A MATTER OF PREFERENCE? DEFENDING THE SINGLE TRANSFERABLE VOTE

by THOMAS ROUND

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> He passed a series of observation monitors. One of them showed some horrible green scaly reptilian creature ranting and raving about the Single Transferable Vote system. It was hard to tell whether he was for it or against it, but he clearly felt very strongly about it. Ford turned the sound down.

- from `So Long, And Thanks For All The Fish' by Douglas Adams [1985]

> ... the worst of all possible plans, the least scientific and most unreal. The decision is to be determined by the most worthless votes given for the most worthless candidates.

- Winston Churchill, House of Commons, 1931 [Quoted in Sykes 1990: 7]

ACKNOWLEDGMENTS.

without which I would most certainly have perished.

7. My parents and family for giving me support and encouragement, for understanding why I took so few holidays, and for sitting through many hours' explanation of electoral details.

8. ADDENDUM - OCTOBER 1995: Mr Robert Kingsmill and Mr Paul Noyelles, for scanning the hard copy of this thesis and providing me again with another disc version - almost three years after I originally erased or misplaced the original disc!

CONTENTS.

GLOSSARY OF TERMS

ALTERNATIVE VOTE (AV)

Voting system where one seat is filled by successively eliminating the lowest candidates and transferring their votes, until the highest candidate has over half of all the votes. Used for mainland Australian lower houses. A specific form of STV.

APPROVAL VOTING

First-past-the-post system, proposed for use in the United States, whereunder a voter may give one vote each to as many candidates as she likes, regardless how many are to be elected.

BLOCK VOTE

The most common extension of first-past-the-post to multi-seat elections. The voter must vote for no more (and, usually, no fewer) candidates than the number to be elected, giving one vote to each.

CUMULATIVE VOTE

First-past-the-post system where the each voter has a number of votes, or parts of votes (usually, one

for each seat to be filled and may divide these among several candidates, or cumulate them upon one, as she pleases.

ELECTORATE

A defined body of voters, who vote as one unit to fill one, or more, identical positions or seats. Usually defined on a territorial basis.

FIRST-PAST-THE-POST

Also called `plurality' or `simple majority'; any system whereby votes received candidate cannot be transferred to or pooled with other candidates, and where the candidates receiving the most primary votes simpliciter are elected, whether or not they polled a quota or majority.

HIGHEST-AVERAGE METHOD

Formula for allocating seats in a proportional representation system. Its result is the same as if each party's total is divided by one more than the number of seats already allocated to it, and the seats allocated one by one to the party showing the highest average as a result. Whenever a party is awarded a seat, its average (and therefore its chance of receiving the next seat) is reduced. The Sainte-Lague version modifies the original d'Hondt system by adding one-half instead of one to the party's total of seats, thus favouring smaller parties. Contrast the largest-remainder method.

LARGEST-REMAINDER METHOD

Formula for allocating seats under a proportional representation system. One quota is subtracted from each party's total for every seat awarded to it. Once no party is left with a full quota, any remaining seats are awarded one by one to the parties with the highest remainder.

LIMITED VOTE

First-past-the-post system where a voter must vote for fewer candidates than the number to be elected, giving one vote to each. Japan uses the extreme form of limited vote only one candidate may be voted for, even when three, four, or five are to be elected.

MONOTONICITY

Also called `positive responsiveness' the aspiration that increased support for a candidate (that is, a net increase in the number of voters ranking her higher, over those ranking her lower, in their preference order) should help, not harm, her chances of being elected. Violations of this monotonicity ideal are called `perverse'.

PAIRWISE COMPARISON

A method proposed by the French polymath Condorcet, wherein voters would rank all candidates in order of preference, and each candidate would be compared against each other in turn to determine which of the two was preferred by more voters.

PARTY LIST

Voting system where candidates nominate jointly as `lists' or blocs, each usually representing a political party; and votes, whether cast directly for individual candidates or for the list, are pooled so as to benefit all and only the candidates on that list. Each list is allocated its proportionate share of seats. In some versions, the candidates ranked highest on the list fill the seats allocated; in other versions, the voters can change which candidates are elected.

PREFERENTIAL VOTING

Voting system where the individual voter may rank some or all candidates in her own order of preference. STV, and AV in single-seat electorates, use preferential voting. (Note; in European party-list systems this has a different meaning, that is, of votes for individual candidates on a party list). Each preference only represents the vote at a particular stage; it is not a vote in itself, for ultimately it cannot help two candidates one ranked lower, the other higher against each other at the same time.

PYRRHIC VICTORY

Situation where a candidate gains enough votes to survive to the final runoff, but then loses to her main opponent, when an allied candidate could have defeated their common foe had she not been eliminated earlier in the count.

QUOTA

Maximum number of votes necessary to elect a voter has only one vote, the quota will be one-half of the votes in a single-seat electorate, one-third in a two-seat electorate, one-tenth in a nine-seat electorate, and so forth. A candidate may, however, be elected even if she has fewer votes than the quota. RUNOFF The final `showdown' between two candidates only, after any others have been eliminated (or already elected), for the last or only seat in an electorate.

SECOND BALLOT

Commonly used in France; if no candidate polls a majority of votes cast (in a single-seat electorate) on the first round, a second round of voting is held some days later, which only the highest candidates may contest; whichever polls the most votes is elected.

SINGLE TRANSFERABLE VOTE (STV)

Voting system where a candidate must poll a required quota of votes (one-quarter in a three-seat electorate, one-sixth in a five-seat electorate, and so on) to be elected. If any candidate is over the quota, her surplus votes are transferred; otherwise, the lowest candidate is eliminated and all her votes are transferred; this continues until the required number of candidates are over the quota. The term `STV' is usually reserved for multi-seat electorates; when adapted to single-seat electorates, it is called the Alternative Vote.

STANDING DOWN

Voluntarily withdrawing as a candidate from an election, in the hope that one's own voters will transfer enough of their support to another candidate to ensure her victory.

SURPLUS VOTES

Votes received by a candidate which are over and above the quota, and therefore are not needed to ensure that she is elected. In proportional representation systems, surplus votes are passed on to their next preference among the remaining candidates.

CHAPTER 1. INTRODUCTION.

In this thesis, I present and defend the following threefold argument;

1. that the Single Transferable Vote (STV) system is the best voting method available for allocating any given number of seats;
2. that STV compares favourably against rival systems, not only in terms of its own criteria, but also as judged against standards which its rivals also hold in common; and.
3. that certain anomalies in STV can either be defended on the basis of these standards, or else removed by appropriate modification.

My goal is to fill something of a gap in the literature on voting systems. At one extreme are abstract, algebraic schemata, as used by the `public choice' school [Bainbridge 1947; Black 1949a, 1949b; Brams and Fishburn 1984a; Farquharson 1969; May 1952; Murakami 1968; Riker 1982]. At the other are debates about specific electoral or constitutional reforms, located in a particular historical context [Best 1975; Bogdanor 1981; Campbell Savours 1989; Hermens 1984; Lakeman 1982; Ray 1982]. I hope to offer a contribution midway between these two poles.

First I will clarify what will be discussed. By `Single Transferable Vote', or STV, I refer to the system known in Australia as preferential voting. This encompasses its use both in single-seat electorates where it is more commonly distinguished by the name `Alternative Vote' (AV) [Aitkin 1985: 93; Black 1949a;168; Hill 1988: 247] and in multi-seat electorates. Indeed, one argument (discussed in Chapter 2) in STV's favour is its flexibility; the same system can be used to fill a single seat by majority vote, or to fill multiple seats on the basis of proportional representation.

I define as STV any voting system, whatever its details, that meets the following broad criteria;

1. Each voter may rank the candidates in the order that she herself prefers them.
2. Each vote carries an equal value, which is cumulated upon one candidate, or divided among several, in the way most likely to ensure that.
3. that vote helps to elect the candidate/s ranked highest by the voter, and.
4. no part of its value is wasted on any candidate whom it cannot help to secure election or avoid defeat.

All existing STV versions fit this definition, but rival systems whether first-past-the-post or party-list do not1 . However, while it is narrow enough to differentiate existing voting systems, this definition is also wide enough to allow for expansion and modification to the basic STV concept. This is important, because there are areas where STV could be improved, as will be discussed in later chapters.

As to what is the correct number of seats that each electorate should have, that is the subject of a long-running debate between opposing schools of political theory and practice [Bogdanor 1981; Chandler 1982; Duverger 1984; Hain and Hodgson 1982; Lakeman 1982; Hermens 1984; Wright 1980]. Single seats require a majoritarian or `winner-take-all' result; multi-seat electorates permit a proportional result.2

As a result, the question of number of seats (what Rae [1971: 16] calls `district magnitude') is entangled with deeper, value-laden questions decisiveness versus proportionality, integration versus diversity that have been thoroughly canvassed by others, and which I will not touch upon here. I intend to discuss only the voting system proper (what Rae [1971: 16] calls the `ballot structure' and the `allocation formula') used to distribute the seat(s) apportioned to an electorate. I will not discuss how many seats should be apportioned to an electorate.

By doing so, I hope to make the task of this thesis easier. The question of proportionality versus majoritarianism is the major stumbling-block to consensus in the electoral debate. The decisive question is the number of seats per electorate. Once that is decided, however, the question of how those seats should be distributed has a much clearer guidance. The question is no longer how closely seats should match votes overall, in the whole parliament, but how closely they can be made to match the seats available in that electorate. The main question of values has already been decided; if a polity opts for single-seat electorates, then it accepts the majority principle; if multi-seat electorates are chosen instead, then it is committed to the principle of proportionality. The choice has been made. What remains is the largely (though it would be rash to say wholly) technical task of working out the best means to that end.

To judge which of various alternative means is `best', I appeal to democratic first principles. Jefferson in 1776 expressed the ideal in familiar words; `Governments deriv[e] their just Powers from the Consent of the Governed'. `Governments' can also include private and voluntary associations that are organised to decide upon collective action; `powers' can include control of the fruits of collective action, not only the state's traditional monopoly of force. The question of voting is not confined to the nation-state and its sub-units.

More importantly, `just' and `consent' have quite specific meanings that point the democratic ideal in a particular direction. The first clearly imports the concept of legitimacy, or authority power with a

normative element added to the descriptive. And the second, `consent', implies a choice that is free and informed, that is, obtained without duress or fraud.3

Legitimacy is valued because it is necessary (though, of course, not sufficient) for collective action to prevail. Its normative deficit in the eyes of `the governed' can too easily become an obstacle in fact as the rulers of Eastern Europe found to their cost after 1989. For reasons both moral and utilitarian, governments need legitimacy. And legitimacy cannot be imparted without popular consent in some form. Ideally, consent should be fully free and fully informed. This ideal is accepted as a near-axiom today;4 any examination of voting methods must seek to maintain, or better to improve on, the progress made towards the ideal by Western liberal democracy in the late years of the twentieth century. The more free and informed consent that a government enjoys, the greater the legitimacy accorded to its exercises of power.

So far, so good; at the level of such general affirmations there in near-complete consensus in favour of the principle. But upon moving to a more specific level, differences in interpretation appear. Some interpretations (eg, Hitler's claim that the Volk's consent is derived from mystical ties of blood and soil, not through such dry, mechanical processes as voting) can clearly be ruled out of consideration. All modern democratic theories agree that consent and power, though vague abstractions, must be rationally and reliably linked.5 This requires concrete institutional devices through votes, seats, and parties. Parties receive votes, and are then awarded seats in such numbers that a party receiving more votes than another (or than itself on a different occasion) should not receive fewer seats. Most voting systems (even the winner-take-all versions)6 award seats somewhat more proportionally than this, but this basic minimum rules out, in principle, the more obvious absurdities.7

Furthermore, there is also a consensus in democratic theory and practice about how votes should be translated into seats within an electorate. Every voting system can be framed in terms of the following formula:

1. Divide the total of votes for all parties by the number of seats plus X,8 to give a quota.
2. Divide each party's total of votes by this quota to give a number of whole quotas, plus a remainder. (For a party with less than one quota, its whole total is its remainder).
3. Allocate one seat for each whole quota, and then for each remainder beginning with the highest, until all seats have been allocated.

Into this uniform basic formula, different voting systems interpose different interpretations of key variables, and this is where consensus ends. These variables are the following four, in descending order of importance. As used here, these terms carry a broader meaning than in the usual political, sociological and legal context.

1. The number of seats in the electorate. This, as stated above, is the most important variable, for it constrains the degree of proportionality attainable. The other variables (save the second, to some degree) are all subsidiary to this winner-take-all or a proportional basis. However, for the reasons stated earlier, this is ultimately a value judgement beyond the scope of this thesis.
2. The number of votes each voter may cast, relative to the number of seats in the electorate. Some systems (such as the single transferable vote) allow the voter one vote only, regardless how many seats are to be filled. Others (such as the `block vote') allow the voter one vote for every

seat.

Appearances can be deceptive here; although in some systems (eg, STV and cumulative vote) a vote can be divided among several candidates at once, what matters is whether the ballot's full voting strength can, if necessary, be cumulated onto one single party.9

3. What counts as a `party', for the purpose of this formula. There are three very different interpretations of this.

   ❍ In a first-past-the-post system, each single candidate is a separate `party'; votes given to one cannot be used to help to another.
   ❍ In a party list system, a `party' is a group of several candidates who have nominated jointly; votes given to one candidate must be pooled for the group as a whole.
   ❍ In a system of transferable votes (such as STV, or the French second ballot), a `party' is a group of one or more candidates who are ranked highest by the individual voter in her own order of preference.

   Furthermore, the second and third interpretations may allow `complex' parties to be formed, by combining other parties. In a list system several different parties may run `joint lists' to pool their combined votes; under a transferable vote system, a Liberal candidate, the Liberal team and the Liberal-National coalition may all be counted as a `party' for the purposes of the Australian Senate's STV voting system.

4. The number of preferences that may be specified for each vote. A `preference' (in the broader, untypical sense used in this formula) is distinct from, and subsidiary to, a `vote'; the latter can count to help two or more different parties at the same time, whereas a preference is only counted if it cannot help or hinder a candidate ranked higher.

Some systems (eg, the block vote) give the voter several votes, but only one preference per vote; others (eg, STV) allow only one vote, but several preferences for it.10 List systems also allow preferences, but these must go to all, and only, the other candidates of the same party. If the voting system counts preferences, then before allocating to the largest remainders any seats not awarded on full quotas votes can be transferred or pooled so as to consolidate several small remainders into a large remainder, or even another whole quota. This occurs under STV systems as `swapping preferences', under second-ballot systems as `republican discipline' [Campbell 1965: 87], and under party list systems as apparentement or `joinder' of lists [Milnor 1969: 55]. The rules specifying whether and how two or more candidates can combine their voting strength, through preferences, are directly linked to the definition of `party'.

Out of these combinations of variables, different polities have constructed a wide variety of voting systems. One conclusion drawn, and which can be logically proved, is that no particular system is perfect; every one contains flaws that violate one or more desirable principles [May 1952]. However, despite these logical defects, voting still goes on. The risk of illogical results is a necessary evil, justified by the benefits of collective action.

However, the legitimacy of a government can suffer if the voting procedure that chose it is shown to contain a defect. Not only do different voting procedures all violate one or more logical principles; they can also lead to very different results. Those who oppose the result reached might attack the system that produced it, on the grounds of its flaws; but if in turn they propose an alternative system,

one likely to give results more to their liking, it too can be attacked for its defects. Any voting system devised can be supported for its desired results and criticised for its demonstrable flaws.

This can reduce the legitimacy of the results reached. Legitimacy is necessary to get people to cooperate with collective decisions that they do not support; the result gains legitimacy from the process. The value of voting is that, even though many would disagree strongly with the results it produces (one British doctor committed suicide when a Labour government was elected in 1974), virtually everyone agrees that it is the only permissible process for reaching collective decisions. But this agreement is contingent upon the process appearing impartial and `end-independent', not `rigged' to produce pre-determined outcomes.

The fact that different systems offend against different principles might suggest that they are equally defective. But this need not be so. Rather than ask whether first-past-the-post's violation of the `Irrelevance' principle cancels out STV's violation of the `Monotonicity' principle (which, in this crude form, would be to compare apples and oranges), one must find a unifying principle that links these separate criteria, and that allows different violations of them to be measured and compared by the same yardstick.

This unifying principle is the basic purpose of elections to link power with consent, by means of votes and seats. This is the common ancestor to which all the offspring, despite their differences, pay tribute. Therefore, in choosing a voting system, we should look for that which most reliably ensures that (within the limits of each electorate) seats reflect votes, and that (without any limits that anyone is willing to state baldly) votes should reflect consent. More of one should mean no less of the other. This is the only `result' that everyone, whatever their different views, will accept as legitimate. And it is the only way to meaningfully compare different voting systems which proceed on opposing assumptions and which insert quite different variables into the electoral formula.

The first requirement stated, that seats should reflect votes, is one that every voting system satisfies on its own terms. Because first-past-the-post treats each individual candidate as a separate `party', and makes no provision for preferences, it is quite rational that it should award its seat to the highest remainder, if no party has a full quota (that is, to elect the candidate with a plurality, if none has an absolute majority) without any provision for other parties to aggregate their smaller surpluses and overtake it. Instead, the question is how well first-past-the-post's terms square with the broader, more fundamental principle that power should reflect consent.

The interpretation of the formula's variables has reached something of a stalemate as regards the conversion of votes into seats. Each side those who support first-past-the-post, party list, and transferable vote systems, respectively recognises only the validity of its own interpretation, and no consensus can be reached at that point.

However, moving a step back to the previous link in the chain between votes and consent one can find a near-complete consensus. All agree that votes should reflect the voter's consent. Indeed, first-past-the-post supporters criticise STV for counting second- and third-preference votes, because these do not represent `positive support'. More generally, there is consensus that a vote has less worth to us, it imparts less legitimacy, the less that it represents the voter's free, informed, and definite consent. Electoral officials spend hours counting thousands of ballot papers, while candidates and citizens wait

nervously for the result. But no one would go to such trouble if those ballot papers had been filled out at random (however legibly) by the five hundred proverbial monkeys locked in a room. Likewise, votes from a stuffed ballot box give little or no legitimacy to the candidate voted for, as Ferdinand Marcos found in 1986.

Such farcical or fraudulent methods are clearly outside the pale. But, even in systems with the best of democratic intentions, the voting system itself can exert a more insidious influence in the same direction. Because every voting system has its own anomalies, each can in certain circumstances reward insincere or `tactical' voting that is, voting for one candidate ahead of another whom the voter actually prefers more. Thus, how the person votes reflects and is distorted by factors other than whether she freely consents to that candidate. The incentive for tactical voting depends on how well the individual voter can guess how others are likely to vote. The disproportionality resulting from a small number of seats per electorate may be more significant, but at least it consistently favours the larger parties; whereas failure to obey the logic of tactical voting can deprive a larger group of voters of their due, and hand victory instead to a smaller but better-regimented group.

But though all systems can reward tactical voting, not all will encourage it; in some systems, the benefits are too minimal and outweighed by the advantages. Clear differences between different systems can be perceived, by both reasoning and empirical experience. Various systems all praise the ideal of positive votes; but some attain it with distinctly greater success than others. Therefore I will adopt this as the yardstick for comparing voting systems which otherwise, in their variables for converting votes into seats, are equally defensible in the eyes of their supporters. The degree to which a system encourages insincere or tactical voting will be used to `break the tie' between systems that are otherwise considered equal in their merits.

On this basis, I will proceed to examine whether one system, STV, least encourages tactical voting. In Chapter 2 I will present a prima facie case for STV on this basis, stressing two of its merits; its origins as a system consciously designed to spare voters the dilemmas of tactical voting; and its flexibility, which uses the same principle to fill any number of seats but does not give any greater incentive for tactical voting. Many arguments in STV's favour have been canvassed by others [Bogdanor 1981; Hoag and Hallett 1922; Humphreys 1911; Lakeman 1982; Wright 1980], but I do not intend to go over the ground already covered by them. Moreover, all of these writers support STV in its multi-seat form as a proportional system, instead of or even in opposition to its use as a majority system in single-seat electorates. By contrast, I intend to make out a case for STV generally, equally applicable to both versions.

In Chapters 3, 4, 5, and 6 I will examine four specific criticisms to which STV is vulnerable, and to which I do not think the traditional apologias of STV have paid enough attention. I will ask whether any of these defects is serious enough to warrant wholly scrapping STV, or whether there are ways to use STV while either living with or living without that defect. Chapter 3 focuses on a criticism usually made by practising politicians that STV accords too much weight to voters' later preferences; while Chapters 4 and 5 present criticisms from the viewpoint of those, usually academic theorists, who support Condorcet's principle and hold that STV accords too little weight to voters' later preferences. Chapter 6 examines a deficiency in STV's proportionality, claimed to make it inferior to d'Hondt party list systems. Finally, in Chapter 7 my conclusions are presented.

In choosing among voting systems, I will bear in mind how those systems will be applied in concrete situations whose precise circumstances are not yet foreseeable.11 Certainly, with the wisdom of hindsight we could pick out defects in any system; but the chance of each defect occurring must be kept in due perspective.12 The system chosen must be workable in practice, but not engineered to favour one side over another. As well as being unjust, attempts to do this can easily rebound on their architects.13 As Taagepera and Shugart counsel; `electoral systems should be designed with more than ten years in mind' [1989: 229].

CHAPTER 2. WHY FOCUS ON STV?

STV is only one of numerous species and sub-species of voting systems at use throughout the world. Moreover, its use in public elections is relatively rare. Outside Ireland, Malta, Australia, and some North American municipalities, it is rarely considered for serious contention, being trumped either by first-past-the-post (in Britain and its present and former colonies) or by party-list systems (in Europe and Latin America).14 Although STV has traditionally been considered the more `Anglo-Saxon' form of proportional representation [Butler, Penniman and Ranney 1981: 8, 20; Humphreys 1911: 198, 208; Milnor 1969: 74-5; Oliver 1983: 125; Rydon 1980: 384; Sharman 1982: 97-8], it is notable that more recent proposals to replace first-past-the-post systems in Britain, New Zealand, Guyana, South Africa and Sri Lanka15 have preferred party-list systems (additional-member versions modelled on the West German being particular favourites) [Baxter 1991: 8; James 1992; New Zealand Royal Commission 1986; Oliver 1983: 108-9; Rydon 1980: 384; Sykes 1990; Weir 1992: 217, 220]. STV has received little attention on the Continent [Campbell 1965: 45; Furlong 1991: 58; Lijphart 1992: 212; Sykes 1990: xi], despite some academic support [Van den Bergh 1955] and its use for some indirect elections to upper houses [Lakeman 1982: 63; Van Raalte 1959: 92].

By contrast, in Australia STV enjoys in either its single- or its multi-seat versions16 virtually unchallenged hegemony at federal, state and local level.17 The earlier discontent expressed by parties such as the ALP has died down, and the electorate has grown familiar with it. Proposals to substitute either first-past-the-post or party lists receive little support possibly because STV is seen as a compromise system that already embodies the best features of both [Oakes 1989: 31; cf Hain and Hodgson 1982: 3-4, 23]. Whatever the reason, STV is unchallenged as the principal electoral system used in Australia.

Why then am I arguing over it? In Australia STV faces no serious challengers; while outside Australia it is not a serious challenger. Either way, STV would seem to require no defence. However, I believe that such a defence would still have value, for four reasons.

(2.1) Political change.

The first reason is that the world electoral map can change greatly. Almost all Western European countries adopted party list systems between 1899 and 1920 [Carstairs 1980: 3]; Eastern Europe followed suit between 1989 and 1991 [Lijphart 1992]. While electoral systems typically become `entrenched', so that the initial choice is hard to overturn [Lijphart 1992; Nohlen 1984], this increases, not reduces, the value of a careful appraisal. Changes can occur rapidly in such times of upheaval and a new electoral system may, in its turn, become entrenched without adequate evaluation of its merits.

There is value in discussing such matters even or particularly at a time when they are not the stuff of front-page news; because when they are, time may be too short and the issue grown too heated to handle with the required delicacy. It should be noted, too, that both first-past-post and party-list systems face substantial criticisms in the countries that use them [Butler, Penniman and Ranney 1981: 20; Chandler 1982: 93] more, it seems, than does STV in Australia.

(2.2) Australian experience.

My second reason is that STV is often rejected on tenuous grounds. In US academia, for example, STV is usually dismissed out of hand because it allows the risk of a `non-monotonic' result; yet logical analysis, and Australia's experience, both show that this risk must be kept in its proper perspective. Indeed, Australia's experience with different forms of STV can give valuable lessons to the rest of the world. Australia is one of the few polities in the world where the voting system (as distinct from the electorate system, the question of multiple versus single seats) enjoys wide consensus [Jaensch 1991: 62-63]. The fact that STV is unchallenged in Australia can make an Australian perspective valuable, for it can demonstrate the acceptance in practice of a system that outsiders have rejected on theoretical grounds.

(2.3) Rationally designed, yet practicable.

STV was designed almost a priori with the deliberate intention of ensuring maximum range of choice for the voter and effectiveness for her vote. Other voting systems either evolved, gradually, with little change since medieval times,18 or were changed on an ad hoc basis to achieve desired goals (usually, proportional representation of parties) with minimal change to the existing system.19 STV was not so bound to the status quo; indeed, its original form proposed by Thomas Hare was far more sweeping and radical a change than the forms actually applied in Ireland and Tasmania some decades later.

This, in itself, is an important point to balance the first. Although designed rationally, STV has also been used in practice, and its modification tempered by experience.20 Other systems have been designed rationally, a priori, but have rarely if ever been used in practice, particularly in public elections. Condorcet's method, for example, of comparing each candidate against each other in a `pairwise comparison', has never been used by any state to elect officials (although it is echoed in the procedures of legislative bodies) [Bainbridge 1947: 421-22; McLean 1992]. Likewise, `points' systems such as Borda's have not been used for public elections (except in Austria and Norway, to choose candidates from party lists [Carstairs 1980: 93, 132]). Among the three systems used to elect governments, STV is the only one that was consciously designed afresh, while first-past-the-post evolved and party list was `bolted together'.

(2.4) Flexible.

The final reason why STV deserves attention is its near-universal flexibility. It can be used in public elections where parties compete, or in private elections with no parties at all [Hoag and Hallett 1922: 330-31; Lakeman and Lambert 1974: 123-127; Lakeman 1982: 51, 53]. It can be used in single-seat electorates to ensure a majority result, and in multi-seat electorates to ensure a proportional result. It lets voters support individual candidates, or parties, or both [Bogdanor 1981: 256-58; Oliver 1983:

122]. By contrast, no other system21 can claim such flexibility. The defenders of party-list systems do not suggest these be used to elect the local football-club executive; while many MPs who regard simple first-past-the-post voting as adequate for ordinary voters prefer more sophisticated methods to select their own party leaders.22 To justify this chopping and changing, the argument is made that

> It is not inconsistent to argue for one kind of electoral system in one country and a different one somewhere else; there are `horses for courses' in electoral systems as in much else. [Harrop and Miller 1987: 41-42; cf Pickles 1971: 115; Van den Bergh 1955: 46].

But this is a slippery slope that is dangerous to tread. Certainly the concrete means of applying a voting system particularly the arrangement of electorates cannot be fixed in the abstract, but must be adapted to each polity's own circumstances. But the less variation in either the basic principle adopted or its effect, the more legitimacy the result will enjoy. After all, different voting systems can give radically different results [Riker 1982: 233-35; Zaid 1984: 453]; if it is suspected that a certain system was selected for a particular election so as to give a desired result, then the legitimacy of that result is weakened.

Historically, cases where the principle is changed arbitrarily are vulnerable to suspicions of partisan `electoral engineering'. The French electoral law of 1951 is a notorious example, universally condemned [Finer 1961: 559; Knapp 1987: 89; Milnor 1969: 53-56; Riker 1982: 25-28; Hain and Hodgson 1982: 32; Van den Bergh 1955: 96]. In prescribing extreme proportional representation where the governing parties were weak while allowing winner-take-all where they were strong, it sacrificed uniformity of principle and thereby forfeited public confidence in the system's impartiality.

It is desirable, then, that the principle of the voting system be kept free of tinkering. But with voting systems other than STV, changing the scale of the election changes its character; even if the principle remains uniform, the incentives it offers the voter can vary markedly with the number of seats to be filled.

As explained in Chapter 1, the criterion to judge a voting system (given that other criteria produce a stalemate between the different schools) is that it not encourage insincere or tactical voting. STV gives no practical incentive for this in any case, whether the voter is confronted with a list of four candidates for one seat or forty candidates for ten seats; she merely ranks them in her own order of preference.

However, other voting systems place different incentives for tactical voting before the voter, depending on the number of seats available. If the principle of a party-list system such as Israel's is applied to fill a single seat, then the voter's task varies immensely. When 120 Knesset seats are filled at large, with the threshold only 1 per cent, then the chance of a vote being wasted is so minuscule that the voter can in effect vote freely for the party of his or her first choice. This is typical of party-list systems with a low quota [Cain 1978: 640; Catt 1989: 556-7; Sykes 1990: 53].

But if, as has recently been proposed, the Israeli Prime Minister were likewise directly elected by nationwide vote, the incentive would be in the opposite direction. With only one seat to fill, each `list' would consist of one candidate alone,23 and the candidate with the most votes (having both the highest

average and the largest remainder) would win. This would (as discussed in the next chapter) give minor-party supporters a very strong incentive to vote tactically. To give them the same range of choice as they had in the Knesset election, the principle of the system would have to be changed perhaps by adding a French-style runoff ballot, so that supporters of the Kach party could vote for Rabbi Kahane in the first round, but still support Shamir over Rabin in the second.24 In that case, supporters of small parties that fall foul of the 1 per cent threshold in Knesset elections could ask why they, too, cannot vote again among the remaining contenders. But either way, if the principle behind the voting system is not adjusted as the number of seats is altered, then the incentive it offers the rational voter varies greatly.

The same applies in reverse as the number of seats increases and not necessarily to reduce tactical voting, but to shift its emphasis. When one seat is to be filled and each `list' is a single candidate,25 the voter can accept or reject that candidate as an individual. However, when the voter is faced with a list of several candidates, perhaps several dozen, the risk increases that she may like some candidates on the list but not others [Milnor 1969: 84]. The voter must consider whether a vote for the list could, by increasing its total pool of votes, help elect candidates whom she dislikes. As a result, she may even decide to vote tactically for a different list whose `best' candidates she admires less but whose `worst' candidates she can better tolerate. Thus most party-list systems contain an incentive for candidates to stand as, and for voters to support, separate but homogenous lists instead of combined but heterogenous ones.26 .

Both first-past-the-post and party-list systems, therefore, confront the voter with incentives for tactical voting the former promoting integration, the latter promoting disintegration, but both perhaps contrary to the voter's real first preference as the number of seats is decreased and increased respectively.27 STV, on the other hand, has the same effect on the voter that is, a negligible incentive for tactical voting by applying the same principle to fill any number of seats.28

For example, the Constitution of the Republic of Ireland prescribes the same `system of proportional representation by means of the single transferable vote' to fill both a single Presidential seat by majority vote, and the several Dail seats in each constituency by proportional representation.29 Of course, details of application may differ (thus, in Australia, party-grouping and ticket-voting are prescribed only for Senate elections, not House of Representatives elections) but these do not impede the voter's freedom to vote her true order of preference.

Whenever the principle of the voting system has to be modified, there is always room for distrust and the suspicion that it is being manipulated. The change could be arbitrary; moreover, its direction might not be obvious (should first-past-the-post transform into the block vote, the limited vote, or the cumulative vote when used to fill several seats?).30 But if the principle is not adjusted, then the effect of the system the logic it imposes on the voter changes greatly. STV avoids this dilemma. It applies the same principle and imposes the same logic on the voter, to vote sincerely, whether to fill one seat or twenty. Conclusion. I argue that STV is worthy of support because it is unique in two areas. First, it has been explicitly designed to maximise the voter's choice, and the effect of that choice, yet has also been used in practice. Secondly, it is generally applicable to all kinds of elections, without either its principle or its effect on the voter changing as the number of seats available is changed; thus the adoption of an STV voting system will minimise the occasion to make potentially controversial choices about electoral laws.

Prima facie, then, a case can be made in favour of STV as the best voting system available [cf Milnor 1969: 86]. However, there are criticisms levelled against STV and claims of its superiority would be rejected by many politicians and political scientists. Many of these criticisms (ie, that it is too complex) have been addressed by others [Lakeman 1974, 1982; Bogdanor 1981: 250; Wright 1980], and I do not intend to re-cover the ground that they have already. I would like to focus, instead, on four particular areas where STV is vulnerable to fairly cogent criticisms, criticisms which do not appear to have been fully addressed by other works supporting STV. Sykes, for example, an advocate of the West German proportional system, attacks STV as

> ` not just cranky, but bad; irrational, insufferably complex, prone to lapses into absurdity, unreliable as a guarantee of proportionality...' [Sykes 1990: xii].

Black criticises it, albeit more temperately;

> ` the single transferable vote is largely a set of practical rules, without a unitary principle behind them...' [Black 1949b: 337; but cf Hill 1988: 252].

I will seek to answer such criticisms, to show that the defects concerned can either be justified as necessary to ensure the overall reliability of the electoral system, to live up to its core of common goals; or, better still, can be removed or mitigated by appropriate modifications. If this can be done, then the case in favour of STV will gain that much more added weight which may, in time, tip the balance in its favour.

CHAPTER 3. SHOULD PREFERENCES COUNT?

STV's most frequently criticised feature, and the major stumbling block to its being adopted by many polities that prefer first-past-the-post voting, is that it counts a voter's second, third, and later preferences among candidates.31 Such criticism is based on three grounds, each of which see first-past-the-post voting as better at upholding the democratic ideal of power and consent. This chapter will seek to answer each of the three, and to show in conclusion that preferential voting is the most reliable index of popular consent.

Grounds of criticism.

The first ground of criticism is that the logic by which first-past-the-post voting works is closer to the democratic ideal. This logic can be reduced to two principles:

1. A candidate who has the consent of more voters should not be defeated by a candidate who has the consent of fewer voters.
2. `Consent' should only be counted in its fullest form that is, as positive assent to the voter's first-choice candidate.

If the first principle alone were decisive, STV would actually trump first-past-the-post; for it can

ensure that the winning candidate ultimately has the consent of an absolute majority, not merely a simple plurality, of voters.32 But the second principle operates to disallow this; second, third (and, a fortiori, later) preferences should not be counted on an equal par with primary votes,33 for they do not represent the highest degree of consent; yet this is what STV does. Thus, STV is seen to violate the principle that more consent, expressed through more votes, should procure more seats, for STV may play strange tricks with the will of the people. A large number of MPs who come second in the preliminary count will be elected in the final ballot on the transferred votes of the candidate who came third. The constituencies in which they are elected will be represented by a member who is the minority's first choice. Victory for the second best is a very special definition of democracy. [Hattersley 1988].

Preferential votes are seen as undesirably negative, not positive; `The disliked candidate wins under STV, rather than the most liked' [Conservative Research Department 1991: 211; cf Aitkin 1985: 93; Campbell Savours 1989: 10; Thompson 1977: 171]. Following first-past-the-post's logic, second- and later-preference votes should not be accorded the same weight as primary votes, for they do not represent the same, highest degree of consent [Black 1949a: 169; Conservative Research Dept 1991: 211; Finer 1961: 553; Milnor 1969: 88; Pickles 1971: 126].

A second, related ground of indictment is that STV is a `device for the aid and comfort of minorities' [Milnor 1969: 69; cf Finer 1961: 554], at best over-lenient to small parties, and at worst giving them blackmail power. Because STV gives minor-party supporters `two bites of the cherry' [DLP 197?], it gives such parties a foothold on political power, because their preferences can decide which major party wins [Baxter 1991: 8; Finer 1961: 554]. Thus STV is criticised not only for favouring `second-best' candidates, but also for favouring what Winston Churchill called `the most worthless candidates' [Richards 1987: 403] for `giving parties who get the least number of votes the most power' [Jack Straw; Tribune, December 20, 1985]. Under first-past-the-post, the real question facing voters is which party will govern [Campbell Savours 1989: 12; Laughland 1992: 12]; minor parties too small to enter into this equation are an irrelevant distraction, and any votes cast for them are rightly forfeited as `wasted'.

The third criticism follows from this. Not only does preferential voting give pivotal minor parties a `blackmail' power far exceeding their electoral support [Rydon 1980: 380]; it also perpetuates their continued existence, thereby hindering the evolution of a two-party system [Barnett 1990: 5; Duverger 1984: 37; Hermens 1984: 22; Holme 1988: 131; Laughland 1991: 11-12; MacCallum 1989; Milnor 1969: 39, 46, 91; Pickles 1971: 127; Riker 1982: 88, 113]. First-past-the-post's supporters see this as undesirable. The more parties that can win votes and seats, the lower the chance that any one will win a majority of seats at any election and the greater the risk that a coalition will be formed through post-election deals in the proverbial smoke-filled rooms, with policies that nobody voted for [Butler, Penniman and Ranney 1981: 18; Chandler 1982; Conservative Research Dept 1991: 219, 221; Duverger 1984: 33; Hain and Hodgson 1982: 10, 18-19, 21; Laughland 1992: 11-12; Oliver 1983: 109; Pickles 1971: 131; Weir 1992: 215]. This detracts from the ideal that popular consent to government must be free and informed; for in such a multi-party situation, the voters were never informed about the coalition government that would emerge from their voting.

These criticisms, then, can be summarised as follows; STV (a) allows the election of second-best candidates, lacking positive support; (b) gives small parties too much influence; (c) promotes multi-

partyism, thereby risking coalition governments being formed without the voters' consent. I will now discuss each in turn.

Are `second-best victories' likely?

The following example, cited by Jaensch [1991: 49-49], might almost seem constructed deliberately to illustrate the strange results that STV can give:

```
Example 3.1.
House of Representatives electorate of MacMillan, Victoria,
1972
Parties Primary votes 2nd count 3rd count 4th count
Labor      22 802     (45.8%) 22 987 23 173 23 709 runner-up
Liberal    12 025     (24.4%) 12 835 13 226 eliminated
Country    8 282      (16.6%) 10 262 13 406 26 096 ELECTED
DLP        3 583      (7.2%)   3 721 eliminated
Indep.     3 113      (6.3%)    eliminated
```

This result saw a candidate with almost 50 per cent defeated, by a rival with only just over one-third as many primary votes not merely a `second-best' but a `third-best' victory.

However, such freak results must be kept in perspective. Under STV, the chance of a candidate gaining election despite low primary support is quite small.34 Most Australian House of Representatives electorates, except during the Democratic Labor Party (DLP)'s heyday, are won on primary votes with no distribution of preferences [Butler, Penniman and Ranney 1981: 20; Hughes 1984: 226; Lijphart 1990: 495; Milnor 1969: 68-69; Ray 1982: 140; Rydon 1980: 379]. Joan Rydon has estimated that, even when preferences were counted, these defeated the plurality winner in less than 7 per cent of contests from 1910 to 1951 [quoted in Milnor 1969 69]. Even the Australian Democrats' recent rise has not greatly changed the latter aspect, as Democrat preferences divide relatively evenly about 60-40 between Labor and the conservatives [Barnett 1990: 5].

This is confirmed by other experience with STV, both in single- and in multi-seat elections. In the Republic of Ireland;

> `First-preference votes are very predictive of the ultimate outcome of elections. Over the three elections studied, only 8.1 per cent of the individuals elected would not have been elected under a simple plurality rule applied to first-preference votes.' [Engstrom 1987: 130].

Similarly, an analysis of the Isle of Man's first election under STV showed that every candidate elected would have also been elected under the old first-past-the-post system [Richards 1987: 403].35

Although some critics of STV use this to attack the system, arguing that the repeated counts and transfers of preferences are therefore unnecessary [Milnor 1969: 69; Sykes 1990: 19], the better view is that justice must not only be done, it must be seen to be done.

Would preferential voting work similarly in, say, Britain? Despite the common assumption [Butler and Kavanagh 1988: 335; Campbell Savours 1989: 11; McGuinness 1992b; Platt 1992c: 6; D.E. Simon, letter in Guardian Weekly April 25, 1992] that under STV36 all opposition parties in Britain would combine their votes into a solid anti-Tory bloc,37 it is more likely that many minor-party supporters' preferences would `leak' to the Conservatives [Baxter 1992: 12; Dunleavy, Margetts and Weir 1992: 16; Johnson 1992: 26]. Rather than their uniformly favouring Labour ahead of Conservative,

> ` the available polling evidence suggests that, if forced to choose, they divide down the middle, without any great enthusiasm for either.' [Kellner 1987: 9; cf Butler and Kavanagh 1988: 82, 98].

The chance of a `second-best victory' decreases further when preferences are optional. In Australia, the conservative parties38 attack optional-preferential voting as a `de facto first-past-the-post system' [Livingstone 1992]; in other words, they believe that Liberal and National voters would not support each other's candidates unless the voting system forced them to. But such partisan considerations cannot override basic questions of democratic principle; and if voters are forced to record preferences for candidates they do not support, then their consent is both less free and less informed. If preferences were optional, then they

> ` would finally realise their claimed rationale as thoughtful indications of voter sentiment. The loss of votes exhausted during election counts would be more than compensated for by the increase in formal votes.' [Ray 1982: 140] 39

Overall, then, STV can be seen as striking a good balance between the `lukewarm majority' and the `committed plurality' because, although the system

> has managed to maintain the principle that the first votes are the most important, an unpopular candidate can still be thwarted if a large majority put him at the bottom of their list. [Richards 1987: 403].

Are `second-best victories' a defect of STV? However, the infrequency of preferences altering the result in practice still does not, of itself, justify them in terms of principle. For if first-past-the-post logic still stands, then preferences are (like the Abbe Sieyes' second chamber) superfluous if they confirm, and obnoxious if they override, the primary-vote result.

However, closer examination shows that first-past-the-post's logic is untenable, even in principle, because it is self-defeating. The two conditions that it posits are not complementary as they may first appear; in fact, the first is so strong that it can easily distort the second.

For it has long been observed, both in theory [Tullock 1992: 226] and in practice [Butler and Kavanagh 1988 4, 97, 266, 335-341; Johnson 1992: 26; Mitchell 1987: 9; Platt 1992a: 5; Weir 1990: 8], that first-past-the-post voting gives a powerful incentive to tactical voting. Precisely because second and later preferences are not counted, a vote is wasted if it is cast for a third- or lower-placed candidate when it could have made the difference between the top two contenders. The rational voter, then, does not vote simply for whichever candidate is ranked highest in her preference scale, but for

whichever she prefers out of those with a chance of winning. Her vote, then, might not be an indication of positive consent. It may be a very negative and half-hearted consent, influenced by other factors for example, the voter's guess as to how others in the electorate are likely to vote [Buchanan 1983: 8-9; Georghiou 1989: 20] that are simply not relevant to the voter's proper role in the electoral process, which is to render a value-judgement as to her consent to candidates and parties.

The supporters of first-past-the-post do not deny that this behaviour is rational (at least in the short term) and does occur. But they usually praise it for its benefits in promoting a two-party system, without addressing the implications of this factor for first-past-the-post's claim to secure more positive consent;

> `Most voters realise that a ballot for a third-party candidate is likely to be thrown away, and thus pick one of the two major candidates even though he is not their first preference.' [Time May 4, 1970: 22 emphasis added].

The fact that some voters ignore the stimulus of first-past-the-post and continue to `waste their votes' on hopeless candidates masks the fact that others have voted tactically. First-past-the-post puts a heavy premium on tactical voting, which means that votes might indicate not genuine consent but grudging acquiescence and blind guesswork. As a result, `no member of Parliament can know that even those who voted for him truly wanted him' [Buchanan 1983: 10]. If votes cannot be relied upon to ensure genuine consent, then the democratic ideal of reliably linking power with consent is hindered:

In a fair electoral system, it would be the very antithesis of democracy to suggest that candidates should not stand, or electors vote, for the party of their first preference. [Platt 1992b: 5].

But this aspect of first-past-the-post not only falls short of this general ideal; it cannot even ensure its own goal of `count[ing] first preferences only' [Dunleavy 1988: 13]. Because this also creates the risk of a `wasted vote', and thereby creates an incentive for tactical voting, it defeats its own purpose. Unless voters are to be deceived40 (for example, invited to rank candidates in order of preference, but then having only the first choice counted), then reliable first preferences cannot be elicited under first-past-the-post.

Therefore, not all votes cast under first-past-the-post can be claimed as `positive' support. An indeterminate number are given to the major-party candidate who is only the second choice, or indeed the second-last choice, of the voter. Like STV, first-past-the- post can produce its own version of `victory for the second-best';

> For 2 years Cyril Smith has been [a British Liberal] MP, despite bigger local support for Labour, because, as he puts it, in Rochedale `the real question is how many Conservatives vote Liberal to keep Labour out' [Roth 1992: 26].

In light of this, first-past-the-post satisfies its own logic no better than does STV. At least STV counts later preferences as such, not disguised as first preferences, so that their number can be reckoned openly; it proceeds by an open process of eliminating the lowest candidates and redistributing their votes unlike the `invisible runoff' of first-past-the-post, with its manoeuvring and guesswork [Holme

1988: 132]. By contrast, first-past-the-post lumps together both first-choice and lesser-evil votes, then counts them all as `solid, rather than loaned, support' [Georghiou 1989: 20-21].

Moreover, STV at least counts the second preferences of all supporters of hopeless candidates; whereas first-past-the-post rewards those who disguise their second-preference votes as first-preferences, while disadvantaging others who do what the system encourages yet penalises that is, voted for their true first preference.

The choice between first-past-the-post and STV, then, is not between `positive' pluralities and `second-best' majorities. It is between two systems that both ensure a winning candidate is elected on a plurality with the help of voters who do not rank her as their first choice which supports Taagepera and Shugart's claim that `polities with different electoral systems learn to achieve the same goals by different means' [1989: 218].

The only real differences are two: (i) STV ensures that, where possible, the plurality is also a majority, and therefore so large that no other plurality could be assembled to `trump' it; and (ii) STV lets voters and candidates know which votes really are positive expressions of support, and which merely consider that candidate a lesser evil. On balance, then because the second principle of first-past-the-post's logic must be abandoned as self-defeating only its first principle is left standing, and on this count STV is superior; an absolute majority however composed fulfils this principle better than does a simple plurality.

Is approval voting any improvement?.

It is appropriate at this point to deal with one recently-proposed system that is claimed to remedy the defects of first-past-the-post voting, yet without counting preferences as STV does. Approval voting is also a form of first-past-the-post, but modified to allow voting for more (or fewer) candidates than the number to be elected. In a single-seat election, then, a voter can approve one, two, three, or more of the candidates at once. Thus, the supporter of a hopeless candidate can still vote her first choice, but also give a second vote to the major candidate whom she considers the lesser evil. This system is claimed to be superior to STV because.

> it is simpler; it is monotonic; it is more likely to elect a Condorcet candidate, preferred by a majority over each other candidate; and. candidates are not seen to be elected on low preferences. [Brams and Fishburn 1984a; New Zealand Royal Commission 1986: 31].

However, each of these three claims can be refuted, and STV's superiority over approval voting established.

The apparent `simplicity' of approval voting masks the familiar tactical voting dilemma for the voter, compounded by extra complications. Voting for too few candidates may `split the vote'; but also, voting for too many candidates may result (as can first-past-the-post for multiple seats) in a candidate being defeated by the second preferences of her own supporters [Lakeman 1982: 24, 51].

STV's single vote per voter is not, as some claim [Sykes 1990: 2] a `bizarre limitation' on one's voting power, but a protection against this danger. The most rational course is to cumulate all of one's voting strength on a small number of candidates at once the minimum number that one's group is likely to elect.

The monotonicity of approval voting is superficial only, as with any other first-past-the-post system. As discussed more fully in Chapter 4, the real measure of monotonicity is how well voting sincerely according to one's preference order will maximise satisfying that order. STV may result in a candidate losing to an ally because of sincere voting; but it will not unlike a first-past-the-post system result in both candidate and ally losing to their common enemy because of it.

The election of a Condorcet candidate is merely hypothetical. First, deadlocked `cycles' can occur where, like the stone-scissors-paper game, no candidate can trump all of the others [but see Feld and Grofman 1992]. Second, elections based on the Condorcet principle could encourage voters not to give second or later preferences, as these could help defeat their own first preferences. For example; in a typical Australian electorate, a Democrat candidate would defeat Labor (on Liberal preferences) in a pairwise contest, and would vice versa defeat a Liberal on Labor preferences. However, this merely makes it in the Labor voters' interests not to give the Democrat their second preferences. This would mean that the Liberal now defeats the Democrat; a `cycle' has arisen, and to resolve it some other method must be resorted to, in which Labor having a higher primary vote could have a better chance than the Democrat would.

So, while criticisms of approval voting and Condorcet systems usually fear these may unfairly favour a `widely acceptable (if often uninspiring!) candidate' [Harrop and Miller 1987: 51; cf Hill 1988: 265, 273; New Zealand Royal Commission 1986: 32], it is more likely that voters would simply `plump' for their first preference among the best-placed candidates,41 rather than risk their later preferences being counted as votes against her [Rapoport and Felsenthal 1990; cf Shocket, Heighberger and Brown 1992: 526]. If most voters do this, which is the rational option for supporters of any large party, then approval voting would revert back to simple first-past-the-post.

Merely because all votes are cast as equal, unranked approvals does not mean that they all represent an equal preference [Hill 1988: 245, 247-48, 274; McLean 1986: 155]. As the New Zealand Royal Commission stated; `The fact that a voter is unable to indicate gradations of approval for candidates does not mean all candidates are equally ranked' [1986: 32].

Minor parties.

It might be contended that parties too small to win seats, and voters imprudent enough to support them, deserve to have their vote either wasted (if their supporters vote sincerely) or `squeezed' (if they vote tactically). This implies a belief that larger parties are morally preferable to small parties, and that it is good for the voting system to count only votes cast for the former [cf Finer 1961: 557].

But parties can change from `large' to `small' status so often that no firm criterion of desert can be drawn on this basis. One Welsh Nationalist MP mentioned a constituency where we lost our deposit in 1966, and won the seat in 1974. Parties can grow from small bases, and we should not be in the

business of taking a steamroller to crack small nuts, in case they grow into big oak trees that threaten the government. [Quoted in Cole 1992: 84].

Likewise, if Queensland used first-past-the-post voting it could not be claimed that a vote for a National candidate in Kenmore or Hamilton is less `serious' or worthy of consideration, merely because the National Party will not poll highly in that area, than a vote for the same party in Roma or Cape York.

Moreover, first-past-the-post inflicts the sorest injury, not on parties so small that the votes they draw would not change the result, but on parties that draw a large enough number of votes to spoil their allies' chances [Cole 1992: 88].

Nor should it be forgotten that minor parties, like independent candidates, still have power to swing the result even under a first-past-the-post system, if they represent `that small central tranche of the electorate whose votes could go one way or the other' [Malcolm 1991: 6]. Platt [1992b: 5] comments on Labour and Liberal Democrat candidates who could not win, but could split the vote in their constituency; `Between now and polling day, they have the power to change the face of Britain.' Similarly, in relation to the recent US Presidential election Allison [1992: 36] asks:

> ... Will senators, governors and congressman who are up for re-election turn their guns on [Ross] Perot, when his independent voters will be in a position to make the differences in their own races?.42

Small parties, then, do not deserve to have their votes thrown away; and in practical terms, they can bargain with their voting strength under any voting system. First-past-the-post does not prevent them from doing this if they are willing to vote tactically for candidates not their real first preference [Lakeman 1982: 162; Wilson 1982: 21].

Coalitions and consent.

A coalition will only be necessary if minor parties win seats as well as votes. Now, STV allows ways to prevent such parties winning seats - most importantly, by fixing small district magnitudes, with resulting high quotas [Rae 1971: 38, 140: Taagepera 1989]. This is much less draconian than first-past-the-post, which constrains small parties even from winning votes from those who support them.

But small parties (like the British Liberals) may still be within striking distance of winning seats even in single-seat electorates, with the possibility of their winning a balance of power in an evenly-hung Parliament. Now, first-past-the-post indisputably reduces the likelihood that two parties which did not campaign as a coalition during the election can win a majority of seats between them and form a coalition after the election. After Britain's 1974 election, for instance, `with 60% of the vote between them, Ted Heath and Jeremy Thorpe were unable to command a majority in the House of Commons' [Alliance Action Group for Electoral Reform 1986: i].

The reason for this is not clear; if two parties campaign as separate entities, then absent spontaneous tactical voting, unlikely to happen unless the party leaders actively urge their supporters to do so they

will split their combined vote and hand victory to their common enemy. A coalition of parties is unlikely to succeed unless it forms a united front, and this must be done before, not after, the people have voted. Otherwise the electorate could be saddled with a coalition government, formed after the election, which they had not voted for. Tasmanian Premier Robin Gray, upon his being ousted from office, argued that his Labor and Green Independent opponents

did not go to the people as one, and every Tasmanian knows it. They went to the people as two separate parties, giving separate pledges to them. [Mackerras 1989: 19].

This is seen as morally wrong, violating the requirement of informed consent, and first-past-the-post is praised for making it practically unlikely.

However, the corollary of this principle that first-past-the-post ensures near-certain defeat for parties that campaign separately is not that coalitions are impossible under that system. Instead, it means only that coalitions among different parties and politicians must be formed in advance of the election, so that their voting strength is combined rather than split. For example, since the 19th century the Conservatives and Unionists in Britain had a long-standing arrangement of this kind [Drucker 1979: 11; Heffer 1992: 6; McLean 1980: 4]. Likewise, coalitions of different parties have won elections under first-past-the-post (eg, Queensland, 1957; India, 1977; Fiji, 1987).43 In post-war Britain, `standing-down' arrangements between the Liberal and Conservative parties operated, officially or not, in a number of constituencies [Evans and Taylor 1984: 258; Roth 1992: 26]. More recently, the Unionist parties in Northern Ireland formed an electoral pact following the Anglo-Irish Accord [Butler and Kavanagh 1988: 98, 230; Cole 1992: 89]; and, on the mainland, opponents of Conservative rule have proposed some central arrangement on the lines of the Gladstone-Macdonald deal of 1905 trading seats for Labour in the Northwest and East Midlands, against seats for Liberals in the Southwest. [Mitchell 1987: 6]44 . Under first-past-the-post any such co-operation between parties under first-past-the-post must take the form of an `electoral pact', whereby they avoid contesting the same electorates lest they split their combined vote [Rothwell 1992b]. The need for such co-operation ensures that the coalition must be constructed well in advance of the election; `once constituencies have chosen their candidates, it's too late' [Johnson 1990: 13]. The logic of electoral pacts therefore ensures that the electorate's consent to government by that coalition is informed. But it also sacrifices another important principle that consent should be free.

`Free' is a broad term, but it has a definite spectrum. Elections in which only one candidate is allowed to run (familiar from the former Soviet Union and in some African states today) are not considered `free' at all by our standards.45 Elections in which (as in Indonesia) only certain parties are `licensed' by the government, and others prohibited as subversive or superfluous, we consider less than adequately free, and therefore objectionable.46

The same criticism can be made of the subtler constraints of choice imposed by the first-past-the-post system. The moral objection is that such `cosy arrangements' in effect let `political machines determine for whom the people have the right to vote' [Lynton Crosby (State Director, Queensland Liberal Party), letter in Courier-Mail June 17, 1992], and deny the voters a chance to `cast a positive vote for what they believe in' [Georghiou 1989: 21]. Moreover, with only a single coalition candidate per electorate, there is no way for voters to show whether they approve of the arrangement which the party leaders have negotiated [Lakeman 1982 4]. The voters' choice of the coalition is certainly informed; but,

because of the electoral pact necessary, their vote for the coalition is very far from free [Bogdanor 1981: 252-53]. Furthermore, on the practical side, that holding together `mathematically constructed pacts and alliances' [Rothwell 1992] can be unfairly difficult, even for parties that are close together ideologically [Evans and Taylor 1984: 258; Platt 1992b: 5]. Parties may be quite willing and able to work together but less willing to sacrifice their own chance of winning votes and seats; this is, after all, the very reason why people form and join political parties [Bogdanor 1981: 245, 252; Lakeman 1982: 4]. Even if the party organisation manages to reach an agreement, local branches or candidates may refuse to cooperate [Andrew Coulson, letter in New Statesman & Society April 17, 1992; James Connell, March 27, 1992], the Unionists in Northern Ireland being a recent example of this [Butler and Kavanagh 1988: 230].

As a result the consensus is that, despite their rationality under first-past-the-post, electoral pacts are `wrong in principle and do not work in practice' [British Labour leader John Smith, quoted in Heffer 1992: 6]. Evans and Taylor conclude that, even if successful in the short term, `all electoral co-operation is chronically prone to internal tensions and breakdowns [I]t is unlikely that both parties can derive an equal benefit; one party rapidly becomes resentful' [1984: 257, 258]. A coalition of parties capable of co-operating in government (as the Liberals and Nationals did in Australia from 1949 to 1972) might suffer artificially heavy strain if the voting system forces them to compete, not co-operate, at the electoral level [Bogdanor 1981: 244-5].

STV, by contrast, enables each party in the coalition to offer its own candidate in every electorate.47 Provided their later preferences flow consistently to their coalition partners, the combined vote need not be split. Moreover, the voters' allocation of preferences enables them to show whether they approve of the coalition or not [Bogdanor 1981: 245, 252, 1991: 29; Lakeman 1982: 161]. In STV systems like Eire and Australia, the exchange of preferences between coalition partners is a two-way process of interaction, whereby the party leaders propose and the party's voters ratify the exchange.

To be most effective, a `preference swap' agreement should be in place before the election; this would ensure that the voters are informed about the possibility of a coalition. But because voters can still choose freely among each party's candidates and can demonstrate whether the allied parties' candidates are their next preference, the coalition will also have the free consent of the voters. Granted, each party's allocation of preferences does involve `uneasy compromises between principle, expedience, and convenience' [Barnett 1990: 4] but the voters remain free to accept or reject the arrangement, which they cannot do under first-past-the-post if an electoral pact has prevented their first-choice party from standing in their electorate.

Conclusion.

First-past-the-post bases its critique of STV on three main grounds, yet in all three areas STV can be defended. As for ensuring that the candidate with most support wins and that only positive support is counted, STV achieves the first goal better and the second no worse than does first-past-the-post. As for pandering to minor parties, STV merely ensures them their due, which they could obtain anyway if they voted tactically under first-past-the-post. And as for avoiding coalitions being formed without the voters' consent, STV ensures almost as well as first-past-the-post that this consent is informed, and it ensures much more reliably that this consent is also free.

Overall, then, STV stands vindicated, notwithstanding that its logic differs from that underlying first-past-the-post. The next three chapters will examine accusations that STV fails to satisfy its own logic.

CHAPTER 4: THE RISK OF `PYRRHIC VICTORY'

One potential defect of STV has rarely been raised as a criticism against that particular system.48 This is curious, considering both the thorough canvassing of other anomalies in STV, such as non-monotonicity (see Chapter 5), and the greater potential harm possible under this particular defect. However, this defect has been noted in connection with other voting systems that function similarly to STV, and I will show that STV is vulnerable to it as well. I will then proceed to suggest a possible remedy.

For want of any conventional term, I have labelled this phenomenon `pyrrhic victory'. The following model (simplified, but realistic) illustrates why this term is an appropriate:

```
Example 4.1
PARTY           PRIMARY VOTES           FINAL COUNT
Labor           45%                     + 7%  = 52% elected
Liberal         27%  eliminated
National        28%                     + 20% = 48%
```

In this case the National came second and the Liberal third, so the final runoff was between Labor and National. Most of the Liberal preferences went to the National, but enough `leaked' to the Labor candidate to give her victory.

However, had the National polled fewer votes (or even organised some of her own supporters to vote Liberal instead) then she and her supporters could have achieved a result preferable to them that is, victory for a compatible ally rather than an opposing enemy.

```
Example 4.2
PARTY           PRIMARY VOTES           FINAL COUNT
Labor           45%                     + 3% = 48%
Liberal         28%                     + 24% = 52% elected
National        27% eliminated
```

The Nationals' achievement in outpolling the Liberals was only a `pyrrhic victory', one that actually ensured their defeat. Given that they could not win,49 they would have been better off (in terms of seeing their second- instead of their lowest-preferred candidate elected) had they not outpolled the Liberals. They survived until the final runoff, but at the expense of an allied candidate who would ultimately have stood a better chance.

Such a result is quite conceivable where different parties in a coalition officially exchange preferences, but cannot discipline their voters not to leak to the other side particularly if the degree varies among the parties. For example, in Queensland,

> National Party voters are traditionally highly disciplined in allocating preferences to their sometimes uneasy bedmates, the Liberals; whereas in recent years a large slice of the Liberal preferences have leaked to Labor. [Livingstone 1992].

The same aberration has been noted in the USA. US voting is first-past-the-post,50 but takes place in two stages; first, a primary election confined to candidates and registered voters of each party, to choose the candidate of each party; and second, the general election, involving a single candidate from the (usually) two main parties. The primary election contest within each party is notoriously intense, almost like a general election campaign, as different candidates' factions compete for the coveted nomination. However, once one contender is selected as the party's standard-bearer, the rest of the party usually unite behind her and work to help her defeat the other party's nominee in the general election.

The problem is, however, that a candidate who can win a primary election covering one part of the political spectrum might go down to defeat when she faces the whole electorate. Voting for such a candidate in the primary, even if she is one's first choice, might ruin the party's chances for the general election [cf Riker 1982: 145-151]:

> Goldwater and McGovern were ideological extremists thrown up by the mechanism of the nominating system, which means obtaining not a majority of the [whole] electorate, but a majority of a rough half of the electorate. [Hodgson 1984: 204] 51

Similar tactical problems bedevil the second ballot system, used in France and some other European countries. A voter might choose her favoured candidate on the first ballot, but find on the second ballot that that candidate simply cannot win. In many second-ballot systems, such as the French before World War I, the rules governing candidature at the second ballot were lenient. Candidates could even enter the second ballot who had not stood at the first, and this was used on occasions to introduce compromise candidates when, the results of the primary round showed, none of the first-round contenders was likely to attract the necessary majority [Campbell 1965; Lakeman 1982].

However, this freedom of candidature has over time become more restricted. Under the current French system, only parliamentary candidates over a minimum threshold of votes (originally 5 per cent) may proceed to the second round [Fisichella 1984: 182, 189; Milnor 1969: 49; Roberts and Lovecy 1984: 63]. For Presidential elections, the rule is even stricter; only the two highest candidates from the first round can contest the runoff [Campbell 1965: 149]. However, one of these two may voluntarily withdraw and thereby allow the third-highest to compete instead. Likewise, in parliamentary elections candidates entitled to contest the second ballot may also withdraw, and throw their support instead behind another candidate better-positioned to win.

The other candidate supported need not be the highest in first-round votes. Indeed, arrangements are often reached whereby different parties agree to `stand down' for each others' candidates in different electorates, even if the first outpolled the second in the first round [Fisichella 1984: 185, 189].52

This right of a candidate to `stand down', in favour of a lower-polling ally who is better-placed to win, gives the second ballot more flexibility in this particular regard than STV (and US-style primary

elections). However, under the second ballot it can only be estimated, not known for certain, whether the candidate standing down really would have been defeated in the runoff. Voters express their preference only among those candidates who actually survive to the second round. They cannot, as they do under STV, specify their complete preference order among all candidates, which could show for certain the result of a pairwise contest between any two candidates. Moreover, in France the usual reason given for these `bargained withdrawals' is providing balance among the different parties in an alliance, so that each wins some representation on the second ballot [Fisichella 1984: 185, 189]. Avoiding a `pyrrhic victory' is rarely cited at least publicly; no doubt a candidate standing down would prefer to present herself as magnanimous rather than unelectable.

The second ballot, as it works in France, has an advantage over STV in that candidates can withdraw voluntarily rather than proceed into a runoff that they are not likely to win. But if STV were modified along similar lines so that the candidate defeated on the final count can then `stand down' (voluntarily, or automatically), so that the count is re-run from the beginning with her votes allocated among candidates originally eliminated earlier in the count then it would combine the advantages of both. For it would let a candidate know, before she stands down, that she does indeed have no hope of victory. She need not, as under the second ballot, merely guess at her chances.

For example, in the above illustration the National candidate, upon learning of her defeat, could withdraw; if the votes were re-counted, the National preferences could then give victory to the Liberal. Of course, a recount would be necessary only if the candidate(s) standing down had enough votes to potentially change the outcome.

However, this is vulnerable to criticism on two grounds. First, this right to stand down might be used tactically by the losing side. For example, if at an election Labor won a majority of seats but depended in most electorates upon Democrat preferences, then the losing Liberal and National candidates could take vengeance for their defeat by standing down, and thereby triggering a recount, in every such electorate. If their own preferences favoured the Democrats over Labor, this could convert a Labor victory into a `hung Parliament'. By the same token, Labor could take similar revenge after a victory for the conservative parties. The winning party would be at the mercy of preferences not just those of its own allies, as under traditional STV, but also those of its opponents.

The second ground of criticism is related. A procedure for standing down would assist the election of `Condorcet candidates', who can defeat the other contenders (or, at least, the plurality winner) in a binary `single combat'. But while Condorcet winners might be `everybody's second choice', they might also be `nobody's first choice' [Lakeman and Lambert 1974: 72, 296] especially if they are centre candidates in a bipolar party system.

In most Australian elections, for example, the Democrats would receive both Labor and Liberal preferences [Barnett 1990: 5] if they survived to enjoy them. But in the typical single-seat contest they are eliminated early, since their primary vote falls far short of the quota.53 A procedure for standing-down could, however, over-compensate in favour of these parties, for whichever side won they would be used as `pawns' by the losing side to deprive the winners of their victory. However low their primary vote, they would enjoy excessive power.

Notwithstanding these defects, there is still a need for some right of standing down. In cases where two

parties contest the election as a coalition, formed in advance and with a defined common platform, then the arguments given in Chapter 3 would apply; by competing together, and offering the voters a wider choice, they should not spoil their own chances.

One should distinguish between an `opportunistic' standing-down, where the small centrist party is used as a pawn by whichever side loses, and a `principled' standing-down, where two or more parties (like the Liberals and Nationals in Australia, or the Centre and Gaullists in France) form a common front against their common enemy. I submit that the second should not be permitted, but the first should, in the interests of fairness.

The problem lies in drawing a workable distinction between a `principled' and an `'opportunistic' coalition between parties. One might, for example, try to define the distinction according to whether and how much the two parties swap preferences. It would then be valid for a National to stand down for a National, for instance, because most Liberal preferences would favour the Nationals over Labor, and thus reciprocate the favour; but a National could not stand down for a Democrat, because over half of Democrat preferences (about 60%, according to Barnett [1990: 5]) favour Labor. The Democrats cannot be seen as `coalition partners' or allies of the National; a National standing down for a Democrat is merely using her as a pawn against Labor. To use the Democrats cannot be seen as `coalition partners' or allies of the National; a National standing down for a Democrat is merely using her as a pawn against Labor. To use the French analogy; if the result of the runoff were not known, but could only be guessed, then a National might stand down for a Liberal but would not stand down for a Democrat.

However, it is very difficult to devise a rule based on flow of preferences that would be fair in principle and easily administered in practice. I propose, then, a simpler, perhaps cruder, but more workable formula: If the runner-up candidate stands down, then a recount will be held, but the winner on the original count can only be defeated by a candidate who also polled at least half of a quota of votes at any stage of the original count.

The candidate who is `everybody's second choice' must then also be the first choice of a sizeable number of voters. When one seat is to be filled, and the quota is therefore 50 per cent, this threshold would amount to 25 per cent of the vote. (These need not be primary votes, or else the result could be distorted with more candidates). In the situation above, where the Liberal candidate drew 27% of the vote before she was eliminated, the National can stand down and let the Liberal take the seat on a recount. However, in a situation like this;

```
Example 4.3
PARTY                PRIMARY VOTES        FINAL COUNT
Labor                45%                  + 7% = 52%        elected
Democrat             12% eliminated
National             43%                  + 5% = 48%
```

- the National cannot stand down for the Democrat, for the latter received too few votes on the original count. This reduces the chance of what some might see as the injustice of the first-place candidate being defeated on preferences not just by the `second-best' candidate (see Chapter 3), but by the `third-best'.

Insisting that the third-place candidate must poll a respectable number of votes also serves another purpose. It makes it more likely that the coalition will be a `principled' one, by ensuring that the third- and the second-place candidates must have polled similar numbers of votes. We can then assume that many voters regard the two parties as `interchangeable', in preference to the common enemy. I assume that many who vote for a coalition would if they knew that choosing one party over another would help to elect the common enemy quite readily change their vote.

If, say, many conservative voters perceive the National and the Liberal parties as interchangeable, as equivalent elements in the anti-Labor coalition, then the law of averages suggests that this will be reflected by their receiving similar numbers of votes similar enough that a small shift in votes could decide which one represents the coalition in the final runoff. By contrast, it is doubtful that many voters would, for instance, view the Nationals and the Democrats as `interchangeable' partners in a coalition.

In conclusion, then, I recommend that traditional STV be modified to give the last runner-up a right to stand down. This would avoid the risk of `pyrrhic victory' in its worst form, without over-compensating to advantage candidates with few primary votes who can be used as `pawns' by the losing side. Otherwise STV could offer voters an incentive to vote tactically, for candidates whom they do not wholly support but judge better-placed to win.

CHAPTER 5: THE RISK OF `PERVERSITY'

One criticism frequently levelled against STV [Brams and Fishburn 1984a: 150-51; Carstairs 1980: 38; Doron and Kronick 1977; Riker 1982: 48-51] is that it can penalise a candidate for having too many votes or, more accurately, for taking too many votes away from her main rival. Like other systems of transferable votes (such as the French second ballot), where the lowest candidates are eliminated and their supporters asked to choose again among those remaining, STV runs the risk of `perverse' results, which violate the ideal of monotonicity or `positive responsiveness' [McLean 1986: 155; May 1952: 682; Riley 1990: 339].54 If this shift in votes changes the order in which the lower candidates are eliminated, it could leave the candidate facing a stronger opponent in the final runoff. Illustrations of this possibility are fairly easy to construct. The following example, although stylised, is not unrealistic in its assumptions:

```
Example 5.1
PARTY               PRIMARY VOTES          FINAL COUNT
Labor               33%                    + 7% = 40%
Liberal             27% eliminated
National            40%                    + 20% = 60% elected
```

This appears to be a simple application of the preferential voting system. (The same applies when STV is used as a system of proportional representation to fill several seats, once only one seat remains to be filled). However, consider the result of the next state election in the same electorate. The National Party has increased its primary vote indeed, it has drawn a large portion of the Labor Party's support away from it; these voters, convinced of the errors of socialism, have even rejected the Liberal Party as

a halfway house, and passed instead directly to the Nationals. The voting in the next election goes as follows:

```
Example 5.2
PARTY              PRIMARY VOTES        FINAL COUNT
Labor              26% eliminated
Liberal            27%                  + 24% = 51% elected
National           47%                  + 2% = 49%
```

The Nationals increased their support by 7%; the Liberals did not increase theirs at all; yet a seat that the Nationals previously won by a safe majority of 60% has been lost. Nor can this be blamed on the `leakage' of later preferences away from the Nationals, for the number of Liberal voters (which still favour the Nationals, in a ratio of almost 3 to 1) has increased, while the number of Labor votes (which put the Nationals last) has decreased.

It is understandable why Riker, Doron and Kronick, Brams and Fishburn call such results `perverse'. More voters put the Nationals first, and fewer put them last, than at the previous election; yet the Nationals now lose the seat which previously they won.

This is certainly a striking anomaly, one that deserves criticism. However, criticism alone is not enough; one should also look for a better alternative. To the critics of non-monotonicity, this leads to the conclusion that STV should not be adopted:

> It is simply not fair that a candidate could lose an election because she received too many votes. Most voters would probably be outraged upon hearing [that] `Mr O'Grady did not obtain a seat in today's election, but if 5,000 of his supporters had voted for him in second place instead of first, he would have won!' [Doron and Kronick 1977: 310].

Riker considers that `the failure to ensure monotonicity is the worst possible sin an electoral system can commit' [quoted in Riley 1990: 348], and contends

> that some kind of monotonicity be required is simply a straightforward matter of making the voting system do what it is supposed to do It is hard to believe there is any good justification for the single transferable vote when there exist proportional representation systems (such as list systems) that are at least weakly monotonic. [Riker 1982: 51].

And Brams and Fishburn use this defect of STV to promote alternative voting systems:

> The fact that more first-place votes can hurt, rather than help, a candidate violates a fundamental democratic ethic. This defect does not afflict non-preferential voting systems like plurality voting or approval voting though with runoffs these, too, become non-monotonic PR might be preserved under a non-preferential scheme in which [single-seat] district elections are only the first stage in a two-stage process [with additional seats to `top up' the result]. [Brams and Fishburn 1984b: 151].

The consensus of these critics is not merely that STV is imperfect, but that STV should be abandoned and replaced by other systems by first-past-the-post systems (of which Approval Voting is one form) for single-seat electorates, and by party-list systems (of which `topping up' is one form) for multi-seat elections.

First-past-the-post and party-list systems were examined earlier (Chapter 2) and there rejected on the grounds that both, unlike STV, offer strong incentives for tactical voting, and thus make votes cast an impaired measure of true popular consent. However, the charge of non-monotonicity is a separate issue, one that shifts the onus back on to STV. What must be assessed, then, is whether STV or its rival (first-past-the-post for single seats, party-list for multiple seats) is better overall for linking power with consent, by ensuring that more seats are won by parties enjoying more free and informed consent.

Two points can be made in STV's favour. The first is that STV's rivals are themselves not clearly superior at ensuring monotonicity, on the whole. The second point is that, even if they are, this advantage is cancelled out by their corresponding inferiority in other respects.

The issue reduces to a binary choice. Either a voting system enables hopeless candidates' supporters to re-allocate their votes (via devices such as preferences or runoffs), or it does not.55 If the system requires re-allocation of votes away from the bottom candidates, it thereby needs some elimination process, and the order of such elimination creates the risk of non-monotonicity. One candidate's gain in votes, while not enough to ensure her election, could be enough to change the order of elimination unfavourably to her.

With an elimination procedure, then, there is the risk of perversity. But without an elimination procedure, there is the risk of a split vote, of votes being wasted on hopeless candidates.56 Which of the two is worse? Both are departures from the `more votes, more seats' principle. A split vote can produce its own form of `perverse' result; by voting for your first choice, you split the vote and let your common enemy win by default. Is this type of `perversity' worse in its likelihood of occurring, and its severity if it does than the type possible under STV?.

The likelihood of a perverse result occurring under STV is hard to assess, because `elections themselves never reveal enough data about preferences to make the perverse outcomes visible to the voters' [Riker 1982: 50]. Australia has used preferential voting for over seven decades; the system has been criticised on many other grounds (see Chapter 3), but rarely if ever for non-monotonicity. Even in Queensland the only Australian jurisdiction where a three-party contest makes perverse results a live risk that risk is rarely recognised, and when it is the remedy sought is simply to gain more votes: 57

> The impending collapse of the Nationals [in 1989] meant that in some crucial three-cornered contests Labor would be denied Liberal preference leakage, and would require large primary swings to cross the line with the expected minimal leakage of National preferences. [Swan 1991: 98].

Likewise, in Eire the main criticisms of STV focus on the arrangement of electoral boundaries [Ray 1982] or the random-sampling procedure for surplus votes [Gallagher and Unwin 1990], but not on non- monotonicity. Katz [1984: 138-9], although he castigates STV for lack of positive

responsiveness, ascribes this to two other factors (leakage of votes, and votes wasted in small electorates) as well as non-monotonicity. In Malta, the principal case of `perversity' - a victory for the runner-up party in 1981 - was due to the arrangement of electorates, not the voting system; it cannot be blamed on STV's elimination procedure, since only two parties contested the election [Lakeman 1982; Taplin 1982; Zanella 1990: 26].

Whether noticed or not, a perverse result is made inherently less probable by the particular conjunction of factors that it requires. There must be a three (or more)-way Whether noticed or not, a perverse result is made inherently less probable by the particular conjunction of factors that it requires. There must be a three (or more)-way race, such that it is not a foregone conclusion as to whom the final `pairwise comparison' will be between. In the typical Australian electorate (save in some parts of Queensland and New South Wales), the only real contest is between Labor and one conservative party.

By contrast, the first-past-the-post system's own form of `perverse' result a split vote can arise in any election with three or more contenders, if none polls over 50 per cent. Even if minor candidates draw only 1 per cent of the total, this could still have changed the result if the winner was elected with, say, 49.5 per cent to 48.5 per cent, and the 1 per cent had known this and voted accordingly.

Furthermore, under STV the unlucky candidate's gain in votes must be within a fairly narrow `band'. Otherwise, the increased vote might simply push her over the quota, or at least give her a head start to offset the preferential votes now flowing to her rival. The narrowness of this `band' affects significantly the nexus between votes and consent. It means that, because it is hard for average voters to predict whether a perverse result will occur, they are not likely in practice to vote tactically on this basis. By contrast, when there is no elimination procedure and a split vote is thus possible, tactical voting becomes a very strong, even predominant element of the voter's electoral calculation.58

STV can reward tactical voting only when one's preferred candidate is just short of winning. Moreover, under STV this tendency is `self-correcting', because if enough of her supporters intend to vote tactically that candidate is safe from the threat of receiving too many votes. It then becomes safe to vote for her again, and so on the cycle continues, balancing itself out so that the safest option is to disregard it completely and vote whatever one's true preference is.

Even critics of STV recognise that such `counter-strategic calculations of other voters in game-like manoeuvres' are likely to cancel out [Brams and Fishburn 1984a: 150]. New Zealand's Royal Commission on the Electoral System concluded that `the situations in which undue advantage could be taken of these defects would be so rare as to render them of little practical significance' [New Zealand Royal Commission 1986: 80].

By contrast, when the split vote is a possibility then the incentive for tactical voting is self-reinforcing. Once your preferred candidate looks like winning too few votes from others to have a chance, it becomes rational to abandon her yourself; thus, her support keeps dropping as it keeps dropping.

As for the gravity of a perverse result, this too must be taken in perspective, and kept in the context of remembering what is the only alternative. In Example 5.2 above, the National Party did lose a seat but to the Liberal Party, a competitor which, if not an ally or coalition partner, is at least closer to it than is

the Labor Party. It could not be otherwise; non-monotonicity only occurs if the party that came third last time comes second this time.

But if that party last time helped elect the previous winner with its preferences, then it is unlikely to be an implacable foe of the previous winner whose seat it has now taken. At least it would be less of a foe than the party that dropped from second to third place, and whose preferences have flowed so more heavily against the previous winner that they cancel out its increased primary vote lead. STV's non-monotonicity, then, might change the balance of seats on one side of the parliament; but it will not affect which side wins a majority. The Queensland Liberal and National parties had bitter disagreements over contesting the same electorates [Hamill and Reynolds 1983]; but in no case does a non-monotonic result appear to have been a bone of contention.

The alternative to STV must be kept in mind. Without an elimination procedure, voting for one's first choice can let one's last choice win by default. Not only is this more likely to be noticed if it occurs, than a non-monotonic result, it is also more serious. Voting National under STV might help elect a Liberal candidate instead; but voting National under first-past-the-post might well help elect a Labor candidate instead, if it splits the conservative vote. The consequences of the latter are clearly more serious in terms of misallocating political power.

The risk of perversity, therefore, is a necessary evil which must be tolerated to gain the superior benefits of STV. But even if it must be tolerated, can it still be minimised? Some supporters of STV have proposed ways to do so (most others, however, appear to have avoided the question). Jonathan Riley, for example, envisages a system in which

> STV is not by itself a rule for making decisions over policy alternatives [but] merely a method of selecting the representatives who will then make choices over alternatives according to say, majority voting [ie, a Condorcet system of pairwise comparisons] The violation of monotonicity by STV is necessary for the majority decisions of elected representatives to correspond (at least indirectly) to the majority decisions of voters at large. [Riley 1990: 348].

Riley was, however, presupposing STV in its usual sense as a proportional representation system; whereas the risk of non-monotonic results is still present with single-seat electorates, or even in the contest for the last seat in a multi-seat electorate [Carstairs 1980: 38].

Another STV supporter, Lord Kitchener, proposed allowing `negative votes' as a way of overcoming `the paradox of the electors who change to disapproving of a candidate, move him to last, but thereby cause him to be elected' [quoted in Hill 1988: 265]. Negative votes may have some merit (if, say, they were counted after the voter's preferences ran out, and were deemed to rank the candidates negatived an equal last), but it is not clear they would avoid this problem. Presumably most or all National voters would cast a negative vote against the Labor candidate; but even if the number of National voters rose, and with it the number of negative votes against Labor, the National would still lose, because her real rival is not Labor but the Liberal candidate.

One certain way to avoid the problem would be allow the leading candidate to `lend' some of her votes

to the lowest, enough to ensure it is the other candidate who is eliminated instead. However, this could appear excessively artificial; the lowest candidate, it might be thought, should be entitled to refuse the poisoned chalice, especially since the extra votes will not help her (they would not be `lent' to her if they would). To let a candidate select her own opponent for the final runoff might seem unduly manipulative. The argument that a party could achieve the same result, even under the usual secret ballot, if its supporters voted tactically for the bottom party carries little weight in this context, since (unlike a first-past-the-post election) the risks of such tactical voting would greatly outweigh its potential benefits.

Another alternative solution was considered, but ultimately rejected, by the author. This was to modify STV so that it worked something like a party-list system for a single seat; candidates would be deemed grouped (but according to the voters' preferences, not according to party-lists), groups could be combined into larger groups, and the highest-polling candidate of the highest-polling group or group within a group, as the case may be would take the seat. Linking of candidates and groups would avoid the split vote problem, yet working from the `top down' (that is, looking for the highest-polling candidates and groups) should avoid the problems of an elimination order. However, workable details for adapting STV to this system have not yet been devised. Using party-lists of the usual kind is also unacceptable, because these can produce their own kind of perverse results; one votes for one candidate on the list, or for the list as a whole because of that candidate, yet one finds out later that this helped to elect another, more disliked candidate on that list.

For the present, then, supporters of STV must concede the defect of monotonicity, yet at the same time insist that it be kept in its proper perspective. The solution is not to abandon STV for a superficially better system, for overall these demonstrably worse at ensuring votes reflect consent and no better at ensuring that reflect votes. As McLean [1986: 147] concludes,

> there is no such thing as a non-manipulable voting system. Some are easier to manipulate than others; but there is no point in looking for one that cannot be manipulated; none exists, and none will ever be invented.

CHAPTER 6: SURPLUS VOTES, REMAINDERS, AND AVERAGES

The preceding three chapters addressed criticisms that apply to STV generally, both in single-seat and in multi-seat elections. This chapter, however, focuses on a perceived defect of STV that arises only when two or more seats are at stake. For when some of the seats but not all have been filled by whole quotas, then surplus votes of those elected candidates must be distributed. The question then arises as to how this should be done.

There is something of a paradox in this area. With the progress of time and the evolution of voting systems, the principle of winner-take-all in multi-seat electorates has been abandoned and replaced by systems seeking some kind of proportionality, which entails minority representation. However, as this chapter will show, STV and some versions of party-list have gone too far in the opposite direction, by giving smaller parties disproportionate over-representation at the expense of larger parties. This

chapter will examine why and how this distortion should and could be rectified.

As a starting-point, it is generally accepted that if multi-seat electorates exist, then some kind of proportional system (STV, party list, limited vote) should be used to fill their seats. The essence of any such proportional system is that every time a voter helps to elect a candidate, the chance of her vote's full value helping to elect another candidate must be reduced accordingly.59 By contrast, a `winner-take-all' system in a multi-seat electorate lets the majority or plurality group use its numbers to fill each seat in turn and defeat the others, any number of times.

In this respect the rule that `more votes means more seats' has been clarified and refined. Its `raw', most basic form may be satisfied by a result that gives a 51 per cent majority five seats out of five or ten out of ten. And indeed, a few decades ago multi-seat electorates with majority or plurality voting were quite common throughout Anglo-American and European democracies [Klain 1955]. However, in the century since the situation has changed.

Indeed, this is a rare case of consensus in the divisive debate over electorates and their district magnitudes. Supporters of proportional representation dislike the winner-take-all system even more when it is applied to a number of seats in a row, swamping localised pockets of support for the minority party. But opponents of proportional representation probably because much of their case dwells upon the merits of single-seat electorates60 are not enthusiastic about the block vote and such systems either. As a result, such multi-seat, winner-take-all systems are much less numerous than several decades ago. They have been largely superseded either by more proportional systems (eg, European legislatures, the Australian Senate) or by single-seat electorates (eg, the UK House of Commons, the US House of Representatives), surviving mainly in local government units where single-seat electorates are deemed too small and proportional voting systems an unnecessary complexity [Hoag and Hallett 1922: 466, 478; Weaver 1984].61

There is consensus, then, for the principle that where multi-seat electorates are used where two or more identical positions are filled at the same time by the same electorate then the winner should not `take all'. Instead, both the larger and smaller parties should share proportionately in the seats available. Groups of voters who have already elected candidates should have only diminished control over filling the remaining seats.62

In the case of STV, this principle is accepted as essential. However, two different methods have been adopted to implement it [Hill 1988: 254];

1. transferring all of the elected candidate's votes, each at a reduced value;
2. transferring some of the elected candidate's votes, each at full value.

The first method involves assigning each ballot a reduced, fractional value. The second method, usually accomplished by selecting set proportions of ballots at random,63 is claimed to be less complex [Sykes 1990: 14]; although others dispute this [Wright 1980: 115-116], and point out that it makes the result depend on chance [Dunleavy, Margetts and Weir 1992: 17; Gallagher and Unwin 1990: 246; Harrop and Miller 1987: 49; Rydon 1980: 385l.

I argue in this chapter, however, is that both methods can be seen as imperfect; for both determine the amount of the surplus in a manner which, although seemingly fair, can be shown to infringe the `more votes, more seats' principle. Just as the simple Hare quota had to give way to the more accurate Droop quota, so too should STV's method of distributing surplus votes be changed, if practicable. The traditional method of quantifying a candidate's surplus is to subtract the quota from the candidate's total. If a candidate polls 120 votes, and the quota is 100 votes, then that candidate's surplus is 20 votes. The traditional system offers two different methods, as mentioned above, for determining whether the value of these 20 votes is concentrated upon only 20 ballot-papers, or spread over all 120;64 but both versions of STV agree that the surplus should be determined by subtraction.

However, most versions of the party list form of PR have come to adopt a different method of determining surpluses. Rather than subtracting one quota per elected candidate to leave a remainder or surplus, these systems avoid the potential `rounding error' [Tullock 1992: 228] by dividing. The original method, named after the Belgian Victor d'Hondt, divides the party's total by one more than its number of whole quotas, so as to give its average. (Other versions modify this formula slightly; one such is Sainte-Lague's which divides by only one-half, not one, more than the party's number of whole quotas. Herein I will focus upon the d'Hondt method).65 It is each party's average, not its simple remainder,66 which decides the seats left over [Carstairs 1980: 24 31].

This method of averages is less favourable to smaller or fragmented parties, as the following examples illustrate:

```
Example 6.1
Quota: 100 votes
Party X 450 votes 4 quotas, remainder 50 votes
Party Y 80 votes no quotas, remainder 80 votes
```

If a remaining seat were allocated on the basis of these remainders, then Party Y would have a better chance of receiving it ahead of Party X. However, if each party's average is considered instead, then the d'Hondt formula favours the larger Party X: Example 6.2 Quota: 100 votes Party X 450 votes average 90 votes, for each of 5 candidates Party Y 80 votes average 80 votes, for one candidate only The average is determined through dividing each party's total by one more than its number of whole quotas obtained. This would put Party X ahead of its rival in priority for another seat.

The rationale of the d'Hondt method is to establish some kind of priority order, allocating each seat in turn to the party whose `need' for it is most `pressing'. This takes the form of a comparison; `If Party X received a fifth seat, it would have one seat for every 90 votes; whereas if Party Y received a first seat, it would have one for every 80 votes.'.

Although it works against smaller parties, the method of averages can be seen as more fair than the method of simple remainders. The latter can actually give a party fewer seats, for the same number of votes, when the total number of seats is increased. The USA found this `Alabama paradox' when it used the remainder system in 1880 for distributing congressional seats among States; Alabama had 8 seats in a house of 299, but only 7 in a house of 300.67 Carstairs [1980: 25] gives a full demonstration. By contrast, a highest-average system is free of this quirk. If extra seats are created, they are added to the totals of whichever parties have, in turn, the highest averages, but cannot take away any seats

already allocated to them. Moreover:

> The size of each party's remainders bears no relationship to the [total] number of votes each party has; yet it is precisely the relationship between the votes and the seats which one is seeking to make as accurately proportional as possible. [Carstairs 1980: 24].

In other words, the remainder is something of a wild card, a random factor. Certainly as a party receives more votes, its remainder increases; but only until it reaches the quota for another seat, whereupon the remainder begins again from zero. While an apparently-similar fate does befall the party's average under the d'Hondt system, the average never drops down as far as zero when another seat is gained; and the drop that it does suffer is less for a larger party that wins more seats. (Gaining its first seat halves the party's vote, because the divisor increases from zero plus one to one plus one; but gaining its tenth seat increases the divisor only from eleven to twelve, a much smaller increment).

As for encouraging tactical voting, the simple-remainder method can reward a party for deliberately splintering into smaller factions. If, for example, Party X splits up (deliberately or not) into five separate parties each polling only 85 votes each (a total of only 425 votes, compared to 450 for the unified party), then each of the five could have won one seat each before Party Y, with its 80 votes, could have won any. Yet if Party X contests the election as a single bloc and polls 450 votes, it receives only four seats before its remaining stock of votes drops below Party Y's.

As Mackerras [1989: 14] frames the distinction:

> ` the Hare quota with largest remainder tends to over-represent smaller at the expense of larger parties. If a party divides in two, an additional remainder is created which may attract an additional place The d'Hondt principle is the opposite. It tends to over-represent larger at the expense of smaller parties.'.

Aside from its factionalising effects, this perversity offends against the `more votes, more seats' standard. At some point proportionality must enter the equation; if not in affecting the number of seats in an electorate, at least in dictating how those seats are allocated. If the simple remainder method is used, its effect is to discriminate against a single Party X, for though it would poll 450 votes as against 425 for a fragmented array of X splinter groups, it would win only four seats compared to their five. Indeed, there is evidence that the deliberate splitting of parties to exploit the largest remainder [Campbell 1965: 94; Lakeman and Lambert 1974: 92] has occurred. As a result, many party-list systems were converted to d'Hondt's highest-average formula.

`Highest-average' forms of proportional representation are closer to the `winner-take-all' end of the spectrum in that they favour larger parties more than do simple-remainder systems. But at the same time, it is arguably more proportional as well. This may seem paradoxical, as many commentators seem explicitly [Butler, Penniman and Ranney 1981: 21; Duncan, Howell and Gauss 1988: II-18; Lijphart 1990: 484; Rae 1971: 31, 180-81; Shugart 1992: 210] or implicitly [Campbell 1965; Mackerras 1989: 14; Sharman 1982: 99] to equate `more proportional' with `more favourable to smaller parties'. However, others [Black 1949b: 337; Carstairs 1980: 26, 218; Knapp 1987: 111; Lakeman and Lambert 1974: 94-95; Mackenzie 1958: 79] appreciate the distinction. A system which

positively rewards small or splintered parties is no more `proportional' than one which over-advantages large parties. A system which gives one party polling 45% four seats, but would give five parties each polling 9% a total of five seats, is not fully proportional. Distribution by simple remainders focuses on each party's number of votes relative to the total for all parties; but this total is merely an abstraction, a numerical figure. What really counts, in terms of political power, is how many votes and seats that party has relative to its competitors, for these are the real, concrete factors in the equation [cf. Black 1949b: 337].

This is not to deny that the highest-average method has a demonstrable bias in favour of larger parties [Carstairs 1980: 28; Criddle 1992: 111]. Contrary to some claims, it is not `completely neutral between contestants' [Minister for Territories, Hansard October 19, 1988: 1929]. Is this, however, a defect? Arguably not. Given that we cannot find a `neutral' method of allocating seats, it is preferable to choose one which, in case of any doubt, rounds off seats in favour of larger, unified parties.

I justify this preference by an appeal to the criterion I adopted as the minimum requirement for a democratic voting system `more votes, more seats'. By its very terms, this principle focuses primarily on assuring justice to parties with `more' votes, that is, to larger parties. Furthermore, the formula which I identified as the basic rationale underlying every voting system `one seat for every whole quota or largest remainder' likewise focuses on the size of parties. If a small party merits concern, it is only when and because its votes are enough for a quota or a highest remainder that is, it receives a seat despite, not because of, its being a small party.

If it does in fact better satisfy both sides, then, the highest-average method should be used and the simple-remainder form discarded. The only objection remaining can be that, although arguably more proportional, it is less favourable to smaller parties. With a body such as the Australian Senate, where a single-party majority is not recognised as necessary or even desirable, it could be seen as a positive advantage to help minor contenders gain seats.

Yet in any election where using a highest-average instead of a highest-remainder formula is likely to make any significant difference, there would likely be a relatively large number of seats at stake in any case. It is unlikely that a small party could convincingly complain of being harshly treated when the quota is already so low.

Defects of STV's quota and remainder method.

These defects of the simple remainder system have been thoroughly canvassed in the literature on party-list forms of PR. However, they have only occasionally, or indirectly, been touched on in discussions of STV. Carstairs, for example, mentions only that STV's results so far as party representation is concerned, would resemble the result of a party-list election using a quota method, but with the allocation of remaining seats determined by the smallest remainders of votes [Carstairs 1980: 40] instead of the largest. That is, the candidates left with the lowest totals would be the first ones eliminated, and their preferences would decide which of the higher candidates win the remaining seats.

It is clear, however, that STV's way of determining surpluses belongs to the simple remainder end of

the spectrum. Of course, votes are counted for individuals and not party lists, but the principle is the same. The largest remainder might not gain an extra seat; but the smallest remainder is the first eliminated, for its preferences to be transferred.

As a result, STV in its current form has the same two defects as do simple-remainder party list systems. A party can win fewer seats even when the total number is increased, and its votes are no less; and smaller parties can gain an undue advantage.

Defect 1; smaller parties disadvantaged by lower quota.

Under the present system, a small party like the Australian Democrats (before their vote was stimulated by the post-1988 disgruntlement of Australian voters with the major parties) would likely win one seat in a State when five Senators were to be elected, but no seats when six Senators were to be elected. With an increase of one seat, making an even number in a contest where Labor and Coalition were evenly-balanced, the big two would win three seats each with whole quotas in their own right, rather than two each with the fifth and last being won by a Democrat.

This perverse results violates what would otherwise be seen as a simple trade-off in terms of larger Senate, lower quota; for it is not only the quota that must be taken into account, but also the distribution of votes among parties. The conventional wisdom is that more seats available translates simply into better chances for smaller parties:

> As the Senate expands, the voting quota for election to the Senate falls and the chance of any government ever controlling the Senate in its own right disappears. [Kelly 1988].

- but, with the simple remainder method, such a linear progression is not guaranteed.

A policy brochure produced by the Democrats circa 1990 praises the party for having opposed 1984's increase in the size of the Federal Parliament. No reason is given for their opposition, but it is reasonable to assume that at least one factor was the adverse effect on the Democrats' Senate fortunes. Yet the Democrats would be embarrassed if, having opposed an increase from five Senators per half-Senate election per State to six, they then turned about and supported an increase from six to seven even though this would greatly improve their Senate numbers. With highest-average rather than highest-remainder STV used for the Senate, smaller parties like the Democrats could assess their electoral fortunes more consistently. Given that the Federal Parliament is going to expand, not decrease, as Australia's population grows, this more consistent advantage to small parties in the long term would balance their handicap under the highest-average system in the short term.

Defect 2: disproportionate over-representation of small parties.

The STV system, particularly as it has been used for the Australian Senate and other upper houses with similar systems, has been criticised for giving undue advantage to smaller parties well in excess of the benefits of a low quota. One expects that for a dozen or so Senate seats, the quota will be low, but even given that some recent Australian examples have been peculiar. The Nuclear Disarmament Party won a NSW Senate seat in 1987 with only 1.5% of the primary vote [Minister for Territories, personal

correspondence, October 11, 1988: 1; Mackerras 1989: 9; Pidgeon 1991: 12]; even though twelve Senate seats were at stake, this still amounted to less than one-fifth of the 7.6 per cent quota the equivalent of winning a House of Representatives seat with only 10 per cent of first-preference votes. Likewise, Jo Vallentine picked up one of WA's 12 seats in 1987 with 4.5% of the primary vote [Mackerras 1989: 9]. In the NSW Legislative Council, with fifteen seats filled at each election, the quota is 6.25 per cent; yet Fred Nile's party won a seat with 3.6 per cent, and Richard Jones, of the Democrats, was elected with 2.7 per cent [Mackerras 1989: 9; Pidgeon 1991: 12].

These results have attracted considerable criticism, and have been used as ammunition against the STV system itself. Senator Peter Walsh criticised the system for enabling `ratbags and time-serving mediocrities' to be elected to the Senate `on only a few percentage points of the primary vote' [Kelly 1988]. Such results undermine STV's claims of greater fairness than other systems, for it `does not necessarily guarantee that the electorate's preferences are fairly represented...' [Pidgeon 1991: 12] and ensures only `a very slender correlation between voter intention and who wins the last seats' [Minister for Territories, personal correspondence, October 11, 1988: 1]. It is one thing to accept multi-seat electorates, with a large number of seats and a relatively low quota, to give representation in a house of review for a wide spectrum of political opinion. But when the quota set seems to prove no bar against screening out fringe candidates, then it has not served its purpose.

Moreover, the corollary of this generosity to smaller parties is a corresponding harshness to larger parties. Musidlak [1984: 5] cites the 1983 Senate contest in Western Australia; the ALP received 49.3 per cent of first preferences, yet won only five of the ten Senate seats an average of 9.9 per cent per seat while the Democrats, with 6.8 per cent, won one seat. Had the ALP total been divided by 6.8 per cent also, so that both parties had one seat for every 6.8 per cent of the vote, then the ALP would have had seven seats to the Democrats' one.

One culprit is certainly the full-preferential system used for the Senate. Each party, when drawing up its how-to-vote card or registering its preference ticket, naturally wants to put its main rivals last. To do this, they tend to put minor candidates (particularly the Democrats [Barnett 1990: 5]) as a `buffer' in the middle, reasoning that they will not survive long enough to benefit from these preferences anyway. But under the existing Senate system, these preferences are quite likely to be counted, for when each large party has a large proportion of its votes `locked up in quotas obtained too early', then its lower candidates are eliminated and these preferences benefit, not them, but fringe candidates. This has been criticised (even by one Australian Democrat Senator) as producing a `Robert Wood'-type phenomenon, where a candidate by picking up small fractions of, eg, seventeenth and thirty-first preference votes (from voters who probably never realised that those high-numbered preferences might actually determine the result) can achieve a quota. [Senator Jean Jenkins, correspondence to Minister for Territories, November 11, 1988: 2]68 . But this merely highlights the point that preferences depend not only on whether they are expressed, but on how likely they are to be used. Generally in the single-member contest, preference to a minor party is an empty gesture as it is not likely to help that party. In the words of one minor party - itself a beneficiary of the preferential system:

> Question: The ALP sometimes recommends that its voters give the DLP candidate their second preferences, but the DLP never reciprocates. Why?.
> Answer: The ALP action in such cases looks good to some unsuspecting people; but the second preferences of ALP candidates are rarely distributed, except in Senate elections.

Therefore the DLP might receive them in theory, but never in fact. [DLP 197?].

This grievance is exaggerated, because its proviso is greatly understated. While a minor party might almost never effectively benefit from major-party preferences in a single-seat election [Rydon 1980: 380: contra Alliance Action Group for Electoral Reform 1984: 20-21], it would almost always do so in a Senate race.69 As shown above, the major parties may have more votes but these are not used to best effect. The lower candidates from the party's team receive only a remainder from their elected team-mates if they survive to receive it at all; they would do far better if the party's votes were divided equally among all of its candidates, for this would keep more of them in the count for longer and give each more votes to avoid elimination. That way the major-party candidates would receive the minor parties' preferences not vice versa.

How to achieve this equal division of votes? Bogdanor [1982: 246] and Sykes [1990: 28] note that in Irish Dail elections, with alphabetically-ordered ballot papers, parties often attempt not very successfully to have their supporters divide their votes roughly equally among the party team. Musidlak [1984: 5-6] notes that in Tasmania, the `Robson rotation' of positions on the ballot with equal batches of each varied order being printed better ensures this desired result. If a party's supporters do not pick and choose among individual candidates, but merely `donkey-vote' down the party ticket, then `their vote will not be concentrated on a fixed candidate and `wasted' in quotas obtained `too early" [Musidlak 1984: 6]; instead it will be divided equally among them. Sharman [1982: 106, 112] claims that the donkey vote in Tasmanian state elections is `notable by its absence'; this differs slightly from Musidlak's interpretation, but the end result is the same. Whether the rotated ballot discourages down-the-ticket voting or merely equalises its effects, the outcome is that candidates within each party group receive broadly similar tallies of primary votes.

This is a clear contrast to mainland STV elections, where the big parties seek to persuade their supporters to copy out the party's how-to-vote card (or, in recent years, to vote `above the line' for the party's ticket), and where as a result almost all of the major parties' votes go straight down the ticket [Butler, Penniman and Ranney 1981: 7; Hughes 1984: 231-2; Jaensch 1991: 38; Musidlak 1984: 5; Rydon 1980: 377; Sharman 1982: 104-5; Wright 1980: 120]. This means that `in any state, one Labor and one non-Labor candidate are elected on first preferences with large surpluses' [Wright 1980: 116].70 Most of the seats are usually filled on primary or surplus votes alone before elimination has to begin [Taplin 1982]. But once this elimination does begin, the surpluses remaining to help the winning candidates' team-mates are greatly depleted.

Musidlak advocates the Tasmanian system of rotating ballots, but for two potentially conflicting reasons. The first is to `remove the head start that regimented voting gives the minor parties and independents' [1984: 6], while the second, and probably dominant, reason is to break down the parties' power to dictate which candidates get elected. If ballot positions are rotated, then `no one is guaranteed a place, nor is anyone in a hopeless position' [Musidlak 1984 6] unlike the Senate version, in which the donkey-vote down the ticket gives an in-built advantage to the candidates at the top [cf Marsh 1985: 377]. Musidlak sees the resulting disadvantage to the larger parties as deserved:

> In return for controlling the order in which their [candidates] are elected, the major parties needlessly set aside a substantial amount of their support in securing the early quotas. [Musidlak 1984: 5].

However, there is room for conflict between the two results. Even with the party's donkey-vote being spread equally among its candidates, the candidates may still attract different amounts of personal support in their own right. Musidlak recognises that `some candidates have a strong personal following and attract well over a quota of supporters' [1984: 6], and mentions a Tasmanian case where even with the rotated ballot order the ALP could have won an extra seat from the Liberals `had the Labor vote been a little more evenly divided' [1984: 6].

If a large number of the voters do make their own choice among their party's candidates, then those candidates will likely receive varying numbers of votes. Even with a rotated ballot, votes might not end up equally divided among candidates unless a large number donkey-vote. STV suffers, though to a lesser degree, the same defect for which STV's own adherents criticise the Japanese limited vote system that a party risks losing seats if one of its candidates is outstandingly popular, wasting surplus votes that could have helped her team-mates [Humphreys 1911: 71; Katz 1984: 139; Lijphart 1984: 209; Reed 1990: 338].

Now, given that the great majority of Australian voters do vote down their party's ticket, one might think it better if their votes do not swamp the choices of those who think about individual candidates.71 But it is contrary to democratic principle to advantage a party for having more apathetic voters, to depend on such donkey-voters to prevent the system working unfairly.

Indeed, it would reward a party for enjoying less informed consent if all its voters went straight down the ticket, and thus had their votes divided with exact equality, the party would have a better chance of getting more candidates elected. Under the existing STV formula, the best way for a party to maximise its chances is not to give its supporters a free choice among its candidates, but to regiment them a different way to have their votes divided equally, rather than cumulated successively on the highest candidates. The ticket-voting rules for the Commonwealth Senate and NSW Council already allow parties to register more than one preference order (this concession accommodates the Australian Democrats' wish to split their preferences between Labor and Liberal as they had previously done with their how-to-vote cards). At present, however, each party must rank its own candidates highest, in the same order as they are listed on the ballot (which in turn is specified by the party); but it would be very much in a large party's interest if it could split its `above-the-line' primary votes more evenly among its team of candidates.72

In a typical Tasmanian House of Assembly election, the first-preference votes for the candidates of a major party's team are relatively evenly divided:

```
Example 6.3.
1986 Tasmanian election, primary vote figures, electorate of
Denison
LIBERAL CANDIDATES*        LABOR CANDIDATES*
Groom 8406                 Batt 3578
Bennett 4547               Jackson 3515
Davis 2570                 White 3203
Holmes 2489                Amos 2017
Barker 1389                Gordon 1795
```

```
Walker 1193          Graham 1437
Hoggett 1078         Alty 389
Hurburgh 946
```

* Candidates listed in order of votes received. (Source: Hare-Clark, Tasmania's Electoral System by Bob Holderness-Roddam).

Although there are clear differences between the most and the least popular candidates, these are very minor compared to the differences in a typical Senate election:

```
Example 6.4.
1984 Senate election, primary vote figures, State of Tasmania
LABOR CANDIDATES      LIBERAL CANDIDATES*
Aulich 96,492         Archer 91,092
Devlin 1,846          Watson 3,798
Coates 8,811          Townley 7,372
White 1,751           Abetz 991
Cooper 2,419          Chabrel 755
```

* Candidates listed in same order as on ballot. (Source: Australian Electoral Commission, The Senate Election, 1 December 1984; Result of Count of First-Preference Votes. Canberra, 1985).

The inequality between each party's candidates is much more pronounced in the Senate election, where the candidates are ranked on the ballot in the party's preferred order, and the voters encouraged to number them in that order. And in other states, whose residents (unlike the Tasmanians) have not had experience with the rotated ballot paper, the difference between the highest candidate and the others is even more marked:

```
Example 6.5.
1984 Senate election, primary vote figures, State of New South
Wales
LABOR CANDIDATES*     LIBERAL CANDIDATES*
Sibraa 1,258,998      Puplick 1,117,071
Childs 2,185          Brownhill 3,939
Morris 3,084          Baume 5,795
West 4,222            Bishop 2,421
Moppett 1,375
```

* Candidates listed in same order as on ballot. (Source: Australian Electoral Commission, The Senate Election, 1 December 1984; Result of Count of First-Preference Votes. Canberra, 1985).

Encouraging voters to make their own choice among candidates may be considered a good thing; but if (as in Tasmania) it coexists with roughly equal numbers of votes per candidate, then the second is not a result of the first but a negation of it. The equality among candidates results from the large degree of donkey-voting, which contradicts the ideal in which voters make informed choices among individual

candidates. At present in Tasmania the two ideals co-exist, but only because each exists only partially. If either were realised fully it would negate the other. Given this, I propose that we look elsewhere for a more reliable means of equalising votes per candidate.

`HIGHEST-AVERAGE' STV.

I propose that we seek ways to modify the STV system, so as to bring it closer to the highest-average ideal. This would better satisfy, not only the `more votes, more seats' principle, but also STV's own logic, by helping to elect more of `the candidate/s ranked highest by the voter' (see Chapter 1). A Labor or Liberal voter would see their preferences elect an extra candidate of their own party instead of a Democrat, who presumably would be ranked lower in their estimation.

What kind of changes would be required to change STV in this way? As a starting-point for discussion, I suggest one possible approach, and then test it for defects. This approach has the following two modifications:

1. Each vote begins with a value of 1.00, but this is divided at each stage of the count by one more than the number of candidates it has already helped to elect. Thus, each vote would begin with a value of one, as no candidates have yet been elected. If and once the first candidate reaches the quota, all of her votes are transferred at a reduced value of 0.5, or half of one vote. Any vote which then helps to elect a third candidate has its value reduced further, to one-third, and so on. (This formula is similar to the `reduction rule' that operated under Sweden's early party-list system [Humphreys 1911: 299-300; Lakeman and Lambert 1974: 290]).
2. Whenever any candidate reaches the quota, any candidates previously eliminated are `resurrected' and returned to the count, each being allocated any votes on which she is the current highest preference.

This method of `reviving' eliminated candidates would protect a party from being penalised for having its support spread unevenly. Even with rotated ballots, voters may still give different candidates greatly varying levels of support. One candidate may be excluded just before her team-mate reaches the quota and releases surplus votes that could have saved her from defeat. `Elimination' of a candidate need not equal defeat, except on the final count to fill the last seat, after which no revival of eliminated candidates is warranted.

An example to illustrate how this works. Imagine a party has two candidates, Black and White. It has 150 voters who give the two candidates their highest preferences, though in different order. Another candidate, Green, is running with a different party which has 65 supporters.

Imagine the quota is 100 votes. Under traditional STV, if Black is much more popular than White (or vice versa), then the party is disadvantaged. If the result on primary votes is

```
Example 6.6
Black 90 votes + 60 = 150 votes White 60 votes - 60
(eliminated) = 0 votes Green 65 votes + 0 = 65 votes
```

then White is eliminated first, and Green survives. White's preferences push Black over the quota, but the surplus votes thereby released from Black are no consolation to White, who has already been permanently eliminated.

Even if Black is already over the quota, so that White does survive in time to enjoy the flow-on of Black's preferences, the traditional STV method of calculating the surplus still leaves their party at a disadvantage compared to Green:

Example 6.7
Black 110 votes - 10 (surplus) = 100 votes White 40 votes + 10
(from Black) = 50 votes Green 65 votes = 0 = 65 votes

- White will still be eliminated before Green. The best arrangement of votes for Black and White, and the result which `highest-average' STV seeks deliberately to ensure, would be to have their votes divided 75- 75, so that each has enough votes to stay ahead of Green and avoid elimination. There is no point in reaching the quota too early (except in some elections - see footnote #70), and we know that their party has enough votes between them for 1.5 quotas. Whether they can turn the certain one seat into a possible two seats depends on whether both Black and White survive to attract preferences from other candidates, including each other.

In both of the above cases, highest-average STV would correct the disadvantage suffered by the party from having Black outpoll White. In the first case, where originally Black fell short of a quota on primary votes -

Example 6.8
Black 90 votes + 60 = 150 - 75 (surplus) = 75 White 60 votes -
60 (elim/ revived) + 75 = 75 Green 65 votes + 0 = 65 + 0 = 65

- and White was therefore eliminated, White's 60 votes would now flow to Black and give her 150 in total. Now, the two differences from traditional STV come into play. Instead of `staying dead', White is eliminated once a candidate is elected. And, while White would still receive Black's surplus votes, the value of those votes would now be much greater.

Traditional STV would give White only 50 surplus votes either by selecting 50 ballots at random, or by transferring all of them each reduced to a value of one-third. Highest-average STV, however, merely `marks down' each of those 150 ballots to a value of one-half. This value is determined without regard to the size of either the quota or the surplus; it is determined by the fact that each of those votes has already helped to elect one candidate, so therefore each vote's value is divided by one more than one, or two. Thus, White now revived, and returned to the count receives the value of 75 votes; Black keeps the other 75 votes, but we know already that Black could `call upon' 150 votes to reach and exceed the quota if her `right' to be elected were questioned. In this case, the result appears unquestionably fair.

Thus far, my testing of the `highest-average' STV method seems to hold water. However, further testing has revealed some odd results which could, it seems, be exploited by blocs of voters willing to

engage in tactical voting.

Revisiting Example 6.7 above, where Black reached the quota on primary votes, the modified result is no less favourable to the larger party;

```
Example 6.9
Black 110 votes - 55 (surplus) = 55 White 40 votes + 55 = 95
Green 65 votes = 65
```

This, however, reveals a distortion. White now receives more votes (95) than she did in Example 6.8 (75), when she polled more primary votes. In fact, variations like this can occur, which means that they can be exploited. If the primary votes had gone Black 100, White 50, then White would receive 50 surplus preferences from Black to make her own total 100.

Highest-average STV is, then, still prone to tactically-exploitable quirks, at least in the rudimentary form in which I have tentatively suggested. However, this should not be cause for despair. The history of STV itself has been a process of trial and error, of gradual refinement. Thomas Hare's original idea (for a kingdom-wide constituency with a simple quota and no transfer of the bottom candidates' preferences) had serious shortcomings [Hill 1988: 253; Lakeman and Lambert 1974: 268-269]; but only a few decades later, STV had been refined into a form sufficiently workable for Tasmania and the Irish Republic to have used it ever since. The lesson is not to abandon the idea, but to keep seeking ways to improve it.

Changing to a `marking-down' system of distributing surplus votes would offer other advantages as well. For example, it is sometimes proposed for traditional STV that the quota be re-calculated at every stage of the count and reduced to allow for exhausted votes, lest an `artificially' high quota cause surplus votes to be wasted [Hoag and Hallett 1922: 380-83; Van den Bergh 1955: 73-5]. However, this is usually rejected as requiring excessive work, particularly if it would not increase the value of surplus votes already released [Taplin 1982]. But if surplus values were determined by simple `marking down', and thus did not depend upon the size of the surplus, then the benefits of reducing the quota would not be nugatory. Rather than being reduced at every single stage, the quota could be re-calculated whenever seats are filled and eliminated candidates revived.

Granted, on the debit side, this method could take longer than traditional STV, because it would require all of the elected candidate's votes to be transferred and marked down. In traditional STV, this only happens when a candidate has a surplus on first-preference votes. If she reaches the quota later in the count, with the help of another candidate's preferences, then only the final batch of votes that `filled the bucket to overflowing' [Van den Bergh 1955: 64] are transferred.73 I presume that, if STV were changed to a highest-average, then all of the elected candidate's ballots (not just the last batch) would be `marked down'; otherwise the surplus would not equal one-half (or one-third, or one-fourth, as the case may be) of the candidate's total votes.

However, there is a countervailing factor. Under traditional STV a surplus vote's transfer value can be quite complex, unlike the deliberately simplified examples I have given above [cf Lakeman 1982: 49]. For example, the quota might be 12,783 votes, in which case a candidate who polls 14,907 primary

votes has a surplus of 2,124 votes. If all of her primary votes indicate second preferences and are therefore transferred, then each will carry a transfer value of 2,124 divided by 12,783, or 0.16615 of one vote each.

By contrast, with a highest-average form of STV these transfer values would be much easier to work out. Such value must always be a simple fraction, with a numerator of 1 and a denominator between 1 and the total number of seats. Thus, in a five-seat election, one can calculate a priori that the only fractional values that could arise during the count are 1/2, 1/3, or 1/4.74.

My conclusion is, then, that ideally STV should be modified in the direction of distributing its surplus votes on a `highest-average' rather than a `simple-remainder' basis. However, at present the only institutionalised means I can think of to achieve this are still rudimentary, and appear to have defects that put them out of consideration for use as they stand. There is a need here for further research, for the study of this aspect of STV appears to be quite embryonic. The end must be to put STV, like party-list versions of PR, on a highest-average basis. There is still room for discussion and debate over the best means to this end.

CHAPTER 7: CONCLUSIONS

The debate over voting systems has continued for centuries; I cherish no illusions that this thesis will close all argument. However, I do hope that it will add more weight to the case for STV, by addressing four particular criticisms that are not fully canvassed elsewhere in the debate. If any of these criticisms are thereby rebutted, then minds might change and STV's chance of acceptance might improve.

I have made it no secret that I believe STV should be adopted, as the voting system used to fill the seat or seats whatever the number in any electorate. As Chapter 1 explained, the electoral debate is deeply polarised, but consensus is more feasible than it may first appear. For the principal division in this debate is between the supporters of winner-take-all systems, and the supporters of proportional representation which, in the modern context, reduces to a division over the merits of single- versus multi-seat electorates. STV unlike other voting systems is in the fortunate position of being equally applicable to both, without changing either its principle or its effect upon the rational voter. Although first conceived by Hare and used in Tasmania to fill multiple seats, it adapts flexibly to single-seat elections. Under STV, any incentive for the voter to vote tactically does not fluctuate with the number of seats to be filled, as it does under both first-past-the-post and party list systems.

This incentive to vote tactically is too often ignored or shrugged off, yet it is a fundamental flaw of any system that encourages it and makes it a more rational strategy than voting with full sincerity. The purpose of an electoral system, as stated, is to link power with consent, and in concrete terms this means relating each party's share of seats with its share of votes. It is respectable to argue that this relationship need not, in fact should not, be mathematically exact; it is sufficient that the relationship not be perverse, nor distorted by random or irrelevant factors. For this reason it is generally accepted that thresholds (a limited number of seats per electorate, or some barrier like West Germany's `5 per cent' clause) are justifiable, to screen out very small parties.

However, while there are arguments of weight that seats need not accurately reflect votes, few if any

are willing to assert baldly that votes need not reflect consent. Indeed, the attention which democratic theory and practice gives to votes cast (even those not translated into seats), with its concepts of `swings', `majorities', and `mandates', would not be forthcoming were votes merely random slips of paper that did not represent the consent of voters [Buchanan 1983: 10; Catt 1989: 557]. This link between votes and consent enjoys a consensus of support; yet, at the same time, every voting system can reward tactical voting, where the vote is cast with factors other than the voter's consent in mind. Tactical voting, however widespread in practice, offends against the basic principle of democratic theory, because it is a deliberate falsification of the voter's preferences. In choosing among voting systems, then given the stalemate over how closely seats should match votes the tie-breaking consideration should be how closely votes match consent. That is, the imperative should be to find a system that overall minimises tactical voting. All systems can reward tactical voting; but not all encourage it equally. Chapter 2 showed that under STV, the incentive to falsify one's true order of preference is so difficult to predict that it rarely, if ever, influences votes in practice.

Chapter 3 defended STV's counting of preferential votes by showing that the rival first-past-the-post system did not ensure any more `positive support' for winning candidates, because of the overriding impetus under first-past-the-post to vote tactically according to how others might vote. In fact, STV too usually elects the candidate(s) with most first preferences, but can be certain that these do represent genuine and not tactical support. Also refuted was the claimed superiority of first-past-the-post at encouraging a two-party system. In fact, first-past-the-post does not prevent coalitions being formed, but this must be done before the election to avoid splitting the combined parties' vote. Although this reduces the likelihood of a post-election coalition emerging without the informed consent of the voters, it drastically limits the free consent of the voters, because it demands electoral pacts with only one coalition party's candidate per electorate. This price is too high; it could well entrench the established parties by deterring the voters from supporting new parties. By contrast, STV encourages coalitions to form and s swap preferences before the election, thus ensuring free as well as informed consent.

Chapter 3 also examined the claimed superiority of approval voting over both STV and first-past-the-post. It concluded that approval voting was irrelevant in practice, because would reduce to a simple first-past-the-post system. As with Condorcet's proposed method of pairwise comparisons, the voter's impetus is to avoid giving lower preferences that may count against her higher preferences.

Chapter 4 discussed the problem of a `pyrrhic victory' under STV, when a candidate survives to the final round but then loses to a candidate whom an earlier eliminated ally could have defeated. A remedy was proposed, allowing the runner-up to `stand down' and trigger a re-count of votes, so that her preferences could give her ally a majority but only if the ally received at least half a quota of votes in the original count. This arrangement would go some way to ensuring the election of a Condorcet candidate who is preferred by a majority over all others, but unlike Condorcet's method it would ensure she is not `nobody's first preference', and would not encourage tactical voting. Indeed, it could reduce tactical voting in situations like Queensland's, where two allied parties are evenly-matched in primary votes but differ somewhat in how tightly their preferences favour each other.

Chapter 5 examined the common objection that STV can in certain circumstances produce a `perverse' or non-monotonic result. By gaining more votes, a candidate might change the order in which other candidates are eliminated and thus leave her facing a stronger opponent in the final contest. However, it was concluded that such a result is unlikely to occur, given the special combination of factors

required; are that the only alternative is to revert to first-past-the-post, which can also produce perverse results that are both more serious (the preferred candidate is defeated by an enemy, not an ally) and more likely to encourage tactical voting.

Chapter 5 examined the recently-criticised disproportionate results of STV used as a proportional representation system in multi-seat electorates. The reason is STV's system of quotas and surplus remainders, which most party list versions of PR have abandoned as too favourable to small or fragmented parties. The alternative d'Hondt's method of highest averages is both more favourable to large and unified parties and also, arguably, more proportional. Having established that a highest average system of PR is preferable Chapter 4 suggested ways in which STV could be modified accordingly.

My overall conclusion, then, is that the case for STV can be defended. Four particular areas of contention, which other advocates of STV have not fully addressed in the past, have been answered; STV's claims have been tested against the basic goal, of linking power with consent, and have been acquitted. By giving less incentive for tactical voting than any other voting system, STV best ensures that the votes cast reflect the voters' genuine consent. However much the rival systems may differ from STV on other matters such as the definition of parties, and the conversion of votes into seats, their supporters cannot deny this is a strong point in STV's favour.

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FOOTNOTES:

1. I am not aware of any other definition of the `ideal type' of STV. The essential elements of STV, incorporated into this definition, I have distilled from three sources: brief constitutional declarations, naming the system without further elaboration; for example, Article 16.2.5 of the Constitution of the Republic of Ireland; detailed statutory regulations, such as the Third Schedule to the Constitution Act of New South Wales, or the Second Schedule to the Aboriginal and Torres Strait Islander Commission Act 1990 (Cwth); and descriptions of STV's operation [eg, Lakeman 1982: 45].

   I have attempted in my definition to combine the brevity of the first and third with some of the precision of the second, so that any future refinement of the existing STV system is guided but not restricted.

2. Multi-seat electorates are necessary (but not sufficient) to ensure a proportionate matching of seats to votes [Milnor 1969: 18-19; Wright 1980 85-921, while single-seat electorates are sufficient (but not necessary) for ensuring that, whether she represents an absolute or a relative majority, the `winner takes all' and the smaller parties receive no seats in electorates where they have no such majority. While it is possible to apply a `winner-take-all' system (on a first-past-the-post or an absolute majority basis) in a multi-seat electorate, there is no way to ensure proportional representation within a single-seat electorate [Hill 1988: 245].

3. These requirements are reflected, often implicitly, in others' definitions of democracy.

   Joseph Schumpeter's definition, for example, requires that `individuals acquire the power to decide by means of a competitive struggle for the people's vote' [Schumpeter [1943] 1954: 269]. `Competitive' means that the contest for power be open and even-handed, not weighted to favour one pre-determined outcome; that is, that it be free.

   Enid Lakeman [1982: 45] declares that; `Two things are necessary; the voter must be given a free choice among as many candidates as may wish to seek his support, and there must be at least a high probability that the choice he expresses will affect of the election in the way that the voter wishes.' The first requires free consent; the second requires informed consent that is, that the voter would vote no differently if he knew how the others voted.

4. The attraction of the democratic ideal is shown by the tribute that vice pays to virtue. Many highly undemocratic regimes whether totalitarian (Stalin's USSR), authoritarian (Marcos'

Philippines), or theocratic (post-1979 Iran) have constitutions that, on their face, appear impeccably democratic.

5. Even those systems that do not aim for a strictly proportional link between votes and seats still seek some kind of rational nexus. For example, first-past-the-post seeks to ensure that the party with the most votes wins a majority of seats; and its results can, under certain conditions, be seen as indirectly proportional, according to the `cube rule'.

6. For example, the `cube rule' [Chandler 1982: 93; Milnor 1969: 20] seeks to explain the distribution of seats under single-seat, first-past-the-post voting on the basis of compounded rather than direct proportionality; if votes are divided between government and opposition in the ratio of 60% to 40%, then seats should be divided in a ratio approaching 216 to 64, or 77% to 23%.

7. However, such `absurd' results where the party with more votes won fewer seats than its rival have in fact occurred, under all types of electoral systems used; eg, single-seat first-past-the-post (South Africa, 1948; UK, 1950), multi-seat first-past-the-post (US Electoral College, 1880 and arguably 1960); single-seat STV (Australia, 1951); multi-seat STV (Malta, 1981; Ireland, 1969); and party list (Austria). These can be blamed, though, more on the number of seats per electorate than on the voting system used within each electorate.

8. X can be any number, whole or fractional, greater than zero. In the standard `Droop quota' used in single transferable vote systems, X is fixed a priori as 1; thus, the quota will be one-half (1/1 + 1) of the total vote in a single-seat electorate, one sixth (1/5 + 1) in a five-seat electorate, and so forth.

   Other systems, such as first-past-the-post or the d'Hondt party list system, fix the quota a posteriori after assessing how the votes are distributed among the different parties; X will then usually have a value greater than 1. For example, under first-past-the-post a seat can be won with one-third or one-quarter of the total vote in a single-seat electorate, and under d'Hondt with one-tenth of the vote in a five-seat electorate, depending on how the other contenders have split the vote.

9. Having `one single vote' is in this sense a privilege, not a limitation, since it ensures that a voter can concentrate all her voting strength upon one single candidate and thus maximise her chances of electing at least one candidate even if she is in the minority in that electorate. Some first-past-the-post systems let the voter `plump' (the British term) [Buchanan 1983: 10] or `bullet' (the US term) [Amar 1984: 1292] for a single candidate, or for fewer than the number to be elected; but except under cumulative voting this merely dilutes the voter's electoral strength.

   Under approval voting, for example, the fewer candidates a voter approves, the less likely she is to help elect a candidate she likes; but the more she approves, the greater the risk that her later preference could help to defeat her higher preference.

10. Some versions of STV (used for the Australian Senate before 1948, and the South Australian Legislative Council before 1973) fill several seats at the same time, each by a preferential majority. In this case, the voter has several votes, each with several preferences. By contrast, the Japanese limited vote system allows the voter a single vote, and only one preference, in a multi-seat electorate.

11. In determining the likelihood that particular rules devised can be manipulated, past frequency of such manipulation is useful evidence, but not conclusive proof- A loophole in the system may lie undiscovered for a long time but then, once discovered, it will exploited whenever

advantageous.

An analogy is the executive government's power, under Section 55 of the Australian Constitution, to proclaim a double dissolution of both houses of Parliament. This power was used only once in the first half-century after federation. and only twice before 1974 [Rydon 1980: 385]; but in the last eighteen years it has been used no fewer than four times (in 1974, 1975, 1983, and 1987).

12. For this reason I will not examine here the phenomenon of protest voting. Although it certainly does occur [Aitkin 1985: 93; Bowler and Lanoue 1992], a voting system cannot be shaped around the contingency that an unforeseeable number of votes may reflect their voters' intention in the short term only (that is, to protest against Party X), not in the longer term (to consent to Party Y). As David Robertson says, `if human nature is to be predictable at all, if constitutions are to be drawn on the basis of it, this is only possible to the extent that man [sic] is rational' [Robertson 1976: 25].

13. The Irish Republic's `Tullymander' is a prime example; enacted by the Fine Gael government to favour its own strongholds, this arrangement of electorates gave the Fianna Fail opposition a landslide victory in 1977 [Carstairs 1980: 209; Lakeman 1982: 93]. Even the above-mentioned French system of 1951 did not achieve its intended purpose [Milnor 1969: 61].

14. More recently, in Namibia and Cambodia as well.

15. Sri Lanka does, however, use a form of STV for its Presidential elections; with the voter limited to three preferences and all candidates but the two highest being eliminated right away.

16. The ACT's referendum in February 1992 offered voters the choice of STV in single-seat electorates or STV in multi-seat electorates. There was no significant pressure for any other alternative to be offered as well. Similarly, in the Republic of Ireland the opponents of multi-seat STV have abandoned their former calls to return to first-past-the-post and are proposing instead `PR in single-seat constituencies' (that is, the majority-preferential or `Alternative Vote') [O'Leary 1979].

17. Even where alternative voting systems are used, these usually mimic the forms of STV by requiring voters to number candidates in order of preference for instance, first-past-the-post in Queensland local elections, and the d'Hondt party-list system used for the ACT Assembly.

18. Roberts and Lovecy [1984: 70] comment that `the piecemeal nature of the UK electoral system pre-dates the invention of modern political parties and has never had to be redesigned after some revolution therefore, many anomalies and inequities have accumulated over time' [cf Harrop and Miller 1987: 42-3].

19. `Countries may be more likely to adopt PR if they have already been accustomed to exercising a choice for more than one candidate in multi-member constituencies, or more than once in two or more ballots' [Carstairs 1980: 213]. One Swiss electoral reformer stated: `I consider the Hare [STV] system preferable. I do not think the [list] system is the best, but it involved the least departure from customary practices' [quoted in Humphreys 1911: 196-7].

A recent example is West Germany's additional-member system, created as a compromise between two different types of voting system Britain's first-past-the-post and Weimar Germany's party lists.

20. For example, the method of transferring surplus votes has been considerably refined (from simple selection by lot as proposed by Hare to selection by lot with fixed quotas of second preferences, to fractional value). Similarly, Tasmania realised in 1958 that six-seat electorates

produced unworkable deadlock, and therefore changed to seven-seat electorates [Wright 1980: 102; Lakeman and Lambert 1974: 268-9; Lakeman 1982: 46].

21. First-past-the-post can, of course, be extended to multiple as well as single seats, but with no uniformity in its principle.

   The `common-law' voting system requires each voter to vote for as many candidates as there are seats; variations, such as approval voting (discussed in Chapter 3), allow the voter to vote for more or fewer candidates than this number; limited-vote systems limit the voter to fewer than the number of seats (culminating in the Japanese single non-transferable vote); cumulative-vote systems give the voter as many votes as there are seats, but allow cumulation of two or more votes on one candidate. In each case the candidates with the most votes simpliciter are elected [Cole, Taebel and Engstrom 1990: 191; Cox 1990: 906, 914; Reed 1990: 336-37]. However, with each of these variations, the logic of tactical voting changes significantly [Catt 1989: 553; Hoag and Hallett 1922: 51-52; Lakeman 1982: 51].

   Nor does multi-seat first-past-the-post always offer simplicity as claimed. In most US jurisdictions. `if too many votes are cast, the ballot is invalidated [but] if, without conscious intent, less than the maximum number of votes are cast, the voter is partially disenfranchised' [Shocket, Heighberger and Brown 1992: 522-23].

22. The British Labour Party uses the `exhaustive-vote' runoff system to elect its parliamentary leader, while the British Conservatives elect their leader using a form of STV [Buchanan 1983: 11; Hill 1988: 245-46; Sykes 1990: 4].

23. The British single-member plurality system has been described as `a party list of one name' [Lakeman 1982: 40].

24. Similarly, the new constitution of Namibia prescribes the second ballot for Presidential elections, nationwide party-list PR to elect the national legislature and, for good measure, single-seat first-past-the-post for local councils.

25. Almost every party-list system used limits the maximum number of candidates per list to the number of seats to be filled.

26. The same applies to different parties running allied or joint lists; for example, in inter-war France, `Catholics who might have voted for an isolated MRP list might vote otherwise if the MRP list was affiliated to a Radical or Socialist list containing anti-clericals' [Campbell 1965: 116-117].

27. This is assuming that single-seat first-past-the-post `expands' into party-list PR when applied to multi-seat electorates. Of course, it could remain a winner-take-all system, which reproduces the basic logic of first-past-the-post, except that it may also increase the risk of a candidate being defeated by her own supporters' votes.

   France has often used different systems single- and multi-seat electorates with plurality, majority and proportional voting systems for different non-metropolitan territories in electing their representatives to the French National Assembly [Campbell 1965: 137].

28. Some versions of STV require the voter to indicate more preferences when there are more seats to be filled [Maley 1982; Rydon 1980], but in practice this adds little burden to the voter, since there are also likely to be more candidates of her preferred party to whom she can give these extra required preferences.

29. However, mixing multi-seat and single-seat electorates for the same assembly, even with STV,

can be criticised as unfair by the parties stronger in the multi-seat electorates [Hain and Hodgson 1982: 14-15; cf Wright 1980: 126].

30. STV itself, when extrapolated from the single-seat to the multi-seat case, has spawned some unorthodox variants; the Senate system between 1918 and 1948, or the `bottom-up' system, whereby the lowest candidates are eliminated and their preferences transferred until the right number of candidates remain.

   But STV was conceived first and foremost as a system for filling multiple seats; therefore the conventional version of STV is the norm not variants which begin with the other extreme (the alternative vote) and try to extrapolate its majority principle for filling one seat to filling a number.

31. However, when first-past-the-post is used to for several seats, it faces a dilemma. Either the voter must be allowed to vote for as many candidates as there are seats (as under the block-vote system), or the number of such candidates must be limited (as under the cumulative or the limited vote).

   The first alternative offends against first-past-the-post's logic even worse than does STV; for not only can one voter's second preference count against another voter's first preference it can even count against her own [Lakeman 1982: 24]. For some reason a second-choice candidate is no longer `second-best' when there is more than one seat.

   But the second alternative can enable minority parties to win seats (cf Japan, Illinois). Multi-seat first-past-the-post, then, cannot consistently maintain the same logic that it does in single-seat elections. This chapter will concentrate, therefore, upon first-past-the-post as applied to single-seat elections.

32. Moreover, in terms of democratic principle STV ensures a much more reliable link between votes and seats, for it reduces the chance of the election result being influenced by the intervention of hopeless (or `irrelevant') candidates.

33. The discussion in this chapter centres around first-past-the-post proper, which refuses to count second and later preferences at all. However, the same arguments are relevant to other systems, occasionally advocated [Sykes 1990: 7-81, whereby later preferences are reduced in value whenever they are transferred from one candidate to another `just to teach the voter a lesson, not to do it again' [Buchanan 1983: 23]. Under STV. A vote loses value only when it is transferred away from an elected candidate.

34. Except in some special circumstances (discussed in Chapter 6) where the minor candidate is `everyone's second preference' and the major parties unnecessarily `lock up' too many of their own primary votes.

35. This does of course depend on the voters voting the same way under first-past-the-post; but if a candidate can get elected under STV, it is likely she would also be a `safe bet' to vote for under first-past-the-post.

36. In this context the more familiar term is `Alternative Vote' (AV), which is the same as STV in single-seat electorates but is usually distinguished from STV in British parlance.

37. See John Martyn, letter in New Statesman & Society March 27, 1992.

38. It should be noted that the ALP no longer supports first-past-the-post voting for parliamentary elections, as it did in the past [Rydon 1980 381, 385], and that its enthusiasm for optional preferential voting has waned as its dependence on Democrat and Green preferences has

increased [Barnett 1990: 5; Hughes 1984: 226; Livingstone 1992; Morley 1992].

39. However, while most Australian commentators [Rydon 1980: 386; 1985: 16] favour simplification of voting rules to reduce the informal vote level, counter-arguments have been raised; `I suggest [the voting procedure] should be made more complicated. How can a useful and well-considered vote possibly be cast by people too stupid or uncaring to understand or read the very simple instructions on the House of Representatives [ballot] paper? [R.A. Lees, letter in The Australian December 11, 1984].

40. Such open deceit upon voters would be so objectionable that it would not be used. However, both Queensland local government's `block vote' ant the ACT's former d'Hondt system verge upon deceiving voters in this way, by imitating the form of the traditional preferential system while giving those preferences very different effects.

41. In a multi-seat electorate, this translates into `plumping' for her several highest preferences, not exceeding the number of seats.

42. This is, however, more easily accomplished under the US electoral arrangements, whereby a voter who chooses Perot for President can then vote for or against Republican candidates for other positions, in the same election; and minor parties with no candidate of their own on the ballot may `endorse' a major-party nominee instead. For example, in the 1990 election for New York Senator, Alfonse D'Amato was listed on the ballot three times as the endorsed candidate of the Republican Party, Conservative Party, and Right to Life Party [Smeal 1991: 73].

43. However, first-past-the-post voting and coalition government did not long survive together. In India the coalition split within three years; in Queensland, first-past-the-post voting was replaced by preferential within five years [Hamill and Reynolds 1983: 3]

44. See also: Robin Blackburn, Ian Bullock, letters in New Statesman & Society April 17, 1992; Gerry Hassan, April 24, 1992.

45. For this reason, the Austrian Constitution requires that if only one candidate is nominated unopposed then the Presidential election takes the form of a yes-or-no referendum on that candidate; similarly, some US states have considered enabling voters to choose `None of the Above' if they find the candidate(s) nominated unsatisfactory [Fund 1991: 28].

    However, the former Soviet system whereby a candidate could not be elected, even if unopposed, if fewer than half of the total electorate voted for her did not in practice make the choice more free, because of the pressure applied to vote for the official candidates.

46. The only possibly permissible exception is to ban parties whose `policy [is] to make the democratic system itself unworkable' the grounds on which the Communist Party in West Germany was banned [Pickles 1971: 123].

47. Although under STV (particularly in single-seat electorates) there is also some incentive to avoid competition among allied parties, this is more to avoid the public appearance of disunity than for any intrinsic aspect of the voting system.

    For example, in the 1992 Queensland election, National leader Rob Borbidge criticised the Liberals' decision to stand a candidate in his electorate. His reason was less the fear of a split conservative vote (even with preferences now optional) than his perception of the Liberal candidacy as an `unfriendly act'. In New South Wales, the Liberal and National parties have sought to avoid such contests, for fear of being seen as `political enemies' [Thomas 1992a, 199b]. The tension seems to be greatest when one party stands against a leader of the other party.

Under STV, it is possible in principle for two or more parties to contest the same electorate, yet swap preferences with so little leakage that their chances are not harmed at all. Some political figures even claim that this helps to `maximise' their combined vote [see letter by Lynton Crosby (State Director, Queensland Liberal Party) in the Courier-Mail June 17, l992]. Although there is little concrete evidence for this [Hamill and Reynolds 1983: 5, 8, 11, 81; Reynolds 1991: 129], it can at least be said that it need not significantly minimise, or split, their combined vote. Livingstone [1992] observes that in Queensland `the Liberal and National parties, however much they may disagree in private, will have to maintain a show of unity to encourage voters to exchange preferences' [cf Sykes 1990: 16, 28]. Under first-past-the-post, by contrast, contesting the same electorates is almost certain electoral suicide however unified the coalition parties may be, and however cordial their relations [Bogdanor 1981: 245; Rydon 1980: 380].

48. But see Hill [1988: 249, 273] where an example is given, though not in the same terms as I use here.

49. To use terms the currency of public choice theory; the National was not a `Condorcet-preferred candidate', because she was defeated in a one-on-one comparison against the Labor candidate (and presumably, would have likewise lost to the Liberal).

50. Some states (eg, Louisiana) require a runoff for the primary or the general election if no candidate polls a majority [Milnor 1969: 491. Whether the runoff or the primary is used, the same problem can arise as under STV, because these systems are functionally equivalent to it [Hoag and Hallett 1922: 476].

51. Strictly speaking, Goldwater owed his 1964 Republican nomination more to the party hierarchy than to primary elections involving rank-and-file Republican voters. But the principle stated in the quotation is still quite applicable to primaries.

52. This is not open to the objection raised in Chapter 3 against first-past-the-post encouraging the formation of electoral pacts. Under the second ballot such pacts follow, rather than limit, the voters' preferences, which can be expressed freely on the first ballot.

53. However, in a multi-seat election, using STV as it is usually applied, the situation is reversed, for reasons explained in Chapter 6. A minor party that draws a sizeable primary vote about two thirds of a quota, according to Musidlak [1984: 5] has a very good chance of surviving to benefit from each side's second preferences against the other.

54. This principle is echoed in the working definition of the democratic ideal adopted in Chapter 1 in the imperative that power be rationally, or reliably, indexed to consent.

55. Party-list systems may enable this through the device of combined lists, but under these non-monotonicity cannot occur, because such systems work on a `top-down' basis awarding seats first to an alliance of lists and then to its member lists rather than on a `bottom-up' basis, eliminating the lowest contenders in turn.

56. Chapter 3 explains why no voting system even one that tries not to, such as first-past-the-post can avoid counting the second and third preferences of lower candidates equally with the first preferences of higher candidates.

57. Under a first-past-the-post system, which as this Chapter explains has its own forms of non-monotonicity, the incentive to `get more votes' may be counter-productive, as it may split the combined vote even further against the common enemy.

58. With first-past-the-post too, the risk of a split vote can occur only within a certain `band'. If a Communist candidate increases her vote from 1 per cent to 20 per cent, she may spoil Labour's chances and hand victory to the Conservatives; but if she increases her vote still further, from 20 per cent to 50 per cent, she can claim victory in her own right.

However, under first-past-the-post this `band' of risk is much wider and (because preference flow is not a factor) much easier to estimate than under STV: therefore it is more likely to induce tactical voting accordingly.

59. Note that either the chance or the value can be reduced.

60. As the New Zealand Royal Commission stated; `A change to multi-member constituencies would need to offer major advantages to justify the loss of the direct link between voter and MP. We do not consider that plurality in multi-member constituencies does so' [1986: 301.

61. Electorates which have two or more seats, but which fill them at different times, in rotation, each by majority vote, are functionally equivalent to single-seat electorates [Mackerras 1989: 1; Sharman 1982], and are so treated in this thesis.

62. Sykes [1990: 2, 59] attacks STV for allowing the voter only a single vote in a five-seat electorate, when `your natural expectation would be that you should have five votes For election of the other four [MPs] you will be at the mercy of other people's votes'.

However, Sykes himself then advocates the West German additional-member system for parliamentary elections notwithstanding that, as it operates in Germany, it effectively allows the voter only one vote in a 498-seat nationwide electorate [cf Hoag and Hallett 1922: 469]; and criticises STV for giving second, third and later choices a value equal to first preferences in some cases [1990: 7-8]; yet if the voter did have `five votes' as Sykes craves, then her first five preferences would in all cases all be counted equally. In fact, under STV the reason each voter has one vote in a five-seat electorate is because her later choices are not counted unless her first choice is eliminated, and are reduced in value if her first choice is elected.

63. Other methods are conceivable. One Hare's original proposal, that the ballot-papers showing the longest list of preferences be the ones selected for transfer is criticised by Hill [1988: 253] as `giving greater power to elect to a voter with a long list'. He does not elaborate why this is undesirable, and this criticism could seem outweighed by the benefits of more votes likely remaining in the count.

However, two other factors should be noted. (1) The criterion is not wholly reliable; a ballot showing a dozen preferences might yet end up exhausted if all of those candidates are eliminated, whereas a ballot showing only one preference might still remain live until the very last count if the candidate preferred is the proxime accessit. (2) This rule could encourage tactical voting, with voters recording unconsidered preferences merely to increase their vote's chance of being transferred.

64. Or fewer, if not all of these 120 ballot-papers indicate a live preference for any of the remaining candidates. For example, 30 of the 120 ballots may be `exhausted', leaving only 90 of them still live.

65. By the `d'Hondt method' I mean its mathematical allocation formula, not its party-list aspect.

66. I deliberately use the term `simple remainders' in preference to the usual term `remainders' simpliciter in contrast to `averages', because a party's average can be seen as a special kind of `highest remainder' ie, the remainder that would result if the party divided its support equally among separate groups, numbering one more than its tally of whole quotas.

However, the literature discussing PR systems usually draws the distinction as being between `remainders' and `averages' [Rae 1971 31] (or `quotas' and `divisors' [Shugart 1992: 209-210]).

67. As the quota is reduced when the total number of seats is increased, the larger parties (or, in the Alabama case, states) who already have more quotas of votes (or, in the Alabama case, population) benefit more. What was formerly a portion of the whole quota is now surplus; parties with more votes, and which therefore have more quotas, now have more newly-released surplus votes.

68. Senator Jenkins proposed that this phenomenon be prevented by limiting the number of preferences that a voter could express. The Federal Government opted instead to reject STV in favour of a d'Hondt party list system for the new ACT Assembly. Both alternatives are open to objection for the reasons given in Chapters 2 and 3.

69. It is interesting that such elections therefore have a higher probability of electing a centrist `Condorcet candidate' one who is preferred over each opponent by a majority of (remaining) votes.

70. In some cases there is an advantage from having a candidate elected early with a large surplus. In some cases, the first candidates to reach the quota are awarded prizes full six-year terms, for Senators elected after a double dissolution; extra votes, for campus delegates to the National Union of Students (NUS) Conference which cannot be logically justified in STV's terms, because it merely rewards the candidates who are `first past the post' [Taplin 1982].

71. Although this has been criticised even by supporters of STV [Giezelt 1981: 62; Ihlein 1988: 21-22; New Zealand Royal Commission 1986: 34], and particularly by its opponents [Katz 1984: 141-145; Ray 1982: 133-4; Sykes 1990: 22-31] on the grounds that it encourages political cannibalism', with candidates competing for votes against their team-mates.

72. A party may not want to divide its ticket-votes exactly equally; it may prefer, say, a 27-26-24-23% rather than a 25-25-25-25% split, to ensure that its highest-ranked candidates still have an advantage over their team-mates.

73. Since 1984, the Australian Senate system has required that all of the elected candidate's votes be considered for transfer, not just the batch most recently received. This was intended to reduce the influence of `floating' voters, whose votes `coming lately' to the elected candidate from lower, eliminated contenders get transferred to their next preference as well, while the votes of those loyalists who gave the elected candidate their primary vote stay `locked up' and are not transferred [Taplin 1982].

   This in itself seems a reasonable modification, and is arguably mare fair, since the result will no longer depend on the order in which batches of votes are received [Van Den Bergh 1955: 65]. However, the 1984 Senate amendments also (intentionally or not) adopted the highly unfair rule that all of the elected candidate's votes are transferred at the same value even if they already have widely differing values [Quota Notes December 1984: 2, June 1987: 1].

   For example, her primary votes would have a value of 1.0, while other votes received from a team-mate's surplus may have a value of (say) 0.2. Yet all will be transferred with their value changed to (say) 0.4 a decrease in one case, an increase in the other. Not only does this violate the STV principle that a successful vote's likelihood of full-value transfer must be reduced; it also `open[s] up the possibility of some people using tactical voting, to achieve more than they could in normal circumstances' and `is tantamount to allowing some voters more than one vote' [Senator David Vigor, Hansard, June 4, 1987: 3555].

74. One could choose different fractions for example, if one wanted to avoid giving undue advantage to larger parties, the divisor could be defined as `one more than twice the number of

candidates that vote has already helped to elect'.

The divisor would then decrease in steps of 1, 3, 5, 7, Like Saint-Lague's version of the highest-average system that operates in Scandinavian party list systems [Lakeman and Lambert 1974: 96]. A large party would then need three times as many votes as a smaller party to obtain its second seat before the latter obtained its first whereas, under the d'Hondt system, it would need only twice as many votes.

Other versions of the highest-average method can be devised by adopting a different set of divisors [Carstairs 1980: 29; New Zealand Royal Commission 1986: 71-73].

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Tom Round
B.A (Hons), LL.B
I.   Ph.D student, School of Politics and Public Policy,
     Faculty of Commerce and Admin, and
II. Associate Lecturer and Tutor, School of Justice Admin, Faculty
     of Education,
... Griffith University, Brisbane, Queensland 4111, Australia.
ph. 061 7 3875 6824 work, 061 7 3217 4169 home
fax 061 7 3875 5608 work
email tround@edn.gu.edu.au (preferred)
OR tom.round@20.fido.far.peg.apc.org
```