only help that candidate.

Appellants' response fails to address the candidate-elimination function of the nonpartisan primary. It is at that stage that the primary/general election system is non-

monotonic. This is illustrated by the fact that in some circumstances, a voter can increase her preferred candidate's chances to win office by voting in the primary for a non-preferred candidate who would be a weaker opponent for her preferred candidate. By helping the non-preferred, but weaker, candidate succeed in the primary, the voter can help her preferred candidate win the general election. Conversely, voting for the preferred candidate and denying the weaker, non-preferred candidate that primary vote, could allow a stronger opponent to advance—and the stronger opponent could defeat the preferred candidate in the general election. In that way, a vote in the primary for the preferred candidate could hurt her chances in the general election—a non-monotonic result.

Although it is disconcerting to acknowledge that a voter cannot be sure that his or her vote for a candidate will help, rather than hurt, that candidate, any system that involves a process for narrowing a field of three or more candidates has that potential. But this is not because a vote for the preferred candidate counts for less in some circumstances, but rather because of the consequent changes in the relative strength of the other candidates. Accordingly, the fact that IRV is non-monotonic does not establish that the system interferes with the right to vote.

Even if non-monotonicity were viewed as an indication that the right to vote may be burdened, a further problem with appellants' monotonicity argument is that they have provided no evidence, even on a hypothetical basis, of the frequency with which the non-monotonic effect is likely to occur in a real-world election—that is, what proportion of

voters would be adversely affected. In the context of a facial challenge, this is significant, in two respects.

First, the risk of this adverse characteristic of IRV is at this stage purely hypothetical, not because IRV has not yet been implemented, but because the non-monotonic effect of IRV may or may not occur in the real world. As we have already noted, in a facial challenge to constitutionality, the challenger bears the heavy burden of proving that the legislation is unconstitutional in all applications. *E.g.*, *Wash. State Grange*, 128 S. Ct. at 1190. Where the harm alleged is hypothetical and may or may not occur, the challenger has not met that burden. *See* our discussion *supra* Section II.A.2 regarding reallocation of surplus votes in a multiple-seat election.

Second, a key issue in a challenge to voting regulations is whether the regulations impose a *severe* burden on the right to vote. *Wash. State Grange*, 128 S. Ct. at 1191. The fact that there may be *some* burden is not enough to invoke strict scrutiny. *Burdick*, 504 U.S. at 433-34. *See* our discussion *infra* Section III. The Supreme Court has recently reiterated that where the regulation and the burden imposed affect a limited number of voters, the burden cannot be characterized as severe. *See Crawford*, 128 S. Ct. at 1622-23. Although it is apparently undisputed that the IRV methodology has potential for a non-monotonic effect, there is no indication, much less proof, of the extent to which it might occur, and so there is no way to know whether the alleged burden will affect any significant number of voters. Accordingly, appellants have not established that non-monotonicity imposes a severe burden on the right to vote.

III.

The second step in analyzing a challenge to government regulation of elections is to determine whether any burden imposed on the right to vote is justified by the interests served by the regulation. If government regulation severely burdens the right to vote, the regulation cannot survive unless it is narrowly tailored to serve compelling state interests. *See, e.g.*, *Wash. State Grange*, 128 S. Ct. at 1191. But if regulation imposes only modest burdens, then "the State's important regulatory interests are generally sufficient to justify reasonable, nondiscriminatory restrictions" on election procedures. *Anderson*, 460 U.S. at 788.[7] For the reasons just discussed, we have determined that appellants have failed to establish that IRV on its face burdens the right to vote, and even if it could be construed as a burden, that burden is minimal. Accordingly, the question, if there is some burden imposed, is whether there are "important regulatory interests" that justify the burden.

Respondents identify several interests that they contend IRV serves and that are adequate to justify any burden imposed on the right to vote. The City asserts that IRV serves the following interests:

(1) Because the citizens of Minneapolis adopted IRV by referendum, IRV serves the purpose of respecting the democratic process;

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[7] Appellants acknowledge that IRV is nondiscriminatory, in that it does not create invidious classifications.

(2) Because IRV requires only one election, rather than separate primary and general elections, IRV reduces the inconvenience and costs to voters, candidates, and taxpayers;

(3) IRV will increase voter turnout; and

(4) IRV encourages less divisive campaigns as candidates seek support for second- and subsequent-choice votes.

Respondent FairVote argues that IRV serves the following interests in addition to those identified by the City:

(1) IRV promotes the election of candidates with majority mandates, eliminating plurality winners in one-seat races;

(2) IRV eliminates the "spoiler" effect of third-party candidacies; and

(3) IRV helps insure more diverse representation by promoting minority representation in multiple-seat races.

Appellants do not directly address most of these proffered benefits of IRV. They argue that the only evidence of purpose in the record is in the report of the Instant Runoff Voting Task Force, which focused only on cost-saving. Appellants also argue that all the proffered benefits are hypothetical, and the City cannot be entitled to summary judgment based on hypothetical justifications for IRV.

Appellants' arguments ignore the fact that legislation is presumed constitutional and the challenger has the burden of proof to rebut that presumption. *See City of St. Paul v. Dalsin*, 245 Minn. 325, 329, 71 N.W.2d 855, 858 (1955). Moreover, as the Supreme Court has explained, in constitutional litigation of this type, the Court does not "require

elaborate, empirical verification of the weightiness of the State's asserted justifications." *Timmons v. Twin Cities Area New Party*, 520 U.S. 351, 365 (1997) (citing *Munro v. Socialist Workers Party*, 479 U.S. 189, 195-96 (1986)). Accordingly, the lack of evidence supporting the suggested beneficial effects of IRV is not fatal.

Reducing the costs and inconvenience to voters, candidates, and taxpayers by holding only one election, increasing voter turnout, encouraging less divisive campaigns, and fostering greater minority representation in multiple-seat elections are all legitimate interests for the City to foster.[8] Whether and to what degree implementation of IRV will achieve those benefits remains to be seen. But it is plausible that IRV may advance one or more of these interests. In the context of this facial challenge, that possibility is sufficient to justify any minimal burden imposed by IRV.

IV.

In addition to arguing that IRV violates the rights to vote and to political association, appellants argue it violates their right to equal protection. This claim appears to be based primarily on the arguments about unequal weighting of votes, and as we have seen, there is no unequal weighting in the IRV system for single-seat races or in multiple-seat races where no allocation of surplus votes occurs. Appellants' equal protection claim fails as well because it is not supported by the legal authority on which it is

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[8] Because Minneapolis did not employ a plurality election system before adoption of IRV, the proffered benefits of promoting majority mandates and eliminating the spoiler effect are not relevant here.

premised, specifically, the Supreme Court's one-person, one-vote jurisprudence and *Bush v. Gore*, 531 U.S. 98 (2000) (per curiam).

Although the Court's one-person, one-vote cases do address the general issue of unequal weighting of votes, they are inapposite here. The one-person, one-vote cases had their origin in the malapportionment of legislatures. *See Reynolds v. Sims*, 377 U.S. 533 (1964). That is, the number of voters in some districts electing one legislator was several multiples higher than in other districts, meaning that a vote in the smaller population district had more impact in terms of electing a legislator than a vote in the more populous district. *See id.* at 562-63. No such vote inequality is created by IRV.

In addition, appellants contend that, under IRV, some votes are counted differently than others, and the system therefore violates the equal protection principles articulated in *Bush*. We agree with the district court that *Bush* is not controlling here. The essence of the equal protection problem addressed in *Bush* was that because there were no established standards under Florida law for discerning voter intent, in the recount process ballots were being judged differently from county to county, and even within individual counties. *See Bush*, 531 U.S. at 106. In contrast, in the IRV system, every ballot and every vote is counted by the same rules and standards.

Finally, it is worth reiterating the comment of Justice Hallam dissenting in *Brown* on the role of this court in addressing a constitutional challenge of this type: "Many reasons might be given why this legislation should not have been passed by the people of Duluth. With its wisdom we are not concerned. The only question is whether this community had the constitutional right to adopt this plan of election." 130 Minn. at 504,

153 N.W. at 958 (Hallam, J., dissenting). The voters of Minneapolis chose to adopt the IRV method. We conclude that this facial challenge to the constitutionality of the IRV method fails.

Affirmed.

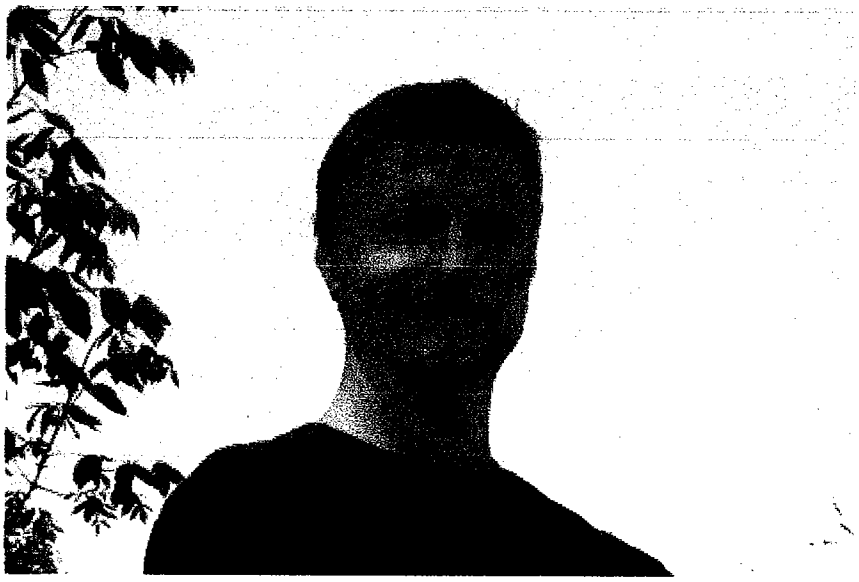
Exhibit 9
Anthony Gierzynski, Gunning for IRV (March 2009)

HOMECONTACT
March 12th, 2009

Voting Paradoxes and Perverse Outcomes: Political Scientist Tony Gierzynski Lays Out A Case Against Instant Runoff Voting

by Philip Baruth

With the Burlington run-off now concluded, and with a high accuracy rate now established in the counting, questions linger about IRV itself. No one in the state has put together a more compelling data set than Political Scientist Tony Gierzynski. Tony's was the only group to conduct exit polling in 2006; this time out, he's brought forward far less reassuring data, and it seemed best to let him present it himself. As regular readers know, I support IRV. But Tony's arguments give me real pause. — PB



Gunning for IRV
by Anthony Gierzynski

Let's get right into it: Instant Runoff Voting (IRV) is *not* good. It is not good because it suffers from three fundamental problems: it discriminates against classes of voters by adding complexity the ballot; it has a very real potential to produce perverse outcomes or voting paradoxes that are not majoritarian; and it fails to address the real problem that arises when multiple parties compete in a two-party system.

The Problems with Adding Complexity to the Ballot

One of the ways that the US elections are unique when compared to other democratic systems is the length and complexity of our ballots. Unlike most other democracies, we ask voters to cast votes on a multitude of offices from Presidency down to Justice of the Peace and to decide a multitude of ballot questions.

Another way US elections are unique is in our pathetically low level of voter turnout. The two are related.

The complexity of US elections increases the costs of participating (having to gather more information to make more decisions) while making it more difficult for voters to discern the connection between any one vote they cast and what government does, which ultimately results in fewer people voting (particularly those at the lower end of the socioeconomic scale).

If anyone has any doubt that the complexity of an election ballot can disenfranchise voters, particularly more vulnerable classes of voters, one need only to remember Florida 2000.

Complex ballot designs—including butterfly ballots and ballots that listed candidates on more than one page—confused tens of thousands of voters, who spoiled their ballots by voting for more than one candidate. Spoiled ballots included a disproportionate number on which Al Gore was selected, costing him the election.

Spoiled ballots were more likely to occur on the more complex ballots. And, those disenfranchised by these complex ballots tended to poorer, less educated, minority, and elderly voters.

As I said above, the fact is the US has the longest and most complex ballots in the democratic world. If states in the US were to adopt IRV for all (or even some) of their elections, the situation would be made worse.

Instead of simply choosing the preferred candidate for president, senator, representative, governor, lieutenant governor, secretary of state, treasurer, etc., they would be asked to rank each candidate which results in a doubling, tripling or even quadrupling of the nature of the task and the cognitive costs of voting.

The effect of adding such complexity to the ballot is not neutral or random; it is more likely to confuse those same groups of disadvantaged voters confused by the Florida ballots. This fact was demonstrated by exit polls of both Burlington voters and San Francisco voters who have also used IRV.

Even when used in a single contest, IRV caused greater confusion among those on the lower end of the socioeconomic scale. In other words, IRV discriminates.

Proponents of IRV like to frame this argument by countering that what critics of IRV are saying is that voters are stupid. We are saying no such thing.

These analyses are not impugning the intelligence of the American voter, just recognizing the limits to what a political system can ask of its citizens and recognizing that adding complexity to the ballot will disproportionately harm some groups of people more than others.

In a democracy that values political participation and political equality such side-effects should not be dismissed lightly. Most people, unlike political activists, don't have a lot of time to devote to politics, and for a democracy to work, they shouldn't have to.

They should be able to focus on careers, raising children, involvement in their community, etc, and still be able to participate meaningfully in the electoral process. IRV makes this even more difficult than it already is by making the task more complex.

Voting Paradoxes or Perverse Outcomes

There exists a number of voting paradoxes or perverse outcomes that can occur with IRV, which are not associated with the typical single vote system. Such outcomes contradict the claim of IRV proponents that IRV creates majority winners.

Perverse outcomes include the possibility that one candidate could increases their vote only to lose the election. Another possibility is one in which every candidate can beat another candidate in a head-to-head matchup (such as candidate A beats B, B beats C, and C beats A…a paper-scissors-rock scenario) so that the election results fail to produce a true majority preference for any candidate.

Yet another is one in which a candidate can beat any other candidate by a majority in a head-to-head matchup and yet lose the election.

The probability of these perverse outcomes happening is not small (see Anthony Quas, "Anomalous Outcomes in Preferential Voting," Stochastics and Dynamics Vol. 4, No. 1 (2004),pp. 95-105; William H. Riker and Peter C. Ordeshook, An Introduction to Positive Political Theory (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973); and Peter Fishburn and Steven Brams, "Paradoxes of Preferential Voting: What Can Go Wrong with Sophisticated Voting Systems Designed to Remedy Problems of Simpler Systems," Mathematics Magazine vol. 56, no. 4, September 1983: pp. 207-214).

Indeed, the 2009 mayoral election in Burlington witnessed one of these perverse outcomes, the "Thwarted Majorities Paradox." A candidate who lost the election, Andy Montroll, was preferred over all other candidates in a head-to-head matchup.

That is, a majority of voters ranked Montroll (the Democratic Party candidate) ahead of the winner Bob Kiss (Progressive Party candidate) and ahead of the second place finisher, Kurt Wright (the Republican Party candidate), yet Montroll lost the election.

This is a concrete instance where proponents' claim that IRV results in majority rule is clearly NOT the case. (Click here for numbers and calculations laid out in table form.)

Failing to Address the Real Problem

In essence what IRV is, is an attempt to use a technological fix to solve a political problem. Single seat contests (such as mayor, or US Senator, or governor, or president) create an incentive for those of similar political mind (that is ideology) to coalesce behind a single candidate in order to win a majority of votes and capture the seat—those that work together to build a majority before elections win, those that don't lose.

This structural incentive is the main reason the US has a two party system. Forcing people of like mind to work together to win elections then creates the governing majorities that have been approved by the people and that can then go about the work of implementing the will of the people.

When a group with a (mostly) shared ideology—such as the case of the Progressive Party and the Democratic Party in Vermont—becomes fragmented in this type of system, with each putting forward their own candidates, the problem that arises is a political problem (politics defined here simply as the means by which conflicts are resolved in order to determine who controls the government).

In such cases what IRV does is it allows the factions to ignore the political problem by using a technological fix as opposed to resolving their differences through the necessary negotiations that characterize politics.

In other words, IRV allows such factions to avoid working together (as they should because they want mostly the same thing). When such factions fail to work together, they ultimately fail to accomplish the reason such organizations exist, which is not just to continue existing: it is to win control of government in order to make people's lives better in a manner consistent with their political values.

UVM Professor Anthony Gierzynski, PhD, conducted an exit poll study of IRV in the 2006 Burlington Mayoral race with his students, is author of two books, a series of articles and book chapters on elections, and is currently completing work on a book on electoral reform with the working title, Prescriptions for a Healthier Democracy: Our Dying Elections and what We Can Do to Save Them.

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Philip Baruth is running for the State Senate. It's a long, tough race. He needs a fast team. Click to join.

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- * Peter Shumlin Returns: The VDB Sit-Down
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- * *T.J. Donovan is No William Shatner (And That's a Very Good Thing)*
- * In Search of Hinda Miller: The VDB Interview
- * The Initially Amusing, Unexpectedly Queasy Interview with Mark Shepard
- * The Expansive Vision of Gaye Symington

• The Jim Douglas Trilogy (AUDIO):

- * LXRG Episode I: Jim Douglas & The League of Extraordinary Republican Gentlemen
- * LXRG Episode II: Crouching Douglas, Hidden Shumlin
- * LXRG Episode III: Statehouse of the Living Dead

• VDB-Approved Sites:

- The Onion
- Sover Scene
- Blue Hampshire
- What's The Point?
- Green Mountain Daily
- BurlingtonPol.com
- The Young Writers Project
- Ameridane
- ibrattleboro
- Gravestone Girl
- Write Down The Middle
- Candleblog
- dohiyimir
- Myrant
- She's Right
- The Front Porch Forum
- Sophia Serve
- Reason and Brimstone
- Evolving Peace
- Rip and Read
- Finding Community in an Independent State
- Green Mountain Politics
- Democracy for America Blog
- Impatient Sufferance
- The Prog Blog
- Roger's World
- Five Before Chaos
- Cobalt 6
- Stop the Circ
- Cutting Ribbons
- Flameape
- From The Wilderness

- Northfield Democrats
- Mulish Behavior
- Evacuation Plans
- Carmen's Good News Garage Blog
- Bosky Dell Farm Blogspot
- Talking Points Memo
- Musings From Vermont
- WaPo's The Fix
- It's Elemental
- Editorial Cartoons by Lee Sanderson
- Minor Heresies
- Bosox Wally
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Exhibit 10
Kathy Dopp, Realities Mar Instant Runoff Voting, 18 Flaws and 4 Benefits
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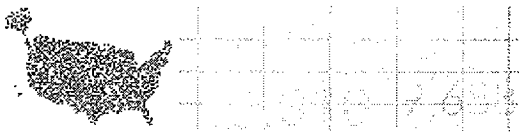

Realities Mar Instant Runoff Voting
18 Flaws and 4 Benefits

June 10, 2008, Version #2– updated Jun 25, Aug 3, Aug 7, 2008 & Feb 12, 2009
By Kathy Dopp, MS Mathematics

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Abstract

This report discusses flaws and benefits of instant runoff voting (IRV) methods and shows how IRV threatens the fairness, accuracy, timeliness, and economy of U.S. elections.

The right to vote is conferred in several places in the U.S. Constitution including in Article. 1.

> "The Times, Places and Manner of holding Elections for Senators and Representatives, shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by Law make or alter such Regulations, except as to the Places of chusing Senators."

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What is Instant Runoff Voting?

Instant runoff voting (IRV) is a method of counting ranked choice ballots. A ranked choice ballot is a ballot style where voters are asked to order the candidates in order of preference.

Depending on the variant, the voter can be asked for a partial ordering where voters are allowed to omit some candidates from their rankings, or a total ordering of all candidates can be required. Partial orderings are likely to be permitted in the U.S. because of the right to have all votes which are cast for eligible candidates counted, and because most optical-scan voting machines economically permit ranking only up to three candidates for each contest.

Ranked choice ballots can be counted by several methods such as:

1. the instant runoff voting (IRV) method described below, or
2. the Bucklin method which adds the lower preferences of voters to the existing totals whenever there is not a majority winner in the first choice count, or
3. the contingent method, also known as "top-two IRV", where all but the two candidates with most votes are eliminated after the first counting round[i], or
4. the Borda counting method where the voters' rankings are converted to ratings, with higher ratings used for first choice (e.g. first choice 3 pts, second choice 2 pts, third choice 1 pt),

This report focuses on the IRV method. Not all of the flaws of IRV are shared by other voting methods that use ranked choice ballots.

In instant runoff voting the counting proceeds in "rounds" where the candidate with the fewest votes is eliminated and the lower-ranked choices of voters whose candidates are eliminated are reallocated to the remaining candidates. For instance, if there are three candidates, then the two candidates with the greatest number of first-choice votes advance to a second round of counting. In a second round, the second choice candidate of all voters whose first choice candidate was eliminated in the first round is counted, along with the first-choices of other voters, and the candidate with the least number of votes is eliminated again. If there is only one candidate remaining who has not been eliminated, that candidate is the winner. If not, there is a third round.

As the number of elimination rounds increase, the IRV counting process becomes more complex. In the third round, some ballots have their first choices counted, some ballots have their second choices counted, and some have their third choices counted. Voters who do not provide total orderings of all candidates may have all their candidates eliminated and their ballots are excluded from the final counting rounds. In the round "n", voters' 1st or 2nd or 3rd,…, or nth ballot choices may be counted, depending on each particular ballot. After a number of rounds equal to the total number of candidates minus one, hopefully only one candidate remains, and is declared the winner.[ii]

There are also alternative voting methods which do not employ ranked choice ballots but instead are *rating* voting schemes (i.e. voters rate each candidate with a number) including a simple method

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called "approval" voting; as well as the "top-two runoff" election method. Appendix E provides a brief description of some alternative voting methods.

What is "Plurality" Voting?

Plurality voting is a name given to the voting system used today in the U.S. where voters cast one vote in each contest for each elected position available and the winners are the candidates who receive the most votes.

Who Supports Instant Runoff Voting?

Support for instant runoff voting **(IRV)** has grown since the 2000 election, and it is being considered for adoption now in many U.S. locations. IRV is billed by its proponents as a solution to the "spoiler problem".[iii]

A "spoiler" is a non-winning candidate whose presence in the election contest causes a different candidate to win than would otherwise win, by splitting the vote. The "spoiler problem occurs when two candidates have overlapping support and both candidates are penalized. When a third party candidate receives an amount of votes that is more than the vote margin between the two major political party candidates, it may tip the balance of votes to the major political party candidate who is favored by fewer voters overall.[iv] The spoiler effect has elected the "wrong" U.S. president 11% of the time[v].

In recent years, a nonprofit organization named Fair Vote has led local referenda to adopt IRV which Fair Vote prefers to other ranked choice voting methods such as the Bucklin or Borda methods.

League of Women Voter groups in Minnesota and North Carolina have adopted resolutions supporting ranked choice methods, including IRV. Burlington, VT, San Francisco, CA, Minneapolis, MN, Takoma Park, MD, and Pierce County, WA have adopted IRV and Cary, NC has tested IRV. IRV has been called "rank choice voting" by some municipalities that have adopted it.

Some Fairness Principles for Voting Methods

Conditions have been proposed to judge whether or not voting and vote-counting methods result in fair or in non-fair, paradoxical election results.[vi] Such fairness criteria include:

1. **The addition of an alternative (candidate) who does not win should not affect the outcome**. This fairness principle says that if you have an election contest where candidate A wins, and you introduce a new candidate C, then either candidate A should still win, or candidate C should now win. In other words, spoilers should not be possible. The addition of a candidate that doesn't win should not affect the outcome.

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This is some times called "independence of irrelevant alternatives" that says that the collective (societal) preference order of any pair of candidates x and y must depend solely on the individual voters' preferences between these candidates and not on their preferences for other irrelevant (non-winning) alternatives.

IRV does *not* meet this condition of fairness. (See appendix A.) As we've seen from prior U.S. elections where "spoilers" determined who won, plurality voting also does not meet this condition.[vii] Other alternative voting methods exist, such as approval or range voting that do seem to meet this fairness condition.

2. **Whenever all individuals prefer an alternative x to another alternative y then alternative x must be preferred to alternative y in the collective preference order**[viii] [the final election result]. This principle says that whenever all individuals prefer an alternative x to another y then x must be preferred to y in the collective preference order. It is possible to find examples of when IRV and plurality voting violate this fairness condition. (See appendix B.) Other voting methods such as approval voting, however, do seem to meet this fairness condition.

3. **The candidate who wins should have received a majority of voters' votes.** Some jurisdictions require winning candidates to have a majority (more votes than 50% of the ballots cast by voters). Some voting methods, such as plurality voting and IRV do *not* meet this condition. Actual top-two runoff elections do. A different definition of "majority"– a "majority of voters who have candidates remaining in the election contest after elimination rounds" is used by IRV proponents in order to claim that IRV "finds a majority candidate". Another way that IRV proponents finagle to claim that IRV satisfies the majority winner condition would be if voters' ballots are only counted whenever the voter has provided a complete ranking of all candidates in the contest, but this practice would probably not be legal in the U.S. and would not be practical with existing U.S. voting systems. On the other hand, top-two runoff elections that IRV is promoted to replace, virtually always finds a "majority" winner for all voters who participate by voting in the runoff election. In practice top-two runoff elections produce different results than IRV elections, because more often a runner-up in the original count wins a top-two runoff election.

4. **Any candidate who is the favorite [first] choice of a majority of voters should win**. While IRV does not always pick a majority winner out of all ballots cast, IRV proponents emphasize that *if* a majority winner exists among voters' first choices, then IRV will always select this candidate as the winner. However, existing plurality voting method also meets this condition, which IRV proponents call the "majority criterion". Range and approval voting do *not* meet this criterion. With IRV and plurality, the majority criterion candidate wins even if the candidate is the last choice or disapproved of by all other voters, and even if there is an alternative candidate who is approved of by *all* voters.

5. **The pair-wise favorite among all voters should be the winner**. In other words, the candidate preferred when compared pair-wise to other candidates by the most number of voters should win. This is called the Condorcet winner. Both IRV and plurality do *not* meet this condition. Range and approval voting meet it more often, as shown in the examples in appendix A.

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IRV does *not* meet four out of the above five fairness conditions. Other alternative voting methods are available that do meet these fairness conditions.

IRV proponents often compare IRV versus plurality on the one hand or compare IRV versus "top-two runoff" on the other hand.

Against plurality voting, IRV supporters point out the spoiler effect which IRV partially solves.

Since top-two runoff elections fix the exact same special case of the spoiler problem that IRV fixes plus also finds majority winners, IRV proponents talk about expense when comparing IRV to top-two runoff elections. However, claims of the economy of IRV over top-two runoff are dubious because in practice runoff elections are rarely needed and IRV requires difficult new machine programming, additional voter education, additional training for poll workers and election administrators, increased ballot printing costs, significantly more difficult and expensive manual audits, increased staff time to count, and the purchase and maintenance of new more complex vote-reading and counting machines.

Flaws of Instant Runoff Voting

Some flaws of the instant runoff voting method for counting ranked choice ballots include:

1. **Does not solve the "spoiler" problem except in special cases**. IRV only solves the spoiler problem in cases where there are only two viable candidates and some minor candidates who receive substantially fewer votes than the two viable candidates. IRV could result in electing to office the candidate who is the second least-favored among all voters[ix] and give the major political party whose voters are less likely to vote for third party candidates a better chance of winning especially if voters incorrectly think that IRV provides an opportunity to put a third party candidate as their first choice without hurting their major party favorite.[x] Oddly enough, IRV voters could sometimes give their favorite candidate a better chance to win by giving a different candidate higher ranking.[xi] (See appendix A.)

2. **Requires centralized vote counting procedures at the state-level**: IRV requires centralized vote counting for all election contests having districts that cross county lines because in each round, IRV requires that the individual ballots choices in the entire contest are counted first to see which candidate advances to the next round to know which ballots' second or lower choices need to be counted next. In other words, non-additive in the sense that there is no such thing as simple precinct subtotals for each candidate.[xii] Counting IRV usually requires counting the second, third … choices of voters whose first, second … choices are eliminated in a prior counting round. Prior to when the state-wide tallies of each round are computed and made available, it is not possible to know which voters' second, third … choices will be counted in the next round for each contest. For all multi-county election contests, IRV thus requires either counting all ballots on a state-level or requires a procedure which involves waiting for all counties to submit first-round results, doing the state-level calculations,

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notifying the counties which voters' ballots to consider second choices for round two, then waiting at the state counting center for the second round ballot numbers from the counties to arrive, and then counting again, repeating this back-and-forth process between the state and local election offices as necessary until a winner is found. Alternatively, when voters are permitted to rank from 1 to N candidates, the counting procedure requires that the jurisdictions accurately report to the state a number of subtotals *for each* precinct or ballot grouping that is equal to $\sum_{i=0}^{N-1} \frac{N!}{i!}$ where N is the number of candidates in the election contest and that the state correctly identify which of these numerous subtotals for each precinct or ballot grouping to add together in each round to obtain the overall results. For just three candidates, there are 15 possible ballot orderings or subtotals. For four candidates, there are 64 possible ballot orderings or subtotals for each precinct. When voters are permitted to rank from 1 to R candidates, as in San Francisco where voters may only rank up to R=3 candidates, then the number of permutations is equal to $\sum_{i=0}^{R-1} \frac{N!}{(i+N-R)!}$ [1]
Maine was considering IRV but had jurisdictions that would have had to give up hand counting in the polling locations. Those hand counted paper ballot counties would have had to purchase central count scanners and truck their ballots to one central office to be "tabulated". Maine abandoned IRV for that reason. Also, if any county were to submit erroneous subtotals by mistake, the process and resorting and counting would have to be restarted. IRV thus requires a sea change in election administration and possibly in state election law.[xiii]

3. **Cannot be implemented without modification to the ballots or to the optical scan machines or their software.** (See appendix D.) You can retrofit some existing optical scanners to count IRV ballots, but not the discrete-sensor machines.[xiv] If you allow ranking all candidates, then you need a number of columns of bubbles equal to the total number of candidates by each name in which you place your rating, or the ballots will quickly become pages long.

4. **Encourages the use of complex voting systems** IRV's main proponent [Rob Richie, Executive Director of Fair Vote] testified (in April 2008) to the U.S. Election Assistance Commission (EAC) that no voting systems are commercially available today to adequately handle IRV. In his testimony, Richie asked for additional technical features for optical scan voting systems, seemed to support electronic-balloting, and found fault with paper ballots.[xv]

5. **Confuses voters more than plurality voting**, and may be more confusing to voters than other alternative voting methods such as approval voting.[xvi]

6. **Confusing, complex, and time-consuming to implement and to count**. Should voters rank all candidates or only three? And, what constitutes a majority win? Is it 50% plus one vote for the total number of first column votes, or does it mean 50% plus one vote of the

[1] This paper was updated on 8/1/2008 to include this formula for when voters are restricted to ranking from one to R number of candidates. Note that when R=N, this reduces to the simpler prior formula.

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accumulated votes for the candidates remaining in the contest only after many voters' ballots may have been eliminated? It took San Francisco more than two years to implement the system. In Australia it took a month in 2007 to count the difficult election contests.[xvii]

If ballots are counted prior to validating and counting all absentee and provisional ballots, the results could be wrong because incorrect candidates may have been eliminated during some rounds, causing votes to be incorrectly allocated. Thus, it is best to wait to begin the IRV counting process after all absentee and provisional ballots are available for counting.

7. **Makes post election data and exit poll analysis more difficult to perform.**[xviii] Given the lack of valid post-election audits in most states, election data analyses are often the only means available for detecting suspicious patterns caused by vote miscount.[xix] Even though Dr. Christopher Jerdonek [the Fair Vote expert on IRV] wrote a paper stating that all raw data from IRV elections should be made available to outside observers for independent analysis and verification of election results, the North Carolina State Board of Elections refuses to release the raw data, claiming privacy concerns,[xx] and some states like Utah do not even publicly post precinct-level or machine-level vote counts, let alone the detailed ballot-level data needed to analyze IRV results.

8. **Difficult and time-consuming to manually count.**[xxi] In each round, IRV requires that individual ballots cast in the entire contest are counted first to see which candidate advances to the next round to know which ballots' second or lower choices need to be counted next. For counting each election contest, for each group of ballots that must be separately maintained (say absentee, precincts …) the ballots must be sorted, stacked, and counted by voters' candidate choices on each ballot. Then the ballots corresponding to any eliminated candidate need to be sub-sorted, sub-stacked, counted and added to the appropriate sub-totals. In following rounds those sub-piles need to be further sub-divided, sub-sorted, sub-stacked, separately counted and added to previous sub-totals. In a simple Cary, North Carolina single member town council seat contest held in only 8 precincts, approximately 72 total stacks and sub-stacks were required. For any grouping of ballots it is not possible to count more than one election contest at a time because the ballots must be resorted and restacked to correctly count each contest.

9. **Difficult and inefficient to manually audit.**[xxii] To check the accuracy of voting machine results via a post-election audit of less than 100% of all ballots cast requires, as a first step, publicly publishing all separate auditable vote counts that can be used to tally the overall election results. After the unofficial auditable vote counts that can be used to tally the overall unofficial result are publicly committed then some of these auditable vote counts can be randomly selected for manual counting in order to check the accuracy of the machine tallies. The accuracy of IRV election results may be practically auditable only via a 100% manual hand count because the correctness of intermediate-stage subtotals in each auditable vote count (machine, batch of ballots, precinct, or polling location) depends on the accuracy of the state-wide subtotals. In other words, IRV is not precinct sum-able in the sense that the totals for all 2nd, 3rd, 4th,… choices for each precinct are not used to obtain the overall election result. To manually check machine counted IRV results without doing a 100% manual count of all ballots in the election contest requires:

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a. publicly publishing 100% of voters' ballots prior to the manual audit and then randomly selecting individual ballots to manually count. This method requires that the voters' individual ballots have printed on them a humanly identifiable mark so that individual ballots could be randomly selected and the accuracy of the tallying could be verified. This would raise other concerns with ballot privacy and cost.

b. Alternatively, the tallies for all $\sum_{i=0}^{R-1} \frac{N!}{(i+N-R)!}$ (where N = number of candidates and R= maximum number of candidates voters are allowed to rank on a ballot) possible unique voter selections for each auditable vote count (a number of tallies usually greater than the number of voters in each precinct) could be publicly published prior to randomly selecting auditable vote counts to manually audit, and then those auditable counts manually checked. Because this is a huge number of tallies to publicly report, this method may be impractical and too confusing for auditors and election officials.

In other words, any manual audit to check the accuracy of an IRV result would require a resorting and restacking and recounting *all* the ballots for the entire election contest state-wide, or either publicly posting all voters' ballots choices for the entire election contest state-wide, along with a humanly-readable identifier marked on each ballot, or alternatively publicly reporting all of the $\sum_{i=0}^{R-1} \frac{N!}{(i+N-R)!}$ tallies for each precinct or other auditable vote count that could be used to tally the vote (the tallies for each possible unique voter ranking). Checking the accuracy of machine-counted IRV election results is more difficult than checking the accuracy of elections counted via other methods.

10. **Could necessitate counting all presidential votes in Washington D.C.** If a Constitutional Amendment or a national popular vote compact were passed in order to have a direct popular vote for the U.S. presidential election as some are pushing for, then using IRV would necessitate counting all presidential votes in Washington D.C. since there would be no such thing as individual state "subtotals". This would be a conflict of interest for the executive branch to determine the next president and could violate the U.S. Constitution.[xxiii]

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11. **Entrenches the two-major-political party system**: IRV has entrenched the two-party political system wherever it has been tried.[xxiv] One reason is because if a voter puts a third party candidate as his or her first choice, it can hurt the chances of the voter's second choice major party candidate, who could potentially be eliminated in the first round, causing that voter's last choice to be selected for office.[xxv]

12. **Ranking a voter's *first-choice* candidate *LAST* could cause that candidate to WIN as opposed to ranking the *first-choice* candidate *FIRST*, which could result in that candidate LOSING!**

In mathematics, a function f is monotonic if for all $x \leq y$, $f(x) \leq f(y)$. Instant Runoff Voting is non-monotonic because increasing a vote for a candidate does not always increase that candidate's chances of winning and in fact may decrease a candidate's chance to win. Voters should have the right to know how to rank their first-choice candidate - first or last or in-between - in order to help their first-choice candidate win. Unfortunately, this is not the case with instant runoff voting. Here is an example.

#voters	Votes 1st/2nd/3rd
6	B>A>C
5	C>B>A
4	A>C>B

Candidate C wins this contest because candidate A is eliminated in round one, giving 4 more votes to candidate C, resulting in 6 votes for B and 9 votes for C in round 2.

If **two additional new voters whose actual preferences are B > A > C** vote their real preferences:

#voters	Votes 1st/2nd/3rd
8	B>A>C
5	C>B>A
4	A>C>B

Then candidate A is eliminated first and their *least* favorite candidate C wins with 8 votes for B, and 9 votes for C.

However, if these same two voters voted A>C>B (ranked their second favorite candidate A first, their least favorite candidate second, and their favorite candidate last) then their favorite candidate B wins:

#voters	Votes 1st/2nd/3rd
6	B>A>C
5	C>B>A
6	A>C>B

This time C, their least favorite candidate loses the first round, resulting in 11 votes for B and 6 votes for candidate A, and their favorite candidate B wins.

In other words, if these two new voters want their first choice candidate B to win, they must *not* rank B as their first choice and must rank candidate B as their *last choice* instead! IRV exhibits the "non-monotonicity" property where increasing your vote for a candidate X, may cause X to *lose*.[xxvi] For some examples see http://rangevoting.org/Monotone.html or http://www.mnvoters.org/images/MVALitiBack.pdf

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13. **Delivers other unreasonable outcomes**. For instance, according to Warren Smith[xxvii]
    a. IRV is more likely to lead to ties and near-ties (see appendix A.),
    b. IRV can select a winner who is the pair-wise "lose to everybody except one" loser (see appendix D), and
    c. IRV favors extremists over centrists.[xxviii]

14. **Not all voters' ballots are treated equally**: Unlike with actual runoff elections, some IRV voters are not allowed to participate in the final selection round of an IRV election because all their choices were eliminated before the last counting round. Some voters have *all* their ranked choices considered. Others do not.[xxix] Some voters' second choices are considered in a timely fashion when their second choice candidates are still in the contest. Less lucky voters' have their second choices considered only after it is too late to help that candidate to win. Some of the most unlucky voters only have their first choice considered, even though their first choice candidate loses. This unequal, unfair treatment of voters' choices, ignoring lower ranked choices on some ballots but not on others causes the IRV counting method to select winners who may be favored by fewer voters than all but one of the eliminated candidates. In other words, candidates who are favored by a majority of voters end up losing, while candidates opposed by a majority of voters may win. There is currently a lawsuit in Minnesota against the adoption of IRV on the basis of the unequal, unfair treatment of voters' ballots.

15. **Costly**: IRV is more costly than plurality voting and is more costly than some other simpler-to-count alternative voting systems. There is the cost of the new machines, software, training, and voter education. The MD legislature estimated that costs could be as high as $3.50 per registered voter in their 2006 IRV bill, and a little less in the 2008 bill which did not include the cost of software which could not be estimated. The MD legislature defeated IRV bills in 2001, 2006 and 2008.[xxx]

16. **Increases the potential for undetectable vote fraud and erroneous vote counts**. This is due to several factors:
    a. The complexity of the machine programming required for counting IRV increases the likelihood of errors.
    b. The complexity of the manual counting procedures and the requirement for a 100% manual count to check the accuracy of the results, makes valid audits less likely to occur. Any procedure lacking a routine method for detecting and correcting errors can be assumed to be inaccurate.
    c. Pre-election machine testing of IRV elections would be more complex and difficult and therefore more likely to miss innocent errors. (Pre-election testing is incapable of detecting any deliberate vote fraud.)
    d. The conflict between the requirement to make voters' ranked choices on all individual ballots available in order for the public to verify the hand count with the requirement for ballot privacy may mean that any post-election data analysis that could check for consistency with patterns caused by vote fraud and error will not be possible.

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e. No one has yet been able to generalize exit poll analysis methods which can now detect vote count patterns that are consistent with vote miscount in most plurality elections, to the much more complex IRV election results. Hence it would be much more difficult, if not virtually impossible to use exit poll data to detect patterns consistent with vote miscount.

f. It could be easier to hide the effects of vote switching and incorrect failure to count votes, and vote padding within a new and more complex voting system like IRV. In other words, any vote count patterns that make vote fraud noticeable may not be easily detectable with IRV voting. IRV proponents have typically not focused attention on developing any routine policies, methods, or procedure for detecting and correcting vote count errors which would work well with IRV methods.

17. **Violates many election fairness principles**. A spoiler candidate who does not win the election contest can cause a different candidate to win than would win if the spoiler candidate were not in the election contest; IRV can fail to elect the candidate that the largest number of voters prefer to other candidates (i.e. IRV does not always elect the pair-wise favorite); IRV does not always elect a majority candidate; IRV can elect the candidate who is second to the bottom for being least favored by voters. See appendix A and the section above on fairness conditions violated by IRV.

18. **Unstable and can be delicately sensitive to noise in the rankings**. If an election is not resolved after 3 rounds of IRV then one is deep in the ranking for many people. This means noise in the rankings. Do people really study candidates they don't care much about? Thus the noise in the ranking for the most ill-informed voters is determining the outcome in deep rank run-offs.

    When an election contest is unresolved after 3 rounds of IRV, a better solution is to hold a real run off with the remaining candidates. Having winnowed the field, voters can now properly study their allowed few choices with the required care and presumably enough will to make the outcome not contingent on noise. Moreover, can you fathom how awful it would be to fill out a ballot ranking every candidate 10 deep? In Australia, voters are required by law to fill rank ever candidate running (generally 20) from 1 to 20. Do you think there is anything besides noise in the last ten? The saving grace on the Australian ballot is that generally there are only 2 questions, one with 3 to 4 rankings and one with about 20. Not like our USA ballots. Restricting the ranking depth of ranked choice ballots could improve IRV methods by reducing noise and making it easier for voters.

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Benefits of Instant Runoff Voting (IRV) Over Plurality Voting

There are a few areas where IRV is an improvement over today's predominant voting method called plurality voting. The benefits of IRV include:

1. **Eliminates the spoiler scenario only in situations where the minor party candidate is behind both frontrunners** so that the spoiler candidate is eliminated before either of the two major party candidates.
2. **Will not elect a candidate who loses pair-wise to all rivals** whereas plurality voting can do so. (See appendix D.)
3. **Votes are more expressive**. It gives IRV voters a sense of being heard by giving voters an opportunity to express their preferences.
4. **An IRV** counting method called Single Transferable Vote (STV) when used in multiple-seat elections, could help minority voting groups obtain representation that is roughly proportional to their numbers in the voting population *if* sufficient candidates run for office that represent minority interests and *if* sufficient minority voters exercise the right to vote and vote for the candidates representing their interests.[2] In actual practice, IRV has not helped minorities to win representation where it has been tried.

If one ignores IRV's unequal treatment of voters' ballots, its counting difficulties, the increased potential for undetected vote fraud and error, the increased costs and complexity, the need for new high-tech voting software and equipment, and the difficulty and costs of manually auditing IRV elections, then it might be considered better than today's plurality voting method. So, if the emphasis is not on fairness, accuracy, economy, and timeliness, then IRV could be considered an improvement over plurality voting. However, IRV is not as fair as top-two runoff elections.

The IRV method, although it does not completely solve the spoiler problem, does not find majority winners, and does not solve the two-party domination problem may fit better with elections like Australia holds where there is a single contest on a single paper ballot. Australia's elections have one contest with perhaps 10-20 political parties running for election.

An "IRV-Like" Solution to Some IRV Counting Issues

While it is not strictly a ranked choice voting method, there is an "IRV-like" solution to the dilemma of the complexity of counting IRV ballots which allows the candidates who are eliminated in beginning rounds to exercise their political power, rather than being defanged by normal IRV counting methods. This is to use the current voting system we have now, where voters vote for one candidate, but then have the losing candidates' votes roll over to whomever the candidate has pre-selected prior to Election Day. That is to say the candidate not the voter determines the ranking preferences. This allows them to negotiate with the major parties to get their issues adopted in return

[2] There are other voting methods available that achieve proportional minority group representation, but do not have as many flaws as IRV methods.

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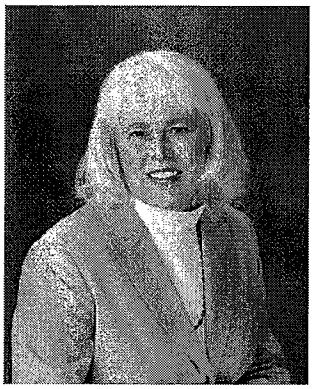
for their roll-over votes. It is simple. Since the rank order is known ahead of time the votes can be counted locally not centrally. This solution solves some of the counting problems of IRV, but it does not solve IRV's fairness issues.

Two alternative methods of counting ranked choice ballots would also eliminate some of the problems of IRV. The Bucklin and Borda methods count *all* the voters' choices as compared to IRV that only counts some voters' choices, conceals the second or lower preferences of voters whose higher ranked preferences are still in the contest. The Bucklin method does not eliminate any candidates. It just counts all the votes and is similar to approval voting, but ranked. Bucklin method is more efficient at finding majorities than IRV, because IRV does *not* count all the votes. The Borda method is simpler to count and to audit than either IRV or Bucklin methods because the Borda method does not require centralized vote counting and is thus precinct-sum-able.



About the Author

Kathy Dopp has an M.S. degree in Mathematics from the University of Utah and has authored dozens of academic papers with Ph.D. computer scientists and statisticians on voting and election issues since 2003, including analyses of exit poll discrepancies and vote count patterns, and voting system recommendations. Dopp is currently executive director of the grossly under-funded non-profit, The National Election Data Archive, for which she has been doing full-time volunteer work for since 2004. Her resume is posted online at: http://electionarchive.org/ucvInfo/staff/KathyDopp.pdf

Acknowledgements

Thanks to computer scientists who are voting system experts, to voting methods experts, and to the organization Fair Vote which promotes Instant Runoff Voting, this revised version

- has a title reflecting additional flaws of instant runoff voting (IRV) suggested by experts,
- discusses how IRV does *not* select majority winners as often as real runoff elections or primary and general elections do,
- differentiates between the ballot style - "ranked choice voting" - and the counting method - "instant runoff voting" (IRV),
- gives an overview of alternative voting methods in appendix E,
- describes an "IRV-like" solution that would solve some of IRV's counting problems,
- provides a precise definition of "spoiler", and
- rebuts Fair Vote's attempt at rebutting the first version of this report in appendix F.

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Appendix A: "Instant Runoff Voting" Examples

Example 1: This example shows that an IRV outcome may not seem fair; and that the IRV counting process is complex. The table below lists twelve voters and four candidates running for a single-winner election contest. Each row represents one voter's candidate rankings.

	Candidates' Ranks			
Voter#	Republican	Libertarian	Green	Democrat
1	4	3	2	1
2	1	4	3	2
3	1	4	3	2
4	3	1	4	2
5	4	1	3	2
6	4	3	1	2
7	4	3	1	2
8	1	2	3	4
9	2	1	4	3
10	4	2	1	3
11	4	3	2	1
12	1	4	3	2

Using the IRV method, the Democrat is eliminated in the first round and the Republican and Green candidates end up being tied, despite the fact that 7 voters, or 58%, prefer the Democrat over the Republican, and 8 voters, or 67%, prefer the Democrat over the Green candidate. Notice that overall although there are 4 voters who selected the Republican as 1st choice, more voters selected the Republican as last choice than any other candidate, and the Democrat is the candidate most frequently ranked 1st or 2nd choice among all voters.

#voters who selected candidate as	Candidates			
	Republican	Libertarian	Green	Democrat
1st choice	4	3	3	2
2nd choice	1	2	2	7
3rd choice	1	4	5	2
4th choice	6	3	2	1
total voters	12	12	12	12

The Democrat has the most 1st and 2nd rankings but is eliminated in the first round; the Libertarian is eliminated in the second round; and the Green and Republican candidates are tied in the third round, although the Green and Democrat are both ranked 1st, 2nd, or 3rd by 11 voters and the Republican is ranked 1st, 2nd, or 3rd among only 6 voters, the least of any candidate. A real run-off election between the Green and Republican candidates is needed for this case.

Not only is the IRV counting process complex and difficult to audit, but the result could be fundamentally unfair whenever minor party candidates become viable, as this example shows by selecting the major-party candidate favored by the least number of voters. IRV proponents claim that such scenarios "occur rarely". This claim may be true because voters learn to strategize to avoid these scenarios rather than ranking candidates honestly.

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Another way to look at this set of voter preferences is:

2 voters prefer D > G > L > R
3 voters prefer R > D > G > L
1 voter prefers L > D > R >G
1 voter prefers L > D > G >R
2 voters prefer G > D > L >R
1 voter prefers R > L > G >D
1 voter prefers L > R > D >G
1 voter prefers G > L > D >R

Notice that: 6 voters rank the Republican last; 3 voters rank the Libertarian last; 2 voters rank the Green party last; and 1 voter ranks the Democrat last.

Let us count the number of voters who prefer each candidate over other candidates:

D > G and L and R for 2 voters
D > L and R or R and G or L and G for 7 additional voters
D > R or L or G for 2 additional voters
11 voters prefer the Democrat over other candidates

G > D and L and R for 3 voters
G > R and L or R and D, or D and L 2 additional voters
G > L or R or D 5 additional voters
10 voters prefer the Green over other candidates

L > D and G and R for 3 voters
L > G and D or G and R or R and D for 2 additional voters
L > R or D or G 4 voters
9 voters prefer the Libertarian over other candidates

R > D and G and R for 4 voters
R > G and D or G and R or D and R for 1 additional voters
R > L or D or G for 1 additional voters
6 voters prefer the Republican over others candidates

In sum:

11 voters prefer the Democrat over other candidates
10 voters prefer the Green over other candidates
9 voters prefer the Libertarian over other candidates
6 voters prefer the Republican over others candidates

So who do you think should win this election with 12 voters? IRV counting methods result in the R and G candidates being tied for first place. If voters approve either their first two or their first three choices then approval voting results in candidate D winning.

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Example 2: This is another example where IRV eliminates the candidate preferred by most voters in the first round.

Let us examine a situation where 40% of voters prefer candidate A over candidate C, and 60% of voters prefer candidate C over candidate A:

#voters	ranking
40	A > C
60	C > A

Now allow rank order voting and introduce candidate B who is preferred first by fewer voters than candidates A. Candidate C is the Ranked Pairs winner here. But with the introduction of B, we get

#voters	ranking
40	A > B > C
35	B > C > A
25	C > A > B

With IRV candidate C, the most popular candidate whom 60% of voters prefer over A is now eliminated in the first round and now candidate A wins despite the fact that most voters (60%) prefer candidate C over candidate A. So, the introduction of candidate B, a non-winning candidate, affects the outcome in IRV, violating one fairness condition.

Let's count the same election contest using approval voting:

40 voters approve of A and B
35 voters approve of B and C
25 voters approve of C and A

A receives 40+25 = 65 votes
B receives 40+35 = 75 votes
C receives 35+25 = 60 votes

Simply add up the approval votes and candidate B, the new candidate wins. Therefore candidate B is no longer a non-winning candidate and so this example of approval voting does not violate this fairness (independence) condition. (See appendix C.)

Another way to see that candidate B is an appropriate winner in this example is to note that

35 + 25 = 60 voters prefer C over other choices. i.e. over A or over B
40 + 25 = 65 voters prefer A over other choices. i.e. over C or over B
40+35 = 75 voters prefer B over other choices. i.e. over C or over A

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Example 3:

#voters	their vote
36	Left>Center>Right
34	Right>Center>Left
15	Center>Right>Left
15	Center>Left>Right

In this IRV 3-candidate 100-voter election, "Left" wins.

But "Center" is preferred over Left by a 64-to-36 landslide majority.
Also Center is preferred over Right by a 64-to-36 majority.

Appendix B: A Scenario Comparing IRV and Approval Voting

This simple approval voting scenario was provided to me by Anthony Lorenzo and demonstrates another instance of how IRV violates conditions for a fair election result, but approval voting meets the same fairness conditions.

> 60% of voters approve of candidate A and candidate B, and believe anybody is better than candidate C.
>
> 40% of voters approve of candidate C and candidate B and believe anybody is better than candidate A.

The outcome in approval voting is that A receives 60 votes, B receives 100 votes and C receives 40 votes. Candidate B, with 100% approval, wins.

In other words, it seems that the fairness condition (sometimes attributed to Kenneth Arrow) that

> "whenever all individuals prefer an alternative x to another y, x must be preferred to y in the collective preference order"

is met in the above example by using the approval voting method where alternative x is that candidate B wins, and alternative y is that another candidate wins.

IRV proponent, Anthony Lorenzo points out that if IRV were used instead of approval for this example, it is possible that up to 60% of the voters who voted for both A and B, may actually have preferred A over B as the best candidate and only voted for B to help ensure that C did not win. So, in that case approval voting violates the "majority favorite criterion" that states:

> "If one candidate is the favorite [first] choice of a majority of voters that candidate should always win"

Both plurality voting and IRV conform to the "majority favorite criterion" because the majority candidate in both plurality and IRV wins even if that candidate is disapproved of by all non-majority voters, and even if there is an alternative candidate that is approved of by *all* voters.

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So if the "majority favorite criterion" is considered a more important fairness condition for election outcomes rather than other fairness conditions, then there is no need to abandon the current plurality voting system for the more complex IRV methods.

Approval voting, which is a simple case of range voting methods, satisfies other conditions for fair election outcomes which IRV does not, solves the "spoiler problem", and alleviates the problem of the two-party lock on our political system. Range and approval voting are much simpler to count locally, particularly for election contests whose districts cross county or township lines.

IRV proponents object to approval voting because it fails what they call the "later-no-harm" criterion which states that:

> "a voter's indicating a second or lower preference should not hurt the voter's top choice."

IRV proponent Anthony Lorenzo notes that in the above example, if all voters who voted for both A and B actually preferred candidate A over B, then, by voting for B, they can cause the defeat of their favorite candidate (A).

On the other hand, IRV voting ensures that a voter's lower preferences never hurt their first choice. However, the first choice of IRV voters often hurts their lower choices candidates by causing their early elimination.

Existing plurality voting methods used in multi-winner election contests, like municipal city council elections, where voters may vote for as many candidates as there are available positions to fill, also could hurt the chances of voters' preferred choices.

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Appendix C: IRV Could Select a Winner Who Is A "Lose To Every Candidate Except One" Loser

IRV will not select a winner who loses pair-wise to all rivals (although plurality could) but could select a winner who is a "lose to every candidate except one" loser. This appendix was primarily written by Warren Stewart with some explanatory additions and editing by the author of this paper.

In IRV/RVC if the voters provide rank order votes such as "A > B > C" (meaning "I prefer A over B over C") then you can make a "pair wise matrix" showing for each candidate pair X and Y how many voters prefer X over Y and how many the reverse.

I.e. if the 3 votes are:

A > B > C (2 voters)
B > C >A (1 voter)

then

A,B: A beats B by 2 voters to 1.
B,C: B beats C pair wise 3 to 0.
A,C: A beats C by 2 to 1.

If some candidate beats every rival pair wise, then that candidate is called a "Condorcet winner" or the "beats-all winner." Here A qualifies.

If some candidate L loses to every rival pair wise, then is a "Condorcet loser" also called "lose to all loser." Here C qualifies.

Plurality voting can elect a lose-to-all loser (unfortunately). Example of Plurality voting electing "lose to all" candidate

Let the four candidates be A, B, C, and D.
#voterstheir vote
28 voters A > B > C > D
25 voters B > C > D > A
24 voters C > D > B > A
23 voters D > C > B > A

In this situation, A would lose to any opponent in a head-to-head election by a huge 72-to-28 margin, far larger than the hugest "landslide" in US presidential election history. And A is ranked dead last by 72% of the voters.

Counting the same example above using IRV method, candidate D would be eliminated in round one and "first-choice votes-for-D" would be re-allocated to candidate C. In round two, candidate B

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would be eliminated and "first-choice votes for B" would be reallocated to C; and C would be selected as the winner. (This example is from http://rangevoting.org/LoseAll.html)

IRV cannot elect a lose-to-all loser L because in the final round it will be L versus somebody and somebody will win. (Or L won't make it to the final round. Either way L does not win.) That's a win for IRV.

IRV can however elect a "lose to everybody except one" loser. (See example 1 in appendix A which can be adjusted slightly to show that.)

And IRV can elect as "winner" the same person IRV would also rate as the "worst" candidate, For example:

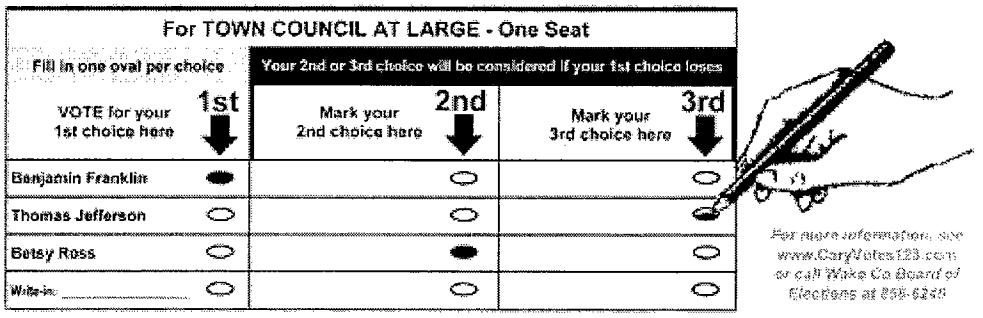
#voters	their vote
2	B > C > A
2	A > B > C
1	C > A > B

where A is (says IRV) "best" but if you use IRV to calculate the "worst" candidate by reversing all votes and using IRV to count them ("trying to choose the worst") then A "wins" also.

For another example see: http://rangevoting.org/IrvRevFail.html

Appendix D: Voter Instructions for Instant Runoff Voting, Cary, NC

How to Fill Out Cary's New Ballot: Mark a Different Candidate for Each Choice



For TOWN COUNCIL AT LARGE - One Seat

Fill in one oval per choice. Your 2nd or 3rd choice will be considered if your 1st choice loses

	VOTE for your 1st choice here (1st)	Mark your 2nd choice here (2nd)	Mark your 3rd choice here (3rd)
Benjamin Franklin	●	○	○
Thomas Jefferson	○	○	●
Betsy Ross	○	●	○
Write-in: _____	○	○	○

For more information, see www.CaryVotes123.com or call Wake Co Board of Elections at 856-6240

Mark your 1st choice, then you may mark 2nd and 3rd choices as back-ups. Your back-up choices will never hurt your 1st choice. Back-up choices are only reviewed if an "instant runoff" occurs and your first-choice condidate gets eliminated and is not in the runoff.

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Appendix E: Alternative Voting Methods Worth Considering

This appendix was built from the terse analysis of voting methods worth paying attention to by Charlie Strauss', and comments and information from U of IA, computer science professor Doug Jones and U of Berkley, computer science professor Arthur Kellner, and David Webber.

Voting methods fall into two categories, rating and ranking methods:

I. Rating Methods (Non ranked-preference)

1) Range voting. In this method voters simply rate, not rank, all the candidates on a scale (say 1-10). The candidate with highest average rating wins. Range voting has three main problems: a) tedious b) requires special machinery, and larger ballots because existing op-scans cannot be retrofitted, and c) If people were honest in their rankings, then in theory, it is Bayes optimal (an ideal voting system). But people are not honest, and will strategically exaggerate the rating differential (ten for the guy they like, zero for the guy they prefer slightly less) making for sub optimal results. Still range voting is very good.

2) Approval voting: simply mark next to any and all candidates you approve of. Works will all existing optical scanners with no changes to firmware or hardware. No changes to existing ballot designs and Easy to hand count. Key feature: this is the binary approximation to range voting (a zero to one scale). In fact, given the strategic exaggeration that occurs in range voting, Approval voting is the natural tendency of range voting results in practice. Thus this may possibly be the overall best voting system that is achievable in practice.

Approval voting is worth a serious look because it does not complicate the ballots. It can be done on the current optical ballots without modification to the ballots or to the optical scan machines or their software. Approval voting works like this: Mark the oval next to any and all candidates you approve of. The winner is the one with the most marked ovals.

Approval voting is not contingent on global outcomes like IRV, and recounting is fairly simple, and there is no difficulty with the hardware or explosion in the length of ballots. One of the benefits of Approval Voting is that by definition, there is no such thing as an overvote. Since overvotes and accessibility were the two main reasons for HAVA, eliminating the potential for overvotes significantly reduces the justification for DREs. Other advantages of Approval Voting are the ease of auditing and the fact that tallying is associative.

3) The Viking voting method. OASIS EML supports the Viking method as they still use it in Norway. In this you strike through the candidates name on the ballot that you absolutely DO NOT want! The Viking system has that nice "throw the bums out" quality. The Viking system requires a positive vote. Since it can be assumed that at least one candidate will vote for him/herself, the Viking and approval methods are essentially equivalent.

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II. Ranked Choice or Ranked Preference

A. Ballot Styles: Combine one of these ballot styles with the ranked preference counting methods mentioned below.

1) candidates choose ranked preference orders of other candidates to award their votes to in case they are eliminated. No changes to current ballots. Empowers third parties and easy to hand count.

2) voter chooses ranked preference: Cedes less power to minor candidates. Ballots are tedious, physically long, easily over-voted, and hard for the voter to quickly scan for mistakes. Very inconvenient or impossible to implement in most existing op-scans. Hard to hand count. Some existing opti-scans can be retrofitted to count IRV ballots, but not the discrete-sensor ones. The big nuisance is if you allow the range 1 to N, you need N columns of bubbles by each name in which you place your rating. Diebold's older op-scan systems can do this (4 or 8 sensors per inch horizontally across the page), while the old ES&S and Sequoia scanners have only a few sensors across the page, one per column of names on the ballot. In other words, the Sequoia and ES&S opti-scans support no more than 3 bubble lanes using 3 or 4 discrete sensors (the 4rth is a position track not a bubble lane). This means that the only space-efficient way to lay out a ranked preference ballot is if the number of rankings allowed is restricted to 3. Consequently ballots will generally be 3 times longer, spill across multiple pages and increase the ways you could accidentally overvote them. The multiple page issue is slightly subtle as implementing a system that can accommodate it on existing hardware is possible but non-trivial, but I'll not dwell on this. However, limiting the depth of ranking here might not be seen a real defect. One can argue that it is what you should do, particularly if IRV is used to resolve the ranked preference.

B. Counting Methods

1) Instant run-off voting is easy to explain but a really poor idea. For example: it becomes unstable when there are three or more strong parties. In that case it will tend to elect a minor preferred fringe party over a centrist party preferred by the majority. How do you combine IRV/STV with precinct counts, especially Hand counted paper ballots (HCPB)? IRV/STV are hard to audit and are not associative. Which voting system is the overall best? We have seen so many voters get confused in voting, and poll workers that are hard to train, that any complex voting system like IRV/STV being imposed on the general voting populace increases confusion.

2) Condorcet AKA ("majority rule"). Condorcet lacks the problems with IRV and arguably the closest to fair system devised. The winner is the person who beats all others if there were just a pair-wise election contest. In the unlikely event of a circular tie, one of the better resolution methods would be to switch to a Borda count.

4) Borda count. Arguably inferior to majority-rule but with one compelling attribute. Borda up weights candidates who are closer to the top of people's rankings. Thus a majority rule winner that only emerged deep in people's rankings would lose out to an almost-majority winner that was ranked highly by most people. Main defect is the scoring scheme that achieves this balance reeks of arbitrariness. Like range voting people can vote strategically to upset the process. The Borda Count

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for ranked choice voting ballots is far easier method to manually count and to manually audit than IRV, because with it, you can produce precinct totals and then aggregate the precinct totals to produce overall totals from which the winner is determined. Therefore, Borda-count precinct level audits work the same way they do with conventional ballots.

5) Top-Two Runoff election. A new and separate runoff election is held for the top two vote-getters in the first election. This has the advantage of almost always selecting a majority candidate.

Appendix F: Rebuttals to Fair Vote's "De-Bunking Kathy Dopp's 15 Flaws of Instant Runoff Voting"

This appendix relies heavily on the expertise, writing, and research of Adb ul-Rahman Lomax and his rebuttals to Fair Vote on the election-methods@lists.electorama.com with some help by other email list members, including Warren Smith. This appendix rebuts the Fair Vote organization's attempted rebuttal of the first version of this paper. (See http://www.fairvote.org/?page=2285 or http://www.fairvote.org/dopp for the full text of Fair Vote's rebuttals.) Note: The numbering of IRV flaws is slightly different in this revised version above than in the original version due to the addition of two new flaws in this addition.

1. *"Does not solve the "spoiler" problem except in special cases...."*

Fair Vote's rebuttal:
"Dopp has her "special cases" reversed. In fact, IRV solves the spoiler problem in virtually all likely U.S. partisan elections. Whenever a third party or independent candidate is unlikely to be one of the top vote-getters ..., IRV eliminates the spoiler problem"

Fair Vote does not contradict the point that "IRV does not solve the spoiler problem" except in the particular case where no third candidate is among voters' top choices. In other words, using IRV counting methods means that the presence of a non-winning "spoiler" candidate can still split the votes and cause a different candidate to win than would otherwise win an election contest.

The particular spoiler problems that IRV does *not* solve are not rare whenever there are three or more major candidates. IRV is mostly being proposed at this time in the U.S. as a replacement for non-partisan elections. For instance, that is what IRV is being used for in San Francisco. Three or more major candidates occur much more commonly in nonpartisan election contests than in partisan ones in a two-party system, so that the spoiler problem is particularly likely in the same local U.S. elections where IRV is usually tested.

Notice that Fair Vote's response uses many hedging or misleading words like "virtually all", "likely", "unique", "final", and "partisan". Because simpler, more problem-free voting methods are available which do solve the spoiler problem in *all* cases, the fact that IRV solves the spoiler problem only in cases where only two major-party candidates are viable, is not a valid reason to support IRV.

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2. Dopp: "Requires centralized vote counting procedures at the state-level..."

Fair Vote's rebuttal:
IRV creates no need to centralize the counting or the ballots themselves, although that is one possible counting procedure ... all that is required to implement IRV is central coordination of the tally. If ballot images are recorded on optical scan equipment, the data from those images can be collected centrally for an IRV ballot. If a hand-count is conducted, vote totals need to be reported to a central tallying office in order to determine what step to take next in the count. In Ireland, for example, there are 43 counting centers in the presidential election contest. Election administrators count ballots and report their totals to a national office that in turn instructs the administrators at each counting center on what to do next. The entire process takes less than a day even though more than a million ballots are cast.

Fair Vote renames "central vote counting" to "central coordination of the tally", but does not contradict our point that IRV requires centralized vote-counting procedures at the state-level for all election contests with districts that cross county lines. What Fair Vote describes is a system where actual ballot counting takes place in regional centers, but the tallies must be transmitted to the central facility and added together and announced before the next round can be counted at the regional centers. All ballots in the entire election contest must be counted for each round and its totals computed and announced, before the next round can be counted. This web page by Warren Smith explains the need for centralized IRV vote counting: http://rangevoting.org/IrvNonAdd.html

Consider absentee ballots which frequently take some jurisdictions up to two weeks after Election Day to verify voter eligibility and count. If all the absentee voters' ballots must be counted first before proceeding to round two, then the statewide or nationwide (in the case of an IRV presidential election) would be held up for two weeks before being able to finish round one counts.

Fair Vote's response hi-lights its push for new hi-tech optical scan voting equipment needed in order to implement IRV by saying "If ballot images are recorded on optical scan equipment, the data from those images can be collected centrally for an IRV ballot". The truth is that very few of today's optical scanners create ballot images. There is a study at http://www.gregdennis.com/voting/sf_irv.pdf that describes that the San Francisco machines are programmed to "interpret" the votes in creating "ballot images" and that the alleged "ballot images" are pre-processed and do not reflect the actual patterns of votes on the paper ballots. See appendix E of this paper for a description by computer scientists of the fact that most of today's optical scanning equipment is not designed to be able to process any ranked choice ballots or to count using IRV methods. Any voting system involving transferring all individual ballot images introduces new costs and security vulnerabilities; and introduces ballot privacy issues.

The method of counting votes in Ireland is that the two lowest-ranking candidates can be eliminated in the first round as long as the sum of their votes is less than the vote total of the next highest candidate. The full counting rules for Ireland are found here: http://www.irishstatutebook.ie/1937/en/act/pub/0032/gen_6.html#gen_6 This makes sense because even if all voters were transferred to one of the other eliminated group of candidates, that candidate

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would still be eventually eliminated without enough votes to surpass the remaining group of candidates. While such a procedure helps shorten IRV counting, Ireland only has 1 million voters nation-wide and 43 total counting centers as opposed to the U.S. having millions of voters just in some cities and over 3300 separate election administration jurisdictions (dozens to hundreds in each state) with dozens to thousands of polling locations in each jurisdiction. The Irish Presidential election is held only once every 7 years and in 2004 it took one day to count but two days to make a decision because no candidate got a majority in the first and only round.

3. Dopp: "Encourages the use of complex voting systems and... [FairVote promotes] electronic-balloting..."

> Fair Vote's rebuttal:
> *Most government IRV elections are in fact conducted with hand-count paper ballots, including national elections in Australia, Ireland and Papua New Guinea....* FairVote advocates that all such machines store a redundant electronic record of each ballot, as well as a paper ballot to allow for better fraud detection, and to simplify ranked ballot tabulations.

Fair Vote reinforces our point that "Fair Vote promotes electronic balloting" when its attempt at rebuttal asks for an "electronic record of each ballot... to simplify ranked ballot tabulations.

Consider trying to manually audit an IRV election. It is not enough to look at the totals for each rank. One has to look at each round, and the ranks on ballots transferred in that round. Suppose A is eliminated. On some ballots A might be in the first position, on some in second position, and so forth. On each of these ballots where A is eliminated, there is the candidate in the second position. The exact sequence of eliminations that took place in the original election must be followed. Compare this with just counting the marks on the ballot and adding them up. How can Fair Vote IRV activists deny the complexity of IRV counting with a straight face? IRV is far more complex to count than any other alternative voting system being considered.

Elections in Australia, Ireland, and Papua New Guinea are held under very different circumstances than U.S. elections. Please refer to response #2 above for a discussion of Ireland's IRV election. Australia ...

4. Dopp: "Confuses voters..."

> Fair Vote's rebuttal:
> *All the evidence shows that voters are not confused by IRV. The rate of spoiled ballots did not increase in any of the U.S. cities when they switched to IRV.*

All the evidence? Well then, let us look at the evidence. Fair Vote implies that the most confused voters in Burlington, VT would, of course, be in the "ward in town with the highest number of low-income voters". However Burlington is a college town and college students are known to be low-income. When I called the Burlington election office, I was told by the person answering the phone that IRV "confused voters". Fair Vote's claims about San Francisco are unfounded

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because there is no real ballot spoilage data from which to make their statistics. There is an analysis of over-vote rates available at http://rangevoting.org/SPRates.html that found a 0.082% overvote rate in plurality contests compared to a 0.60% overvote rate in the IRV election contests, a difference that is statistically significant. More information here: http://rangevoting.org/Irvtalk.html#nospoilageincrease . There is also a study that goes into more detail at http://www.gregdennis.com/voting/sf_irv.pdf that is also inconsistent with Fair Vote's conclusion that "All the evidence shows that voters are not confused by IRV." According to the study, 14% of Latinos and 27% of Asian voters, in exit polls conducted by the Chinese-American Voter Education Committee found IRV difficult to use. Also, some patterns of overvotes do not show up in the San Francisco ballot images used to determine the statistics because the software pre-processed and interpreted the voters' ballots, rather than simply reporting them.

The author(s) of Fair Vote's rebuttal attempt should read all the news articles on voter confusion that are provided in the endnotes of this paper. It is hard to imagine how anyone could deny that IRV causes some voter confusion.

5. Dopp: "Confusing, complex and time-consuming to implement and to count..."

Fair Vote's rebuttal:
IRV certainly is simpler for election officials and voters than conducting a whole separate runoff election to find a majority winner. ... Note that the winning threshold for an IRV election, as with any election, must be specified in the law.

Computer scientists who are voting system experts generally disagree with Fair Vote's unsupported assertion that IRV is "simpler" than an election plus a separate runoff election. If the required winning threshold for an IRV election is a majority of voters, then an IRV election could end by requiring a separate top-two runoff election afterwards. It took two years to implement IRV in San Francisco, and some jurisdictions have passed IRV but are still waiting to implement it whenever new voting equipment that can handle IRV elections can be purchased.

6. Dopp: "Makes post election data and exit poll analysis much more difficult to perform..."

Fair Vote's rebuttal:
To date, IRV election can make it easier to do post-election and exit poll analysis. Because optical scan counts with IRV require capturing of ballot images, San Francisco (CA) and Burlington (VT) were able to release the data files showing every single ballot's set of rankings – thereby allowing any voter to do a recount and full analysis on their own.

Exit polls can be done just as well under IRV rules as vote-for-one rules. California requires a manual audit in its elections, which has been done without difficulty in San Francisco's IRV elections. Manual audits should be required for all elections, regardless of whether IRV is used or not.

Fair Vote continues to make the unsupported assertion that election and exit polls analysis can "be done just as well under IRV". However, the fact is that no researcher or mathematician has

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yet been able to generalize exit poll analyses methods that could detect patterns consistent with vote miscount or with exit poll response bias in contests with two viable candidates, to any ranked choice voting methods. Imagine exit pollsters trying to accurately obtain all the ranked ballot choices of all voters for all election contests at the precinct-level and then trying to compare their sums statistically with the number of subtotals of votes equal to $\sum_{i=0}^{N-1} \frac{N!}{i!}$ for each precinct! Imagine the sample size exit pollsters would need to reduce the error due to random chance for such statistical comparisons! For instance, I have repeatedly challenged IRV proponents to generalize the methods explained in this exit poll analysis paper to IRV and none have been able to do so yet: http://electionarchive.org/ucvAnalysis/US/exit-polls/Exit-Poll-Analysis.pdf

As pointed out above, the optical scan machines in San Francisco (and probably in Burlington) do not provide images of the ballots. The ballot data they provide are preprocessed and modified into abstracted vote data which is what San Francisco calls "images" that do not show all the rankings on the ballot. Data is processed out that is considered irrelevant for election administration purposes although it is relevant for determining voter error rates and for analyzing election data. There are also legal, financial, administrative, and ballot privacy impediments to publicly releasing the images of all ballots.

Fair Vote's response suggests, without supporting evidence, that if ballot images showing all voters' ranked choice votes were available, then election data analysis would be easy to perform, This study explains the lack of accurate, un-interpreted ballot images in San Francisco: http://www.gregdennis.com/voting/sf_irv.pdf

Fair Vote claims that San Francisco manually audited its IRV machine count accuracy "*without difficulty*". How could San Francisco manually audit 1% of its IRV election precincts according to California statutes in a publicly verifiable way? I ask Fair Vote to demonstrate that San Francisco did a publicly verifiable valid manual audit of its precinct machine counts which checked the accuracy of its IRV election results by providing the URL where San Francisco, prior to beginning its audit, publicly released all of the thousands of vote counts, $\sum_{i=0}^{N-1} \frac{N!}{i!}$ vote counts per precinct, along with each vote count's unique candidate ranking order, or alternatively, where San Francisco publicly posted all of its individual ballots' IRV rankings with humanly readable identifiers that are needed to manually audit an IRV election by randomly selecting ballots.

More discussion on post-election audits of IRV elections is below in the audit section.

7. Dopp: "Difficult and time-consuming to manually count..."

Fair Vote's rebuttal:

Manual counts can take slightly longer than vote-for-one elections, but aren't difficult, unless many different races on a ballot need to go to a runoff count. As cited earlier, Irish election administrators

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can count more than a million ballots by hand in hotly contested presidential elections in one standard workday.

See the response to Fair Vote's "Irish" story above which counts only one election contest using only 43 counting centers for only 1 million total ballots for only one IRV round because the election was not close, and actually took two days to decide. What does Fair Vote mean by "need to go to a runoff count"? Is Fair Vote is honestly admitting that if many different election contests on a ballot are counted using IRV, manually counting is difficult? Fair Vote fails to mention San Francisco where election workers put in 16 hour days and the counting took about a month to count their IRV election.

A number of vote counts equal to $\sum_{i=0}^{N-1} \frac{N!}{i!}$, where N is the number of candidates in the election contest, could possibly be used to tally IRV rounds in *each* precinct or voting machine. Errors in counting IRV ripple through the rounds. IRV machine programming errors are easier to make and more difficult to detect. An error in counting the first round can require the entire election to be recounted in all the precincts and in all the rounds. Absentee and provisional ballots that sometimes take weeks after Election Day to process could change the entire IRV election results, necessitating waiting until all absentee and provisional ballots have been counted to begin IRV counts. For all contests whose districts reside in more than one jurisdiction, unless all ballots are centrally tallied by the state, every local jurisdiction must wait until all jurisdictions have reported the prior round's tallies to the central office to tally and the central office reports back who won the prior round, before knowing how to tally the next round.

8. Dopp: "Difficult and inefficient to manually audit..."

Fair Vote's rebuttal:

IRV can be manually audited just as well as vote-for-one elections, although it does take more effort (since voters must be allowed to express more information on their ballot). A manual audit can either be done using a random sample of ballots from all jurisdictions, or a random sample of ballots from a random sample of voting machines, or by a complete re-tally from a random sample of voting machines. A complete re-tally of all ballots (a recount) is, of course, possible but unnecessary unless a court recount is ordered.

Notice this paper said audits are "difficult and inefficient" and Fair Vote says "can be manually audited". This is true. However, ordinarily with an audit, one can pick a sample precinct and count it. Period. But with IRV, the number of possible vote counts that could be used to tally any IRV election in each precinct or other auditable vote count is equal to $\sum_{i=0}^{N-1} \frac{N!}{i!}$ if N is the number of candidates. With just three candidates, there are 15 possible ballot orderings or subtotals in *each* precinct. One cannot know if the overall IRV results are correct by randomly selecting and counting all the ballots from 1% of precincts, unless all those $\sum_{i=0}^{N-1} \frac{N!}{i!}$ counts for *each* and every precinct, including the unique candidate ranking associated with each of the

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$\sum_{i=0}^{N-1} \frac{N!}{i!}$ counts within every precinct or other auditable vote count, are publicly released prior to the audit, in order that auditors could:

1. check the accuracy of all the tallies for all those counts in all precincts for each IRV round, and then that

2. randomly select from all those counts (equal to the number of total precincts times $\sum_{i=0}^{N-1} \frac{N!}{i!}$ which had been previously publicly reported.

Alternatively, Fair Vote is proposing a ballot-selection method to audit an IRV election that (to be publicly verifiable) would necessitate first publicly releasing the ranked vote choices on each and every individual ballot, along with printing a humanly readable identifier on each ballot that could be used to randomly select identifiable ballots. To avoid ballot privacy issues the humanly readable identifiers for each ballot would have to be printed on the ballots after voters cast them. With IRV's more than N! unique ballot preference orders for each precinct, if there were a lot of candidates, then individual voters' ballots could become easier to identify. Then ballots would have to be randomly selected from the entire election contest, including all precincts, so this might not meet California's requirement to manually audit 1% of precincts. See http://www.sos.ca.gov/elections/voting_systems/pearson_rcv_letter_091407_07_0586.pdf

The only other possible way to validly audit an IRV election that takes more than one round to count would be to manually recount 100% of the ballots involved in the election contest. Perhaps since it took San Francisco about a month to count its IRV election, it simply manually counted all the ballots and called it an audit.

9. Dopp: "Could necessitate counting all presidential votes in Washington, D.C.…"

Fair Vote's rebuttal:
If the Electoral College were abolished and IRV were then adopted for future national popular vote elections for president, there would need to be national coordination of the tally in order to know which candidates got the fewest votes nationwide and needed to be eliminated –… Note that voters certainly would be pleased to have a majority winner in elections for our highest office.

Fair Vote has renamed "counting votes in Washington D.C." to "national coordination of the tally" and our two statements are in agreement. All 3300+ jurisdictions which count votes in a U.S. presidential election would first have to completely count the first choices on all ballots, including absentee and provisional ballots before transmitting first round numbers to Washington DC where these votes would be tallied and the winner of the first round announced, prior to any of the 3300+ jurisdictions being able to count round #2, and so forth. Of course each of these 3300+ jurisdictions have dozens to thousands of precincts in each of them. Alternatively, all the ballots could be sent to Washington DC for counting.

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Fair Vote's misleading assertion that "*voters certainly would be pleased to have a majority winner in elections for our highest office*" is probably true. However, IRV does not find majority winners with any reliability. A majority winner occurs when a majority of those who voted in an election cast a vote for the winner. In Australia's IRV system, they find majority winners because Australia requires that all voters fully rank all the candidates, or the ballot is not counted. That a ballot containing a vote for an eligible candidate is eliminated is a violation of a basic principle of democracy and would never be adopted in the U.S. As the Australians know, once you have ranking optional, you can get majority failure. The only method being used that guarantees a majority winner is real top-two runoff voting.

If the same definition that Fair Vote uses for "majority" is used for "unanimous", why not, for the cost of a very complicated counting process, have "unanimous" elections by using IRV and continuing the elimination for one more round, until all the votes are for one candidate?

10. Dopp: "IRV entrenches the two-major-political party system ..."

Fair Vote's rebuttal:
IRV neither "entrenches" nor "overthrows" the two-party system. It simply ensures no candidate wins over majority opposition. If a minor party has the support to earn a majority of vote, it can win in an IRV election. If not, it will not win.

IRV makes the continuation of a two-party system highly likely, and IRV has no record of assisting in the overturning of a two-party system, and IRV has several obvious ways in which it helps maintain a two-party system by eliminating minor political parties in the first round, with less risk to the major party candidates, so that major parties can safely ignore minor parties. Observant voters also notice immediately that ranking a minor party candidate first, could cause the early elimination of their major-party favorite, causing their least favorite candidate to win, and so voters quickly learn to rank a major party candidate first. Some information on how IRV entrenches the two-party system in Australia is in this article: http://www.abc.net.au/elections/federal/2004/items/200407/s1162263.htm On the other hand, with an actual top-two runoff, a third party has only to muscle its way to second place to make it into the runoff, giving it a better chance of winning, as opposed to IRV which provides less chance for a minor party to convince voters that it is viable. Fair Votes' response does not say that the Green party won any seats, only that it ran candidates. Could it be that the Green party supports IRV against its own interests? With IRV they are defanged. Political scientist Maurice Duverger observed (See http://rangevoting.org/DuvTrans.html note #3) that the top-2-runoff (2 round) election method is a single winner system which does not lead to 2-party domination, as is shown by historical experience.

Fair Vote's statement that IRV "ensures no candidate wins over majority opposition" is misleading because a candidate with more opposition than any other candidate could win an IRV election. In a simple 12 voter example in appendix A above, 11 voters prefer the Democrat over other candidates; 10 voters prefer the Green over other candidates; 9 voters prefer the Libertarian over other candidates; and only 6 voters prefer the Republican over others candidates; 6 voters rank the Republican dead last; 3 voters rank the Libertarian dead last; 2 voters rank the Green

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party dead last; and 1 voter ranks the Democrat dead last. Yet the Republican and Green party candidate tie for first place!

In Australia, it appears there were 9 Green "pair-wise majority winners" but IRV forced every single one of them to lose. Yet Richie considers it a "success" that the Green party "contested" and "won 8% of the vote" but did not win a single seat? The Greens are strong in Australia because of other elections in their senate which are not held using IRV.

11. Dopp: "Could deliver unreasonable outcomes...."

Fair Vote's rebuttal:
Unreasonable outcomes are less likely with IRV than with any other single-seat voting method in use today. Every single voting method ever proposed can deliver "unreasonable outcomes" in some scenarios, but real-world experience has shown IRV to be one of the best methods. The overwhelming number of election method experts agree that IRV is fairer and more democratic than plurality voting even if some might prefer other theoretical voting methods.

Fair Vote says "IRV is fairer and more democratic than plurality voting..." Sure, fairer than plurality voting, better than diving into a swimming pool with no water in it. Better than dictatorship. But is IRV fairer and more democratic than other methods in use today, such as "top-two runoff"? Absolutely not. Is IRV fairer and more democratic than other available voting methods including approval, Borda count, Condorcet, or range methods? Absolutely not.

Fair Vote's rebuttal:
The American Political Science Association (the national association of political science professors) has incorporated IRV into their own constitution for electing their own national president. Robert's Rules of Order recommends IRV over plurality voting.

Look at the APSA constitution and, sure enough, you will find a provision that if there are three or more candidates for the office of President-Elect, the "standard method of the alternative vote" is to be used, and the method is described. The method is loosely IRV. However, how does the APSA actually elect its Presidents? The President, with the advice and consent of the elected Council, appoints a Nominating Committee which names a single nominee. If there is no other nominee, this candidate is elected at the Annual Meeting. However, it is possible to nominate other candidates by petition. The last time there was a petition candidate was about 40 years ago. In order for the APSA to use IRV, there would have to be a second petition candidate. The chances of that can be estimated at once in every 1600 years.

Wait, what about the elected APSA Council? They are elected by plurality-at-large. Voters vote for as many seats as are open and the candidates with the most votes win. So the APSA is actually not using IRV. They are using plurality. Period.

Next, Robert's Rules of Order do not actually recommend IRV. It says that "preferential voting" gives fairer results than plurality voting if it is considered impractical to used repeated balloting, which is what Roberts Rules actually recommend. Robert's Rules states that "there are many

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forms of preferential voting" and describes the Single Transfer Vote (STV) "IRV-like" method "by way of illustration". Robert's Rules require repeat balloting when no candidate gains a majority of all ballots cast. Then Robert's Rules discusses some of the problems of this specific method: it "deprives" voters of the opportunity to base later choices on the results of earlier rounds (which is provided with top-two runoff) and can fail to find a "compromise winner".

12. Dopp: "Not all ballots are treated equally... "

Fair Vote's rebuttal:
This charge reveals a lack of understanding of how IRV works. All ballots are treated equally. Every one has one and only one vote in each round of counting. Just as in a traditional runoff, your ballot counts first for your favorite candidate and continues to count for that candidate as long as he or she has a chance to win.

In an IRV "instant runoff" voters who sincerely rank their preferred candidates cannot participate in the instant runoff unless one of their candidates is still in the last runoff. So in the U.S., IRV does not treat all voters equally because voters are likely to only get to participate in the IRV final runoff if the top two leading candidates are among their top three preferences. In addition, some voters' ballots have all their choices counted, other voters' ballots have only their top preference counted. In other words, IRV conceals votes because some votes are never counted in determining the winner. Clearly Fair Vote has a different perspective on the meaning of when voters' ballots are "treated equally". On the other hand, the top two runoff method that IRV often replaces treats all voters' ballots equally by anyone's definition of "equal".

13. Dopp: "Costly. ... "

Fair Vote's rebuttal:
The two main expenses associated with the transition to IRV are voting equipment upgrades and voter education. Both of these are one-time costs that will be quickly balanced out by the savings coming from eliminating a runoff election in each election cycle.

The increased voting equipment maintenance, programming, testing, and upgrade costs of IRV are on-going, not "one-time". If IRV saves so much money, then why did jurisdictions like Oakland adopted IRV "pending implementation"? And why did the Maryland legislature estimate that costs could be as high as an additional $3.50 per registered voter in their 2006 IRV bill, and a little less in the 2008 bill which did not include the cost of software, as cited earlier in this paper? While IRV supporters in North Carolina are claiming that the pilot was a success, why did no NC counties decided to participate in the 2008 county-elections IRV pilot?

IRV is being promoted by Fair Vote to replace plurality voting, not just to replace top-two runoff elections. Not every election requiring a majority candidate necessitates a runoff election. And because IRV does not always find a majority candidate, another runoff could be necessary after the IRV election anyway.

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In nonpartisan elections, IRV tends to simply ratify the results of the first round because the vote transfers tend to happen in the same ratio as the already existing votes. In other words, if candidate C is eliminated, the C votes will be split in about the same ratio as A and B have already. There are simpler methods to count ranked choice ballots which find majority candidates more often than IRV, such as the Bucklin method. Top-two runoff elections more often cause the original second-place candidate to win the final runoff. Often top-two runoff elections are held during the next general election and are therefore relatively cheap.

Fair Vote neglects to mention the increased costs of manually counting and manually auditing IRV rounds over any other voting method being recommended by voting system experts or in use today.

14. Dopp: "Increases the potential for undetectable vote fraud and erroneous vote counts..."

Fair Vote's rebuttal:
Actually, just the opposite is true, so long as paper ballots (such as optical scan) are used. The reason that any attempts at fraud are easier to detect with IRV is that there is a redundant electronic record (called a ballot image) of each ballot that can be matched one-to-one with the corresponding paper ballot. Cities such as San Francisco (CA) and Burlington (VT) release these ballot files so that any voter can do their own count. Without such redundant ballot records (which are not typical with vote-for-one elections) there is no way to know for certain if the paper ballots have been altered prior to a recount.

Fair Vote's claim that "there is a redundant electronic record (called a ballot image) of each ballot" is:
1. False, as discussed amply above the alleged "ballot images" are interpreted ballot data,
2. prohibitively costly,
3. would open up new security issues and new avenues for electronic ballot box stuffing, vote tampering and fraud,
4. would require a humanly readable identifier printed on each paper ballot after the voter casts them to "match up" with electronic records,
5. would necessitate extra post-election auditing steps and expense, and
6. certainly does not make fraud "easier to detect" in the absence of post-election manual audits, that are absent in most states, and which IRV makes much more difficult to conduct.

In addition, the complexity of IRV counts makes any patterns caused by vote miscount much more difficult to detect by data analysis methods.

15. Dopp: "Violates some election fairness principles...."

Fair Vote's rebuttal:
This charge reveals either a general lack of understanding, or intentional miss-representation. Every single voting method ever devised must violate some "fairness principles" as some of these criteria are mutually exclusive. .... When the field narrows to the two finalists in the final instant runoff count, the candidate with more support (ranked more favorably on more ballots) will always win.

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> *Some theoretical voting methods may satisfy some "fairness' criteria, such as monotonicity, but then violate other more important criteria such as the majority criterion, or the later-no-harm criterion.*

After making unsubstantiated claims, the rest of Fair Vote's paragraph substantiates the original statement that IRV "violates some election fairness principles". In fact, this second version shows how IRV violates an additional fairness condition, the majority candidate condition that was not shown in the first version.

Sure, it is possible that "all voting methods violate some election fairness principles," but many alternative voting systems, including top-two runoff, range and approval and Condorcet voting methods satisfy many fairness principles that IRV does not satisfy. For instance, some voting systems always find majority winners, pick the pair-wise favorite among all voters, or eliminate the spoiler problem completely, whereas IRV does not do any of these except in particular cases. These same voting systems, besides being fairer in many respects than IRV and plurality voting, are easier to count and to administer and to audit than IRV.

"Later-no-harm", that a voter's lower preference cannot harm the voter's higher preference, is Fair Vote's favorite election criterion. Later-no-harm, however, is incompatible with the basic principles of majority rule, which requires compromise if decisions are to be made. That is because the IRV sequential elimination guarantees that a lower preference cannot harm a higher preference because the lower preferences are only considered if a voter's higher preference candidate is eliminated. Later-no-harm is undesirable because it interferes with the process of equitable compromise that is essential to the social cooperation that voting is supposed to facilitate. If I am negotiating with my neighbor, and his preferred option differs from mine, if I reveal that some compromise option is acceptable to me, before I am certain that my favorite will not be chosen, then I may harm the chance of my favorite being chosen. If the method my neighbor and I use to help us make the decision *requires* later-no-harm, it will interfere with the negotiation process and make it more difficult to find mutually acceptable solutions. On the other hand, the Bucklin method of counting ranked choice ballots causes "later-harm" only if your favorite candidate does not win by a majority in the first round.

For a more detailed rebuttal of Fair Vote's claims, see the full email responses by Abd ul-Rahman Lomax to the election-methods discussion list which will be posted here http://uscountvotes.org/ucvAnalysis/US/RCV-IRV/

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[i] Note that "top-two IRV" is not equivalent to "top-two runoff" elections because top-two IRV does not allow all voters to participate in the "top-two IRV" runoff because there may be some voters whose ranked ballot choices do not include either of the top two candidates, and "top-two runoff" elections always find a majority candidate and "top-two IRV" may not.
[ii] There is some debate about the exact definition of IRV. This definition of Instant Runoff Voting is borrowed from http://www.ncvoter.net/irv.html and from Warren Smith.
[iii] "Boxed In" by Peter C. Baker in The Nation magazine discusses Fair Vote's promotion of IRV and discusses some of the flaws of IRV. (June 2, 2008) See https://thenation.com/ or http://rangevoting.org/Baker2BookRev.html IRV was recently promoted in "An Elections Revolution" by Tony Marrero in the Hernando Today, May 27, 2008
http://www2.hernandotoday.com/content/2008/may/27/elections-revolution/
Voters Want Choices. And They Want to Be Heard. That's why Ranked Choice Voting makes so much sense.
http://seattleweekly.com/2008-06-04/music/voters-want-choices-and-they-want-to-be-heard/ IRV is being promoted for local elections. See http://www.ncga.state.nc.us/gascripts/BillLookUp/BillLookUp.pl?Session=2007&BillID=S1692 and http://www.ncga.state.nc.us/gascripts/BillLookUp/BillLookUp.pl?Session=2007&BillID=H2413
[iv] According to Warren Smith, spoilers can exist in Plurality, IRV, Borda, and Condorcet voting methods but do not exist in Approval and Range voting methods.
[v] See "A Test Drive of Voting Methods" by William Poundstone
http://www.mathaware.org/mam/08/PoundstoneMAMessay.pdf
[vi] Fairness conditions #1 and #2 have been attributed to Kenneth Arrow. Arrow's theorem requires a ranked order voting system that allows two candidates to be ranked equally that does not apply to all voting methods. See http://www.encyclopedia.com/doc/1O87-Arrowsimpossibilitytheorm.html Fair Vote's web site incorrectly states that "In 1952, Kenneth Arrow, a professor emeritus of economics at Stanford University in Palo Alto, Calif., proved that *no* voting system is completely free from counterintuitive outcomes. " See http://www.fairvote.org/op_eds/science110202.htm
According to William Poundstone, "If you make a separate-but-parallel assumption, that voters are willing and able to rate the candidates on a numerical scale, as is done in range and approval voting, there is no problem in devising a fair system. This result can be demonstrated much more simply and is hardly Nobel-worthy (though it's been acknowledged by Nobel laureates such as Amartya Sen)."
See Arrow's theorem http://en.wikipedia.org/wiki/Arrow's_impossibility_theorem#Statement_of_the_theorem or this discussion of it http://rangevoting.org/ArrowThm.html Plurality is a special case of IRV. William Poundstone says "Imagine we have a voting system where everyone is instructed to rank all the candidates, from first to nth choice, but the tallying rule says that we ignore all the rankings except first-place choices. The rule is, whichever candidate has the greatest number of first-place choices wins. This system is covered by Arrow's theorem, and it's easy to see that, for all practical purposes, it is equivalent to plurality voting. (With plurality, we don't bother to ask people for their lower choices because they're irrelevant to determining the winner.) Arrow's theorem applies to every system that uses ranking information and nothing but ranking information. This includes systems that discard some of the ranking information, as plurality does. But range and approval use fundamentally different types of information (absolute judgments on how acceptable a candidate is) and thus are not covered [by Arrow's theorem]." See http://rangevoting.org/Lorenzo.html Arrow defines a social welfare function which aggregates voters' preferences into a single preference order from the set of individual voter preference orders. See http://www.encyclopedia.com/doc/1O87-Arrowsimpossibilitytheorm.html
[vii] This fairness condition is attributed to Kenneth Arrow. See http://condorcet.org/rp/arrow.shtml
[viii] Ibid note vi
[ix] To be precise: IRV can select the candidate as the winner whom the largest number of voters would choose as the "worst" candidate. This is easy to test by anyone using a paper and pencil or a spreadsheet to try out various situations counted by IRV.
[x] As Warren Smith explains "In fact when you have two-party domination, IRV works fine since all the minors get eliminated first and then the most popular major wins. The problem arises when the third-party candidate actually has a chance. In THAT case, "IRV spoiler" scenarios happen. If voters try to avoid them then we return to two-party domination. (If they do not avoid, then we get "wrong winner" spoiler scenarios.) So the IRV two-party-domination trap is more subtle than the 2PD trap in plurality voting, but history indicates it is still effective."
[xi] See "A Test Drive of Voting Methods" by William Poundstone
http://www.mathaware.org/mam/08/PoundstoneMAMessay.pdf
[xii] Instead if there were 4 candidates, there would be 3 rounds and 4 raised to the 3rd power or 64 possible subtotals for each precinct which might be used to count the votes during the rounds, depending on the results of prior rounds. This complexity makes plenty of opportunity for counting mistakes.
[xiii] Warren Smith has created a web page explaining the need for centralized counting procedures here:
http://rangevoting.org/IrvNonAdd.html
[xiv] According to Ph.D. computer scientist/voting system expert Doug Jones of the U. of Iowa, "Diebold's older op-scan systems can do this (4 or 8 sensors per inch horizontally across the page), while the old ES&S and Sequoia scanners can't (only a few sensors across the page, one per column of names on the ballot)."

[xv] Rob Richie of Fair Vote said: "what we … run into, is the basic problem of a jurisdiction deciding to go that direction [use IRV] and then its voting equipment not being able to handle it [IRV]" and "For an instant runoff election, a rank choice ballot for an optical scan counting system, the essential thing it needs to do, is capture the ballot image of each voter's ballot, ... And what we found was, actually a lot of optical scan systems don't capture ballot images." And "I guess the point I wanted to highlight is that, there is an issue of how to create procedures that anticipate risk, like the risk of paper ballots being destroyed or, either accidentally or maliciously, how it would change." See "United States Election Assistance Commission Public Meeting Voting Integrity Advocates Roundtable Discussion" April 24, 2008 http://www.eac.gov/News/meetings/News/meetings/EAC%20Roundtable%20042408.pdf

[xvi] "Voter finds new system frustrating" Oct 19, 2007, Harrison Metzger Times-News, Hendersonville: Bill Modlin wasn't happy with his first experience with the new "instant runoff" voting when he cast his ballot for Hendersonville City Council on Thursday. ..."It doesn't make any sense to me, and I can guarantee you because of the way they have it set up there are people in this town that are going to lose their vote," he said. ..."I call it instant confusion," he said. http://www.blueridgenow.com/article/20071019/NEWS/710190361 (Cached at http://www.ncvoter.net/downloads/IRV_Oct_19_Voter_finds_new_system_frustrating.pdf). Also "To stem runoff votes, new ballots have voters rank top 3" Oct 17, 2007 by Jordan Schrader, USA TODAY. CARY, N.C. - Winning candidate Frantz said he heard from many confused voters on the campaign trail." I found myself, when I was at some places, that's all I was doing … explaining the new voting system," he said. http://www.usatoday.com/news/politics/2007-10-17-Runoff_N.htm (Cached at http://www.ncvoter.net/downloads/IRV_Oct_17_USAToday_To_stem_runoffs_new_ballots.pdf) A sample ballot shows how instant runoff voting will affect the way voters choose Hendersonville City Council members this year. (105 KB) Asheville Citizen Times http://www.ncvoter.net/downloads/IRV_Touchscreen_Ballot_NC.pdf Also see http://rangevoting.org/SPRates.html When San Francisco adopted top-3-IRV ("as simple as 1-2-3") their ballot spoilage rate in IRV election contests went up significantly versus plurality contests held at the same time and place.

[xvii] The winner of the Cary IRV election contest won with 1401 votes when there were 3022 first-column votes cast for three candidates and a few write-in candidates. See http://msweb03.co.wake.nc.us/bordelec/downloads/cary_irv_results.xls or http://msweb03.co.wake.nc.us/bordelec/downloads/cary_irv_results.htm and the results for Council Member C-B 1 Cary Municipal District B at http://msweb03.co.wake.nc.us/bordelec/downloads/2007OCT_summary-official.htm
It took San Francisco about a month, necessitating an extended canvass period after Election Day to count its IRV votes: "Preferential voting software breaks down in San Francisco: Thu, 4 Nov 2004 10:07:12 PST. In the election of 2 Nov 2004, San Francisco's district supervisor election used ranked-choice voting for the first time. It went just fine on Tuesday during the election. Preliminary results showed candidates in three districts had won by a clear majority (so no re-ranking-rounds were needed), whereas the other four seats remained to be determined by the preferential ballot counting process. The computer processing broke down completely on Wednesday afternoon when election workers began to merge the first, second, and third choices into the program that is supposed to sequentially eliminate low-vote candidates and redistribute voters' second and third choices accordingly." See http://rangevoting.org/rangeVirv.html It took San Francisco more than two years to implement the system, a process that included making changes to its optical-scan voting machines that required the approval of the secretary of state. In the 1970's, Ann Arbor, Mich., abandoned it [IRV] after one election. See http://www.nytimes.com/2004/09/30/national/30runoff.html San Francisco officials missed a deadline Tuesday to certify the outcome of the local Nov. 6 election after a partial check found too many errors in the tally of absentee ballots run through the city's electronic voting machines. See "Instant Runoff Voting Facts Verses Fiction" http://www.instantrunoffvoting.us/ In Australia it took a month in 2007 to count the difficult election contests.

[xviii] I have asked several alternative voting methods proponents who claim otherwise to generalize the exit poll analysis methods shown in "New Mathematical Function for Analyzing Exit Poll Discrepancy" http://electionarchive.org/ucvAnalysis/US/Exit-Poll-Analysis.pdf and none have yet been able to do so.

[xix] See exit poll analysis methodology described at http://electionarchive.org

[xx] Cary, NC did release some aggregated data which was not useful for analysis because whether or not and when the second, third … choices of voters are relevant for counting or not depends on exactly in what round voters' first, and second choices were eliminated. See http://msweb03.co.wake.nc.us/bordelec/downloads/cary_irv_results.htm

[xxi] "Critics Take Runoff Concerns To Elections Board" Tuesday, Oct 30, 2007 NBC 17..."What IRV does is violate one of the basic principals of election integrity, which is simplicity," said Perry Woods, a political consultant in Cary. He says a small glitch threw everything into turmoil. Basically, someone counted the same group of votes twice; the error was caught, and corrected after an audit. Wood says his problem is with how they conducted that audit. "In this case, they ended up recounting all the ballots again and calling it an audit," said Woods. "I felt like if they were doing that, the public should have been involved, so no doubt is there." See http://www.nbc17.com/midatlantic/ncn/search.apx.-content-articles-NCN-2007-10-30-0028.html. According to Chris Telesca who observed the IRV counting in Wake County, NC, to hand-process a little over 3000 paper ballots (after the first choice votes were counted on the op-scan machines) when there were only 3 candidates plus a few write-ins for the Cary district B, single member town council seat, and the counting went only two rounds it took 6 sorting stacks for each of 12 ballot groupings or precincts (8 precincts plus absentee by mail in Cary, board of elections one-stop site, the Cary one-stop site, provisional ballots- Cary, and possibly some transfer votes from another

county which were eligible to vote in the Cary IRV contest) or 12 times 6 stacks = 72 stacks. Wake County officials decided to put each stack in a separate plastic bag to keep track. This would not be possible if there were more than one IRV contest because each contest requires independent sorting and stacking to count. The procedure was very complicated, but it was there in print. Even so, the Wake Board of Elections (BOE) didn't follow it. There was no overhead projector so that observers could follow the process. Non Board members were sorting the ballots into stacks which was hard to follow. Nonetheless, observers and the Board came up with different totals at the end of the day. The next day, the different totals were determined to be caused by a calculator error that was discovered in an "audit" – that also discovered a few missing votes. The "audit" – which had to have included going back into the previously sorted/stacked and counted ballots – was not done in public. It took 3.5 hours minimum to do the first expedited processing of the 3000 ballots, not including the non-public "audit". If you proceeded at the same pace for a county commissioner election in 2008, it could take three teams of counters 350 hours to sort/stack and count 300,000 ballots for just one election contest. That is just ten hours short of nine weeks – more time than it would take to hold a runoff election 4 to 6 weeks later. See http://www.carynews.com/front/story/7368.html and http://www.newsobserver.com/630/story/735578.html and http://www.newsobserver.com/630/story/739547.html
See also the "Instructions on counting optical scan IRV ballots" on pages 1- 3, and sample ballots on page 5 (provided by the Rocky Mount Telegram) http://www.ncvoter.net/downloads/IRV_Optical_Scan_Ballot.pdf and "2007 PILOT PROGRAM iVOTRONIC *TOUCH SCREEN) METHODOLOGY" (an illegal work around that was not used but was devised for Hendersonville, NC) http://www.ncvoter.net/downloads/Henderson_County_IRV%20Tabulation.pdf
It took San Francisco about a month, necessitating an extended canvass period after Election Day to count its IRV votes: "Preferential voting software breaks down in San Francisco: Thu, 4 Nov 2004 10:07:12 PST. In the election of 2 Nov 2004, San Francisco's district supervisor election used ranked-choice voting for the first time. It went just fine on Tuesday during the election. Preliminary results showed candidates in three districts had won by a clear majority (so no re-ranking-rounds were needed), whereas the other four seats remained to be determined by the preferential ballot counting process. The computer processing broke down completely on Wednesday afternoon when election workers began to merge the first, second, and third choices into the program that is supposed to sequentially eliminate low-vote candidates and redistribute voters' second and third choices accordingly." See "Ranked-Choice Voting and Flawed Ballots Tax San Francisco's Election" Kat Zambon, 11/9/2007 http://www.votetrustusa.org/index.php?option=com_content&task=view&id=2639&Itemid=113 See http://rangevoting.org/rangeVirv.html It took San Francisco more than two years to implement the system, a process that included making changes to its optical-scan voting machines that required the approval of the secretary of state. See http://www.nytimes.com/2004/09/30/national/30runoff.html San Francisco officials missed a deadline to certify the outcome of the local Nov. 6 election after a partial check found too many errors in the tally of absentee ballots run through the city's electronic voting machines. See "Instant Runoff Voting Facts Verses Fiction" http://www.instantrunoffvoting.us/ In Australia it took a month in 2007 to count the difficult election contests. In the 1970's, Ann Arbor, Mich., abandoned it [IRV] after one election.

[xxii] Wake County, North Carolina claims to have audited the Cary IRV vote count the day after the official public count, but that audit was not performed in public and no one on the Board of Elections staff kept track of the time and manpower required.

[xxiii] A similar problem occurs today in that all county election officials count the votes in their own re-elections or for their replacement. Also see http://rangevoting.org/NPVtrainwreck.html

[xxiv] Examples include Australia (IRV seats are two-party dominated, zero third party members currently in the federal house; even though other NON-IRV seats NOT 2-party dominated, so this makes it quite clear) ditto Ireland and Fiji (but Fiji's democracy recently ended)

[xxv] Another reason is here http://rangevoting.org/KISSirv.html

[xxvi] See "Boxed In" by Peter C. Baker. The Nation's article concludes that "IRV has many flaws". Baker provides an interesting example of another vagary of the IRV method by illustrating how a winning candidate could lose by **gaining more votes** from a losing candidate, thus causing a different candidate to be eliminated in the first round. See https://thenation.com/ or http://rangevoting.org/Baker2BookRev.html

[xxvii] See http://rangevoting.org/TieRisk.html http://rangevoting.org/Monotone.html and http://rangevoting.org/IrvExtreme.html and see also http://zesty.ca/voting/sim

[xxviii] This is shown by the graphical analysis of Ka-Ping Yee http://zesty.ca/voting/sim/

[xxix] Two example elections to illustrate this are http://rangevoting.org/CoreSupp.html and http://rangevoting.org/rangeVirv.html#nasty

[xxx] These costs came from an e-mail from Scott Kennedy that referred to the 2008 bill cost study: Revision of documentation - $3 million, Agency IT systems - $4.5 million (assuming extensive revisions to much of the State Board's election management system, including considerable expansion of data sets and the reporting of data), Judge training development - $50,000, Voting system – undeterminable at this time, Voter education - $2.1 million. Chris Telesca of North Carolina notes that the first year costs in MD for the 2006 bill were $11,050,000 and $1,500,000 each year after that but the cost of the software was not included in the estimates. MD has approximately 3,135,773 registered voters. See

http://mlis.state.md.us/2006rs/fnotes/bil_0002/sb0292.pdf Most voting systems do not have IRV compatible software. For instance, North Carolina's voting equipment does not have IRV compatible software and none is available according to Keith Long, the Voting Systems Project Manager for the NC State Board of Elections. See http://www.ncvoter.net/downloads/Keith_Long_Machines_Not_IRV_Compatible.pdf IRV advocates often claim "IRV is cheaper than (non-instant) runoffs". That claim can be true, but also can be false because the multi-round runoffs involve simpler (plurality-style) voting for which the old machines suffice. The main reason their claim is misleading is that we usually in the USA have only one round so the comparison with multi-round elections is with a spurious straw man. For the MD Legislature fiscal notes for SB0233 in 2001, see http://mlis.state.md.us/PDF-Documents/2001rs/fnotes/bil_0003/sb0233.PDF or http://mlis.state.md.us/2001rs/fnotes/bil_0003/sb0233.doc. For fiscal notes for SB 292 in 2006, see http://mlis.state.md.us/2006rs/fnotes/bil_0002/sb0292.pdf. And for HB 1502 in 2008, see http://mlis.state.md.us/2008rs/fnotes/bil_0002/hb1502.pdf
Although a single IRV election could be cheaper than two elections (original plus runoff) runoff elections may only be needed rarely depending on the requirements of the jurisdiction, so the expense ratio on average is not anywhere near 2-to-1, and hence the expense of switching to IRV would usually exceed any savings in jurisdictions which conduct runoffs, for a long time (and perhaps forever considering the need to replace and update voting machines and the extra cost of manual audits). See http://rangevoting.org/Irvtalk.html

[xxxi] election-methods@lists.electorama.com See http://rangevoting.org/

[xxxii] http://www.burlingtonfreepress.com/apps/pbcs.dll/article?AID=/20080404/NEWS/80404029/-1/NEWS05

Exhibit 11
Anthony Gierzynski, et al., Instant Runoff Voting,
The Vermont Legislative Research Shop,
University of Vermont (March 2006)

The
UNIVERSITY
of VERMONT

The Vermont Legislative Research Shop

Instant Runoff Voting

On March 7, 2006 the city of Burlington, Vermont utilized an instant run off voting system (IRV) to select its mayor. As a result Burlington's mayor, Bob Kiss, is currently the only executive office holder in the US to be selected by the instant runoff voting system. The purpose of this report is to present the results of an exit poll The Vermont Legislative Research Shop conducted on the March 7th election. Before discussing the election and exit poll we will examine the use of IRV in other political jurisdictions and paradoxes associated with this type of voting system.

Instant Runoff Voting (IRV) is also known as Alternative Voting, Ranked Choice, Preferential Voting, or the Hare System. For the purposes of this report we will refer to the system as IRV. IRV describes an electoral process in which voters can rank choices for a political office on a ballot. If one candidate is ranked first by over 50% of the voters, that candidate wins and the election is over. If no candidate receives over 50% of the votes in the first ranking then the candidate with the lowest number of votes is eliminated. The second rankings of voters who voted for the eliminated candidate are allotted to the remaining candidates. This process continues until one candidate receives over 50% of the vote.

The first use on record of IRV was the colony of Queensland, Australia in 1893. The IRV method is presently used for electing the Australian House of Representatives. The President of Ireland is currently elected using IRV, as well as the Papua New Guinea National Parliament and the Fijian House of Representatives.[1]

Experience with IRV in the US

IRV is used by several US cities, including: San Francisco, California for its Board of Selectmen election in 2004 and Cambridge, Massachusetts for its city council elections. Ann Arbor,

[1] Anthony Quas, "Anomalous Outcomes in Preferential Voting," *Stochastics and Dynamics* Vol. 4, No. 1 (2004), pp. 95-105, and "Instant-runoff Voting." Wikipedia. Modified March 30th, 2006, accessed 4/4/06, http://en.wikipedia.org/wiki/Instant_runoff_voting.

Michigan used the system for its mayoral race in 1975 and some cities that have adopted, but have yet to implement IRV, include Ferndale, Michigan, and Takoma Park, Maryland. [2]

San Francisco, CA

Thanks to an exit poll conducted by Francis Neely, Lisel Blash, and Corey Cook of San Francisco State University, the 2004 San Francisco Board of Supervisors election provided a look at how IRV worked in another city. IRV was
Supervisors districts. Neely *et al's* study aimed to determine whether the voters had prior knowledge of the IRV method before voting, whether they understood the new method of voting, and whether they utilized it by ranking all three choices. Overall, Neely *et al* concluded that IRV was accepted positively in San Francisco though the results did raise some concerns about educational and language barriers when using IRV.

In order to make voting easier for the entire public, San Francisco instituted a program meant to educate the public on how Instant Run-off Voting
e Department of Elections with the goal to inform voters how to correctly mark ranked-choice voting ballots. The city produced and distributed informational flyers and pamphlets citywide in order to inform people of the change in voting. The Department of Elections also chose to train 3,500 poll workers on the ins and outs of ranked-choice voting so as to better inform those coming to vote.[3]

e had a demonstration ballot which allowed people to walk through the process of ranking their candidates. The ballot was available in multiple languages to cater to people whose first language is not English. The Department of Elections also distributed full-color brochures in English, Spanish and Chinese.[4]

it (IRV), most [voters said] they prefer it to

Voters with higher levels of education were more likely to have had prior knowledge of the new voting system. Sixty-two percent of the respondents without any college education had prior knowledge of the new system in contrast to the 72% of voters who had some college experience. Education was also a factor when examining
who did not finish high school responded that they did not understand the IRV method in contrast to the 12.1% of those with at least some college experience. Thus, education played a role in both prior knowledge as well as understanding of IRV with the advantage toward those respondents with greater education.

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[2] "Instant-runoff Voting." Wikipedia. Modified March 30th, 2006, accessed 4/4/06, http://en.wikipedia.org/wiki/Instant_runoff_voting

[3] Department of Elections. "RCV Public Education Plan." San Francisco, California, November 2, 2004. Accessed 4/4/06 from www.sfgov.org/site/uploadedfiles/election/appendixD-rcvpubliceducationplan2004.pdf

[4] Department of Elections: Ranked-Choice Voting. Department of Elections. March 14, 2006. Accessed 4/4/06 from http://www.sfgov.org/site/election_index.asp?id=24269.

With regard to language differences, voters whose first language was Spanish had more difficulty with IRV. Only 55.7% of those voters for whom Spanish was their first language had prior knowledge of IRV compared to 70% of voters for whom English was their first language and 69.4% of respondents for whom Chinese was their first language. Twenty-three percent of Spanish speakers and 20% of other language speakers reported not understanding the ballot compared to 12% of English speaking voters. Also, general ethnicity was examined finding that 11.7% of white respondents reported not understanding the ballot as contrasted to 23.2% of blacks, 19.5% of Hispanics and 16.5% of all other ethnicities.

In examining the extent of use of the IRV method, it was shown that whites were more likely to and 50% of blacks ranked all three choices. Fifty-eight percent of Asians, 53% of Hispanics, and 49% of all other respondents ranked all three choices.

The tendency to rank the candidates reflected the degree of knowledge of the new system. It was found that blacks, Hispanics, voters with lower levels education, and voters whose first language was not English had less of a tendency to rank three candidates as opposed to voting for one candidate.

Overall, the study concluded that ace participants and over three fourths of the absentee respondents say they pref Francisco State University report showed that IRV was accepted positively amongst respondents, the authors also outlined concerns, which must be addressed in order to ensure a greater understanding for the entire public. Unequal amounts of knowledge, understanding and use among education, ethnic and language groupings must be addressed, they concluded, in order to ensure that all groups are best equipped to understand and use IRV.[5]

Cambridge, MA

Cambridge, Massachusetts city government uses instant runoff voting as part of their proportional representation system for electing members of the City Council and School Committee. The elections are conducted using the Cincinnati method, wherein a quota system is utilized to elect candidates following the ranking of candidates by individual voters. All candidates who reach the necessary quota with first choice votes secure a position on the city council or school committee. Once reaching the sufficient number of votes for election, extra ballots with first placed votes for an elected member will be redistributed to the candidates marked next in preference (the number 2 preference). The count continues with the elimination of those candidates receiving fewer than fifty votes in the first count. These ballots are redistributed to the other candidates according to the next preference marked. After each distribution, the candidate with the lowest number of votes is eliminated and his/her ballots

[5] Lisel Blash, Corey Cook & Francis Neely. "An Assessment of Ranked-Choice Voting in the San Francisco 2004 Election." Public Research Institute. San Francisco State University. San Francisco, CA. May 2005.

redistributed to the next indicated preference (number 2, 3, 4, etc.). The count continues until the nine winners are identified.[6]

The proportional representation used by the Cambridge city government is different from the commonly used ranked choice voting because of its usage of a quota system. Unlike a majority of city council elections, the city of Cambridge is a single district and candidates are eliminated if they do not acquire the sufficient number of votes following a succession of voting rounds.

Ann Arbor, MI

In November 1974 the residents of Ann Arbor voted in favor of the usage of IRV for mayoral elections with 52% voting in favor of the method. The method was used in the April 1975 mayoral election following a large effort by the city to educate voters about the practice and implications of IRV voting. In the mayoral election, the Republican candidate won 49% among 1st place votes, while the Democratic candidate secured 40% and a third party candidate received 11%.[7] In the 2nd round when the 2nd ranking votes of the 3rd party candidate were reallocated, the Democratic candidate won by 121 votes. This sparked a heated contestation of the results by the incumbent Republican mayor James Stephenson. In April 1976, 62% of voters supported the revocation of instant runoff voting in Ann Arbor.

Voting Paradoxes

There are a number of voting paradoxes associated with IRV that represent potential drawbacks to the system. Peter Fishburn and Steven Brams discussed the paradoxes in an article entitled the [8] The four paradoxes Fishburn and Brams identified were the

The No-Show Paradox occurs when "the addition of identical ballots with candidate x ranked last may change the winner from another candi d happen if a Burlington mayoral election had the following results (where PDR is a ballot with a Progressive Party candidate ranked 1st, a Democrat 2nd and Republican 3rd, PRD is a ballot with a Progressive Party candidate ranked 1st, a Republican 2nd and a Democrat ranked 3rd, etc.):

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[6] The City of Cambridge Elections Commission, "Proportional Representation Voting in Cambridge Municipal Elections," http://www.cambridgema.gov/Election/prop-voting.html, accessed April 26, 2006.

[7] Elizabeth Ahlin, "Election Reform Takes a Step in San Francisco: Ranked choice could boost third parties," *NewsDesk.org*, September 7, 2004, http://www.artsandmedia.net/cgi-bin/dc/newsdesk/2004/09/07_ranked_choice, accessed on April 6, 2006.

[8] Peter Fishburn and Steven Brams, "Paradoxes of Preferential Voting: What Can Go Wrong with Sophisticated Voting Systems Designed to Remedy Problems of Simpler Systems," *Mathematics Magazine* vol. 56, no. 4, September 1983: pp. 207-214.

Table 1: Original Results[9]

1st Round Votes		2nd Round Votes D over R	2nd Round Votes R over D
417	PDR	417	0
82	PRD	0	82
143	DPR	143	0
357	DRP	357	0
285	RPD	0	285
324	RDP	0	324
1st Round	Progressive	499	
	Democrat	500	
	Republican	609	
2nd Round	~~Progressive~~	eliminated	
	Democrat	916	Winner
	Republican	691	

The addition of 2 ballots with the ranking PDR (with a Republican ranked last) would lead to the Republican winning the election over the Democrat. This would be the case even if there were 321 additional PDR ballots cast.

Table 2: Adding 2 additional PDR ballots

1st Round Votes		2nd Round Votes P over R	2nd Round Votes R over P
419	PDR	419	0
82	PRD	0	82
143	DPR	143	0
357	DRP	0	357
285	RPD	0	285
324	RDP	0	324
1st Round	Progressive	501	
	Democrat	500	
	Republican	609	
2nd Round	Progressive	644	
	~~Democrat~~	eliminated	
	Republican	966	Winner

A variation of this paradox comes in the form of a violation known condition.[10] The "non-perversity" condition specifies that increased votes for a candidate should feat. As Gideon Doron and Richard Kronick demonstrate in their article in the *American Journal of Political Science*, a perverse outcome is possible in a single transferable vote system such as IRV.[11] Doron and Kronick present a hypothetical which we

[9] Numbers for simulation borrowed from Fishburn and Brams article.

[10] William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973).

[11] Gideon Doron and Richard Kronic, "Single Transferrable Vote: An Example of a Perverse Social Choice Function," *American Journal of Political Science* vol. 21, no. 2, May 1977, pp. 303-311.

modify for our purposes of illustration.[12] Suppose 17 voters cast the following vote in an election involving 4 candidates (where P is the Progressive Party Candidate, D the Democrat, R the Republican and I an independent):

Table 3

# of voters	1st choice	2nd choice	3rd choice	4th choice
6	P	D	R	I
2	D	P	R	I
4	D	R	P	I
5	R	P	D	I

In this scenario, the candidate with the lowest first place votes, R (5 voters listed R as their 1st choice, 6 listed P, and 6 (2+4) listed D as their 1st choice), is dropped and his 5 second place votes are distributed to P, making P the winner.[13] Consider a different scenario where P gets 2 extra first place votes as in the following table:

Table 4

# of voters	1st choice	2nd choice	3rd choice	4th choice
6	P	D	R	I
2	P	D	R	I
4	D	R	P	I
5	R	P	D	I

In this case, D is dropped from the contest and the 2nd place votes allocated then result in a victory for R. In other words, P gets 2 additional 1st choice votes and loses the election. This

two voting systems: IRV *and* runoff-elections.[14] The unique problem for IRV in this situation is that such "perverse" outcomes are more visible than in runoff elections.

The other paradoxes discussed and demonstrated by Fishburn and Brams include: the Thwarted-Majorities Paradox in which a candidate that can beat every other candidate in direct-comparison may lose the election; the Multiple-Districts Paradox in which a candidate wins every district individually but manages to lose the general election when the districts are combined; and, the More-is-Less Paradox, suggests that if a winner were ranked higher by some voters (all else remaining the same) then another candidate might have won.[15] Though these paradoxes appear to apply to other voting systems, IRV "is especially vulnerable because of its sequential elimination [16] Finally, there is one other paradox referred to as "Condorcet's

[12] Their example is for a multi-member district. We modify it to apply to elect a single candidate (for which, according to the authors, it applies) and change the symbols to fit the Burlington Example.
[13] Since the independent, I, was ranked 4th by all voters, dropping that candidate has no effect on the result.
[14] Gideon Doron and Richard Kronic, "Single Transferrable Vote: An Example of a Perverse Social Choice Function."
[15] Peter Fishburn and Steven Brams, "Paradoxes of Preferential Voting: What Can Go Wrong with Sophisticated Voting Systems Designed to Remedy Problems of Simpler Systems," *Mathematics Magazine* vol. 56. no. 4, September 1983: pp. 207-214.
[16] Peter Fishburn and Steven Brams, "Paradoxes of Preferential Voting: What Can Go Wrong with Sophisticated Voting Systems Designed to Remedy Problems of Simpler Systems," p. 214.

where voters rank their preferences ala IRV for "every candidate to be beaten by some other [17] This would occur in Burlington with a vote such as

Table 5

400	PDR[18]
500	RPD
700	DRP

The Progressive candidate beats the Democrat 900 to 700, the Democrat beats the Republican 1,100 to 500, and the Republican beats the Progressive 1,200 to 400, showing no clear preference for any one candidate.

In sum, IRV has the potential to result in some unusual electoral outcomes, outcomes that could, as happened in Ann Arbor, leave the public unhappy with the results. The probabilities of such outcomes are not insubstantial.[19] The main source of paradoxes arising from IRV is the fact that it matters which candidates are eliminated after the first round.[20] Races in which no candidate wins in the first round and the 2nd and 3rd close are contests in which these sort of unusual outcomes are most likely. Because it matters who comes in 2nd and 3rd, IRV is not immune to strategic voting as some of its advocates claim.[21]

Exit Poll of Burlington's 2006 IRV Experience

th election, The Vermont Legislative Research Shop (VLRS), with the assistance of 51 students from Professor terviewed 1,096 voters leaving the polling places on Election Day.

IRV Exit Poll Methodology

The VLRS class read selections from *Basics of Survey Research* by Earl Babbie for strategies on how to conduct exit polls. The book discusses guidelines for asking questions, what types of questions to ask, and the construction of the actual questionnaire. Three different groups of students wrote exit poll questions which were then vetted by the entire class resulting in a first

[17] Peter Fishburn and Steven Brams, "Paradoxes of Preferential Voting: What Can Go Wrong with Sophisticated Voting Systems Designed to Remedy Problems of Simpler Systems," p. 210.
[18] Simulation numbers borrowed from Fisburn and Brams.
[19] Anthony Quas, "Anomalous Outcomes in Preferential Voting," *Stochastics and Dynamics* Vol. 4, No. 1 (2004), pp. 95-105 and William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973).
[20] In terms of the voting literature, this situation violates of Arrow's condition of independence from irrelevant alternatives (see Kenneth Arrow, *Social Choice and Individual Values*, 2nd Ed. (New Haven, CT: Yale University, 1970)).
[21] On strategic voting in preferential voting see William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory.*

draft of the exit poll. Some of the questions were based on questions sent to us by Representative David Zuckerman and Vermont's Secretary of State, Deb Markowitz. The survey went through several drafts, reviewed by Representative Zuckerman, Secretary of State Markowitz, Philip Baruth and Kate Eddy. The final survey included

ended question on why voters liked or disliked IRV, as well as

about it), how voters ranked the candidates, how the voters felt about several aspects of IRV, and four demographic questions. The exit poll form with all of the questions (and results) can be found in Appendix A.

Students who were to conduct the poll attended a training session the night before the election. There they were given the questionnaires and an instruction sheet (see Appendix B). During the session Professor Gierzynski went through all of the instructions and read through the survey instrument with them. Students from Professor Gierzynski's Politics & the Media course were told that they would earn their extra credit only if they followed the instructions exactly.

Sixty-one students were posted at all 7 wards of the city throughout the day, covering most of the time that the polls were open (from 7am to 7pm). Each student completed an average of 18 surveys resulting in a grand total of 1,096 surveys. Professor Gierzynski and 4 of the students from the VLRS class visited the polls throughout the day to make sure students were working at the polls during their designated time slots.

When the students arrived at their designated polling place, they were instructed to introduce themselves to the election officials, get clarification regarding how close to the polling place they could stand, and then take up a post near the exit to the polling place. The student's responsibility was then to approach the first person they saw leaving the polls and deliver the

UVM student conducting research for Vermont legislators and the

thoughts of the new voting system. Do you have a couple of minutes to answer a few questions about it?" The students were not allowed to pick and choose whom they asked; they had to ask the first person who walked by them after they finished each survey. The students were also asked to record the number of people who refused to answer the survey.

The VLRS students and Professor Gierzynski entered the responses from each questionnaire into a database. The exit poll results for the vote for mayor were then compared with the official Burlington election results and then weighed accordingly. The sampling error for a sample this size is roughly ± 3 percentage points.

Election Results

Before discussing the exit poll findings, an examination of the ballots cast for mayor is instructive.

Participation in IRV

Table 6 shows the percentage of people who cast a vote in each ranking level according to official election results.[22] About 1/5th of voters selected only one candidate, that is, they, in effect, did not participate in the IRV aspect of the election. Four-fifths of voters took part in ranking candidates, with 80.9% people having ranked at least two candidates, 47.9% having ranked at least 3 candidates, etc. Only a little over 1/4th of voters ranked all 5 candidates.

Table 6	
Ranking	**% of people**
Voted for only 1 candidate	19.1%
Ranked at least 2 candidates	80.9%
Ranked at least 3 candidates	47.9%
Ranked at least 4 candidates	29.9%
Ranked all 5 candidates	26.4%

As Table 7 shows, voters for the Republican candidate, Kevin Curley, were the least likely to rank candidates. A little over 29% of Curley voters voted just for Curley and ranked no other candidate as compared with 12% of Kiss voters and 17.3% of Miller voters.

Table 7	
Voters for	**% of voters who did not rank any candidates after their first choice**
Kiss (P)	12.0%
Miller (D)	17.3%
Curley (R)	29.4%

Voter Turnout

Voter turnout as a percentage of eligible voters[23] was 30.3% for the 2006 mayoral election.[24] Two other elections in recent years had a highe
eligible voters cast ballots, and 1995, with the highest level of turnout at 36.5% (see Table 8).

[22] Official election results can be obtained by the City of Burlington's Internet site http://www.ci.burlington.vt.us/ct/elections/, accessed April 22, 2006.
[23] The number of eligible voters was obtained from the US Census Bureau (census.gov). Calculating turnout as a percent of eligible voters is a better reflection of voter turnout than calculating it as a percentage of registered voters since registration is part of the participatory process.
[24] Voting data was provided thanks to the Burlington City Clerk, Jo LaMarche.

Table 8	
Mayoral Election Year	**Voter Turnout as a % of voting age population**
2006	30.3%
2003	22.3%
2001	18.7%
1999	31.0%
1997	20.8%
1995	36.5%
Sources: Burlington City Clerk's Office and US Census Bureau.	

The 1995 and 1999 elections were also the highest turnout elections in terms of absolute number of people casting votes. In 1995, Peter Clavelle, who had lost his reelection bid to Peter a competitive election, undoubtedly the reason why turnout was so high that year. The two mayoral elections prior to 2006 saw very little in the way of competition. In 2003, Mayor Clavelle won both the Progressive Party nomination and the Democratic Party nomination and won reelection easily. The 2006 mayoral election was the first mayoral contest since the early 1990s in which there was no incumbent running for reelection and a competitive election. Because it was competitive, we would expect turnout to be similar to the 1995 and 1999 elections, and it was. There is no indication from the turnout numbers that IRV increased voter turnout. Additionally, only 2% of those we polled said that d if it "hadn't been for the new voting system."

IRV Exit Poll Results

The majority of Burlington residents liked IR
17.9% disliked it and 18.7% did not whether they liked it. When the results are broken down by educational level (see Figure 1) we found that those with a higher level of education were more likely to respond favorably to the use of
a postgraduate degree said that they liked IRV compared to 45.1% of those with a high school diploma or less.

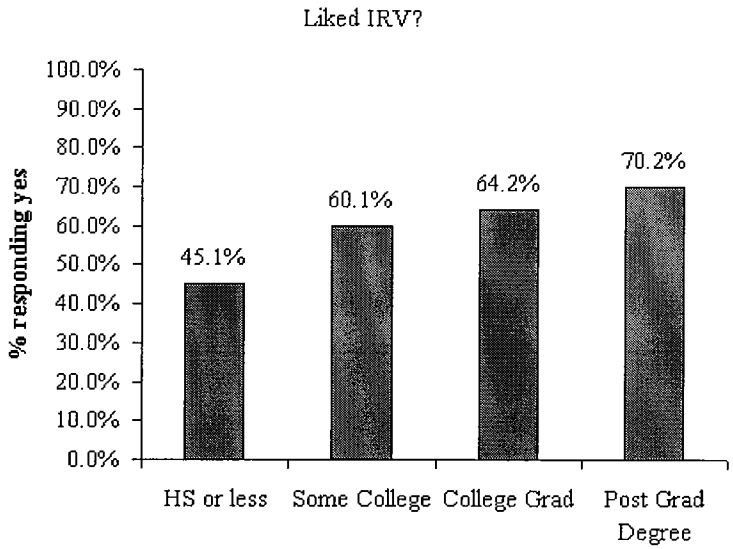

Figure 1: Preference for IRV by level of formal education.

Support for the new voting system also varied along party lines. Progressives liked IRV the most, at a rate of 80.3%. Democrats followed at a rate of 64.9%, and Republicans favored IRV the least, with just 36.5% saying they liked the new voting system while a plurality of Republicans, 47.8% did not like it. This finding, that Republicans were the group that liked IRV the least, fits with the fact that voters for the Republican candidate Curley were the least likely to have ranked any candidates beyond their 1st choice.

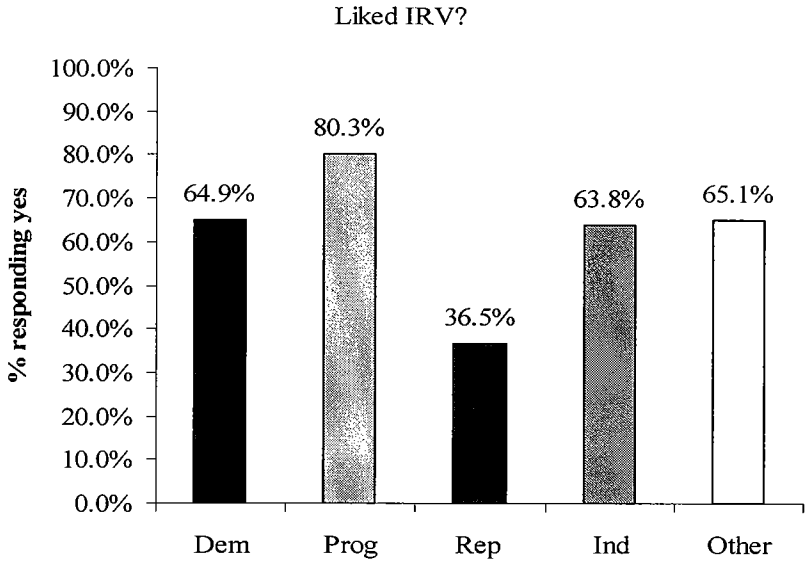

Figure 2: Liked IRV by partisanship

Respondents that said they either liked or disliked the IRV system were asked why they liked or disliked it in an open ended question. Of the respondents that answered that they liked IRV, 11.5% said the reason that they liked it was that it got rid of the spoiler effect, or the ability of a third party candidate to take votes away from a candidate otherwise more likely to win; 10.4% said that they liked IRV because it avoids a runoff; 9.1% said they liked it because allows greater political expression; 7.5% liked it because it was more democratic and legitimate; 7% liked it because it saves money; and, 6% liked it because they thought it was fairer (for full results of the open-ended question see Appendix A).

Of the respondents that did not like the IRV system, 16.4% said that it was too confusing; 10.7% said that they did not like change or did not see the reason for change; 5.7% wanted a runoff; and 3.8% felt it would not be as true of a vote.

In general most voters thought that IRV was a better way to express
system (see Figure 3). Seventy-one percent of
express my voting preferences than the usual
IRV "the election results will better reflect voter
preferences than the

Regarding any difficulty voters might have had with IRV, only 8.6% of voters said they found the ballot confusing. A little over 1/4th
about more of the candidates than [they] did fo
ss confusing if the ballot just asked for my top 2 or 3 preferences

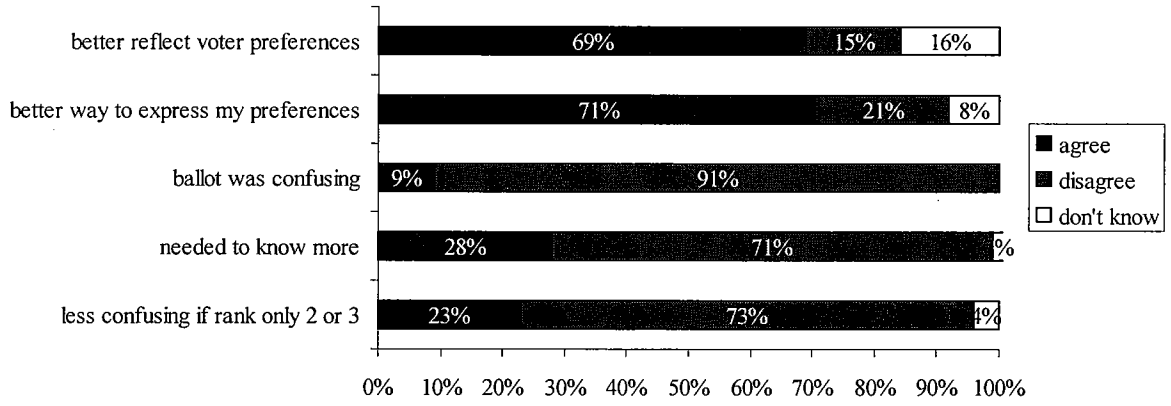

Figure 3: Specific Opinions on IRV

A majority of 58.3% of voters said that they would like to see the use of IRV in gubernatorial races in Vermont, whereas 28.2% would not want
Again, as shown in Figure 3, Progressives were highly likely to favor the use of IRV for Gubernatorial races, at a rate of 81.2%. Democratic voters favored its use at 59.5%, while only 28.1% of Republican voters would like to s

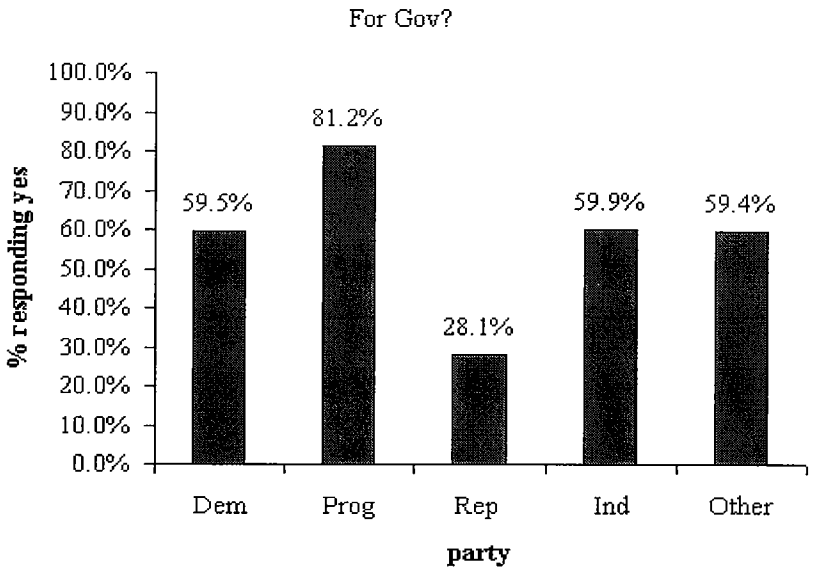

Figure 4: Percent by party answering "yes" to the question: Would you like to see the new system of ranking candidates used for the election of governor in Vermont?

Fewer voters supported the use of IRV for all statewide offices than favored it for gubernatorial elections—53.3% said that they would like to see it used for all statewide offices, whereas 31.9% would not like to see IRV used in those elections. Approval for use in statewide elections also varied along party lines. As shown in Figure 5, 75.4% of Progressive voters favored its use statewide, and 52.5% of Democrats favored its usage. There were only 24.6% of Republican voters that wanted to see IRV used for all statewide elections.

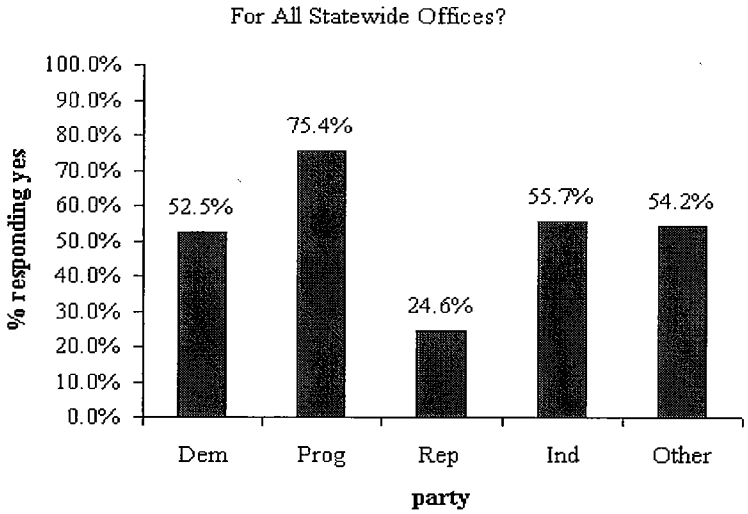

Figure 5: Percent by party answering "yes" to the question: Would you like to see the new system of ranking candidates used for the election of all statewide candidates in Vermont?

In terms of awareness of the new system, 90.4% of voters knew about the IRV system by the time they arrived at the polls. Of those who knew about it ahead of time 58.4% of these voters found out about the system from the news media, 9.3% from the city of Burlington and 12.7% from other sources. Voters with a higher level of education were more likely to know that the IRV system would be used before the election; 95.1% of those with a Post Graduate degree knew IRV would be used compared to 82.1% of those with a High School degree or less.

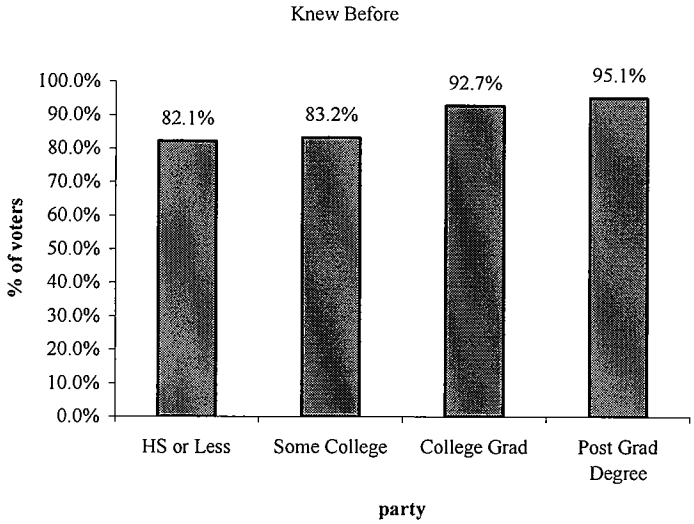

Figure 6: Knew about IRV before they arrived at the polling place

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Educational levels also affected whether
those with a high school degree or less thought the ballot was confusing while about ½ as many of college graduates thought it was confusing.

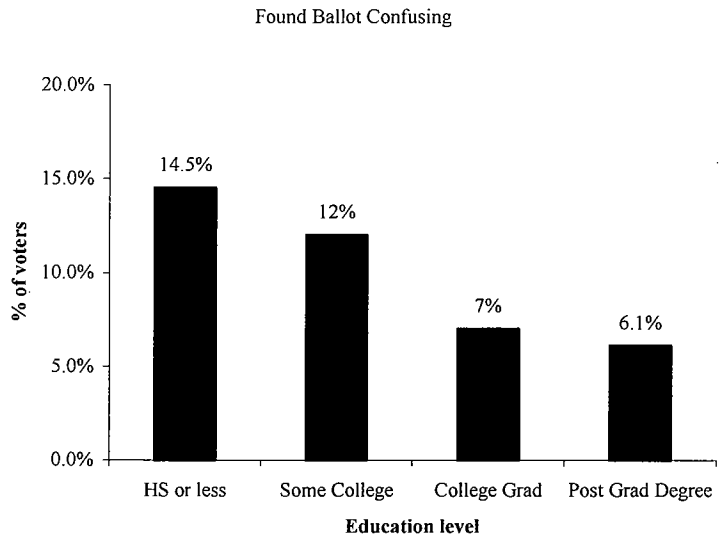

Figure 7: Percent who thought ballot was confusing by level of education

The relationship between education levels and awareness and understanding of the IRV ballot in our exit poll is similar to the findings of the exit poll conducted during experience with IRV (see discussion above) and is one of the main concerns with this method of voting. As the experience of Florida in the 2000 presidential election demonstrated, certain voters are likely to have enough difficulty with complex ballots so that their votes do not end up counting. The percentages of people who were unaware of IRV or found the ballot confusing in the Burlington election were low even for the lowest levels of education (undoubtedly due to the ers on IRV). The number of confused voters represented by those percentages, however, would be much greater in elections in larger cities or in statewide contests. Additionally, the higher level of voter turnout in statewide elections means that a larger proportion of the electorate would be composed of groups that, according to both our results and those of the San Francisco exit poll, had more difficulty with IRV, namely, those with lower levels of education. To illustrate, the percent of eligible voters casting ballots for governor in Vermont in 2004 was 65.1%[25] compared to the 30.3% turnout in the 2006 mayoral election in Burlington. Only 12% of voters in Burlington's mayoral election had a high school degree or less, while 26% of voters in the 2004 presidential election had a high school degree or less.[26] Because they represent the group that had the most difficulty with IRV, a higher percentage of voters with a high school degree or less would undoubtedly inflate the percentage, as well as the number of those uninformed about IRV and/or confused by it. In other words, there is a good possibility that the difference among voters based on education levels would be intensified in an election with a higher voter turnout.

[25] Vote data from Vermont Secretary of State (http://vermont-elections.org/elections1/2004_election_info.html), voting eligible population from United States Election project (http://elections.gmu.edu/).
[26] National exit polls conducted by the National Election Pool.

Conclusion

Instant Runoff Voting appeared to go very well; however, the long term viability of IRV may be tested only through future use. Eight in ten voters ranked at least two of the candidates, 63.4% of the voters said that they liked the new system, and nearly 6 in 10 would like to see it used for the election of Ve
competitive elections for mayor in Burlington, there appeared to be no significant difference in voter turnout for Burlington's first use of IRV.

The exit poll results do, however, raise a couple of concerns about IRV. There appear to be both education and partisan differences in the reaction to IRV. The relative lack of awareness and confusion voiced by those with lower levels of education suggests that IRV has the potential to engender some inequities in the electoral process based on class. The partisan divide found on

poses a problem for the perceived fairness of elections and the legitimacy of those elected. While a sound argument can be made that IRV functions in a manner to select candidates based on majority preferences, the minority party may see it as an unfair changing of the rules of the game that deprives them of a chance of winning when their opposition is in such disarray as to offer multiple candidates. Were any of the potential voting paradoxes discussed above to arise in an election (especially if a Republican candidate had the lead in the 1st round and lost after the second round) there would surely be attacks on the legitimacy of that election in the press. Then there will be a real test of th

Other questions remain to be answered regarding the effect of IRV elections. It is unknown how IRV affects campaigning. It may ensure more congenial elections since candidates would not want to alienate any potential 2nd place votes from supporters of their opponents. But, it could also make it so candidates pl
wanting to alienate any potential 2nd r to the voters what their choice really means in terms of governance. Nasty campaigning, it should also be noted, could simply go underground as it may have in the Burlington mayoral contest. It also remains to be claims of its supporters to the contrary, IRV does allow for, and even encourages strategic voting (as opposed to pure preference-based choices).[27] it might differ from their calculus in the typical single-vote system used in the US is unknown, as is the way that such differences might affect the outcome of elections.

In the end, elections are about building governing majorities. IRV offers an opportunity to have an electoral majority without doing the hard work and compromise necessary to build it. How that dynamic might affect the ability of elected officials to govern is a whole other matter to be seen.

Completed by Anthony Gierzynski, Ph.D., Gabriela Bourne, Christopher Dunham, Geoffrey Frazier, Emily Kueffner, Brennan Leene, Stephanie Manosh, Eve Margolis, David McCabe,

[27] On strategic voting in preferential voting see William H. Riker and Peter C. Ordeshook, *An Introduction to Positive Political Theory.*

Ryan Whalen, and Joseph Winsby in response to a request by Representative David Zuckerman on April 27, 2006.

Appendix A

Hi, I am a UVM student conducting research for Vermont legislators and the secretary of state on voters' thoughts of the new voting system. Do you have a couple of minutes to answer a few questions about it? Your responses will be completely confidential.

So, today's mayoral election was different from those in the past because you were asked to rank your preferences for mayor as opposed to just voting for one candidate.

[A] Did you know before you came to vote today that you would be asked to rank your preferences for mayor as opposed to voting for just one?
90.4% Yes **9.6% No**

[B] *If 'yes' to [A]:* How did you hear about the new voting system?
9.3% From the City of Burlington
2.0% From a candidate or political party
6.3% From friends
58.4% From the news media
12.7% other
11.2% form combination of sources

[C] In today's mayoral election there were 5 candidates on the ballot. In what order did you rank the candidates?
[Interviewer: put a number next to each candidate representing the respondent's ranking. If they don't

1, 2, 3, 4, 5, X or blank
[__] Louie "The Cowman" Beaudin
[__] Kevin Curley, Republican
[__] Bob Kiss, Progressive
[__] Hinda Miller, Democrat
[__] Loyal Ploof, Independent

Sample weighted by vote

[D] Overall, do you like the new voting method used for voting for mayor today better than the usual method of voting for one candidate?
63.4% Yes, like new method just used better
17.9% No, like usual method better
18.7% *don't know/don't care/no opinion*

[E] *[If 'yes' or 'no']* Why?

Reasons offered for liking new methods (includes responses only from those answering 'yes' to question D above)**:**
11.5% eliminated the spoiler effect
10.8% offered no reason
10.4% avoids a runoff
9.1% allows greater political expression
7.5% majority rules, more democratic, legitimacy

7.0% it saves money
6.0% it is fairer
5.7% it makes more sense
5.4% it allows more competition
5.2% it allows for more candidates to run
4.5% it makes it faster
4.0% it shows a clear winner
3.5% it makes it easier
3.0% it allows them to vote their conscience
2.1% it allows for more control

Reasons offered for disliking the new methods (includes responses only from those answer 'no' to question D above)**:**
16.4% it is too confusing
16.4% offered no reason
15.1% only voted once without ranking
5.7% don't like change
5.7% wanted a runoff
5.0% don't see reason for change
3.8% feel it will not be as true of a vote
3.1% feel it is not familiar
3.1% feel that it can be manipulated
3.1% feel forced to rank
3.1% feel that it is silly
3.1% feel that if you loose then you loose
2.5% the winner of the first round could loose

[F] Would you have preferred a separate run-off election held at a later date between the 2 highest vote getters instead of the system used today?
20.9% Yes **68% No** **11%**

I'm going to read you a few statements about the voting for mayor today. Please tell me whether you agree or disagree with the statement.
[G] It is a better way to express my voting preferences than the usual system.
71.1% agree **20.8% disagree** **8.2% don't know**
[H] The ballot was confusing.

[I] I felt I needed to know more about more of the candidates than I did for the usual way of voting.

[J] It would've been less confusing if the ballot just asked for my top 2 or 3 preferences rather than 5.

[K] The election results will better reflect voter preferences than the usual system.

[L] I wouldn't have voted today if it hadn't been for the new voting system
2.1% agree **96.3% disagree** **1.7% don't know**

[M] Would you like to see the new system of ranking candidates used for the election of governor in Vermont?
58.3% Yes
28.2% No

[N] Would you like to see the new system of ranking candidates used in Vermont for elections for all state-wide offices?
53.3% Yes
31.9% No

Now, just a few background questions....

[O] To which age group do you belong?
8.2% 18-24 **33.8% 45-59**
38.5% 25-44 **19.3% 60 and over**

[P] What is your level of formal education?
1.1% Some high school
10.9% High school degree
18.5% Some college
36.0% Bachelors degree
33.5% Post graduate degree

[Q] No matter how you voted today, do you usually think of yourself as a:
33.8% Democrat **32.7% independent**
11.5% Progressive **10.4% something else**
11.2% Republican

[R] *Record person's gender*
49.8% Female **50.1% male**

Appendix B

Instructions: Please read carefully.

1. Fill out the label on your envelop with your name and the polling place. Mark down the time you arrive and the time you leave.

2. Arrive at the polling place sometime in the first ½ hour of your time block.

3. When you arrive at the polling place, go inside and introduce yourself to the election officials. Tell them you are a UVM student wanting to conduct a study of voters' reaction to the instant run-off system for Vermont state legislators and the Secretary of State. Ask them to help you with understanding where you can stand to poll voters leaving the polling places. Technically, the rules state we have to be outside of:
   (a) The area within a corridor extending fifteen (15) feet to each side of the designated primary access route and ending where the primary and access route reaches the city sidewalk; and
   (b) The area within a thirty (30) foot radius of the front of the polling place drawn from the center point of the designated primary entrance door(s).

4. Start polling by asking for an interview with the first person who walks near you using the greeting/intro spelled out at the top of the survey. Slight modifications of the greeting are okay, the key think is to get in that
   a. you are a UVM student
   b. working on a research project of voters reaction to the new voting system
   c. and that this is for Vermont state legislators and the secretary of state

5. When reading the survey questions to the voter, be sure to read them exactly as they appear. Read all response options except the "don't know, don't care, know opinion" option (we'll leave it to them to volunteer that option). Do not read anything that is in italics—that is for you.

6. Mark each answer they give in the box next to the response option.
   a. When recording their response to the way they ranked the candidates use numbers for each candidate they ranked, if they didn't rank the candidate leave the box blank, if they ranked the candidate but didn't remember how they ranked them but an 'X' in the box.
   b. For [E] write down what they say word-for-word as best as you are able.

7. If the voter refuses to answer a particular question, that is okay. Do not press them for an answer. Leave the responses unmarked and just move on to the next question.

8. After you complete each survey thank the respondent and then ask the next person who walks near you. It is **very important that you select your subjects by asking the next available person!** If you pick and choose whom you ask the survey results will be biased.

9. On the envelop containing your surveys keep track of how many voters refuse your request for an interview (you can use hash marks). Note anything you think we should know about the process on the envelope (anywhere), e.g., people were confused with question [X]...

10. When you have had 20 interviews (the number of forms you are provided with) you can go home.

11. Drop off the envelopes with your surveys at my office on Wednesday.

12. Instructions must be followed exactly in order to earn your extra credit.

If you have any problems or questions, I've arranged to be available via a cell phone; the number is 802-999-9339.

Exhibit 12
Francis Neely, et al.
An Assessment of Ranked-Choice Voting in the San Francisco 2005 Election, Public Research Institute, San Francisco State University, (July 2006)

Public Research Institute

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1600 Holloway Ave.
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An Assessment of Ranked-Choice Voting in the San Francisco 2005 Election

Final Report

July 2006

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EXECUTIVE SUMMARY

Purpose

In the general election of November, 2005, the City and County of San Francisco used an Instant-Runoff Voting system, called Ranked-Choice Voting (RCV), for the second time. It was the first citywide application of RCV. Voters in four Board of Supervisors districts used it for the first time while those in the other seven used it for the second time. The purpose of this report is to evaluate the transition from the former runoff system to RCV. We surveyed 1923 voters to better understand their experience. This assessment considers four main indicators:

- Whether voters knew they would be asked to rank their preferences before coming to the polls or casting their absentee ballots,
- Whether voters reported understanding Ranked-Choice Voting after having used it,
- Whether voters tended to rank three candidates, and if not then why not, and
- What voters thought about RCV—whether they prefer it to the former runoff system, and which system they think produces more fair results.

Methodology

- Voters were surveyed in two ways: an exit poll of polling place voters (n = 1291) and a mail-in survey of absentee voters (n = 632).
- A purposive sample design was used in the exit poll: 26 precincts were chosen by how well they represented their BOS district, and 3 precincts were polled to oversample Asian-Americans, Latinos, and African-Americans. In the survey of absentee voters, respondents were chosen at random from official records.
- Response rates at the precincts ranged from 25% to 69%; the mail-in survey response rate was 18%.
- Survey forms were made available in English, Spanish and Chinese.

Prior Knowledge of Ranked-Choice Voting (RCV)

- A narrow majority of voters surveyed (54%) knew before voting that they would be asked to rank candidates for City Treasurer and Assessor in the 2005 election.
- The proportion of voters who had prior knowledge of RCV was lower in 2005 (54%) than in the 2004 election for the Board of Supervisors (67%).
- Those with lower rates of prior knowledge tended to be those who were less educated, reported having lower incomes, and spoke a primary language other than Spanish.
- African Americans were considerably less likely than other racial and ethnic groups (41.9%) to know they would be ranking their choices for these offices.
- Voters residing in districts that used RCV for the 2004 election for the Board of Supervisors were more likely to know that they would be ranking their choices in 2005 (57%) than those from districts using RCV for the first time (49%).

Overall Understanding of RCV

- The wide majority of voters said that they understood Ranked-Choice Voting either "fairly well" or "perfectly well" (87%).
- The proportion of voters indicating they understood RCV in 2005 (87%) is about the same as those saying they understood RCV in the 2004 Board of Supervisors election (86%).
- Self-reported levels of understanding were lowest among voters with low levels of education and those for whom Chinese was their first language.

Use of the Ranked Choice Ballot

- The majority of voters reported ranking three candidates in the race for City Treasurer (57%), while 33% reported selecting only one candidate.
- Few systematic differences were found between demographic groups, however African Americans were far more likely to rank three choices (73%) than Whites (51%) and the lowest proportions were found among the oldest voters (38%) and those with both the lowest and highest levels of education (44% and 50%, respectively).
- The primary reasons voters gave for ranking less than three choices was that they felt they did not have enough information about other candidates (31%) or they found other candidates to be unacceptable to them (21%).
- A small proportion of voters (9%) reported selecting less than three candidates in the Treasurer race because they did not know they could do so or did not understand that part of the ballot.
- By a wide margin, more voters said the ranking task easy or very easy (46%) than said it was difficult or very difficult (16%).

Opinions of RCV

- By a margin of three to one, voters preferred the ranked-choice voting system to the prior two-stage runoff election system: 51% preferred RCV; 17% preferred the traditional runoff method, while the remainder expressed no preference.
- Younger voters, those whose first language was English, and those with more education and income were more likely to voice a preference for RCV.
- Among racial and ethnic groups, African Americans (32%) were by far the least likely to say that they preferred ranked-choice voting.
- By a margin of greater than two to one (37% to 15%), voters perceived the Ranked-Choice Voting system as more fair than the runoff system. However, a plurality of those surveyed said there was no difference between the two.
- Older voters and self-reported conservatives were the least likely to perceive RCV as more fair than the runoff system.

INTRODUCTION

This report contains results of a survey of voters in the San Francisco municipal election of November, 2005. In that election, the City and County of San Francisco used an Instant-Runoff Voting system, called Ranked-Choice Voting (RCV), for the second time. It was the first citywide application of RCV. Voters in four Board of Supervisors districts used it for the first time while those in the other seven used it for the second time. Candidates for City Assessor and Treasurer were elected using this method of voting. The election for the City Attorney did not use RCV since the incumbent ran unopposed.

San Francisco is the first jurisdiction in the U.S. to elect government offices with this type of election system since Ann Arbor, Michigan used it in the 1970s. Other jurisdictions are considering adopting similar election reform, or have already begun to implement Instant-Runoff Voting systems. Therefore, it is useful to track the experience of San Francisco and to examine the outcome of this historic electoral reform.

The primary purpose of this study is to gauge the ease or difficulty with which voters expressed their preferences on this form of ballot and to get their reactions after having used the RCV system. This study follows a similar survey taken during the November 2004 election for seven members to the Board of Supervisors. We consider four main indicators: (1) Whether voters knew in advance that they would be permitted to rank their preferences in these races before coming to the polls or casting their absentee ballot; (2) Whether voters reported understanding the ranked-choice process after having used it; (3) Whether voters fully utilized the preference rankings, why they did not for those voters who ranked less than three choices, and whether they found that ranking task to be difficult or easy; and (4) Once having used the ranked-choice system, whether voters perceive Ranked-Choice Voting to be fair and prefer that voting system to the previously used two-stage runoff election.

We examine these questions in part by exploring differences between demographic groups that might have experienced relatively higher levels of difficulty with the unfamiliar ballot. Those include groups based on language, race and ethnicity, age, education, and income.

The two principal investigators are Francis Neely and Corey Cook, both assistant professors of political science at San Francisco State University (SFSU). Lisel Blash of the Public Research Institute (PRI) at SFSU managed the study in the field and contributed throughout the project. PRI's John Rogers and Jim Wiley also provided valuable support and suggestions. In addition, Richard DeLeon, professor emeritus of political science at SFSU, gave advice on the design and implementation, and provided the precinct sample demographic indices. Finally, the study could not have been conducted without the conscientious efforts of student volunteers who collected the exit poll data, and assisted with the mail-in absentee survey and data entry.

This study was funded by the City and County of San Francisco, and by the College of Behavioral and Social Sciences and the Office of Community Service Learning at San Francisco State University.

METHODOLOGY

Study Design

Voters were surveyed to obtain measures of public opinion on the questions mentioned above. The goal was to draw inferences to all voters—those who fill out and cast ballots at the polling places on Election Day and those who vote with an absentee ballot submitted through the mail.[1]

Sample Design

Exit Poll Sample: A purposive sample design was used. The basic sample includes two or three precincts per district, twenty-six precincts in all, chosen for how well they represent their district. Two steps were taken to identify representative precincts. First, from census data an index was built from ten demographic indicators (race and ethnicity, income, home ownership, households with children, nativity, age, and education). The indicators were standardized and deviations were calculated and summed to create an aggregate measure of typicality. The second step was to consider the ideology of the precincts. This was done to avoid sampling precincts that are ideologically extreme, compared to the rest of the district. Richard DeLeon's Progressive Voting Index is a measure of progressivism based on past voting records. Deviations from the district average were calculated and plotted against the demographic index of deviation. A low score on both of these indices means that a precinct is very much like the district overall in its demographic makeup and in its ideology. These were the precincts chosen for the survey of polling place voters, ranked below by how well they reflect the nature of their district.

Table 1. Precincts in the Exit Poll Sample

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11
Basic Sample	2111	3217	3324	2447	3513	3617	2725	3851	3921	3024	1101
	2103	2212	3322	2423	3548	3611	2724	3846	3931	3025	1105
		3218	3341		3526			3847			
Over-sample			3336		3522				3918		

Cell entries are precinct numbers. D1 = Board of Supervisor District 1.

In addition to the basic sample, three groups were oversampled: Asian-Americans, Latinos, and African-Americans. To do this, three additional precincts were chosen using 2000 census data to identify precincts with high concentrations of residents from each group. Precinct 3336 contains 92% Asian/Pacific Islanders; precinct 3522 has 66% African-American/Black residents; and precinct 3918 is made up of 77% Latinos. Those three precincts were surveyed, and the results from voters in each group were added to the basic sample. Oversampling allows more accurate estimates to be made about subgroups within populations.

Absentee Voters Sample: The sample of absentee voters was generated from the Department of Election registration files, obtained through their office. A random 3600 records were chosen that contained the names and addresses of voters in San Francisco who are under a permanent

[1] Note that this study excludes a small proportion of voters who cast ballots early at City Hall.

absentee status. Surveys were mailed to those voters, along with pre-addressed and postage-paid return envelopes. Approximately seven days later a follow-up postcard reminder was sent.

The Instrument

The questionnaire was designed to pursue the main research questions mentioned above: How easy or difficult was it for voters to use the RCV system? And what did they think of it, after having used it? We see these as fundamental questions in assessing the success of implementing a new election system.

Those issues were examined in four main questions: (1) Did voters know about RCV before voting? (2) How easy or difficult it was for them to use RCV? (3) How many candidates did people tend to rank? (4) How did voters compare RCV to the former runoff system? Measures were included that would allow us to examine voters' experience among various groups, especially those based on education, income, language, and race or ethnicity.

The survey was relatively brief, fitting on one piece of legal-sized paper, printed on both sides. It was translated into Spanish and Chinese (See the Appendix for the English version). The absentee version was also available in three languages. The questionnaire sent to absentee voters varied only minimally from the version used for polling place voters. Most questions were identical, but some required rewording. For instance, the seventh question in the exit poll read, "Before coming to vote today, what was your opinion of Ranked-Choice Voting (Instant Runoff Voting)?" In the absentee version, the wording was, "Before casting your absentee ballot, what was your opinion of Ranked-Choice Voting (Instant Runoff Voting)?"

Surveying Voters

Exit Poll of Polling Place Voters: We recruited 115 volunteer interviewers from political science and urban studies courses at San Francisco State University. They were trained in two ways. First, each successfully completed the National Institute of Health's on-line accreditation program for research involving human subjects. Second, each attended a three-hour training session conducted by Lisel Blash and professors Neely or Cook. The students received credit toward various courses for their efforts.

Interviewers worked in pairs and surveyed voters in six hour shifts.[2] Polling places in San Francisco open at 7:00 a.m. and close at 8:00 p.m. Our interviewers worked either a 7:00 a.m. to 1:00 p.m. shift, or a 1:00 p.m. to 7:00 p.m. shift. Because of known interviewer effects, nearly all of the pairs included one female and one male.

Voters who completed the survey did so unassisted, and then folded and placed their forms in a box in order to preserve anonymity. The interviewers asked each person leaving the polling place to participate. This worked fairly well since interviewers worked in pairs, and since the rate at which people leave the polling place is more regular than the rate at which they arrive.

[2] Several of the interviewer teams included a third person.

Response Rates
In the exit poll, among precincts that were staffed for the full day, the response rate ranged from 25% to 69% (number of voters completing the survey / total number of polling place voters). In the absentee mail-in survey, of the 3600 requests sent out 632 completed forms were returned, for a response rate of 18%.

The Data
In the polling place sample, the total number of completed surveys collected was 1291. The total number of completed absentee surveys was 632. The following tables display the number of completes per district.

Table 2. Exit Poll and Absentee Surveys Collected by District

BOS District	Number of Exit Poll Surveys	Number of Absentee Surveys
D1	104	47
D2	137	72
D3	142 [a]	46
D4	86	56
D5	184 [b]	56
D6	72	47
D7	97	75
D8	151	90
D9	146 [c]	37
D10	99	39
D11	73	34
Unknown [d]	0	33
Total	1291	632

a: 44 of the 142 are oversampled cases; b: 31 of the 184 are oversampled cases; c: 67 of the 146 are oversampled cases; d: 33 absentee surveys were returned with the precinct information removed.

Weighting the Data: The results reported below are from weighted data, based on three factors. First, in order to gauge the opinions of all voters in the election, the polling place and absentee data were combined. In doing so, the proportion of each type of voter in the data matters. Among the 1923 voters surveyed, 632 (32.87%) were absentee voters. This is somewhat smaller than the proportion of actual absentee votes cast during the election (40.41%).[3] Weighting adjusts for this discrepancy. Second, the exit poll data were weighted to adjust for discrepancies between the proportion of completed surveys collected in a district and the polling place turnout in that district. These discrepancies arose because of differences in staffing and differences in response rates across the districts. Finally, in order to improve the estimates among subgroups of voters that are typically underrepresented in exit poll surveys, three precincts were over-sampled. Those were located in Chinatown, the Mission, and Western Addition. Once the over-sampled

[3] The number of absentee and polling place voters was acquired from the Statement of the Vote, retrieved from the San Francisco Department of Elections web pages.

cases were added, the proportions of each group were adjusted within that district to match the original proportions in the basic sample. Weighting the data improves the accuracy of the report, although in this study the effect is minimal—the results from weighted and un-weighted data reported in the tables below typically vary by less than 2%.

FINDINGS

The reported findings are organized around four main measures of interest:

1. Did voters know about Ranked-Choice Voting before coming to vote?
2. Did they understand the ballot?
3. What was voters' experience with the ranking task: Was it easy? Did they rank three candidates? If not, then why not?
4. What do voters think of RCV?

Though we highlight what we see as the most relevant findings here, in the appendices we report the frequencies of responses to questions asked of polling place voters as well as bivariate reports on several key variables for further information.

We report the results on select variables whether the observed differences are statistically significant or not. Readers should be aware that a Chi-square test that produces a p value of less than .05 means that the differences observed in the sample are very likely to exist in the population; specifically, we are 95% certain that the differences among surveyed voters also exist among all voters.

1. Awareness of RCV Prior to Election Day

The San Francisco Department of Elections informed voters in a variety of ways about Ranked-Choice Voting and its use in the November, 2005 election. They conducted 241 separate outreach events, all of which included information about RCV. In addition to a citywide mailing to registered voters and paid advertisements in neighborhood newspapers, the department produced and distributed a multilingual brochure and audio and video public service announcements. To gauge voters' awareness of RCV respondents were asked, "Before coming to vote today, did you know you would be asked to rank your choices for the Treasurer and Assessor?" Just over one-half of the voters (54%) said that they knew they would be asked to rank their choices. This figure is quite a bit lower than the proportion of respondents who indicated during the November 2004 election that they were aware RCV would be used in elections for the Board of Supervisors (69%). However, it is encouraging that voters surveyed in those precincts that had previously voted in district elections for the Board of Supervisors using the ranked-choice ballot in 2004 were substantially more likely to know that the ranked-choice ballot would be used for Treasurer and Assessor in this election.

Table 3. Prior Knowledge of RCV by District Type
(Chi-square = 12.01, p < .001, N = 1902)

	"Yes-Knew"
Districts held 2004 BOS Election	57.3%
Districts did not hold 2004 BOS Election	49.2%

Differences in prior knowledge were observed across age groups, but not in any meaningful pattern. Further, those differences are not statistically significant.

Table 4. Prior Knowledge of RCV by Age
(Chi-square = 11.50, p < .12, N = 1894)

	"Yes-Knew"
18-24 years	51.8%
25-29 years	50.9%
30-39 years	54.9%
40-49 years	52.7%
50-59 years	50.9%
60-69 years	63.4%
70-79 years	56.8%
80 years & older	55.0%

Education, however, was strongly related to the likelihood that voters knew that they would be asked to rank candidates. Those with less than a high school education were less likely to know (43% knew), and voters with coursework beyond the BA/BS level were more likely to know (61%). These findings are consistent with those from the prior election.

Table 5. Prior Knowledge of RCV by Education
(Chi-square = 16.50, p < .003, N = 1876)

	"Yes-Knew"
Less than HS	43.4%
HS grad	53.2%
Some college	50.4%
College grad	52.2%
Post-grad study	60.6%

By a small margin, voters who learned Spanish as their first language were more likely than others (61% knew) to be aware that they would be asked to rank their choices for Treasurer and Assessor. However, when comparing all four groups, the differences are not statistically significant. Still, it is worth noting that this finding varies from the previous election. In 2004, native English (70%) and Chinese (69%) speakers were the most likely to report prior knowledge, while native Spanish speakers (56%) reported significantly lower levels of awareness.

Table 6. Prior Knowledge of RCV by First Language
(Chi-square = 4.30, p < .24, N = 1874)

	"Yes-Knew"
English	54.9%
Chinese	53.4%
Spanish	61.3%
Other	47.4%

Income was not systematically related to one's likelihood of knowing about RCV before voting. As seen in Table 7, the largest difference is between the least wealthy voters who were least likely to know (49%) and those with $75,000 to $100,000 household incomes who were most likely (59%). But the pattern is not consistent and the differences could have occurred by chance.

Table 7. Prior Knowledge of RCV by Income
Chi-square = 4.68, p < .46)

	"Yes-Knew"
Less than $10,000	49.0%
$10,000 - $19,999	55.9%
$20,000 - $49,999	53.7%
$50,000 - $74,999	52.4%
$75,000 - $99,999	59.3%
$100,000 or more	54.1%

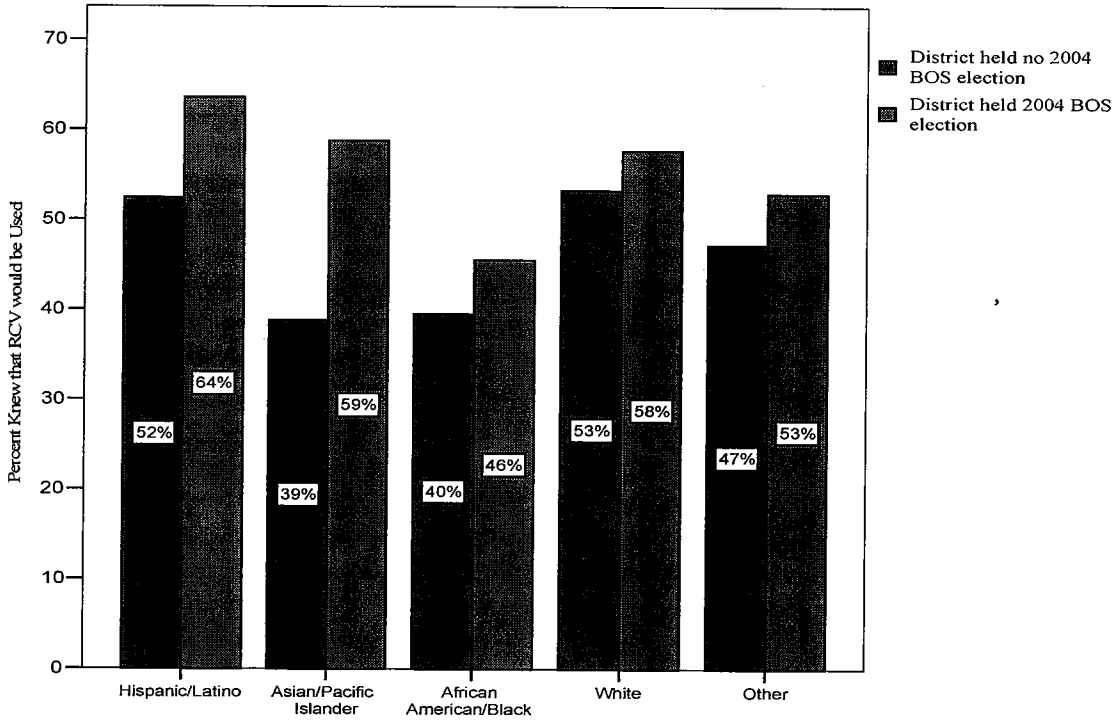
Across racial and ethnic groups, Latinos were most likely to have prior knowledge of RCV (59%) while African-Americans were least likely (42%). About 52% of Asians and Pacific Islanders knew they would be asked to rank candidates, as did 56% of whites, and 46% of those of "other" races and ethnicities.

Table 8. Prior Knowledge of RCV by Race/Ethnicity
(Chi-square = 12.58, p < .02)

	"Yes-Knew"
Hispanic/Latino	59.3%
Asian/PI	51.6%
African American/Black	41.9%
White	56.0%
Other	50.4%

However, for all ethnic and racial groups, respondents residing in districts with prior experience with the ranked-choice ballot reported higher levels of knowledge that the ballot would be used in the 2005 general election. This trend was particularly pronounced among Asian and Pacific Islanders. Among members of this group, rates of knowledge about RCV were 20 points higher in districts that had previously used ranked-choice balloting.

Figure 1: Relationship Between District Type, Race/Ethnicity, and Level of Understanding of RCV (n = 1875)



Within racial group comparisons across district differences: Chi-square Latino = 1.96, p<.11; Chi-square Asian = 10.34, p<.001; Chi-square Black = .42, p<.32; Chi-square White = 2.15, p<.08; Chi-square Other = .39, p<.33 Within district group comparisons across racial and ethnic groups: Chi-Square 2004 District = 5.40, p<.25; Chi-square Non-2004 District = 10.24, p<.04

Summary

While most voters knew before they voted that they would be asked to rank the candidates for City Treasurer and Assessor/Recorder, nearly half did not. Voters with more education were more likely to have prior knowledge of RCV, as were voters who lived in districts that used RCV in the 2004 Board of Supervisors election. Black voters were less aware of RCV than others. Controlling for race and ethnicity, the influence of having had a 2004 RCV election was greatest among Asian-American voters. While levels of prior knowledge of RCV were not significantly different across language groups, it is worth noting that native Spanish speakers reported being relatively more aware of RCV in 2005 than in 2004.

2. Overall Understanding of Ranked-Choice Voting

Voters were asked to describe their overall experience with Ranked-Choice Voting by answering the following question: "Overall, how would you describe your experience with Ranked-Choice Voting for City Treasurer and/or Assessor-Recorder?" By using the word "overall" we hoped to avoid reports on specific difficulty people had with, say, the form of the ballot (like the size of the print or layout of the page). By asking about their "experience" we hoped to avoid reports of how well they grasped other aspects of RCV, like the way the votes would be tallied, or the method for transferring a vote from a first preference to a second preference. We selected a measure that would most cleanly gauge the degree to which voters were able to navigate the new system to express their preferences on the ballot.

Generally speaking, voters across all categories reported high levels of understanding. About 87% of those responding said that they understood it either perfectly well or fairly well. And slightly over one-half (52%) of voters said they understood it perfectly well. These figures tracked closely to the results from the previous election. By nearly identical proportions, a sizeable majority of voters in the 2004 election reported general understanding (86% to 14%). In the following tables we consider levels of understanding based on the same variables in the last section: age, education, first language, race/ethnicity, and income. To present the results more clearly, we collapse the two categories indicating a general understanding ("understood it perfectly well" or "understood it fairly well," and the two that indicate some degree of not understanding ("did not understand it entirely" or "did not understand it at all"). Because the concern in changing election systems and voting procedures centers on voters who might have difficulty expressing their preferences, we report the proportions who indicated they did not understand RCV.

Table 9. Overall Understanding of RCV
(N = 1633)

Understood it perfectly well	51.6%
Understood it fairly well	35.6%
Did not understand it entirely	9.9%
Did not understand it at all	3.0%

As shown in Table 10, self-reported levels of understanding were higher in districts that held a previous election using RCV than those that did not, although the difference is at the margins of statistical significance.

Table 10. Overall Understanding of RCV by District Type
(Chi-square 2.56, p<.11, N = 1633)

	Did not understand entirely or did not understand at all
Districts held 2004 BOS Election	11.8%
Districts did not hold 2004 BOS Election	14.5%

No systematic differences in understanding were observed across age groups as shown in the below table. Although one group stands out—voters 80 years and older—as more likely to report not understanding, that difference is not significant when considered against the other age categories separately. When compared against all others combined, however, it is marginally significant (Chi-square = 3.21, p < .08).

Table 11. Understanding of RCV by Age
(Chi-square = 5.30, p < .63, N = 1625)

	Did not understand entirely or did not understand at all
18-24 years	13.3%
25-29 years	10.6%
30-39 years	11.4%
40-49 years	13.2%
50-59 years	13.8%
60-69 years	12.8%
70-79 years	10.4%
80 years & older	20.0%

Levels of education were related to levels of understanding. Nearly one-fourth (24%) of the voters in the least educated group indicated that they did not understand RCV, compared to only one-tenth (10%) of those with the most years of formal education. These proportions closely matched those observed in the 2004 election where by far the single largest percentage of those reporting a lack of understanding were those without a high school diploma (27%).

Table 12. Understanding of RCV by Education
(Chi-square = 9.69, p < .05, N = 1409)

	Did not understand entirely or did not understand at all
Less than HS	23.8%
HS grad	15.3%
Some college	13.9%
College grad	13.3%
Post-grad study	10.0%

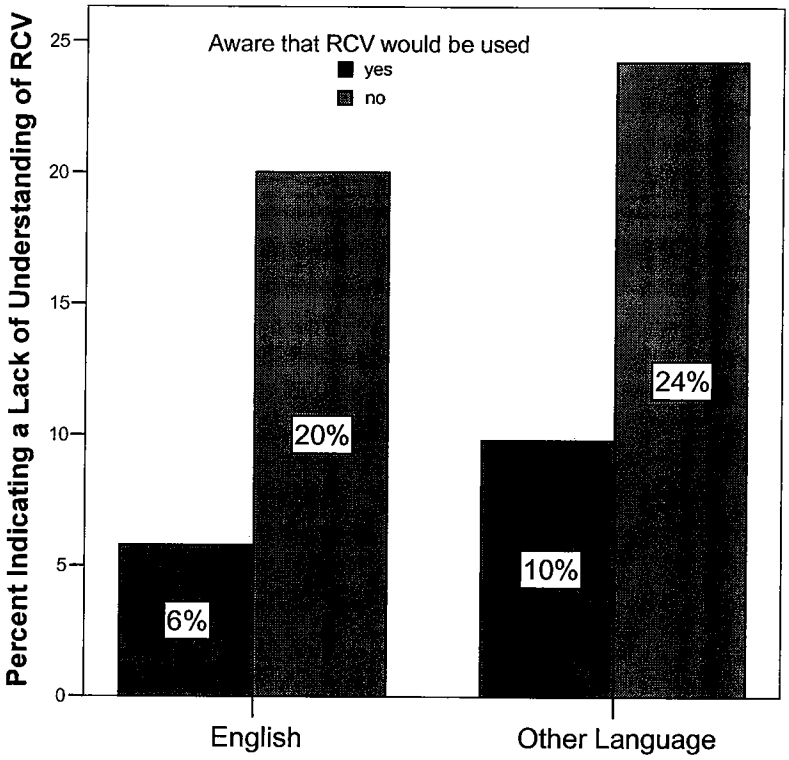
One's understanding of RCV was also related to one's first language. A higher proportion of voters who learned Chinese as their first language said they did not understand RCV (22%) than did voters who first learned Spanish (9%) or English (12%).

Table 13. Understanding of RCV by First Language
(Chi-square = 10.08, p < .02, N = 1610)

	Did not understand entirely or did not understand at all
English	12.1%
Chinese	21.9%
Spanish	9.0%
Other	13.9%

For both native and non-native English speakers, lack of understanding was substantially higher among voters who had been unaware that they would be asked to rank their choices for Assessor and Treasurer. Still, statistically significant differences remained between those whose first language is English and those whose first language is another language among those aware that RCV would be used in this election.

Figure 2. Relationship between First Language, Prior Knowledge, and Understanding of Ranked-Choice Voting (N = 1602)



Within language group comparisons across district differences: Chi-square English = 61.42, p<.001; Chi-square Not English = 11.20, p<.001 Within knowledge group comparisons across language groups: Chi-Square Prior Awareness= 3.00, p<.08; Chi-square No Prior Awareness = 1.15, p<.28

Although some differences in levels of understanding were observed across racial and ethnic groups, those were not statistically significant. The proportions of voters who indicated they did not understand RCV ranged from 10% (Latinos) to 16% (African-Americans), a difference that could have occurred by chance.

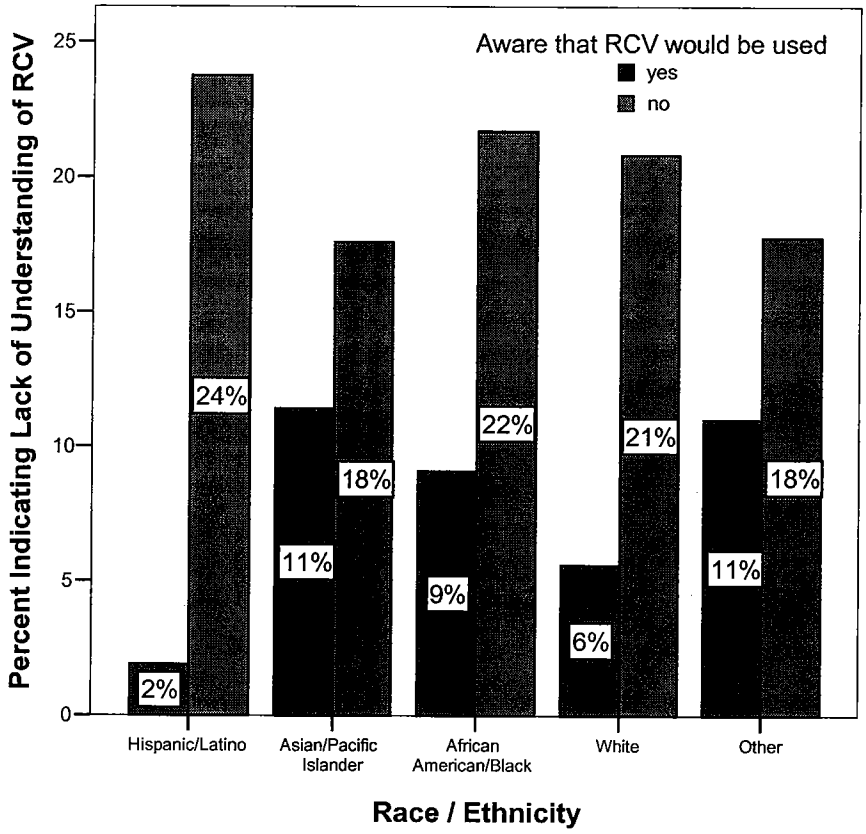
Table 14. Understanding of RCV by Race/Ethnicity (Chi-square = 3.23, p < .52, N = 1613)

	Did not understand entirely or did not understand at all
Hispanic/Latino	10.2%
Asian/PI	14.3%
African American/Black	16.2%
White	12.2%
Other	14.7%

Figure 3 displays the influence of prior knowledge on levels of understanding, across race and ethnic groups. By comparing the bars within each racial/ethnic group we see large differences in how well voters understood RCV based on whether they knew before voting that they would be asked to rank candidates. Prior knowledge tended to improve one's understanding of RCV, especially among Latino and white voters.

We can also examine the differences across racial and ethnic groups, among those who did and did not have prior knowledge of RCV. Differences among those who did not know they would be asked to rank candidates are indicated by comparing the lightly shaded bars, and they are not statistically significant. In other words, for voters who did not know about RCV, we observe no meaningful differences in levels of understanding across race and ethnic groups. However, among voters who did know (indicated by the darker bars) Latinos and whites reported significantly higher levels of understanding. It must be strongly emphasized, however, that all of these groups expressed overall high levels of understanding. Those saying they understood RCV the least were Latinos who did not have prior knowledge; yet a full three-fourths of them said they understood RCV "fairly well" or "perfectly well."

Figure 3. Relationship Between Ethnicity, Prior Knowledge, and Understanding of Ranked-Choice Voting (N = 1603)



Within racial group comparisons across district differences: Chi-square Latino = 15.75, p<.001; Chi-square Asian = 1.87, p<.012; Chi-square Black = 2.75, p<.08; Chi-square White = 53.88, p<.001; Chi-square Other = .85, p<.26 Within knowledge group comparisons across racial and ethnic groups: Chi-Square Prior Awareness= 10.34, p<.04; Chi-square No Prior Awareness = 1.29, p<.86

As expected, given findings for the previous year, income was correlated with levels of understanding, with the wealthiest voters least likely to say they did not understand the ranked choice balloting method. Approximately ten percent gave those responses. Meanwhile, about 23% of voters with household incomes of $10,000 to $20,000 indicated they did not understand entirely or did not understand at all.

Table 15. Understanding of RCV by Income
(Chi-square = 16.55, p < .01, N = 1559)

	Did not understand entirely or did not understand at all
Less than $10,000	14.9%
$10,000 - $19,999	23.1%
$20,000 - $49,999	13.9%
$50,000 - $74,999	12.1%
$75,000 - $99,999	11.3%
$100,000 or more	9.5%

Summary

Voters tended to say they understood RCV. Nearly nine in ten (87%) said they understood it fairly well or perfectly well. When examining the types of voters who understood it less than others, we find that those who are the least educated, whose first language was Chinese, and those with relatively low income ($10,000 to $20,000) were more likely to say they did not understand it. Voter eighty years old and older were also more likely to indicate they did not understand RCV, however that difference is not statistically significant. It is worth reiterating the positive nature of these findings. Across these various categories of voters, the single highest proportion of voters reporting a lack of understanding was less than one in four, with 24% of the least educated indicating they did not understand RCV. But that leaves over three-fourths of those in that income bracket who said that they did understand it.

3. Ranking Candidates

Respondents were asked about their votes for Treasurer. On the survey form we formatted three columns to resemble the actual ballot. Each column contained a full list of the candidates in the order they appeared on the ballot. Voters were asked, "How did you rank your preferences for City Treasurer? Put an "X" in the boxes below to show the choices you marked on the actual ballot. (If you didn't vote for Treasurer, then go to question 26)."[4]

Of the respondents we surveyed, 71% filled out this section. Of those, nearly three in five (57%) ranked three candidates on the questionnaire, indicating that they had ranked three on the ballot. About one-third (33%) said they voted for only one candidate for Treasurer, while 10% said they ranked two candidates. In the following tables we report the proportions of voters ranking three candidates, among those who filled out this portion of the survey.

[4] One of the candidates for Treasurer was mistakenly omitted from the list on the forms that were sent to absentee voters. Results reported on the number of candidates ranked and the follow-up questions about the reasons for ranking fewer than three (Q20 and Q21a-g) are therefore limited to polling place voters.

Table 16. Number of Candidates Ranked
(N = 921)

Chose one	33.1%
Ranked two	10.4%
Ranked three	56.5%

Although voters residing in those districts that had previously elected candidates for the Board of Supervisors were generally more knowledgeable about the use of RCV and reported higher levels of understanding about the task of ranking voters than those residing in other districts, they were no more likely than others to rank three candidates. The difference, about four percentage points, could have occurred by chance.

Table 17. Voters Ranking Three Candidates by District Type
(Chi-square = 1.87, p < .40, N = 921)

	Ranked three
Districts held 2004 BOS Election	54.9%
Districts did not hold 2004 BOS Election	59.1%

Differences in voters' tendencies to rank three candidates based on one's age were evident, but once again inconsistent. As Table 18 indicates, the youngest voters were most likely to report having ranked three candidates (74% of those voters under 25 years old ranked three), and the oldest voters were least likely (38% of those 80 and older did).

Table 18. Voters Ranking Three Candidates by Age
(Chi-square = 28.52, p < .02, N = 915)

	Ranked three
18-24 years	73.8%
25-29 years	57.8%
30-39 years	52.1%
40-49 years	55.7%
50-59 years	62.5%
60-69 years	48.3%
70-79 years	56.4%
80 years & older	37.5%

Education was related to voters' tendencies to rank three candidates, but not in an intuitive way. The least educated and the most educated voters were less likely to rank three candidates. About 44% of those with less than a high school education ranked three, and about half of those with more than a bachelor's degree ranked three. Meanwhile, nearly two-thirds (65%) of voters with

some college coursework but no bachelor's degree reported ranking three candidates for Treasurer.

Table 19. Voters Ranking Three Candidates by Education (Chi-square = 17.74, p < .03, N = 916)

	Ranked three
Less than HS	44.0%
HS grad	61.7%
Some college	64.6%
College grad	58.3%
Post-grad study	50.3%

Race and ethnicity were also strongly related to the likelihood that someone ranked three candidates. About 72% of African Americans ranked three, while only about a half (51%) of whites did. About two-thirds of Latinos (67%) and Asian (65%) voters said they ranked candidates. Meanwhile, 56% of voters of other ethnicities and races ranked three. These findings are seemingly counter-intuitive given the above findings that African Americans tended to be less aware than other groups that they would be expected to rank their preferences in these races. However, this seeming contradiction assumes that voters have three clear preferences to express. For instance, it is possible that those aware they would be ranking their preferences strategically chose to vote only for their most preferred choice or found it more difficult to discern between what they deemed to be inferior choices. As discussed below, there are various explanations to account for why voters rank less than three choices.

Table 20. Voters Ranking Three Candidates by Race/Ethnicity (Chi-square = 23.82, p < .003, N = 909)

	Ranked three
Hispanic/Latino	67.4%
Asian/PI	64.7%
African American/Black	72.1%
White	51.4%
Other	56.4%

Looking across income groups, we see no systematic relationship in the tendency to rank three candidates. About 70% of those with a household income of less than $10,000 said they ranked three candidates, relatively more than any other group. When compared all income categories, the difference is not statistically significant. However, a comparison between the lowest income group and all other voters combined does lead to a statistically significant difference (Chi-square = 4.02, p < .05).

Table 21. Voters Ranking Three Candidates by Income
(Chi-square = 12.77, p < .24, N = 893)

	Ranked three
Less than $10,000	69.5%
$10,000 - $19,999	55.7%
$20,000 - $49,999	52.3%
$50,000 - $74,999	57.9%
$75,000 - $99,999	53.7%
$100,000 or more	60.0%

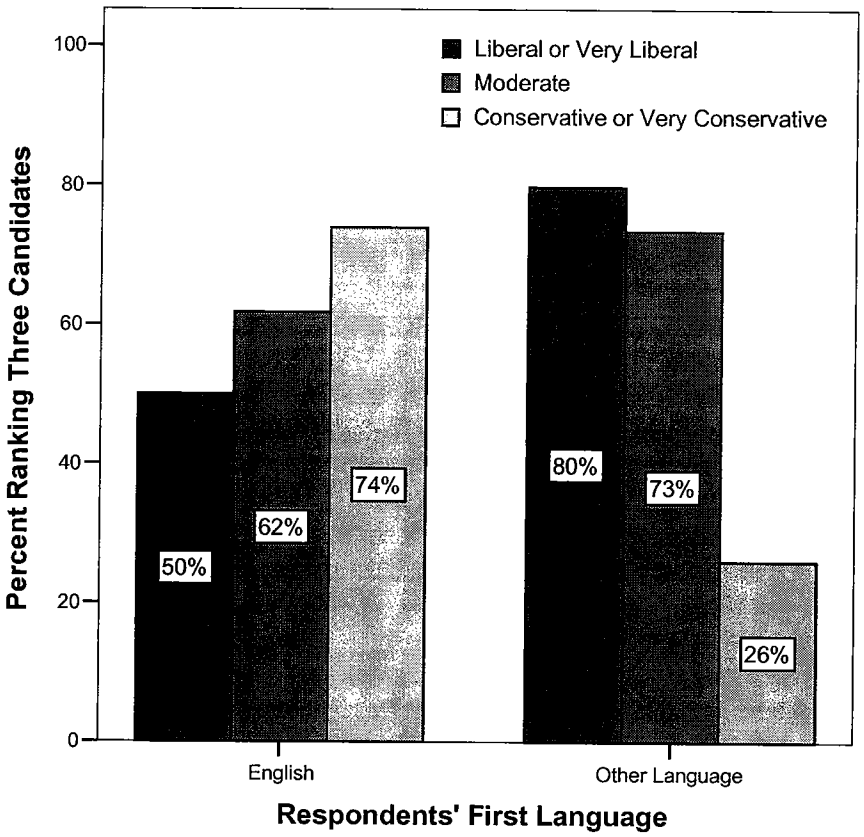
The tendency to rank three candidates was also related to one's first language. Those who first learned English were much less likely to rank three candidates (54% did) than were those who first learned something other than English, Spanish, or Chinese (81% of those voters ranked three). About two-thirds of the voters who first learned Chinese or Spanish ranked three candidates.

Table 22. Voters Ranking Three Candidates by First Language
(Chi-square = 19.20, p < .005, N = 906)

	Ranked three
English	53.8%
Chinese	65.4%
Spanish	67.3%
Other	81.0%

These data are sufficiently rich to look more closely at another mechanism by which ranking decisions might vary: ideology. As the left portion of Figure 4 shows, among native English speakers, the more conservative a voter was, the more likely he or she was to rank three candidates; nearly three-fourths of the self-described conservatives ranked three, while only half of the liberal voters ranked three. This contrasts to the influence of ideology among voters whose first language was something other than English. Among those voters the influence of ideology was reversed. Among the liberals, 80% said they ranked three candidates. Meanwhile only about one-fourth of the conservatives ranked three candidates.

Figure 4. Relationship between Ideology, Language, and Ranking Three Candidates (N = 892)



Within language group comparisons across ideological differences: Chi-square English = 14.43, p<.002; Chi-square Not English = 18.99, p<.001 Within ideology comparisons across language groups: Chi-Square Liberal = 22.35, p<.001; Chi-square Moderate = .2.17, p<.15;
Chi-square Conservative = 11.52, p< .002

Summary

About one-third of the electorate reported choosing only one candidate on the RCV ballot for Treasurer. About 57% said they ranked three candidates. Several demographic factors were related to the likelihood that voters ranked three candidates. Voters most likely to rank three were the youngest (under 25 years), the moderately educated, the least wealthy, and those who first learned a language other than English. African-American voters were more likely to rank three, and whites were less likely. Among voters whose first language is English, the more conservative, the more likely one is to rank three. Among those whose first language is something else, the more conservative, the *less* likely one is to rank three candidates. Next, we look at the reasons voters gave for not ranking three candidates.

Reasons given for not ranking three candidates: Ranking as many candidates as was allowed in the San Francisco 2005 election is a good thing for a voter who has at least three preferences among the candidates running. Those voters will express themselves as fully as possible by ranking those preferences on the ballot. However, some voters will probably not have at least three preferences. For instance, someone may find one candidate acceptable and all of the others equally unacceptable. That voter may fully express his or her preferences by choosing only one candidate.

It is useful, therefore, to consider the above results regarding ranking candidates along with a question that helps determine why voters did not rank three candidates. We asked it this way: "If you ranked fewer than three candidates for Treasurer, what best describes the reason? (check all that apply)." Note that this was asked only of respondents who voted for City Treasurer, and only those who did not rank three candidates.

The most common reason voters gave for not ranking three candidates was that they did not know enough about the other candidates on the ballot. Nearly one-third (31%) of the voters who did not rank three candidates checked that as a reason. Just over one in five (21%) said that none of the other candidates were acceptable to them and about 8% said that they will probably always just pick one candidate. In other words, a sizeable majority of those ranking less than three candidates may have made a conscious or strategic choice to do so. However, a small proportion of voters (9%) reported ranking fewer than three choices because they did not know they could do so.

Table 23. Why Voters Did Not Rank Three Candidates

	Percent
I didn't know enough about the other candidates	31.2%
No other candidates were acceptable to me	21.2%
I didn't know I could rank three	8.9%
I'll probably always just pick one	7.9%
I didn't understand that part of the ballot	2.9%
My favorite candidate suggested that strategy	2.8%

Ease with which voters ranked candidates: We asked voters how easy it was to rank the candidates for City Treasurer. First, we asked how easy it was to choose a favorite candidate; that was followed by, "What about ranking your top three choices for Treasurer? Was that:" The answer options ranged from very easy to very difficult. Nearly half (46%) said it was either easy or very easy, while about 16% said it was either difficult or very difficult. In the tables below the responses were collapsed to report the proportions of voters who answered either "easy" or "very easy" across the categories of age, education, first language, race/ethnicity, and income.

Table 24. Voters Saying that Ranking was Easy
(N = 1236)

Very Easy	14.2%
Easy	32.0%
Neither Easy nor Difficult	37.7%
Difficult	13.5%
Very Difficult	2.7%

Voters between the ages of 40 and 79 tended to find the ranking task easier than others. About half of those voters said it was easy or very easy. Conversely, the youngest voters were least likely to say that ranking candidates was easy, with a little less than one-third (31%) giving those responses.

Table 25. Voters Saying that Ranking was Easy by Age
(Chi-square = 24.28, p < .05, N = 1228)

	Easy or Very Easy
18-24 years	31.3%
25-29 years	38.5%
30-39 years	41.6%
40-49 years	48.3%
50-59 years	50.2%
60-69 years	50.7%
70-79 years	52.1%
80 years & older	44.2%

Education was related to the ease with which voters ranked candidates. However, counter to our expectations, those voters without a high school diploma were the most likely to say that it was easy. Nearly two-thirds (66%) of voters with less than a high school education said ranking was easy, compared to 43% of the voters who were most educated.

Table 26. Voters Saying that Ranking was Easy by Education
(Chi-square = 19.49, p < .02, N = 1225)

	Easy or Very Easy
Less than HS	65.8%
HS grad	48.7%
Some college	48.5%
College grad	45.3%
Post-grad study	42.6%

Voters whose first language was Spanish were considerably more likely than others to say that ranking candidates was easy or very easy. Almost two-thirds (66%) gave those responses, compared to 45% among those who first learned English, 48% for those with Chinese as their first language, and 40% among voters who first learned some other language.

Table 27. Voters Saying that Ranking was Easy by First Language (Chi-square = 13.07, p < .05, N = 1217)

	Easy or Very Easy
English	45.1%
Chinese	48.0%
Spanish	65.6%
Other	39.5%

Race and ethnicity were also related to the reported ease with which voters ranked the candidates for Treasurer. Latinos were more likely to say that ranking was easy or very easy (58%). Just under half of voters of all other ethnic or racial backgrounds (varying between 43% and 48%) indicated that it was easy.

Table 28. Voters Saying that Ranking was Easy by Race/Ethnicity (Chi-square = 17.79, p < .03, N = 1223)

	Easy or Very Easy
Hispanic/Latino	58.4%
Asian/PI	43.7%
African American/Black	48.1%
White	45.0%
Other	43.2%

We found no systematic differences across income levels in how easy it was for voters to rank candidates. While the proportions who gave those responses varied from about 42% to 54% with those in the lowest income grouping and those in the second highest income category reporting greater levels of ease, those differences were not statistically significant.

Table 29. Voters Saying that Ranking was Easy by Income (Chi-square = 14.98, p < .14, N = 1194)

	Easy or Very Easy
Less than $10,000	54.3%
$10,000 - $19,999	43.9%
$20,000 - $49,999	46.2%
$50,000 - $74,999	41.5%
$75,000 - $99,999	51.6%
$100,000 or more	44.7%

Summary

Many more voters said the ranking task was easy (46%) than said it was difficult (16%). Those who were more likely to say it was easy or very easy were middle-aged and older voters (40 to 79 years), the least educated, voters whose first language was Spanish, and Latino voters.

4. Opinions about RCV

We asked three questions to gauge voters' opinions about the RCV system. First, we asked those who ranked candidates whether they were satisfied with number of candidates they could rank in the contest for City Treasurer. Four candidates competed for the office, but voters were allowed to rank only their top three choices. Second, we asked whether voters preferred RCV to the former two-stage runoff system. Finally, we asked what they thought about the fairness of the results under RCV compared to the former runoff system. The questions were worded this way:

> How satisfied were you with the number of candidates you were allowed to rank?
> I was satisfied ranking three or fewer
> I wanted to rank more than three
>
> What is your opinion of the Ranked-Choice Voting system (Instant Runoff)?
> I prefer Ranked-Choice Voting (RCV) to the former runoff system
> No difference to me between RCV and the former runoff system
> I prefer the former runoff system to RCV
>
> How about the fairness of the results from Ranked-Choice Voting and the former runoff system? Would you say:
> RCV produces results that are more fair than the former runoff system
> No difference in the fairness of the results
> The former runoff system produces results that are more fair than RCV

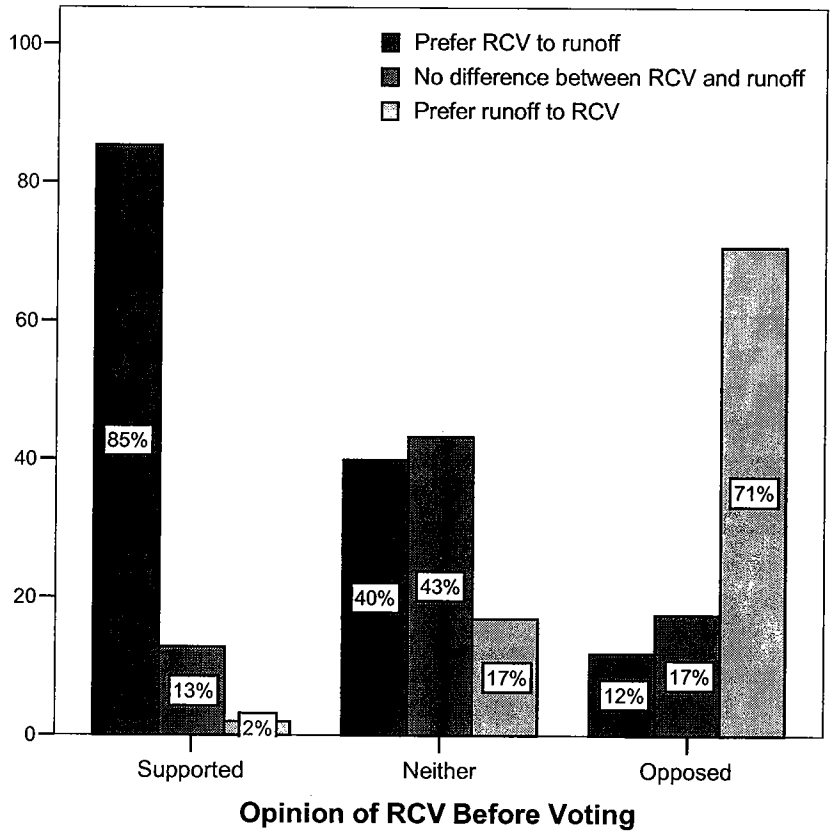
Satisfaction with the limit on the number of rankings: Only six percent of those who voted for Treasurer said they wanted to rank more than three candidates. Looking at the factors examined

above – age, education, race/ethnicity, language, and income – we see some differences. For instance, around 14% of the least educated voters said they wanted to rank more candidates, compared to only 3% of the most educated voters. About 4% of Asian voters and 5% of whites wanted to rank more candidates. This compares to 8% of Latinos, 9% of African Americans, and 13% of voters of other races and ethnicities. We saw no statistically significant differences in how satisfied voters were with the number of candidates they could rank based on age, first language, or income.

Preference for RCV versus runoff: As for preferences between RCV and the former runoff system, over three times as many voters prefer RCV (55%) than prefer the former runoff system (17%). A little over one-quarter (28%) expressed no difference between the two systems. Significant variation in opinions was observed across types of voters, as reported below. In doing so, we report the proportion preferring RCV for all factors except voters' age where we report the proportion preferring a runoff. We have chosen the data we believe are the most informative, and encourage readers to turn to the appendix for fuller results.

First, it is worth noting that most voters did not change their opinions in regard to Ranked-Choice Voting and the former runoff system after having participated in the election. As the left portion of Figure 5 shows, about 85% of those who came to vote preferring RCV still preferred it after voting. On the right-hand side of the figure we see that 71% of those who preferred the runoff continued to prefer it after having used RCV. It is useful to look at those voters who said they saw no difference between the two systems before voting—that is, the middle cluster of bars. Among such voters, we see that two in five (40%) prefer RCV to the runoff after voting, compared to fewer than one in five (18%) who prefer the runoff system.

Figure 5. Comparing Prior Opinions to Current Opinions of RCV



Age is strongly related to whether voters prefer RCV or the former runoff. Younger voters are less likely to prefer the runoff system. For example, among those 25 to 29 years old, only 8% gave that response. Meanwhile, three times that proportion of older voters said they prefer a runoff – 27% of voters in the sixties and 23% of voters in their seventies. And four times that proportion (33%) of voters eighty and older said they prefer the runoff system.

Table 30. Prefer Runoff to RCV by Age
(Chi-square = 60.06, p < .001, N = 1708)

	Prefer Runoff
18-24 years	12.7%
25-29 years	8.1%
30-39 years	12.1%
40-49 years	14.8%
50-59 years	18.6%
60-69 years	26.5%
70-79 years	22.7%
80 years & older	33.3%

We also see relatively large differences in voters' preferences for RCV based on one's first language. If that is English, then about 57% prefer RCV, if it is Chinese, 52% prefer RCV, if Spanish, then only 43% prefer RCV, and for those who first learned some other language, 42% prefer RCV to a runoff system.

Table 31. Prefer RCV to Runoff by First Language
(Chi-square = 21.77, p < .001, N = 1695)

	Prefer RCV
English	56.5%
Chinese	52.1%
Spanish	43.1%
Other	41.5%

Education is also strongly related to these opinions. Among the most educated, the proportion of voters preferring RCV approaches two-thirds (64%), while less than half of other voters expressed that preference. The less education voters have, the less likely they are to say they prefer RCV.

Table 32. Prefer RCV to Runoff by Education
(Chi-square = 50.44, p < .001, N = 1696)

	Prefer RCV
Less than HS	42.9%
HS grad	44.5%
Some college	48.5%
College grad	53.1%
Post-grad study	63.5%

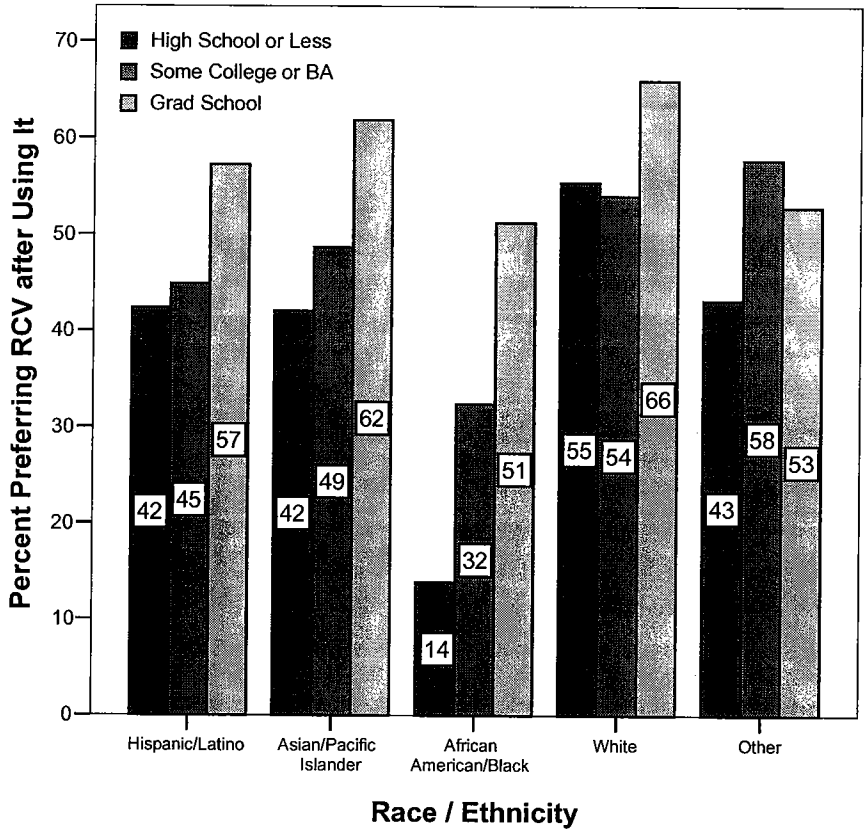
These attitudes also vary by race and ethnicity. Whites are most likely to say they prefer RCV, with 59% expressing that opinion. By contrast, under one-third (32%) of African Americans said they prefer RCV. About half (51%) of Asian voters prefer RCV, as do 47% of Latinos we surveyed. Among voters of other races and ethnicities, 54% said they prefer RCV to a runoff system.

Table 33. Prefer RCV to Runoff by Race/Ethnicity
(Chi-square = 49.73, p < .001, N = 1695)

	Prefer RCV
Hispanic/Latino	47.4%
Asian/PI	50.6%
African American/Black	32.2%
White	59.0%
Other	54.3%

The interaction between ethnicity and education level provides an interesting glimpse into voters' expressed preferences for Ranked-Choice Voting. First, compare the pattern within the clusters of bars in Figure 6, noting the influence of education within racial and ethnic groups. For most groups, higher education levels is related to increased support for RCV, most obviously so for African Americans. Next, compare the bars across race and ethnicities within education categories. Here we see that, controlling for education, the differences between groups remains significant, especially among the least educated, with white voters the most likely and African American voters the least likely to express a preference for RCV. Overall, what this shows is that both race/ethnicity and education are factors that explain preferences for the RCV system. Further, education is much more strongly related to one's opinion of RCV among Black voters than among other voters.

Figure 6. Relationship Between Education, Ethnicity, and Preference for RCV (N = 1688)



Within racial group comparisons across education differences: Chi-square Latino = 2.48, p<.65; Chi-square Asian = 7.55, p<.11; Chi-square Black = 7.85, p<.10; Chi-square White = 31.11, p<.001; Chi-square Other = 3.90, p<.42 Within education level group comparisons across racial and ethnic groups: Chi-Square High School or Less= 19.07, p<.01; Chi-square Some College or BA = 18.33, p< .02; Chi-square Grad School = 19.59, p<.01

Across income groups we also see large differences. The main one is between voters in households where the annual income is $100,000 or more and the rest of the voters. Among those with the most income, 63% prefer RCV. Among other voters, the proportions preferring RCV range from 48% to 55%.

Table 34. Prefer RCV to Runoff by Income
(Chi-square = 40.61, p < .001, N = 1642)

	Prefer RCV
Less than $10,000	48.4%
$10,000 - $19,999	54.8%
$20,000 - $49,999	50.0%
$50,000 - $74,999	53.4%
$75,000 - $99,999	52.8%
$100,000 or more	63.1%

We uncover only a small difference in voters' preferences between those districts with prior experience using the ranked choice ballot and other districts. While 56% of voters residing in areas that elected a district Supervisor in 2004 preferred RCV, 52% of voters in other districts expressed a preference for ranked-choice voting, a difference that could have occurred by chance.

Table 35. Prefer RCV to Runoff by District Type
(Chi-square = 3.35, p < .19, N = 1716)

	Prefer RCV
Districts held 2004 BOS Election	56.3%
Districts did not hold 2004 BOS Election	52.3%

Summary

Voters were satisfied with ranking three of the four candidates for Treasurer, with relatively few people saying they wanted to rank more than three. Voters expressed a preference for the RCV system over the former runoff system by a ratio greater than three to one. Over half (55%) said they prefer RCV. Older voters were more likely than younger voters to prefer the runoff system. Voters who tended to express more preference for RCV were those with some graduate school training, those whose first language was English or Chinese, white voters, and those in the top income category. Voters who were the least likely to prefer RCV were African Americans (32% preferred RCV versus 21% who preferred the runoff) and the elderly, 80 years and older (44% preferred RCV versus 33% for a runoff system). Note that, even among these voters who favored RCV the least, more of them preferred RCV than preferred the former runoff system.

Relative fairness: Voters were asked to compare RCV with the former runoff system in terms of the perceived fairness of the election results. Over twice as many respondents said that they thought RCV produces results that are more fair than those indicating that the previous voting method was more fair. Thirty-seven percent responded that way, compared to 15% who said the former runoff system produced better outcomes. The plurality of voters, very nearly one-half (48%) saw no difference between the different voting systems.

Table 36. Opinion about the Fairness of Results under RCV versus Runoff (N = 1629)

RCV results are more fair than the former runoff system	37.0%
No Difference	48.1%
Former runoff system results are more fair than RCV	15.0%

Only minimal differences are found between those areas with prior experience with the ranked-choice ballot. In both sets of precincts voters perceived RCV as more fair than the runoff system by wide margins.

Table 37. Opinion about the Fairness of Results under RCV versus Runoff by District Type (Chi-square = 1.07, p < .59, N = 1629)

	Runoff more fair than RCV
Districts held 2004 BOS Election	14.3%
Districts did not hold 2004 BOS Election	16.0%

Age is strongly related to these attitudes. Nearly one-third of the oldest voters (30%) said the former system produced more fair results, while only 7% of the youngest voters gave that response.

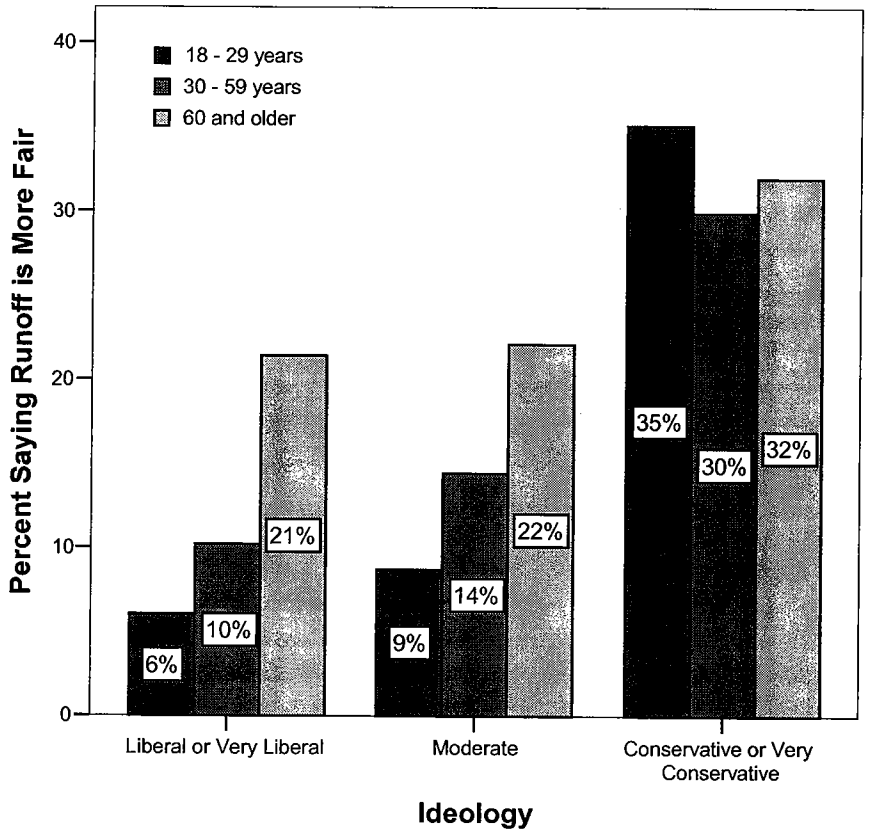
Table 38. Opinion about the Fairness of Results under RCV versus Runoff by Age (Chi-square = 50.14, p < .001, N = 1622)

	Runoff more fair than RCV
18-24 years	7.0%
25-29 years	8.9%
30-39 years	9.8%
40-49 years	13.9%
50-59 years	15.9%
60-69 years	23.6%
70-79 years	20.6%
80 years & older	30.4%

The degree to which one's age explains one's preference for RCV versus the runoff system depends on ones ideology. Figure 7 displays this. Among respondents who call themselves liberal or very liberal, older voters tend to prefer the runoff more than do younger voters. By contrast, among conservatives we see similar attitudes across age groups, with about one-third preferring the former runoff system to RCV. Meanwhile, although the pattern among moderate

voters resembles that of liberal voters, those differences are not statistically significant. It appears that among conservatives one's ideology trumps one's age as a factor that shapes opinions about the fairness of the two election systems.

Figure 7. Relationship Between Ideology, Age, and Perceptions of Fairness of RCV (N = 1596)



Within ideological group comparisons across age groups: Chi-square liberal = 24.50, $p < .001$; Chi-square moderate = 6.82, $p<.15$; Chi-Square conservative = 3.96, $p<.42$. Within age group comparisons across ideology groups: Chi-Square 18 – 29 yrs = 14.81, $p<.01$; Chi-square 30 – 59 yrs = 32.83, $p<.001$; Chi-square 60 yrs and over = 11.35, $p< .05$

Voters with less than a high school education were more likely to say that the runoff system produces better results than RCV. One in five (21%) of those voters gave that response, a higher rate than was seen among voters with more education (between 13% and 17%).

Table 39. Opinion about the Fairness of Results under RCV versus Runoff by Education (Chi-square = 19.42, p < .02, N = 1611)

	Runoff more fair than RCV
Less than HS	20.5%
HS grad	16.8%
Some college	15.5%
College grad	13.4%
Post-grad study	15.5%

Language was not meaningfully related to opinions about fairness. While voters whose first language was English were less likely to say that the runoff produces fairer results, the difference was about 3% and could have occurred by chance.

Table 40. Opinion about the Fairness of Results under RCV versus Runoff by First Language (Chi-square = 3.78, p < .71, N = 1610)

	Runoff more fair than RCV
English	14.5%
Chinese	17.4%
Spanish	17.7%
Other	17.4%

Some marginal differences were observed across race and ethnic groupings. Slightly larger proportions of Asian (18%) and Black (19%) voters said they thought the runoff system produced more fair results than did Latinos (13%), whites (14%), and voters of other races and ethnicities (15%).

Table 41. Opinion about the Fairness of Results under RCV versus Runoff by Race/Ethnicity (Chi-square = 14.46, p < .07, N = 1612)

	Runoff more fair than RCV
Hispanic/Latino	13.0%
Asian/PI	18.1%
African American/Black	18.5%
White	13.8%
Other	14.6%

Meanwhile, voters' income level was not systematically related to their opinions about the fairness of the RCV and runoff systems.

Table 42. Opinion about the Fairness of Results under RCV versus Runoff by Income (Chi-square = 3.80, p < .96, N = 1562)

	Runoff more fair than RCV
Less than $10,000	13.5%
$10,000 - $19,999	17.1%
$20,000 - $49,999	12.4%
$50,000 - $74,999	14.5%
$75,000 - $99,999	15.6%
$100,000 or more	14.6%

Summary

Generally, San Franciscan voters think that RCV produces results that are more fair than those produced under the former runoff system. Some relatively small differences in opinion were found based on education and race/ethnicity, with the least educated voters and Asian and African American voters more likely to say the runoff system produces fairer results. However, larger differences were observed across age groups. About 30% of the oldest voters and over 20% of voters between 60 and 80 years think that a runoff system produces results that are more fair than RCV. Among conservatives, however, we see no such differences based on age. Again, we reiterate that even among the groups who express the least favorable opinions of RCV, on balance those opinions are positive.

SUMMARY

Our intention in this study was to assess the ease with which voters in San Francisco are making the transition from a majority runoff system to a less common preferential voting system, called Ranked-Choice Voting. We aimed to examine practical questions from the voters' perspective: How easy or difficult was RCV to use? And what did voters think about the system after having used it? The answers to these questions matter for the community as it moves forward under the RCV system. Democratic ideals demand that the franchise be experienced equally among various types of citizens. The findings are also pertinent beyond San Francisco as other jurisdictions move to adopt election systems like RCV.

An important analytical note must be emphasized: these results describe the current state of affairs. Our findings do not, and cannot, identify the specific impact of reforming to the RCV system. That would require comparable data from the same population of voters using the former runoff system, something we do not have. Some of the differences and discrepancies we uncover would undoubtedly occur regardless of what election system is in place. That said, we think that this report provides valuable information about RCV and voters' experience with it, particularly when viewed in conjunction with our comparable study of the 2004 election.

The evidence above suggests that most voters are readily adapting to Ranked-Choice Voting. Nearly nine in ten say that, overall, they understood RCV, a figure that matches findings from the 2004 election survey. Some variation in levels of understanding occurred, with the least educated, those whose first language was Chinese, and those with low income more likely to say they did not understand it. However, in all subgroups surveyed at least three-fourths of voters indicated that they understood RCV.

Over half of the voters surveyed reported ranking three candidates, while one-third reported only listing one candidate on the ranking portion of the ballot. The most common reasons given for not ranking three candidates were that voters lacked information about the other candidates, and voters saw the other candidates as unacceptable. Although other versions of this type of election system allow or require voters to rank more than three candidates, relatively few San Francisco voters were dissatisfied with being limited to three rankings. It is possible, however, that this finding is particular to the election of the City Treasurer in which only four candidates were on the ballot and that voters would report different attitudes in races involving greater numbers of contestants. In this election, though, many more voters told us that the ranking task was easy than said it was difficult.

Opinions about RCV, though varied, are generally quite positive. Slightly over half of the voters we surveyed said that they prefer it to the runoff system; however, because many respondents saw no difference between the two, that figure is more than three times as many as those who said that they prefer the two-stage runoff. Clear differences in preferences emerge between racial and ethnic groups, with whites reporting the most positive responses and African-Americans the least positive.

Another opinion we measured was voters' perceptions about the relative fairness of RCV and the runoff system. The most common response was that both produce equally fair results. Of those

who saw a difference, more than twice as many said RCV was more fair than said the runoff was more fair. Differences were observed across age groups, with higher proportions of older than younger voters preferring the runoff system. However, among conservatives those preferences did not vary by age. On these three types of opinion, then—preference between the two systems, satisfaction with the three-candidate limit, and relative fairness—the prevailing attitudes of voters we surveyed is favorable for RCV.

These positive reports about voter perceptions and degrees of understanding should be tempered, however, with another finding. Nearly half (46%) of the voters we surveyed said they did not know they would be asked to rank candidates on the fall 2005 ballot. This is a considerably larger proportion than was found in the fall of 2004 (31%), and clearly puts some voters at a disadvantage. Those who were least aware tended to be the least educated and African-Americans. We see the issue of voter awareness as the main area of concern for San Francisco as the community moves forward with RCV elections.

As explained above, the City's Department of Elections went to considerable lengths to inform voters about RCV. Over 150 presentations were conducted to educate voters, and all of these included a segment on Ranked-Choice Voting. In addition, voters were informed through the mail, through ads in neighborhood papers, press briefings, public service announcements, an internet website, and brochures. The information was disseminated in several languages to reach the diverse groups of voters in San Francisco. Notwithstanding these outreach efforts, a large proportion of voters said they did not know they would be asked to rank candidates on the ballot.

One possible explanation for the lower rate of awareness in 2005 is that voters paid less attention to the citywide races in 2005 than they did to the district races in 2004. In the fall of 2005 many voters turned out to vote because of the controversial and highly publicized ballot propositions in the statewide special election. Some of those voters may have been unaware or only vaguely aware of the local races. However, that reasoning might also apply in 2004 when voters turning out to vote in the presidential election might have paid less attention to the local races further down on the ballot. Still, the relatively competitive nature of the 2004 elections, the levels of media attention devoted to those contests, and the amount of public attention surrounding the first use of the RCV ballot might account for differences between the two elections.

We see a slight improvement in awareness of RCV with experience: voters in districts that were holding RCV elections for the second time tended to be more aware of RCV than voters in districts using it for the first time. But even then, the numbers remain lower in 2005 than in 2004. Another difference was observed among language groups. Although we can provide no explanation at this time, it is worth noting that native Spanish speakers were more aware of RCV in 2005 than in 2004.

To summarize, voters in San Francisco appear to be adjusting well to the Ranked-Choice Voting system. From a variety of indicators we see that their experience with RCV was a positive one. Eighty-seven percent of those we surveyed said they understood it fairly well or perfectly well, and they prefer it to the former runoff system by a three-to-one margin. Generally, voters say they do not find the ranking task to be difficult. And, while a sizeable proportion did not rank three candidates, their reasons are sensible. On the factors we examined, some differences

emerge across education, language, and racial/ethnic groups. In addition, a troubling proportion of voters said that they were unaware that they would be asked to rank candidates on the ballot. We encourage actors in the community, in both the official and advocate capacities, to attend to these differences across groups, especially in regard to awareness of RCV, and to focus resources on minimizing them. While the transition to RCV appears to have been a smooth one, we see this as an area for improvement. As elections under RCV proceed, and as voters become more familiar with that portion of the ballot, it would be useful to track their experiences and conduct further assessments.

Appendix A: Survey Questionnaire

San Francisco State University 2005 Election Survey

You have been invited to participate in this survey because your precinct was selected to research public opinion about Ranked-Choice Voting, otherwise known as Instant Runoff Voting, and other topics. This survey is completely **anonymous--do not put your name on this form.**

There are no risks or benefits to you participating in this survey. You may choose to participate or not. You may answer only the questions you feel comfortable answering, and you may stop at any time. If you do not wish to participate, you may simply return the blank survey, with no penalty to yourself. If you do participate, **completion and return of the survey indicates your consent to the above conditions.**

The survey should take approximately 5 minutes to complete. Any questions or concerns should be directed to: Lisel Blash, Project Coordinator, Public Research Institute, San Francisco State University, 415-338-6733

如果你需要中文版問卷，請向調查員索取。

Si prefiere recibir una copia de este cuestionario en Español, por favor pregunte al ayudante.

1. What is your age?

- ☐ 18-24
- ☐ 25-29
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60-69
- ☐ 70-79
- ☐ 80 & older

2. What was the last grade of school you completed?

- ☐ Did not finish high school
- ☐ High school graduate or GED
- ☐ Some college or Associate Degree
- ☐ College graduate
- ☐ Post-graduate study

3. What is your Race or Ethnicity?

- ☐ Hispanic/Latino
- ☐ Asian/Pacific Islander
- ☐ African American/Black
- ☐ White
- ☐ American Indian
- ☐ Other

4. What is the first language you learned to speak?

- ☐ English
- ☐ Chinese
- ☐ Spanish
- ☐ Other

5. Please check the box that best represents your household's total yearly income.

- ☐ Less than $10,000
- ☐ $10,000-$19,999
- ☐ $20,000-$49,999
- ☐ $50,000-$74,999
- ☐ $75,000-$99,999
- ☐ $100,000 or more

6. Before coming to vote today, did you know you would be asked to rank your choices for the Treasurer and Assessor?

☐ Yes ☐ No

7. Before coming to vote today, what was your opinion of Ranked-Choice Voting (Instant Runoff Voting)?

- ☐ Supported it
- ☐ Neither supported nor opposed it
- ☐ Opposed it

8 - 13. How did you just vote on:

	For	Against	Neither
Local Prop. C (Ethics Com.)	☐	☐	☐
Local Prop. D (MUNI board)	☐	☐	☐
Local Prop. H (Firearm ban)	☐	☐	☐
State Prop. 73 (Abortion)	☐	☐	☐
State Prop. 75 (Union dues)	☐	☐	☐
State Prop. 76 (Budgeting)	☐	☐	☐

14. How often would you say you vote in elections?

- ☐ Never before this time
- ☐ Occasionally
- ☐ Usually
- ☐ Always

15. In some places, all voters cast their ballots by mail and there are no polling places. What do you think about San Francisco adopting a system like that, where everyone would vote as absentee voters do now?

- ☐ Approve strongly
- ☐ Approve
- ☐ Neither approve nor disapprove
- ☐ Disapprove
- ☐ Disapprove strongly

The next questions ask about the San Francisco Voter Information Pamphlet that the Department of Elections sends in the mail.

16. What do you think about the overall size of the Information Pamphlet?

- ☐ Much too long
- ☐ Somewhat too long
- ☐ Just about right
- ☐ Somewhat too short
- ☐ Much too short

17. Generally speaking, how useful is the Voter Information Pamphlet to you?

- ☐ Very useful
- ☐ Somewhat useful
- ☐ Not very useful
- ☐ Not useful at all

18. Currently, the Pamphlet contains a summary of ballot measures, one official argument for each measure and one against, and paid arguments for and against the measures. Do you find the paid arguments in the Pamphlet useful or not?

- ☐ Very useful
- ☐ Somewhat useful
- ☐ Not very useful
- ☐ Not useful at all

19. Other cities have briefer, less costly Pamphlets. What do you think about having a briefer Pamphlet, even if that means omitting the paid arguments?

- ☐ Approve strongly
- ☐ Approve
- ☐ Neither approve nor disapprove
- ☐ Disapprove
- ☐ Disapprove strongly

PLEASE TURN THE QUESTIONNAIRE OVER ☛

20. How did you rank your preferences for City Treasurer? Put an "X" in the boxes below to show the choices you marked on the actual ballot. (If you didn't vote for Treasurer, then go to question 26)

FIRST CHOICE		SECOND CHOICE		THIRD CHOICE	
Jose Cisneros	☐	Jose Cisneros	☐	Jose Cisneros	☐
Manuel Valle	☐	Manuel Valle	☐	Manuel Valle	☐
Calvin Louie	☐	Calvin Louie	☐	Calvin Louie	☐
Isaac Wang	☐	Isaac Wang	☐	Isaac Wang	☐

21. If you ranked fewer than three candidates for Treasurer, what best describes the reason? (check all that apply)
- ☐ I didn't know I could rank three
- ☐ I didn't understand that part of the ballot
- ☐ I didn't know enough about the other candidates
- ☐ No other candidates were acceptable to me
- ☐ My favorite candidate suggested that strategy
- ☐ I'll probably always just pick one
- ☐ I ranked three candidates

22. How satisfied were you with the number of candidates you were allowed to rank?
- ☐ I was satisfied ranking three or fewer
- ☐ I wanted to rank more than three

23. Sometimes it's easy to choose a favorite candidate from among those running, and other times it's hard. What about this election for City Treasurer? How easy or difficult was it for you to decide who your first choice was?
- ☐ Very Easy
- ☐ Easy
- ☐ Neither Difficult nor Easy
- ☐ Difficult
- ☐ Very Difficult

24. What about ranking your top three choices for Treasurer? Was that:
- ☐ Very Easy
- ☐ Easy
- ☐ Neither Difficult nor Easy
- ☐ Difficult
- ☐ Very Difficult
- ☐ I didn't rank three choices

25. Overall, how would you describe your experience with Ranked-Choice Voting for City Treasurer and/or Assessor-Recorder?
- ☐ Understood it perfectly well
- ☐ Understood it fairly well
- ☐ Did not understand it entirely
- ☐ Did not understand it at all

26. Before coming to vote today, how familiar were you with Ranked-Choice Voting (Instant Runoff Voting)?
- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not very familiar
- ☐ Not at all familiar

27. What is your opinion of the Ranked-Choice Voting system (Instant Runoff)?
- ☐ I prefer Ranked-Choice Voting to the former runoff system
- ☐ No difference to me between Ranked-Choice Voting and the former runoff system
- ☐ I prefer the former runoff system to Ranked-Choice Voting

28. How about the fairness of the results from Ranked-Choice Voting and the former runoff system? Would you say:
- ☐ Ranked-Choice Voting produces results that are more fair than the former runoff system
- ☐ No difference in the fairness of the results
- ☐ The former runoff system produces results that are more fair than Ranked-Choice Voting

29. How long have you lived in San Francisco?
- ☐ less than 1 year
- ☐ 1 – 5 years
- ☐ 6 – 10 years
- ☐ 11 – 20 years
- ☐ over 20 years

30. How long have you lived at your present address?
- ☐ less than 1 year
- ☐ 1 – 5 years
- ☐ 6 – 10 years
- ☐ 11 – 20 years
- ☐ over 20 years

31. Do you rent or own your place of residence?
☐ Rent ☐ Own (or buying) ☐ Neither

32. What is your gender?
☐ Female ☐ Male

33. Did you happen to vote in last November's local election for Board of Supervisors?
☐ Yes ☐ No ☐ I don't know

34. How interested have you been in the political campaigns this year?
- ☐ Very much interested
- ☐ Somewhat interested
- ☐ Not much interested

35. On most political matters, do you consider yourself:
- ☐ Very liberal
- ☐ Liberal
- ☐ Moderate
- ☐ Conservative
- ☐ Very Conservative

36. No matter how you voted today, do you usually think of yourself as:
- ☐ Republican
- ☐ Democrat
- ☐ Independent
- ☐ Something else

Please fold your questionnaire and put it in the box. Thank you!

Appendix B: Frequency Tables of Pertinent Variables (Weighted Data)

Q1. Age of Participant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	110	5.7	5.7	5.7
	25-29	169	8.8	8.8	14.6
	30-39	399	20.8	20.9	35.4
	40-49	371	19.3	19.4	54.8
	50-59	389	20.2	20.4	75.2
	60-69	241	12.5	12.6	87.8
	70-79	152	7.9	7.9	95.7
	80 & older	82	4.3	4.3	100.0
	Total	1912	99.4	100.0	
Missing	System	11	.6		
Total		1923	100.0		

Q2. Last grade completed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not finish high school	54	2.8	2.9	2.9
	High school graduate or GED	159	8.2	8.4	11.2
	Some college or Associate Degree	399	20.7	21.0	32.3
	College graduate	629	32.7	33.2	65.5
	Post-graduate study	654	34.0	34.5	100.0
	Total	1894	98.5	100.0	
Missing	System	29	1.5		
Total		1923	100.0		

Q3. Race or ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hispanic/Latino	151	7.9	8.1	8.1
	Asian/Pacific Islander	283	14.7	15.2	23.4
	African American/Nlack	129	6.7	6.9	30.3
	White	1205	62.7	64.8	95.1
	American Indian	7	.4	.4	95.5
	Other	84	4.3	4.5	100.0
	Total	1860	96.7	100.0	
Missing	System	63	3.3		
Total		1923	100.0		

Q4. First language learned

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	1544	80.3	81.7	81.7
	Chinese	135	7.0	7.1	88.8
	Spanish	77	4.0	4.1	92.9
	Other	135	7.0	7.1	100.0
	Total	1891	98.3	100.0	
Missing	System	32	1.7		
Total		1923	100.0		

Q5. household's total yearly income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $10,000	105	5.5	5.8	5.8
	$10,000-$19,999	145	7.5	8.0	13.7
	$20,000-$49,999	427	22.2	23.4	37.2
	$50,000-$74,999	375	19.5	20.6	57.8
	$75,000-$99,999	275	14.3	15.1	72.9
	$100,000 or more	494	25.7	27.1	100.0
	Total	1821	94.7	100.0	
Missing	System	102	5.3		
Total		1923	100.0		

Q6. Knowledge that RCV would be used in Treasurer and Assessor election

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	1031	53.6	54.2	54.2
	no	871	45.3	45.8	100.0
	Total	1902	98.9	100.0	
Missing	System	21	1.1		
Total		1923	100.0		

Q7. Opinion of RCV prior to voting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Supported it	740	38.5	39.6	39.6
	Neither supported nor opposed it	914	47.5	48.9	88.5
	Opposed it	214	11.1	11.5	100.0
	Total	1868	97.2	100.0	
Missing	System	55	2.8		
Total		1923	100.0		

Q14. How often would you say you vote in elections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never before this time	15	.8	.8	.8
	Occationally	34	1.8	1.8	2.6
	Usually	290	15.1	15.3	17.9
	Always	1556	80.9	82.1	100.0
	Total	1895	98.5	100.0	
Missing	System	28	1.5		
Total		1923	100.0		

(Tables for Q20 through Q21g report polling place voters only. See text of the report for details.)

Q20. How did you rank your preferences for City Treasurer? First Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Jose Cisneros	633	48.9	69.0	69.0
	Manuel Valle	33	2.6	3.6	72.6
	Calvin Louie	181	14.0	19.7	92.3
	Isaac Wang	70	5.4	7.7	100.0
	Total	917	70.9	100.0	
Missing	0	374	28.9		
	System	2	.1		
	Total	376	29.1		
Total		1292	100.0		

Q20. How did you rank your preferences for City Treasurer? Second Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Jose Cisneros	129	10.0	21.0	21.0
	Manuel Valle	135	10.4	21.9	42.8
	Calvin Louie	203	15.7	32.9	75.8
	Isaac Wang	149	11.6	24.2	100.0
	Total	616	47.6	100.0	
Missing	0	673	52.1		
	System	3	.3		
	Total	677	52.4		
Total		1292	100.0		

Q20. How did you rank your preferences for City Treasurer? Third Choice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Jose Cisneros	106	8.2	20.2	20.2
	Manuel Valle	136	10.5	25.8	46.0
	Calvin Louie	132	10.2	25.2	71.2
	Isaac Wang	151	11.7	28.8	100.0
	Total	526	40.7	100.0	
Missing	0	762	59.0		
	System	5	.4		
	Total	767	59.3		
Total		1292	100.0		

Q21a. I didn't know I could rank three

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	858	66.4	91.1	91.1
	Checked	84	6.5	8.9	100.0
	Total	942	72.9	100.0	
Missing	System	350	27.1		
Total		1292	100.0		

Q21b. I didn't understand that part of the ballot

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	915	70.8	97.1	97.1
	Checked	27	2.1	2.9	100.0
	Total	942	72.9	100.0	
Missing	System	350	27.1		
Total		1292	100.0		

Q21c. I didn't know enough about the other candidates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	648	50.2	68.8	68.8
	Checked	294	22.7	31.2	100.0
	Total	942	72.9	100.0	
Missing	System	350	27.1		
Total		1292	100.0		

Q21d. No other candidates were acceptable to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	742	57.4	78.7	78.7
	Checked	200	15.5	21.3	100.0
	Total	942	72.9	100.0	
Missing	System	350	27.1		
Total		1292	100.0		

Q21e. My favorite candidate suggested that strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	915	70.8	97.2	97.2
	Checked	27	2.1	2.8	100.0
	Total	941	72.8	100.0	
Missing	System	351	27.2		
Total		1292	100.0		

Q21f. I'll probably always just pick one

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	868	67.2	92.2	92.2
	Checked	74	5.7	7.8	100.0
	Total	942	72.9	100.0	
Missing	System	350	27.1		
Total		1292	100.0		

Q21g. I ranked three candidates

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Checked	657	50.8	69.7	69.7
	Checked	285	22.1	30.3	100.0
	Total	942	72.9	100.0	
Missing	System	351	27.1		
Total		1292	100.0		

Q22. How satisfied were you with the number of candidates you were allowed to rank?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I was satisfied ranking three or fewer	1427	74.2	93.2	93.2
	I wanted to rank more than three	105	5.5	6.8	100.0
	Total	1532	79.7	100.0	
Missing	System	391	20.3		
Total		1923	100.0		

Q23. Sometimes it's easy to choose a favorite candidate,,,and other times it's hard. What about this election for Treasurer? How easy or difficult was it for you to decide who your first choice was?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Easy	283	14.7	17.4	17.4
	Easy	506	26.3	31.2	48.6
	Neither difficult nor Easy	570	29.6	35.1	83.7
	Difficult	219	11.4	13.5	97.2
	Very Difficult	46	2.4	2.8	100.0
	Total	1624	84.4	100.0	
Missing	System	299	15.6		
Total		1923	100.0		

Q24. What about ranking your top three choices for Treasurer? Was that:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Easy	187	9.7	11.6	11.6
	Easy	444	23.1	27.6	39.2
	Neither difficult nor Easy	549	28.5	34.1	73.2
	Difficult	213	11.1	13.2	86.5
	Very Difficult	46	2.4	2.9	89.3
	Didn't rank three choices	172	8.9	10.7	100.0
	Total	1611	83.8	100.0	
Missing	System	312	16.2		
Total		1923	100.0		

Q25. Overall, how would you describe your experience with Ranked-Choice Voting for City Treasurer and / or Assessor-Recorder?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Understood it perfectly well	843	43.8	51.6	51.6
	Understood it fairly well	581	30.2	35.6	87.1
	Did not understand it entirely	161	8.4	9.9	97.0
	Did not understand it at all	49	2.5	3.0	100.0
	Total	1633	84.9	100.0	
Missing	System	290	15.1		
Total		1923	100.0		

Q26. Before coming to vote today, how familiar were you with Ranked-Choice Voting (Instant Runoff Voting)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very familiar	633	32.9	35.5	35.5
	Somewhat familiar	687	35.7	38.5	74.0
	Not very familiar	309	16.1	17.3	91.4
	Not at all familiar	154	8.0	8.6	100.0
	Total	1783	92.7	100.0	
Missing	System	140	7.3		
Total		1923	100.0		

Q27. What is your opinion of the Ranked-Choice Voting system (Instant Runoff)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I prefer Ranked-Choice Voting to the former runoff system	939	48.8	54.7	54.7
	No difference to me between ranked-Choice voting and the for	484	25.2	28.2	82.9
	i prefer the former runoff system to ranked-Choice Voting	293	15.2	17.1	100.0
	Total	1716	89.2	100.0	
Missing	System	207	10.8		
Total		1923	100.0		

Q28. How about the fairness of the results from Ranked-Choice voting and the former runoff system? Would you say:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ranked-Choice Voting produces results that are more fair	602	31.3	37.0	37.0
	No difference in the fairness of the results	783	40.7	48.1	85.0
	The former runoff system produces results more fair	244	12.7	15.0	100.0
	Total	1629	84.7	100.0	
Missing	System	294	15.3		
Total		1923	100.0		

Q32. What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	948	49.3	52.0	52.0
	Male	875	45.5	48.0	100.0
	Total	1823	94.8	100.0	
Missing	System	100	5.2		
Total		1923	100.0		

Q33. did you happen to vote in last November's local election for Board of Supervisors?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1565	81.4	86.1	86.1
	No	170	8.9	9.4	95.4
	I don't know	83	4.3	4.6	100.0
	Total	1818	94.5	100.0	
Missing	System	105	5.5		
Total		1923	100.0		

Q35. On most political matters, do you consider yourself:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very liberal	382	19.8	21.2	21.2
	Liberal	680	35.4	37.8	59.0
	Moderate	577	30.0	32.1	91.0
	Conservative	139	7.2	7.7	98.7
	Very Conservative	23	1.2	1.3	100.0
	Total	1801	93.6	100.0	
Missing	System	122	6.4		
Total		1923	100.0		

Q36. No matter how you voted today, do you usually think of yourself as:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Republican	153	8.0	8.4	8.4
	Democrat	1105	57.4	60.8	69.2
	Independent	369	19.2	20.3	89.5
	Something else	190	9.9	10.5	100.0
	Total	1817	94.5	100.0	
Missing	System	106	5.5		
Total		1923	100.0		

Appendix C: Bivariate Report on Select Variables

The tables below report the bivariate relationship between seven key variables and a set nine factors. The key variables are responses to the following questions:

> Q6. Before coming to vote today, did you know you would be asked to rank your choices for the Treasurer and Assessor? Yes, No
>
> Q20. How did you rank your preferences for City Treasurer? Put an "X" in the boxes below to show the choices you marked on the actual ballot.
>
> Q22. How satisfied were you with the number of candidates you were allowed to rank? I was satisfied ranking three or fewer, I wanted to rank more than three
>
> Q24. What about ranking your top three choices for Treasurer? Was that: Very Easy, Easy, Neither Difficult nor Easy, Difficult, Very Difficult, I didn't rank three choices
>
> Q25. Overall, how would you describe your experience with Ranked-Choice Voting for City Treasurer and/or Assessor-Recorder? Understood it perfectly well, Understood it fairly well, Did not understand it entirely, Did not understand it at all
>
> Q27. What is your opinion of the Ranked-Choice Voting system (Instant Runoff)? I prefer Ranked-Choice Voting to the former runoff system, No difference to me between Ranked-Choice Voting and the former runoff system, I prefer the former runoff system to Ranked-Choice Voting
>
> Q28. How about the fairness of the results from Ranked-Choice Voting and the former runoff system? Would you say: Ranked-Choice Voting produces results that are more fair than the former runoff system, No difference in the fairness of the results, The former runoff system produces results that are more fair than Ranked-Choice Voting

The nine factors are age, education, race/ethnicity, first language, income, gender, BOS district, political party identification, and political ideology. Please see the questionnaire in Appendix A for the complete question wording of those items.

Cells in the tables contain the row percentages of the valid cases (i.e., if someone did not answer the question, then that case was disregarded). All data are weighted. Caution should be exercised in interpreting estimates drawn from a small number of cases.

Due to an error in printing, the measure of how many candidates absentee voters ranked was compromised. Therefore, only the responses from polling place voters are reported in that table.

Q6. Aware of RCV Prior to Coming to Vote		Yes, Knew (%)	Sample N
(entries are row percentages)			
Total Sample (all voters surveyed)		54.2%	1902
By Age			
	18-24 years	51.8%	110
	25-29 years	50.9%	167
	30-39 years	54.9%	399
	40-49 years	52.7%	368
	50-59 years	50.9%	387
	60-69 years	63.4%	235
	70-79 years	56.8%	148
	80 years & older	55.0%	80
By Education			
	Less than HS	43.4%	53
	HS grad	53.2%	154
	Some college	50.4%	395
	College grad	52.2%	627
	Post-grad study	60.6%	647
By Race/Ethnicity:	Hispanic/Latino	59.3%	150
	Asian/PI	51.6%	279
	African American/Black	41.9%	129
	White	56.0%	1194
	Other	50.4%	123
By First Language:	English	54.9%	1531
	Chinese	53.4%	133
	Spanish	61.3%	75
	Other	47.4%	135
By District:	District 1	62.3%	154
	District 2	50.3%	195
	District 3	55.3%	141
	District 4	49.7%	155
	District 5	56.5%	207
	District 6	54.0%	137
	District 7	60.5%	205
	District 8	49.5%	281
	District 9	52.7%	148
	District 10	41.0%	122
	District 11	66.4%	116
By Income:	Less than $10,000	49.0%	104
	$10,000 - $19,999	55.9%	143
	$20,000 - $49,999	53.7%	423
	$50,000 - $74,999	52.4%	374
	$75,000 - $99,999	59.3%	275
	$100,000 or more	54.1%	492
By Gender:	Female	53.3%	940
	Male	54.5%	871
By Political Ideology:	Very Liberal	58.3%	379
	Liberal	54.0%	674
	Moderate	51.3%	573
	Conservative	51.8%	137
	Very Conservative	60.9%	23
By Political Party:	Republican	52.3%	149
	Democrat	51.8%	1097
	Independent	56.8%	368
	Something Else	64.6%	189

Q20. Number of Candidates Ranked (polling place voters only)		Chose Only One (%)	Ranked Two (%)	Ranked Three (%)	Sample N
(entries are row percentages)					
Polling Place Sample (all surveyed)		33.1%	10.4%	56.5%	921
By Age					
	18-24 years	18.5%	7.7%	73.8%	65
	25-29 years	34.3%	7.8%	57.8%	102
	30-39 years	38.0%	9.9%	52.1%	242
	40-49 years	31.4%	12.9%	55.7%	210
	50-59 years	26.9%	10.6%	62.5%	160
	60-69 years	36.0%	15.7%	48.3%	89
	70-79 years	43.6%	0%	56.4%	39
	80 years & older	62.5%	0%	37.5%	8
By Education					
	Less than HS	52.0%	4.0%	44.0%	25
	HS grad	28.3%	10.0%	61.7%	60
	Some college	27.1%	8.3%	64.6%	192
	College grad	33.0%	8.7%	58.3%	321
	Post-grad study	35.8%	13.8%	50.3%	318
By Race/Ethnicity:	Hispanic/Latino	23.9%	8.7%	67.4%	92
	Asian/PI	24.1%	11.2%	64.7%	116
	African American/Black	23.5%	4.4%	72.1%	68
	White	36.7%	11.9%	51.4%	578
	Other	38.2%	5.5%	56.4%	55
By First Language:	English	34.6%	11.6%	53.8%	760
	Chinese	30.8%	3.8%	65.4%	52
	Spanish	28.8%	3.8%	67.3%	52
	Other	14.3%	4.8%	81.0%	42
By District:	District 1	25.9%	12.3%	61.7%	81
	District 2	36.8%	14.7%	48.5%	68
	District 3	27.9%	11.8%	60.3%	68
	District 4	27.3%	9.1%	63.6%	66
	District 5	45.8%	5.6%	48.6%	107
	District 6	23.3%	5.5%	71.2%	73
	District 7	23.5%	11.8%	64.7%	102
	District 8	40.4%	12.1%	47.5%	141
	District 9	37.6%	16.1%	46.2%	93
	District 10	27.4%	6.5%	66.1%	62
	District 11	36.7%	8.3%	55.0%	60
By Income:	Less than $10,000	27.1%	3.4%	69.5%	59
	$10,000 - $19,999	32.9%	11.4%	55.7%	70
	$20,000 - $49,999	39.4%	8.3%	52.3%	216
	$50,000 - $74,999	30.2%	11.9%	57.9%	159
	$75,000 - $99,999	34.9%	11.4%	53.7%	149
	$100,000 or more	28.8%	11.3%	60.0%	240
By Gender:	Female	35.0%	11.0%	54.0%	500
	Male	30.8%	9.4%	59.8%	413
By Political Ideology:	Very Liberal	42.2%	11.5%	46.3%	244
	Liberal	32.2%	9.6%	58.2%	366
	Moderate	25.6%	9.9%	64.5%	242
	Conservative	29.8%	12.8%	57.4%	47
	Very Conservative	25.0%	0%	75.0%	8
By Political Party:	Republican	26.9%	5.8%	67.3%	52
	Democrat	34.9%	9.2%	55.9%	598
	Independent	21.3%	16.3%	62.5%	160
	Something Else	42.6%	8.9%	48.5%	101

Q22. Satisfied with the Number of Candidates Allowed to Rank		Percent Satisfied	Sample N (totals)
(entries are row percentages)			
Total Sample (all voters surveyed)		94.3%	1323
By Age			
	18-24 years	100.0%	70
	25-29 years	94.0%	116
	30-39 years	92.0%	275
	40-49 years	94.4%	269
	50-59 years	93.7%	269
	60-69 years	94.4%	162
	70-79 years	95.2%	105
	80 years & older	98.0%	50
By Education			
	Less than HS	86.1%	36
	HS grad	93.9%	115
	Some college	91.9%	285
	College grad	94.2%	414
	Post-grad study	96.7%	460
By Race/Ethnicity:	Hispanic/Latino	92.2%	116
	Asian/PI	96.1%	204
	African American/Black	91.5%	82
	White	95.1%	822
	Other	87.1%	85
By First Language:	English	94.5%	1057
	Chinese	96.0%	100
	Spanish	92.1%	63
	Other	89.5%	86
By District:	District 1	93.9%	115
	District 2	95.5%	110
	District 3	95.0%	101
	District 4	96.0%	100
	District 5	95.0%	141
	District 6	92.5%	106
	District 7	95.2%	147
	District 8	96.1%	204
	District 9	90.2%	112
	District 10	92.4%	79
	District 11	92.5%	80
By Income:	Less than $10,000	94.7%	75
	$10,000 - $19,999	92.6%	95
	$20,000 - $49,999	91.8%	306
	$50,000 - $74,999	95.0%	261
	$75,000 - $99,999	95.4%	195
	$100,000 or more	95.5%	352
By Gender:	Female	96.0%	681
	Male	92.8%	629
By Political Ideology:	Very Liberal	91.6%	296
	Liberal	96.3%	485
	Moderate	94.0%	417
	Conservative	95.7%	94
	Very Conservative	76.9%	13
By Political Party:	Republican	89.6%	106
	Democrat	95.3%	813
	Independent	92.6%	258
	Something Else	94.9%	136

Q24. Ease of the Ranking Task		Very Easy (%)	Easy (%)	Neither (%)	Difficult (%)	Very Difficult (%)	Sample N
(entries are row percentages)							
Total Sample (all voters surveyed)		14.2%	32.0%	37.7%	13.5%	2.7	1236
By Age							
	18-24 years	6.0%	25.4%	55.2%	10.4%	3.0%	67
	25-29 years	10.6%	27.9%	43.3%	14.4%	3.8%	104
	30-39 years	8.4%	33.2%	40.0%	16.8%	1.6%	250
	40-49 years	16.9%	31.2%	35.0%	13.5%	3.5%	260
	50-59 years	15.3%	34.9%	36.9%	11.0%	2.0%	255
	60-69 years	19.1%	31.6%	34.9%	13.2%	1.3%	152
	70-79 years	18.4%	33.7%	31.6%	11.2%	5.1%	98
	80 years & older	19.0%	26.2%	28.6%	21.4%	4.8%	42
By Education							
	Less than HS	32.4%	35.1%	16.2%	10.8%	5.4%	37
	HS grad	14.2%	33.6%	41.6%	7.1%	3.5%	113
	Some college	14.1%	34.4%	38.9%	10.4%	2.2%	270
	College grad	13.2%	32.1%	38.6%	14.0%	2.1%	386
	Post-grad study	13.4%	29.4%	37.2%	17.2%	2.9%	419
By Race/Ethnicity:	Hispanic/Latino	16.8%	41.6%	30.1%	11.5%	0	113
	Asian/PI	8.5%	35.2%	45.2%	8.0%	3.0%	199
	African American/Black	13.6%	34.6%	33.3%	12.3%	6.2%	81
	White	15.0%	30.0%	36.7%	15.6%	2.7%	749
	Other	19.0%	24.1%	44.3%	11.4%	1.3%	79
By First Language:	English	13.7%	31.4%	37.9%	14.3%	2.8%	972
	Chinese	12.1%	35.4%	38.4%	10.1%	4.0%	99
	Spanish	23.0%	42.6%	26.2%	8.2%	0	61
	Other	15.1%	24.4%	45.3%	12.8%	2.3%	86
By District:	District 1	17.8%	31.8%	35.5%	11.2%	3.7%	107
	District 2	11.8%	26.5%	39.2%	15.7%	6.9%	102
	District 3	11.8%	31.2%	41.9%	14.0%	1.1%	93
	District 4	8.2%	34.7%	40.8%	12.2%	4.1%	98
	District 5	10.7%	31.1%	36.9%	18.9%	2.5%	122
	District 6	20.2%	30.3%	34.3%	13.1%	2.0%	99
	District 7	16.9%	30.3%	38.0%	11.3%	3.5%	142
	District 8	16.1%	32.3%	37.0%	14.1%	.5%	192
	District 9	15.5%	32.0%	38.1%	12.4%	2.1%	97
	District 10	9.0%	35.9%	37.2%	16.7%	1.3%	78
	District 11	14.6%	37.8%	39.0%	4.9%	3.7%	82
By Income:	Less than $10,000	17.1%	37.1%	35.7%	10.0%	0	70
	$10,000 - $19,999	13.4%	30.9%	38.1%	15.5%	2.1%	97
	$20,000 - $49,999	13.9%	32.2%	41.8%	10.3%	1.8%	273
	$50,000 - $74,999	12.4%	29.0%	42.7%	12.9%	2.9%	241
	$75,000 - $99,999	17.4%	34.2%	31.6%	15.3%	1.6%	190
	$100,000 or more	14.1%	30.6%	35.9%	15.3%	4.1%	320
By Gender:	Female	13.9%	30.3%	39.9%	13.6%	2.4%	627
	Male	14.6%	33.6%	35.3%	13.8%	2.7%	595
By Political Ideology:	Very Liberal	18.1%	31.0%	34.3%	14.4%	2.2%	271
	Liberal	13.2%	31.8%	38.2%	14.5%	2.3%	440
	Moderate	9.7%	33.4%	40.9%	12.7%	3.2%	401
	Conservative	20.7%	31.5%	34.8%	9.8%	3.3%	92
	Very Conservative	30.8%	23.1%	30.8%	15.4%	0	13
By Political Party:	Republican	20.2%	27.9%	35.6%	12.5%	3.8%	104
	Democrat	13.8%	33.3%	36.5%	13.7%	2.7%	747
	Independent	13.5%	31.0%	38.5%	14.3%	2.8%	252
	Something Else	12.9%	26.6%	45.2%	12.9%	2.4%	124

Q25. Overall Understanding of RCV		Perfectly Well (%)	Understood it Fairly Well (%)	Not Entirely (%)	Not at all (%)	Sample N
(entries are row percentages)						
Total Sample (all voters surveyed)		51.6%	35.6%	9.9%	3.0%	1633
By Age						
	18-24 years	46.2%	39.6%	9.9%	4.4%	91
	25-29 years	57.0%	32.4%	8.5%	2.1%	142
	30-39 years	48.7%	40.0%	9.0%	2.4%	335
	40-49 years	52.9%	33.8%	10.2%	3.1%	325
	50-59 years	51.6%	34.6%	10.3%	3.5%	341
	60-69 years	60.6%	26.6%	10.8%	2.0%	203
	70-79 years	46.0%	43.5%	8.1%	2.4%	124
	80 years & older	38.5%	40.0%	13.8%	7.7%	65
By Education						
	Less than HS	35.7%	40.5%	19.0%	4.8%	42
	HS grad	35.6%	49.6%	11.9%	3.0%	135
	Some college	42.8%	43.4%	11.0%	2.9%	346
	College grad	52.1%	34.6%	9.6%	3.8%	532
	Post-grad study	62.4%	27.6%	7.9%	2.2%	558
By Race/Ethnicity:	Hispanic/Latino	43.1%	46.7%	9.5%	.7%	137
	Asian/PI	31.5%	54.2%	12.2%	2.1%	238
	African American/Black	41.9%	41.9%	11.1%	5.1%	117
	White	58.7%	29.0%	9.0%	3.2%	1020
	Other	48.5%	37.6%	9.9%	4.0%	101
By First Language:	English	54.7%	33.2%	9.1%	3.0%	1321
	Chinese	28.9%	49.1%	17.5%	4.4%	114
	Spanish	46.3%	44.8%	9.0%	0	67
	Other	46.3%	39.8%	12.0%	1.9%	108
By District:	District 1	48.5%	39.0%	10.3%	2.2%	136
	District 2	55.6%	33.3%	9.8%	1.3%	153
	District 3	50.0%	35.7%	11.9%	2.4%	126
	District 4	48.0%	37.0%	13.4%	1.6%	127
	District 5	56.1%	31.2%	6.9%	5.8%	173
	District 6	47.5%	41.0%	6.6%	4.9%	122
	District 7	56.5%	32.2%	6.8%	4.5%	177
	District 8	59.1%	27.4%	11.1%	2.4%	252
	District 9	45.6%	40.8%	12.0%	1.6%	125
	District 10	31.1%	45.3%	17.0%	6.6%	106
	District 11	52.9%	40.2%	6.9%	0	102
By Income:	Less than $10,000	37.9%	47.1%	12.6%	2.3%	87
	$10,000 - $19,999	41.9%	35.0%	17.9%	5.1%	117
	$20,000 - $49,999	44.3%	41.6%	10.3%	3.7%	377
	$50,000 - $74,999	51.4%	36.4%	9.0%	3.1%	321
	$75,000 - $99,999	54.6%	34.0%	9.7%	1.7%	238
	$100,000 or more	62.4%	28.1%	7.4%	2.1%	420
By Gender:	Female	49.0%	37.3%	10.5%	3.2%	832
	Male	54.7%	33.5%	9.1%	2.7%	781
By Political Ideology:	Very Liberal	57.5%	28.7%	10.9%	2.9%	348
	Liberal	51.0%	37.4%	9.4%	2.2%	596
	Moderate	47.8%	39.0%	10.2%	2.9%	510
	Conservative	55.4%	29.8%	9.9%	5.0%	121
	Very Conservative	31.6%	57.9%	5.3%	5.3%	19
By Political Party:	Republican	54.8%	31.9%	8.9%	4.4%	135
	Democrat	48.3%	38.5%	10.4%	2.7%	989
	Independent	55.3%	29.7%	11.6%	3.4%	320
	Something Else	63.2%	30.1%	4.9%	1.8%	163

Q27. Prefer RCV or former Runoff		Prefer RCV (%)	No Difference (%)	Prefer Runoff (%)	Sample N
(entries are row percentages)					
Total Sample (all voters surveyed)		54.7%	28.2%	17.1%	1716
By Age					
	18-24 years	45.1%	42.2%	12.7%	102
	25-29 years	61.1%	30.9%	8.1%	149
	30-39 years	57.3%	30.5%	12.1%	354
	40-49 years	58.2%	27.0%	14.8%	352
	50-59 years	53.1%	28.3%	18.6%	339
	60-69 years	54.0%	19.4%	26.5%	211
	70-79 years	50.0%	27.3%	22.7%	132
	80 years & older	43.5%	23.2%	33.3%	69
By Education					
	Less than HS	42.9%	45.2%	11.9%	42
	HS grad	44.5%	33.6%	21.9%	137
	Some college	48.5%	34.0%	17.5%	359
	College grad	53.1%	31.8%	15.1%	569
	Post-grad study	63.5%	18.7%	17.8%	589
By Race/Ethnicity:	Hispanic/Latino	47.4%	40.1%	12.4%	137
	Asian/PI	50.6%	31.1%	18.3%	251
	African American/Black	32.2%	47.0%	20.9%	115
	White	59.0%	23.9%	17.1%	1087
	Other	54.3%	32.4%	13.3%	105
By First Language:	English	56.5%	26.0%	17.4%	1390
	Chinese	52.1%	32.5%	15.4%	117
	Spanish	43.1%	41.5%	15.4%	65
	Other	41.5%	41.5%	17.1%	123
By District:	District 1	53.2%	31.9%	14.9%	141
	District 2	54.0%	26.4%	19.5%	174
	District 3	49.2%	32.8%	18.0%	128
	District 4	52.9%	23.9%	23.2%	138
	District 5	62.8%	21.1%	16.1%	180
	District 6	53.2%	34.1%	12.7%	126
	District 7	54.0%	28.3%	17.6%	187
	District 8	60.2%	22.7%	17.0%	264
	District 9	61.1%	30.2%	8.7%	126
	District 10	35.1%	41.4%	23.4%	111
	District 11	60.0%	25.7%	14.3%	105
By Income:	Less than $10,000	48.4%	41.9%	9.7%	93
	$10,000 - $19,999	54.8%	27.8%	17.5%	126
	$20,000 - $49,999	50.0%	34.1%	15.9%	378
	$50,000 - $74,999	53.4%	31.1%	15.5%	341
	$75,000 - $99,999	52.8%	23.4%	23.8%	252
	$100,000 or more	63.1%	21.5%	15.5%	452
By Gender:	Female	52.6%	30.4%	17.0%	867
	Male	57.4%	25.6%	17.0%	828
By Political Ideology:	Very Liberal	63.8%	22.9%	13.3%	362
	Liberal	58.7%	27.8%	13.5%	637
	Moderate	49.8%	31.0%	19.2%	536
	Conservative	37.8%	32.3%	29.9%	127
	Very Conservative	33.3%	28.6%	38.1%	21
By Political Party:	Republican	36.4%	32.2%	31.5%	143
	Democrat	54.0%	29.3%	16.7%	1034
	Independent	56.7%	27.6%	15.7%	344
	Something Else	72.1%	19.2%	8.7%	172

Exhibit 13
Loren Collingwood, et al.
An Assessment of Rank Choice Voting's Debut in Pierce County, WA,
The Washington Poll
University of Washington (June 2009)

An Assessment of Rank Choice Voting's Debut in Pierce County, WA

A Research Report of The Washington Poll

By: Loren Collingwood[1], Todd Donovan[2], and Matt Barreto[3]

June 8, 2009

Introduction

Prototypical elections in the U.S. involve candidates first campaigning in a primary where they compete against partisans of the same political stripe. The winner of each party's primary then face off against one another in a general election. Ranked choice voting (RCV), or instant run-off voting, is a method of voting that essentially incorporates the primary and general elections into one election and on one ballot.[4] It is designed to provide voters with a broader array of candidates from which to choose without having to risk 'wasting their vote' by not voting for one of the top two candidates. In brief, proponents argue that RCV improves democratic voting processes.[5]

With RCV, voters do not just pick their top choice; instead, they rank their first, second, third, fourth, and so on, choices. As such, RCV is an iterative voting process, with a series of votes. On the first vote, if one candidate obtains a majority (50% + 1) of the vote, they win. But, if no candidate receives a majority on the first vote, the candidate with the fewest first-choice votes is eliminated from the election. The eliminated candidate's votes are then allocated to each voter's second choice candidate. This process continues until one candidate has a majority of votes.[i] The process is designed to operate as a primary and general election all in one. In a traditional primary, voters who voted for the losing candidates that did not advance to the runoff or general, must decide which of the two finalists they will vote for, or perhaps to not vote in the runoff. In RCV, the voter is allowed to vote in the primary and runoff/general during the same election.

Few jurisdictions in the U.S. employ RCV, although there has been a recent increase in the number of geographic entities using this method, including the city of San Francisco and Burlington, Vermont. In 2006, voters in Pierce County, Washington, approved a Charter Amendment to use RCV in upcoming elections. RCV in Pierce County debuted in 2008 for County-level elections only. This report analyzes the results from the seven RCV election contests in the November, 2008 general election. These include the County Executive contest, the County Assessor-Treasurer contest, County Sheriff, and the County Council District seats (2, 3, 4, and 6).

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[1] University of Washington, Department of Political Science
[2] Western Washington University, Department of Political Science
[3] University of Washington, Department of Political Science
[4] Ranked Choice Voting – Also referred to as RCV in this report.
[5] A January, 2005, report by FairVote, estimates that the city of San Francisco saved approximately $1.2 million by not having to administer run-off elections.

The Primary and General in One Election

As mentioned, one tenet of RCV, in theory, is to limit the number of elections required to fill seats for public office. In doing so, RCV can be thought of as a primary, general, and even run-off election wrapped into one.

One criticism of RCV is that it allocates votes differently from traditional primary and general election contests. That is, RCV may be seen by some observers as problematic because there is no guarantee that the candidate with the most votes in the first round of counting will obtain the most votes in the final round of balloting. One way to assess if this is something unique to RCV is to examine several (recent) examples of outcomes in traditional elections. As we illustrate below, the candidates who receive the most votes in a primary contest do not always win the general election.

Looking at the most recent Washington State legislative results, while most of the candidates who *gained the most votes in the top two primary went on to win the general, several examples contravene* this general rule. Indeed, of the 26 Senate elections, the candidate that received a majority of the votes in the primary received the most votes in the general 22 times. Two candidates—Randi Becker (LD-2) and Kevin Ranker (LD-40)—however, were able to make considerable progress between the two elections to muster a victory. The numbers from these contests are displayed in table 1. Finally, two candidates, Margarita Prentice (LD-11) and Dan Swecker (LD-20), received a plurality of the primary vote share and a majority in the general.

Table 1. Primary and General voting patterns for 2008 State Senate elections.

2008 State Senate Legislative Primary and General Results
(Races where primary winner did not win general)

District	Candidate	Party	Primary Vote	Primary Vote Share	General Vote	General Vote Share
LD-2 – Senate	Marilyn Rasmussen	Democrat	14,675	50.44	30,206	48.37
LD-2 – Senate	Randi Becker	Republican	10,921	37.54	32,244	51.63
LD-40 – Senate	Kevin Ranker	Democrat	10,310	28.28	38,200	58.56
LD-40 – Senate	Steve Van Luven	Republican	13,787	37.82	27,028	41.44

Results are similar for candidates seeking office in 2008 for state representative position one and position two, respectively, and are presented in table 2. Of the 49 races for position one, 40 candidates won a majority of the vote in both elections, five won a plurality in the primary followed by a victory in the general, and four candidates came second in the top two primary but won in the general. For representative position two, 45 candidates won a majority of the vote in both contests, 2 won a plurality

in the primary followed by victory in the general, and two finished second in the primary but won the general. The results of the candidates who did *not* place first in the primary, but *did* place first in the general are presented in table 2.

Table 2. Primary and General voting patterns for 2008 legislative district elections.

2008 State Representative Legislative Primary and General Results
(Races where primary winner did not win general)

District	Candidate	Party	Primary Vote	Pri. Vote Share	General Vote	Gen. Vote Share
LD-6 -- State Rep 1	Kevin Parker	Republican	11,248	29.80	37,050	52.85
LD-6 -- State Rep 1	Don A. Barlow	Democrat	17,208	45.58	33,050	47.15
LD-8 -- State Rep 1	Brad Klippert	Republican	6,272	19.00	31,266	52.51
LD-8 -- State Rep 1	Carol L. Moser	Democrat	12,603	38.18	28,278	47.49
LD-14 -- State Rep 1	Norm Johnson	Republican	5,618	22.06	23,790	53.24
LD-14 -- State Rep 1	Vickie Ybarra	Democrat	7,642	30.01	20,895	46.76
LD-47 -- State Rep 1	Geoff Simpson	Democrat	8,999	39.52	27,439	52.62
LD-47 -- State Rep 1	Mark Hargrove	Republican	10,666	46.84	24,707	47.38
LD-6 -- State Rep 2	John F. Driscoll	Democrat	17,902	48.10	35,107	50.05
LD-6 -- State Rep 2	John E. Ahern	Republican	19,315	51.90	35,033	49.95
LD-44 -- State Rep 2	Mike Hope	Republican	15,101	49.33	34,437	50.09
LD-44 -- State Rep 2	Liz Loomis	Democrat	15,512	50.67	34,319	49.91

In summary, one criticism leveled against RCV—that candidates who do not obtain the most votes in the initial iteration of voting can go on to win the election outright—is also a function of traditional primary and general election dynamics. Although the trend above suggests that candidates who win primaries also tend to win the general, there are regular instances when this does not happen. In short, it is not a unique feature of RCV to have a candidate win office after trailing in the initial vote count.

Another critique is that a third place candidate can win under RCV; but this is certainly an anomaly and did not happen in any of the Pierce County contests. While this cannot happen in the current top-two primary electoral design, it was possible under the blanket primary once employed in Washington State.

Thus, many electoral dynamics characterized by traditional voting systems are mirrored in RCV. After any primary the top two finalists must then go after the votes of the losing candidate either through endorsements or outreach to those voters. The finalists know that winning the primary does not ensure their victory in the general and that voters who preferred one of the losing candidates still has a vote in the general and a chance to influence the election. This reflects a very similar process that likely occurs under RCV.

Ranked Choice Voting Results

The 2008 general election marked the first time Ranked Choice Voting occurred in Washington State. RCV occurred for seven races in Pierce County: Executive, Assessor / Treasurer, Sheriff, and Council Members 2, 3, 4, and 6. However, just Executive, Assessor, and Council position 2 involved more than one round of voting. Results for these contests are presented below.[6]

The County Executive race—the most high profile of the three—involved three rounds of voting. Working forwards, Shawn Bunney, endorsed by Republicans, captured a plurality of the vote (35 percent) in round 1. Pat McCarthy, a Democrat, came second with 26.5 percent of the vote, followed by Democrat Calvin Goings (23 percent), and Mike Lonergan (15 percent). Lonergan sought a Republican endorsement, but fell short at the GOP convention, and campaigned as an independent.[7] Because no candidate received a majority of the votes, Lonergan (last place) was eliminated and his supporters' second preference votes were then transferred to the remaining candidates.. These votes were distributed fairly equitably and similar in proportion to the initial vote. That is, McCarthy garnered 29 percent of Lonergan's vote, Goings 18.5 percent, and Bunney 30 percent. The remainder of Lonergan's vote was exhausted, as 10,746 of his voters opted to not rank a second choice candidate.

These reallocated figures, however, still did not produce a majority for any candidate. The final round of voting eliminated Goings, whose supporters' votes were then distributed to the remaining candidates. Goings supporters split heavily toward the other Democrat, McCarthy, by a ratio of about 3:1, with 19,562 votes exhausted. This gave McCarthy the final majority at 50.75 percent to 49.25 percent.

[6] See appendix for tables of Sheriff, and Council positions 3, 4, and 6.

[7] The Pierce County Official Local Voter's Pamphlet officially lists Mike Lonergan as a member of the Executive Excellence Party.

Table 3. County Executive had three rounds of voting, with Bunney winning the first two rounds, but McCarthy gaining the most votes in the final round.

County Executive Election 2008								
	Round 1			Round 2			Round 3	
Candidate	Votes	Percent	Transfer	Votes	Percent	Transfer	Votes	Percent
Mike Lonergan	45,330	15.15	-45,330	0	0.00	0	0	0.00
Pat McCarthy	79,235	26.49	12,973	92,208	31.98	44,138	136,346	50.75
Calvin Goings	69,052	23.08	8,375	77,427	26.85	-77,427	0	0.00
Shawn Bunney	105,057	35.12	13,633	118,690	41.17	13,602	132,292	49.25
Write-In	458	0.15	-458	0	0.00	0	0	0.00
Exhausted by Over votes	532		61	593		125	718	
Under Votes	13,107		0	13,107		0	13,107	
Exhausted ballots	0		10,746	10,746		19,562	30,308	
Continuing Ballots	299,132	100.00		288,325	100.00		268,638	100.00
TOTAL	312,771		0	312,771		0	312,771	

This contest was a tightly fought competitive election. The fact that Bunney was ahead initially but failed to capitalize in the final round of voting speaks to the competitiveness of the race, not the iniquities of RCV as an electoral system, per se. Indeed, very competitive legislative races analyzed earlier in this process showed candidates winning in the "initial" round but then losing in the "final" round. Moreover, the logical transfer of votes (i.e., Goings votes shifting primarily to McCarthy) are dynamics we would expect to see from a losing primary candidate who then encourages their supporters to vote for the member of their party who goes on to compete in the general. As such, this contest mirrors election dynamics seen in traditional primary then general elections.

County Assessor / Treasurer

The County Assessor race involved six candidates, and required four rounds of counting.[8] The initial count gave Dale Washam (independent), a plurality of the vote at 25 percent. Three candidates trailed closely; Terry Lee, a Republican (19.1%) Jan Shabro, a Republican, 19.1%, and Barbara Gelman, an endorsed Democrat, with 19.0%. Beverly Davidson, a second endorsed Democrat, was in 5th place with 10.4%. Under a top-two primary, both Democrats and Shabro would have been eliminated prior to the general election.

In the first round, Tuma and Davidson (D) were eliminated due to relatively low vote totals. Gelman (D) received a plurality of second preferences from supporters of these candidates, with the rest distributed fairly evenly across the remaining candidates. As no one had a majority after this count, Shabro (R) (the

[8] According to the Pierce County Official Local Voters' Pamphlet, this was a non-partisan race.

lowest ranked candidate remaining), was then eliminated. A plurality of Shabro's supporters' second preferences (13,640) went to Gelman (D), with 11,686 going Lee (R) and 10,492 to Washam. After these two rounds of transfers, Washam remained in the lead with 36.4%, with Gelman (D) at 32.5 and Lee (R) at 31%. This meant Lee was eliminated. In Round 4, Lee's supporters' second preferences then split slightly toward Gelman, but not enough to overtake the lead that Washam had since the first count. In sum, this contest involved four tight rounds of voting, where Washam began with a lead of 6% that narrowed but held resulting in a final victory of 51.93.

Table 4. County Assessor race is close throughout, as the vote is disparate.

County Assessor / Treasurer Election 2008

	Round 1			Round 2		
Candidate	**Votes**	**Percent**	**Transfer**	**Votes**	**Percent**	**Transfer**
Dale Washam	65,676	25.02	6,322	71,998	28.94	10,492
Terry Lee	50,278	19.16	8,245	58,523	23.52	11,686
Jan Shabro	50,023	19.06	8,224	58,247	23.41	-58,247
Bernardo Tuma	18,205	6.94	-18,205	0	0.00	0
Barbara Gelman	49,874	19.00	10,133	60,007	24.12	13,640
Beverly Davidson	27,340	10.42	-27,340	0	0.00	0
Write-In	1,051	0.40	-1,051	0	0.00	0
Exhausted by Over Votes	363		71	434		73
Under Votes	49,961		0	49,961		0
Exhausted Ballots	0		13,601	13,601		22,356
Continuing Ballots	262,447	100.00		248,775	100.00	
TOTAL	312,771		0	312,771		0

	Round 3			Round 4	
	Votes	Percent	Transfer	Votes	Percent
Dale Washam	82,490	36.44	15,876	98,366	51.93
Terry Lee	70,209	31.02	-70,209	0	0.00
Jan Shabro	0	0.00	0	0	0.00
Bernardo Tuma	0	0.00	0	0	0.00
Barbara Gelman	73,647	32.54	17,420	91,067	48.07
Beverly Davidson	0	0.00	0	0	0.00
Write-In	0	0.00	0	0	0.00
Exhausted by Over Votes	507		93	600	
Under Votes	49,961		0	49,961	
Exhausted Ballots	35,957		36,820	72,777	
Continuing Ballots	226,346	100.00		189,433	100.00
TOTAL	312,771		0	312,771	

County Council Position Two

The only Council position to move beyond one round was seat 2. Joyce McDonald, a Republican state legislator, nearly obtained a majority in the first round of balloting at 49.92 percent of the vote. Carolyn Merrival, who campaigned as a Democrat, finished third and was eliminated. Her vote transferred to Al Rose, another Democrat, at a high rate; nevertheless McDonald was able to reach a majority at 55.26 percent.

Table 5. County Council position 2 was not close in the first round, but drew closer in the second round.

County Council Position 2 Election 2008					
	Round 1			Round 2	
	Votes	Percent	Transfer	Votes	Percent
Al Rose (D)	12,317	30.79	4,747	17,064	44.74
Carolyn Merrival (D)	7,651	19.13	-7,651	0	0.00
Joyce McDonald (R)	19,967	49.92	1,111	21,078	55.26
Write-In	65	0.16	-65	0	0.00
Exhausted by Over Votes	31		2	33	
Under Votes	3,630		0	3,630	
Exhausted Ballots	0		1,856	1,856	
Continuing Ballots	40,000	100.00		38,142	100.00
TOTAL	43,661	0		43,661	

Under-voting and Over-voting

Another criticism leveled against RCV is the relative complexity it poses for voter decision making. In the case of candidate elections, voters in RCV systems must rank candidates for the various offices on the ballot, whereas voters in traditional voting systems typically just pick one candidate..[9] This relative complexity suggests that RCV is a more cognitively challenging task, which may result in higher rates of voter abstention. Adding to this, because of its first time status, the voter learning for this election may be considerably high, which may also cause some voters to abstain. Students and practitioners of voting call abstention under-voting; according to the Pierce County Auditor's website, "an under vote is when a voter chooses not to vote on a specific race or issue."

Two issues of under voting emerged in the RCV contests in Pierce County. The first issue—that turnout was generally higher for non-RCV contests—came about likely for two reasons. First, absentee voters, who comprised 84% of all voters, received two ballots in the mail—one for traditional contests, the other for RCV contests. About 20,000 voters did not return their RCV ballots but returned their traditional ballots. In other words, turnout was lower for the RCV contests.[10] While turnout is generally

[9] In Pierce County, voters rank up to three candidates.

[10] As acknowledged, under-voting tends to increase with down-ballot races, so we would expect to see fewer votes for County Executive than, say, for governor. But, for a variety of reasons, we should not necessarily expect to see

lower for down-ballot races, the fact that RCV was on a separate ballot and was an alien form of voting for many voters may have resulted in higher rates of under-voting witnessed in typical traditional contests.

Table 6. Fewer people cast ballots in RCV contests than in traditional voting.

RCV and Traditional Ballots Cast		
	Raw Numbers	*Percent*
Registered Voters	411,103	
Poll Ballots Cast	52,134	12.68
Absentee Ballots Cast	281,690	68.52
Total Traditional Ballots Cast	*333,824*	*81.20*
RCV Ballots Cast	312,771	76.08
Total Ballots – RCV Ballots	21,053	6.31

The second under-voting issue is that among those RCV ballots returned, as with any election, some voters did not vote in a particular race, or, unique to RCV, cast the allotted number of ranked votes. For instance, *if a voter did not vote at all in a specific contest, that is an under-vote. But if a voter casts a* vote on the first ballot but abstains from rounds two and three that is considered an exhausted vote, not an under-vote. In the 2008 County Executive race, for example, 13,107 voters were classified as under-voters because they abstained from this contest yet still turned in their ballots.[11] In terms of exhausted votes, 10,746 voters cast but one vote, and 19,562 cast just two votes for a total exhaustion of 30,308 votes.

Over-voting, on the other hand, occurs "when a voter votes for two candidates in a race or connects the arrow for both "yes" and "no" on an issue."[12] In the RCV context, a ballot is considered an over-vote if at any time during the balloting contest the ballot cannot be advanced because more than one candidate is selected in one rank.[13] Table 7 reports under-votes and over-votes by round for the three races that required more than one round, as well as the four one round RCV contest.

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lower turnout for County Executive than say, State Auditor or State Treasurer. This is because County Executive may be a more high profile race for many voters. Nevertheless, total votes cast for State Auditor (excluding under and over voting) was 308,800. The same calculation for County Executive puts total votes cast at 299,132, about 9,000 votes lower.

[11] Presumably because they voted in other RCV contests.

[12] http://www.co.pierce.wa.us/pc/abtus/ourorg/aud/elections/RCV/ranked/rcvresults.htm

[13] Ibid.

Table 7. Under and Over Vote by RCV Electoral Contest

Under and Over Voting in RCV Contests

County Executive

	Round 1	Round 2	Round 3	Total
Over Votes	532	61	125	718
Under Votes	13,107	13,107	13,107	13,107
Total Vote	312,771			

County Assessor / Treasurer

	Round 1	Round 2	Round 3	Round 4	Total
Over Votes	363	71	73	93	600
Under Votes	49,961	49,961	49,961	49,961	49,961

County Council – District 2

	2008			2004
	Round 1	*Round 2*	*Total*	*Total*
Over Votes	31	2	33	3
Under Votes	3,630	3,630	3,630	12,429
Total Vote	43,661			44,875

County Council – District 3

	2008		2004
	Round 1	Total	
Over Votes	23	23	7
Under Votes	2,987	2,987	4,182
Total Vote	52,310		49,461

County Council – District 4

	2008		2004
	Round 1	Total	
Over Votes	8	8	1
Under Votes	5,177	5,177	12,204
Total Vote	41,267		43,408

County Council – District 6

	2008		2004
	Round 1	Total	
Over Votes	8	8	8
Under Votes	*2,435*	*2,435*	3,322
Total Vote	33,045		34,087

Further analysis suggests that, while the general under vote of 21,053 was an undesirable element of the RCV voting process, among the ballots that were returned under-voting does not appear to be outstanding relative to the under-vote levels in previous (non-RCV) elections. Moreover, while the

amount of over voting does increase in the 2008 RCV election compared to the 2004 general, both contests contain an over-vote of very few voters. A simple comparison across similar-type elections sheds light on these under-vote and over-vote issues. We focus here expressly on comparing the 2008 election to the 2004 election.

County Executive

The 2008 County Executive race reported a combined over-vote and under-vote of 718 and 13,107 votes, respectively. To more fully gauge the impact of under-voting, it is necessary to add in the 21,053 voters who cast a normal ballot but not a RCV ballot. This brings the total under-vote to 34,160, or 10.4 percent of the total ballots cast. The 2004 Executive contest reported lower under vote—28,718—but there was also lower turnout. Thus, the under-vote was about the same (9.06 percent) as the 2008 contest. Finally, the over-vote was minute in 2004; just 48 voters over-voted. The evidence suggests, then, that for the County Executive race, there was an increase in over-voting but not especially for under-voting.

Table 8. Under-vote and over-vote in the 2004 and 2008 County Executive elections.

County Executive Comparison (2004 and 2008)				
	2004 Votes	2004 Percent	2008 Votes	2008 Percent
Over Vote	48	.02	718	.22
Under Vote	28,718	9.06	34,160	10.39
Total Ballots Cast[14]	317,002		333,824	

County Assessor / Treasurer

To gauge whether there was an abnormal amount of under-voting in the County Assessor race, a comparison to the 2004 race is drawn. This comparison reveals that under-voting was much higher in the 2008 County Assessor race than in the 2004 Assessor contest. In the 2004 election, under-voting accounted for about 10 percent of the total ballots cast; but in the 2008 race, under-voting doubled to 21 percent of the total ballots cast.

Table 9. Under-vote and over-vote in the 2004 and 2008 County Assessor contests.

County Executive Comparison (2004 and 2008)				
	2004 Votes	2004 Percent	2008 Votes	2008 Percent
Over Vote	35	.01	600	.18
Under Vote	32,025	10.1	71,014	21.27
Total Ballots Cast	317,002		333,824	

[14] Includes total ballots cast for the normal voting procedure for 2008.

County Sheriff

The County Sheriff race was decided on the first ballot, as Paul Pastor received 72 percent of the vote among ballots cast for the RCV contests. The scenario of RCV and non-partisan office combine to create a fairly high under-vote of 70,547 (21 percent of the total vote). The over-voting is still low at just 101 (.03 percent). Unfortunately for this analysis, there was no Sheriff contest in 2004 or 2000; thus it is hard to know whether this under-vote is uniquely high. But, given that the percent under-vote is very similar to the under-voting in the Assessor race, it may be that circa 20 percent is an expected value for down ballot countywide contests.

County Council

RCV contests also included the County Council races 2, 3, 4, and 6. Seat 2 is the only race to invoke the RCV algorithm, whereas the other three races were decided on the first ballot. To examine under and over-voting, a comparison is first drawn between Council Seat 2 and under and over-voting for the other Council Seat contests. Second, all four races are compared to the results from the 2004 elections.

The mean under-vote for the County Council races (2, 3, 4, and 6) is 8.5 percent. County Council 2 matches this almost exactly, at 8.3 percent. Again, RCV reports higher over-voting than standard voting procedures. The mean over vote across the four contests is 17.5 raw votes, whereas the over vote in County Council race 2 is 33. Nevertheless, this is a fraction of the total votes cast, making it essentially negligible to the final outcome.

The under-vote comparison to the 2004 contests is not so straightforward. This is a result of the 21,000 RCV abstentions. Since the general under-vote data is aggregate, it is not possible to disentangle these figures and apply the RCV abstentions to the appropriate County Council races. Further, in 2004, Council Seats 2 and 4 were essentially one candidate contests; thus under-voting should be disproportionately higher in these races. A true comparison, then, is examining seats 3 and 6 across elections.

If we make some assumptions about how these 21,000 general under-votes might be distributed, we can develop an imperfect comparison to the 2004 election. Pierce County contains seven Council seats. The under-vote reported from the Pierce County website, as well as a weighted tally of the under-vote (assignment of the 21,000 votes) is presented in table 5. These results suggest that under-voting was higher in the 2008 election, versus 2004 for seats 3 and 6 (where competitive contests existed).

Table 10. Under vote for County Council seats, 2004 and 2008.

County Council Under-Vote 2008 and 2004 (*percent*)			
Council Seat	2004	2008	2008 Weighted[15]
2	27.70	8.4	14.47
3	8.46	5.7	11.93
4	28.11	12.6	18.32
6	9.75	7.4	13.20

Logical Pattern in Transfer of Vote

An important factor in evaluating the accuracy of RCV—and by extension its effectiveness—is to determine whether the transfer of votes from one round of voting to the next occurs logically. For instance, if two Democratic and two Republican candidates are on the ballot, it is reasonable to assume *that the bulk of a Democratic candidate's votes will go to the other Democrat should the former fail to* advance into the later rounds of the voting process. And likewise with the Republican candidates.

To the extent possible, we measure the transfer of the vote in the 2008 RCV contests. The Executive contest pitted two Democrats, Pat McCarthy and Calvin Goings, against Republican Shawn Bunney. Independent Mike Lonergan was also a contestant. As table 11 demonstrates, Lonergan received the fewest votes in round 1, and therefore was eliminated. His 45,330 votes were distributed fairly evenly among the three candidates. As an independent candidate, this was a logical displacement. After round 2, Goings, the Democrat was eliminated and his votes went disproportionately to the remaining Democratic candidate McCarthy (44,138 to McCarthy, and 13,602 to Bunney). These results suggest that the pattern of vote transfer was logical indeed.

[15] The weighted figure proportionally assigns the 21,053 votes to the appropriate district. The math is straightforward:

1. *Normal Ballots Cast (333,824) – RCV Ballots Cast (317,002) / Number of County Council seats (7) = 3,007.6.*
2. Number of districts in play (4) * 3,007.6 = 12,030.29
3. This figure is then assigned proportionately to each district based on the normal turnout for that district. For instance, seat 6 had a relatively low turnout compared to seat 3, thus, its allocation of the overall 20,000 over votes is of a lower proportion.

Table 11. County Executive logical transfer of votes.

County Executive Election 2008								
	Round 1			Round 2			Round 3	
Candidates	Votes	Percent	Transfer	Votes	Percent	Transfer	Votes	Percent
Mike Lonergan (O)	45,330	15.15	-45,330	0	0.00	0	0	0.00
Pat McCarthy (D)	79,235	26.49	12,973	92,208	31.98	44,138	136,346	50.75
Calvin Goings (D)	69,052	23.08	8,375	77,427	26.85	-77,427	0	0.00
Shawn Bunney (R)	105,057	35.12	13,633	118,690	41.17	13,602	132,292	49.25
Write-In	458	0.15	-458	0	0.00	0	0	0.00
Exhausted Ballots	0		10746	10746		19562	30308	0
TOTAL	312771		0	312771		0	312771	

The County Assessor race was a non-partisan contest, and even though many of the candidates presented themselves in partisan shades, this obfuscation of candidate partisanship is demonstrated in the transfer of votes. This point is highlighted by Shabro's transference of votes: second preferences (13,640) went to Gelman (D), with 11,686 going Lee (R) and 10,492 to Washam (I). Thus, the transference tends to reflect the non-partisan nature of this contest.

Turning to the County Council position 2 election, two Democrats, Al Rose and Carolyn Merrival, were pitted against Republican Joyce McDonald. As table 12 reveals below, Merrival placed third in round 1. Her vote was reallocated by a margin of 62 percent – 14.5 percent to Rose and McDonald, respectively. Again, this is logical vote transference.

Table 12. County Council position 2 race suggests a logical transference of votes.

County Council Position 2 Election 2008					
	Round 1			Round 2	
	Votes	Percent	Transfer	Votes	Percent
Al Rose (D)	12,317	30.79	4,747	17,064	44.74
Carolyn Merrival (D)	7,651	19.13	-7,651	0	0.00
Joyce McDonald (R)	19,967	49.92	1,111	21,078	55.26
Write-In	65	0.16	-65	0	0.00
Exhausted Ballots	0		1,856	1,856	
TOTAL	43,661	0		43,661	

In short, what these two partisan contests suggest is that, juxtaposed to standard American election campaigns where often 80-90 percent of partisan voters vote for candidates of the same political stripe, RCV contests may produce a less polarized politics. Here, while voters who cast their first vote for a

Democrat tend to also cast their second vote for a Democrat, a sizeable minority cast their second ballot for a Republican.

Campaign Finance

Proponents of RCV claim that, because of the more democratic process of voting for multiple candidates, campaigns that spend less have a greater chance to win than they would under traditional voting systems. We test for this possibility by reviewing campaign spending for candidates seeking RCV offices in the 2008 election compared to the same offices in 2004. If more winning campaigns spent relatively less money in the 2008 races than in the 2004 races, this supports the notion that campaign financing may play a diminished role in RCV systems.

Of the six races examined, in the 2004 election, the candidate that spent the most won five times; his frequency dropped to just three in 2008.[16] To be sure, differences across campaign environments—as well as a certain amount of randomness in campaign politics—may explain the discrepancy between 2004 and 2008, nonetheless these figures do suggest that campaign financing may be less of a factor in RCV contests than traditional elections.

Conclusion

Given the above findings, a few conclusive comments are necessary. Overall, RCV has similar voting patterns as exhibited in traditional primary-general election contests. That is, RCV does an effective job of simulating both a primary and general in one election. Moreover, in partisan contests, the transference of votes reflects logical partisan patterns, which we would expect in primary to general contests.

Overall, under-voting was greater in the RCV contests than in the traditional ballot contests. Although this may be due to the fact that voters received two different ballots, this trend toward under-voting is worrisome. To be sure, with more voter education, RCV under-voting will likely decrease in future elections. In other words, in the coming elections, as voters become used to ranked choice voting, under-voting is quite likely to match levels reported in traditional elections. Over-voting, on the other hand, is higher in RCV contests, but the overall impact is so slight, it is neglible.

An analysis of the 2004 San Francisco RCV contest revealed that under-voting was generally less in RCV contests within the city than non-RCV contests outside of the city (such as State Assembly races). To be sure, this discrepancy may be due to the possibility that County Supervisor (RCV) elections may be more high profile than State Assembly races, nevertheless the results are promising.

Finally, a trans-year comparison of candidate financing and electoral victory suggests that candidates who spend less money may be more likely to win in RCV elections than in traditional voting systems.

[16] See appendix for campaign financing on individual RCV contests.

Appendix

Campaign Finance and winner by Contest, 2004 and 2008.

County Executive

Table 13. Campaign contributions for each candidate in the 2004 and 2008 elections

County Executive Campaign Financing (2004 and 2008)		
Candidate	**Contributions**	**Winner**
2004 Election		
Greg Bakamis	$4,666.00	
John Ladenburg	$134,600.19	√
2008 Election		
Shawn Bunney (R)	$423,256.92	
Calvin Goings (D)	$308,534.28	
Pat McCarthy (D)	$116,601.66	√
Mike Lonergan (E)	$43,735.00	

County Assessor / Treasurer

County Assessor Campaign Financing (2004 and 2008)[17]		
Candidate	**Contributions**	**Winner**
2004 Election		
Ken Madsen	$27,751.51	√
Richard Washam	$1,519.00	
2008 Election		
JANICE SHABRO	$17,047.85	
BARBARA GELMAN	$16,220.00	
BEVERLY DAVIDSON	$9,837.40	
Richard Washam	$0	√

[17] Contributions and expenditures were not reported for all candidates in this election. Data gathered from http://www.pdc.wa.gov/.

County Council Position 2

County Council Seat 2 Campaign Financing (2004 and 2008)		
Candidate	**Contributions**	**Winner**
2004 Election		
Calvin Goings	$50,213.25	√
2008 Election		
Joyce Mcdonald	$32,444.79	√
Allen Rose	$30,556.29	
Carolyn Merrival	$15,059.52	

County Council Position 3

County Council Seat 3 Campaign Financing (2004 and 2008)		
Candidate	**Contributions**	**Winner**
2004 Election		
Roger Bush	$68,887.04	√
Kevin Wimsett	$62,366.49	
2008 Election		
Bruce Lachney	$84,861.16	
Roger Bush	$43,863.37	√

County Council Position 4

County Council Seat 4 Campaign Financing (2004 and 2008)		
Candidate	***Contributions***	***Winner***
2004 Election		
Richard Dorsett	$44,684.65	
Timothy Farrell	$41,296.00	√
Bill Smitherman	$32,291.35	
2008 Election		
Timothy Farrell	$21,705	√
Kenneth Paulson	$0	

County Council Position 6

County Council Seat 6 Campaign Financing (2004 and 2008)		
Candidate	**Contributions**	**Winner**
2004 Election		
Richard Muri	$18,202.01	√
Donald Green	$0.00	
2008 Election		
Richard Muri	$22,564.59	√
Vincent Stewart	*$8,557.27*	

References

FairVote – The Cent for Voting and Democracy. 2005. *Evaluation of San Francisco's first ranked choice election*. www. FairVote.org.

Neely, Francis, Lisel Blash, and Corey Cook. 2005. *An assessment of ranked choice voting in the San Francisco 2004 election.*

Porter, John. Brookings Institution. *Opportunity 08. Empowering moderate voters: implement an instant runoff strategy.*

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[i] Porter, John. Brookings Institution. *Opportunity 08. Empowering Moderate Voters: Implement and Instant Runoff Strategy*. Accessed 2/12/09.

Exhibit 14
Long Beach City Council Elections Oversight Committee,
Projected Cost Savings to Move Municipal Elections
To Odd-Calendar Year Elections
(August 2008)

City of Long Beach
Working Together to Serve

Memorandum

C-4

Date: August 5, 2008

To: Honorable Mayor and City Council

From: Councilmember Bonnie Lowenthal, Chair, Elections Oversight Committee

Subject: ***PROJECTED COSTS SAVINGS TO MOVE MUNICIPAL ELECTIONS TO ODD-CALENDAR-YEAR ELECTIONS***

The Elections Oversight Committee, at its meeting held July 22, 2008, considered communications relative to the above subject.

It is the recommendation of the Elections Oversight Committee that the City Council concur in the recommendation of the Committee to refer to the Charter *Amendment Committee for further discussion and consideration.*

Respectfully submitted,

ELECTIONS OVERSIGHT COMMITTEE

Councilmember Bonnie Lowenthal, Chair

Prepared by:
Gloria Harper

Alternative 3: June - November

Pros	Cons
▪ Full consolidation	▪ No guarantee for June
▪ One voting system	▪ Unknown County costs
▪ Higher voter turnout	▪ Lengthy campaigns
▪ Potential capital investment savings of $1.9 million	▪ Bottom of ballot
	▪ Later reporting of results
	▪ 28 day canvass
	▪ Write-in candidates listing
	▪ ? Federal - State ticket "affect"
	▪ Charter change re: term start date

Alternative 4: November - March

Pros	Cons
▪ One voting system	▪ Lower March turnout
▪ Higher November turnout	▪ Unknown County costs
▪ Potential capital investment savings of $1.9 million	▪ Lengthy campaigns
	▪ November bottom of ballot
	▪ November late results
	▪ November 28 day canvass
	▪ Write-in candidates listing
	▪ ? Federal - State ticket "affect"
	▪ Charter change re: term start date
	▪ Impacts in Lakewood, Signal Hill and Avalon

CITY OF LONG BEACH

DEPARTMENT OF THE CITY CLERK

333 W. Ocean Blvd. Long Beach, CA 90802 (562) 570-6101 FAX (562) 570-6789

July 22, 2008

ELECTIONS OVERSIGHT COMMITTEE
City of Long Beach
California

RECOMMENDATION:

Receive and discuss the City Clerk's report relative to projected costs savings associated with a Charter Amendment to move municipal elections to odd-calendar-year elections.

DISCUSSION

On July 8, 2008, your Committee requested that the City Clerk provide further information on the net costs savings associated with the implementation odd- year elections for the City of Long Beach.

Over six election cycles elections costs (April and June) are projected to total $11,555,157, as shown in Attachment 1. If Long Beach voters approved a Charter Amendment no later than the 2010 election cycle, it is estimated that the net savings of moving to odd-calendar-year election would save up to $2,951,616 in General Fund appropriations.

TIMING CONSIDERATIONS

In order for odd-year elections to be implemented in Long Beach, a Charter Amendment approved by voters is required. Assuming support for an odd-year election cycle ballot measure, and the effective date of such a measure (if approved by voters), the measure would need to provide that the terms of current or "first cycle" elected officials would be extended one year. The pros and cons of odd-year elections were previously presented in a 2007 report titled "Election Cycle Alternatives" (see Attachment 2).

SUGGESTED ACTION:

Approve recommendation.

Respectfully submitted,

LARRY HERRERA
CITY CLERK

Attachments

ATTACHMENT 1

Projected Election Costs and Savings
Odd-Calendar-Year Elections
2014 to 2020

Year	2011	2013	2015	2017	2019	2021	Total
April (PNE)	$ 1,200,000	$ 660,000	$ 1,242,000	$ 683,100	$ 1,285,470	$ 707,009	$ 5,777,579
June (GME)	$ 1,200,000	$ 660,000	$ 1,242,000	$ 683,100	$ 1,285,470	$ 707,009	$ 5,777,579
Projected Cost	$ 2,400,000	$ 1,320,000	$ 2,484,000	$ 1,366,200	$ 2,570,940	$ 1,416,038	**$ 11,555,157**
Odd Year Savings							
Voter Education	$ 150,000	$ 155,250	$ 160,684	$ 166,308	$ 172,128	$ 178,153	$ 982,523
Polls	$ 43,750	$ 45,281	$ 46,866	$ 48,506	$ 50,204	$ 51,961	$ 286,569
Poll Workers	$ 97,769	$ 101,191	$ 104,733	$ 108,398	$ 112,192	$ 116,119	$ 640,402
City Employees	$ 159,099	$ 164,667	$ 170,431	$ 176,396	$ 182,570	$ 188,960	$ 1,042,123
Projected Savings	$ 450,618	$ 466,390	$ 482,713	$ 499,608	$ 517,094	$ 535,193	**$ 2,951,616**
						Net Projected Costs	**$ 8,603,541**

City of Long Beach

Charter Amendment Committee

Election Cycle Alternatives

January 9, 2007

Recent History

- May 2003 – City Clerk met with area city clerks in the City of Commerce to discuss setting up joint powers authority to cosponsor proposal to Secretary of State (SOS)
- June 2003 – Council approves submittal of Municipal Elections Project (MEP) SOS
- July 2003 – Supervisor Knabe writes SOS supporting MEP & long-term goal of one voting system
- July 2003 – SOS declines to fund MEP & ask City to work with Registrar on use of funds
- October 2003 – City of Long Beach Technology Services Department entered into contract with the Los Angeles County Registrar-Recorder/County Clerk for the DIMS Elections Management System.

Recent History

- April 2005 – City Attorney submits E-Minus 50 legislative proposal to County Counsel
- September 2005 – E-Minus 50 deemed not feasible
- January 2005 – 1st Request For Information (RFI) for voting system. System costs range from $3.1 million to $8.0 million
- June 6, 2006 – 2 Vote Tuesday
- August 2006 – Notified by RRCC that we may use Ink-A-Vote at no equipment charge
- September 2006 – EOC Demonstrations by voting system vendors
- October 2006 – 2nd RFI for voting system.

Other Jurisdictions

Pop. Rank:	City:	Election Date:
1	Los Angeles	Odd-year: March - May.
2	San Diego	Even-year: June - November
3	San Jose	Even-year: June - November
4	San Francisco	Every year: November - December
5	Long Beach	Even-year: April - June.
6	Fresno	Even-year: June - November
7	Sacramento	Even-year: June - November
8	Oakland	Even-year: June – November.

Election Cycle Alternatives

Even Year

1. April – June
2. February – June
3. June – November

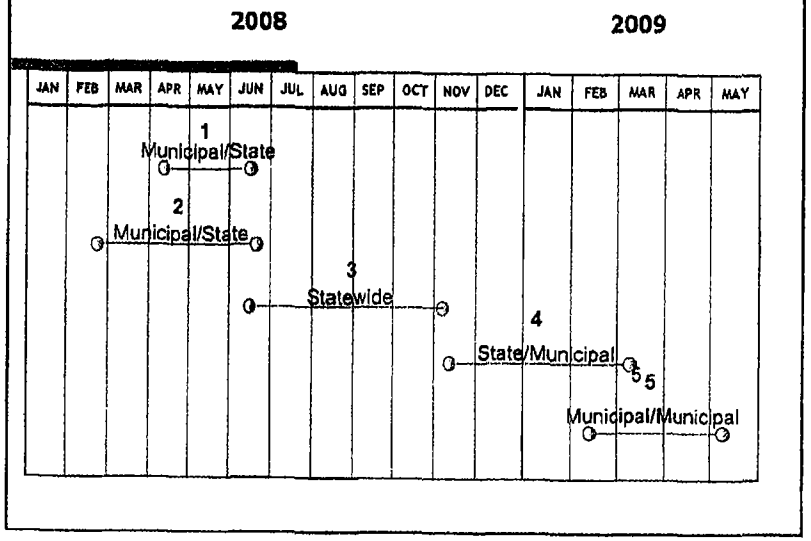
Even/Odd Year

4. November – February

Odd Year

5. March - May

Election Cycle Alternatives



Alternative 1: April - June

Pros	Cons
▪ 2VoteTuesday Program	▪ Voter confusion
▪ Mail tracking technology	2 voting systems
▪ Candidate name on ballot	Polls
▪ Higher June turnout	Sample Ballot
	Absentee Ballots
	▪ Poll-worker shortage
	Supply distribution

Alternative 2: February - June

Pros	Cons
▪ Meets 88 day deadline	▪ No guarantee for June
▪ City conducts primary	▪ Concurrent still possible
▪ InkaVote equipment possible	▪ Unknown equipment cost
▪ Higher June turnout	▪ Later reporting of results
▪ Potential capital investment savings of $1.9 million	▪ Holiday campaigns
	▪ Bottom of ballot
	▪ 28 day canvass
	▪ Write-in candidate voting
	▪ Charter change re: Primary

Alternative 5: March - May

Pros	Cons
▪ One voting system	▪ Lower turnout
▪ Focus on City issues	▪ Must determine voting system and County costs, if InkaVote is used
▪ No 2VoteTuesday	▪ Must change terms of office for City, Long Beach Unified School District, and Long Beach Community College District
▪ Fewer voting locations	▪ Charter change re: term start date
▪ Fewer poll-workers needed	▪ Impacts in Lakewood, Signal Hill and Avalon
▪ Potential capital investment savings of $1.9 million	

Recommend: Alternative 1 April - June

- **Continue 2VoteTuesday**
- **Increase poll-worker stipend**
- **Consider new City-owned central count voting system**
- **Continued use of DIMS election management information system**
- **Implement mail tracking technology**
- **Scale up to precinct level ballot counters and direct recording equipment**
- **Secure elections supply distribution and collection office space**

Alternatives Considered But Not Recommended

- **Instant Runoff Voting – requires a Charter change and software not yet certified**
- **All Mail Ballot Elections – highly mobile population**
- **Winner Take All – requires Charter change and produces a plurality result**