

Elections and Electoral Systems

Democracies are sometimes classified in terms of their electoral system.

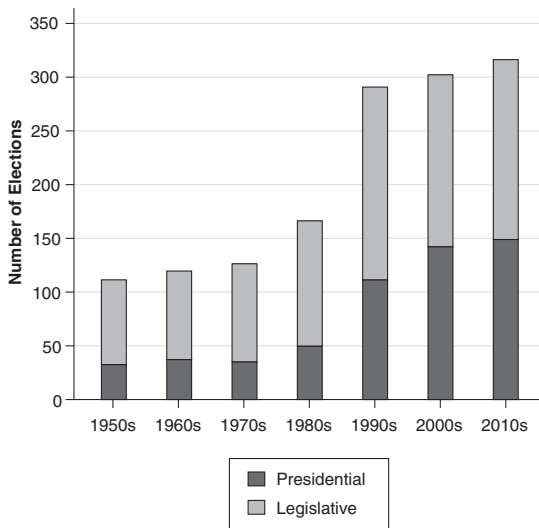
An **electoral system** is a set of laws that regulate electoral competition between candidates or parties or both.

Elections and Electoral Integrity

Elections are increasingly used to fill legislative and executive offices around the world.

Almost all of the world's independent states today use direct elections to elect people to their lower house of parliament.

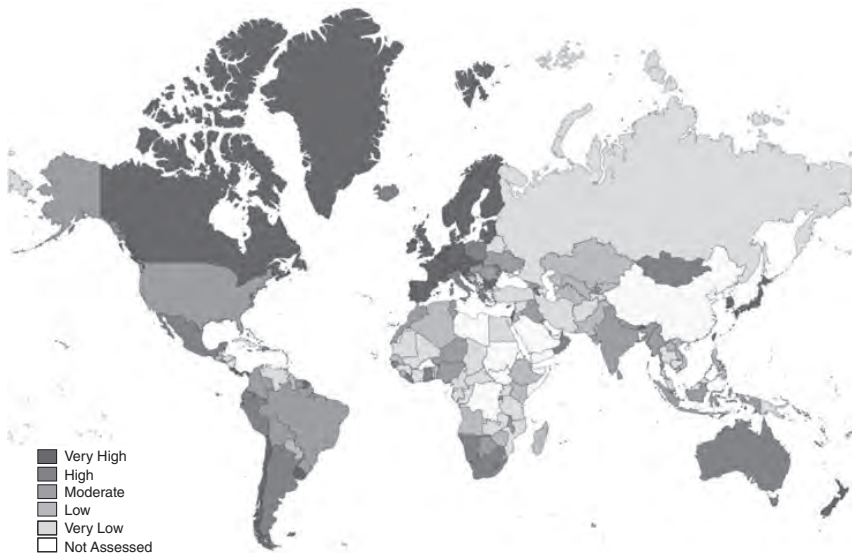
Legislative and Presidential Elections by Decade



Electoral integrity refers to the extent to which the conduct of elections meets international standards and global norms concerning 'good' elections.

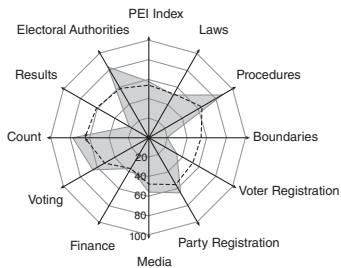
These norms and standards are usually set out in treaties, conventions, and guidelines issued by international and regional organizations.

Violations of electoral integrity are referred to as **electoral malpractice**.

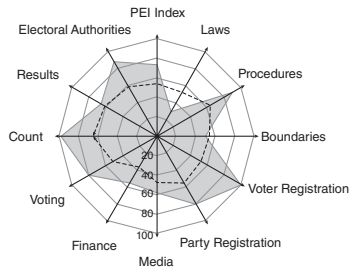


Electoral Integrity, 2021

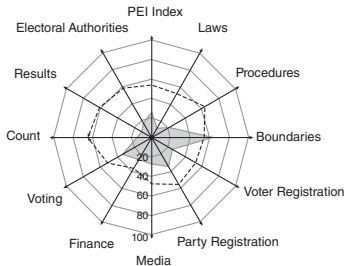
United States



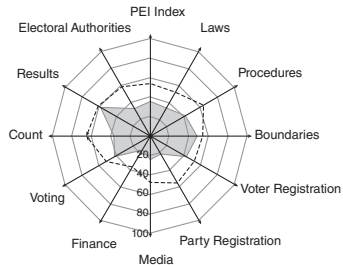
South Korea



Belarus



Egypt



Democracies tend to have higher levels of electoral integrity than dictatorships.

There's variation, though, among both democracies and dictatorships.

Electoral integrity is influenced by:

- Domestic structural constraints
- The role of the international community
- Institutional design
- Electoral management bodies

Two strategies to identify election fraud:

1. Election monitoring
2. Election forensics

Benford's Law: Frequency Distribution of First and Second Digits

0	1	2	3	4	5	6	7	8	9	MEAN
E	0.301	0.176	0.125	0.097	0.079	0.067	0.058	0.051	0.046	3.441
0.120	0.114	0.109	0.104	0.100	0.097	0.093	0.090	0.088	0.085	4.187

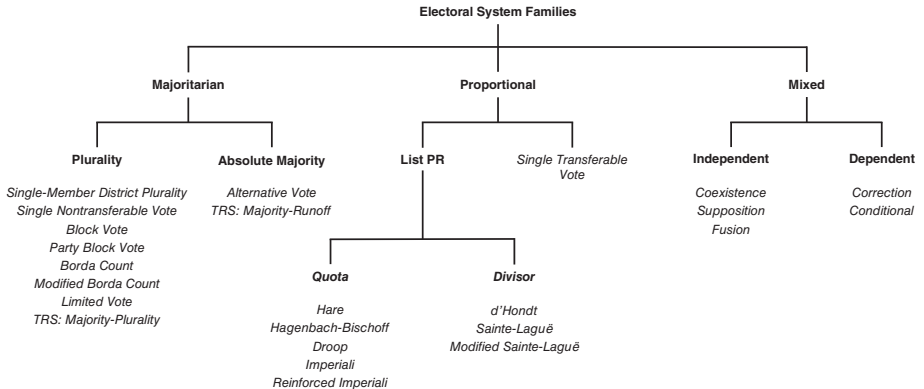
Electoral Systems

Political scientists typically distinguish between electoral systems based on their electoral formula.

1. Majoritarian
2. Proportional
3. Mixed

An electoral formula determines how votes are translated into seats.

Electoral System Families



Majoritarian Electoral Systems

A **majoritarian electoral system** is one in which the candidates or parties that receive the most votes wins.

A single-member district plurality system (SMDP) is one in which individuals cast a single vote for a candidate in a single-member district.

The candidate with the most votes wins.

Bedford Constituency, UK Legislative Elections, 2019

CANDIDATE	PARTY	VOTES	PERCENTAGE
MOHAMMAD YASIN	LABOUR	20,491	43.3
RYAN HENSON	CONSERVATIVE	20,346	43.0
HENRY VANN	LIBERAL DEMOCRAT	4,608	9.7
ADRIAN SPURRELL	GREEN	960	2.0
CHARLES BUNKER	BREXIT	896	1.9

The **single nontransferable vote (SNTV)** is a system in which voters cast a single candidate-centered vote in a *multimember* district.

The candidates with the highest number of votes are elected.

Whereas SMDP and SNTV are 'plurality' majoritarian electoral systems, the **alternative vote** is an 'absolute majority' majoritarian system.

The **alternative vote (AV)**, sometimes called the instant-runoff vote, is a candidate-centered preference voting system used in single-member districts where voters rank order the candidates.

If a candidate wins an absolute majority of first-preference votes, they're immediately elected.

If no candidate wins an absolute majority, the candidate with the fewest first-preference votes is eliminated, and their votes are reallocated among the remaining candidates based on the designated second preferences.

This process is repeated until one candidate has obtained an absolute majority of the votes cast (full preferential system) or an absolute majority of the valid votes remaining (optional preferential system).

Richmond Constituency, New South Wales, Australia 1990

	FIRST COUNT		SECOND COUNT		THIRD COUNT		FOURTH COUNT		FIFTH COUNT		SIXTH COUNT		SEVENTH COUNT	
CANDIDATE	(NO.)	(%)	(NO.)	(%)	(NO.)	(%)	(NO.)	(%)	(NO.)	(%)	(NO.)	(%)	(NO.)	(%)
STAN GIBBS	4,346	6.3	4,380	6.3	4,420	6.4	4,504	6.5	4,683	6.8				
NEVILLE NEWELL	18,423	26.7	18,467	26.7	18,484	26.8	18,544	26.9	18,683	27.1	20,238	29.4	34,664	50.5
GAVIN BAILLIE	187	0.3												
ALAN SIMS	1,032	1.5	1,053	1.5	1,059	1.5	1,116	1.6						
IAN PATERSON	445	0.6	480	0.7	530	0.8								
DUDLEY LEGGETT	279	0.4	294	0.4										
CHARLES BLUNT	28,257	40.9	28,274	41.0	28,303	41.0	28,416	41.2	28,978	42	29,778	43.2	33,980	49.5
HELEN CALDICOTT	16,072	23.3	16,091	23.3	16,237	23.5	16,438	23.8	16,658	24.1	18,903	27.4		

Australian How-To-Vote Card, Green Party, Canning Constituency, 2015

HOW TO VOTE 1

VANESSA RAULAND

FOR CANNING

STANDING UP FOR WHAT MATTERS

You must number every box for your vote to count.
No ticks or crosses.

PLACE A '1' IN THIS BOX, THEN NUMBER ALL OTHER BOXES.





HOUSE OF REPRESENTATIVES

6	SHARMA, Vimal Kumar Palmer United Party
8	WHITTLE, Connor Liberal Democrats
2	ALLEN, Michelle Pirate Party
7	SMITH, Greg Australian Defence Veterans Party
3	LOVE, Katrina Animal Justice Party
9	HASTIE, Andrew Liberal
12	VAN LIESHOUT, Teresa Independent
4	KEOGH, Matt Australian Labor Party
1	RAULAND, Vanessa The Greens (WA)
10	McCOURT, Jim Family First Party
11	VAN BURGEL, Jamie Australian Christians
5	SMITH, Angela Sustainable Population Party

Authorised by: Jessa McColl on behalf of The Greens (WA), 443 Hay St, Perth, 6000.
Printed by The Environmental Printing Company, 2/20-24 Commerce St, Malaga WA 6090.

The majority-runoff two-round system (TRS) is another 'absolute majority' majoritarian electoral system.

In a **majority-runoff TRS** voters cast a single candidate-centered vote in a single-member district.

Any candidate who obtains an absolute majority in the first round of elections is elected.

If no one obtains an absolute majority, then the top two vote winners go on to compete in a runoff election in the second round.

Burundi Presidential Elections, 2020

FIRST ROUND		
CANDIDATE	PARTY	VOTE SHARE (%)
ÉVARISTE NDAYISHIMIYE	CNDD-FDD	71.45
AGATHON RWASA	NATIONAL CONGRESS FOR LIBERTY	25.15
GASTON SINDIMWO	UNION FOR NATIONAL PROGRESS	1.70
DOMITIEN NDAYIZEYE	KIRA BURUNDI COALITION	0.57
LéONCE NGENDAKUMANA	FRONT FOR DEMOCRACY IN BURUNDI	0.49
DIEUDONNé HAHIMANA	INDEPENDENT	0.43
FRANCIS ROHERO	INDEPENDENT	0.21

Uruguay Presidential Elections, 2019

FIRST ROUND		
CANDIDATE	PARTY	VOTE SHARE (%)
DANIEL MARTINEZ	BROAD FRONT	40.49
LUIS ALBERTO LACALLE POU	NATIONAL PARTY	29.70
ERNESTO TALVI	COLORADA PARTY	12.80
GUIDO MANINI RÍOS	OPEN CABILDO	11.46
CÉSAR VEGA	PARTIDO ECOLOGISTA RADICAL INTRANSIGENTE	1.43
EDGARDO NOVICK	PARTIDO DE LA GENTE	1.12
PABLO MIERES	INDEPENDENT PARTY	1.01
GONZALO ABELLA	POPULAR UNITY	0.84
GUSTAVO SALLE	GREEN ANIMALIST PARTY	0.83
OTHERS		0.33
SECOND ROUND		
DANIEL MARTINEZ	BROAD FRONT	49.21
LUIS ALBERTO LACALLE POU	NATIONAL PARTY	50.79

Proportional Electoral Systems

A **proportional**, or **proportional representation (PR)**, **electoral system** is a quota- or divisor-based electoral system employed in multimember districts.

The rationale behind PR systems is to produce a proportional translation of votes into seats.

Proportional representation (PR) electoral systems come in two main types:

1. List proportional representation systems (List PR)
2. Single transferable vote (STV)

In a **list PR system**, each party presents a list of candidates to voters in each multimember district.

Parties receive seats in proportion to their overall share of the votes.

These seats are then allocated among the candidates on their list.

List PR systems differ in important ways:

1. The precise formula for allocating seats to parties
2. The district magnitude
3. The use of electoral thresholds
4. The type of party list employed

All PR systems employ either quotas or divisors to allocate seats to parties.

A **quota** is essentially the 'price' in terms of votes that a party must 'pay' to guarantee themselves a seat in a particular electoral district.

A quota, $Q(n)$, is calculated as

$$Q(n) = \frac{V_d}{M_d + n}$$

- V_d is the number of valid votes in district d .
- M_d is the district magnitude or number of available seats in district d .
- n is the modifier of the quota.

$$Q(n) = \frac{V_d}{M_d + n}$$

- Hare quota: $n = 0$.
- Hagenbach-Bischoff quota: $n = 1$.
- Imperiali quota: $n = 2$.
- Reinforced imperiali quota: $n = 3$.
- The Droop quota is the Hagenbach-Bischoff quota plus 1.

Allocating Seats to Parties using the Hare Quota

	PARTY A	PARTY B	PARTY C	PARTY D	PARTY E	PARTY F	TOTAL
VOTES	47,000	16,000	15,800	12,000	6,100	3,100	100,000
SEATS							10
QUOTA							10,000
VOTES ÷ QUOTA	4.7	1.6	1.58	1.2	0.61	0.31	
AUTOMATIC SEATS	4	1	1	1	0	0	7
REMAINDER SEATS							3

Allocating Seats to Parties using the Hare Quota

	PARTY A	PARTY B	PARTY C	PARTY D	PARTY E	PARTY F	TOTAL
VOTES	47,000	16,000	15,800	12,000	6,100	3,100	100,000
SEATS							10
QUOTA							10,000
VOTES ÷ QUOTA	4.7	1.6	1.58	1.2	0.61	0.31	
AUTOMATIC SEATS	4	1	1	1	0	0	7
REMAINDER SEATS							3

What about the 'remainder' seats?

The most common method for allocating the remainder seats is the **largest remainder method**.

Hare Quota with Largest Remainders

	PARTY A	PARTY B	PARTY C	PARTY D	PARTY E	PARTY F	TOTAL
VOTES	47,000	16,000	15,800	12,000	6,100	3,100	100,000
SEATS							10
QUOTA							10,000
VOTES ÷ QUOTA	4.7	1.6	1.58	1.2	0.61	0.31	
AUTOMATIC SEATS	4	1	1	1	0	0	7
REMAINDER	0.7	0.6	0.58	0.2	0.61	0.31	
REMAINDER SEATS	1	1	0	0	1	0	3
TOTAL SEATS	5	2	1	1	1	0	10

A **divisor**, or **highest average, system** divides the total number of votes won by each party in a district by a series of numbers (divisors) to obtain quotients.

District seats are then allocated according to which parties have the highest quotients.

The three most common divisor systems are:

- D'Hondt: 1, 2, 3, 4, ...
- Sainte-Laguë: 1, 3, 5, 7, ...
- Modified Sainte-Laguë: 1.4, 3, 5, 7, ...

Allocating Seats to Parties using the d'Hondt Divisor System

	PARTY A	PARTY B	PARTY C	PARTY D	PARTY E	PARTY F	TOTAL
VOTES	47,000	16,000	15,800	12,000	6,100	3,100	100,000
SEATS							10
VOTES ÷ 1	47,000 (1)	16,000 (3)	15,800 (4)	12,000 (6)	6,100	3,100	
VOTES ÷ 2	23,500 (2)	8,000 (9)	7,900 (10)	6,000	3,050	1,550	
VOTES ÷ 3	15,666 (5)	5,333	5,266	4,000	2,033	1,033	
VOTES ÷ 4	11,750 (7)	4,000	3,950	3,000	1,525	775	
VOTES ÷ 5	9,400 (8)	3,200	3,160	2,400	1,220	620	
VOTES ÷ 6	7,833	2,667	2,633	2,000	1,017	517	
TOTAL SEATS	5	2	2	1	0	0	10

The key factor influencing the proportionality of an electoral system is the district magnitude.

District magnitude refers to the number of representatives elected in a district.

The larger the district magnitude, the greater the degree of proportionality.

There's considerable variation in district magnitude across countries.

In 2006 and 2007, Ukraine had a district magnitude of 450.

Serbia currently has a district magnitude of 250.

Historically, Chile had a district magnitude of 2.

All proportional electoral systems have an electoral threshold.

An **electoral threshold** is the minimum level of support a party needs to obtain representation.

A **natural threshold** is a mathematical by-product of the electoral system.

A **formal threshold** is explicitly written into the electoral law.

Electoral system proportionality is low when the electoral threshold is high.

Electoral thresholds can have negative side-effects.

- In Turkey 2002, so many parties failed to surpass the 10% threshold that fully 46% of all votes were wasted.
- In Poland 1993, 34% of the votes were wasted, allowing the former Communists to return to power.

In a **closed party list**, the order of candidates elected is determined by the party itself, and voters aren't able to express a preference for a particular candidate.

In an **open party list**, voters can indicate not just their preferred party, but also their favored candidate within that party.

In a **free party list**, voters have multiple votes they can allocate either within a single party list or across different party lists.

02424605

PROV

1994

Make your mark next to the party you choose.
Etša leshwase pela mofangiso ooo n e kgotshang.
Yena kgotshwa eceleni kwelwano lo leshwaseko.
Enda mofangiso otholelo ka vando len e n e hswakisa.
Baya leshwase go lebagane le leshwase la gago.
Yena kgotshwa laho eduse rekgano oyalatetako.



Place a mark next to the party you choose.
Ora leshwase la gago go lebagane le phuthi yoo o e kgotshago.
Kha vito le kgotshwa pholelo le dekgano len eha leshwa.
Baya leshwase leshwase otholelo leshwaseko eha oyalatetako.
Dwasa kgotshwa laho eduse rekgano oyalatetako.

PROV 1994

PAN AFRICANIST CONGRESS OF AZANIA		PAC		
VRYHEIDSFREONT - FREEDOM FRONT		VF-FF		
WOMEN'S RIGHTS PEACE PARTY		WRPP		
XIMOKO PROGRESSIVE PARTY		XPP		
AFRICA MUSLIM PARTY		AMP		
AFRICAN CHRISTIAN DEMOCRATIC PARTY		ACDP		
AFRICAN DEMOCRATIC MOVEMENT		ADM		
AFRICAN NATIONAL CONGRESS		ANC		
DEMOCRATIC PARTY - DEMOKRATIESE PARTY		DP		
DIKWANKWETLA PARTY OF SOUTH AFRICA		DPSA		
FEDERAL PARTY		FP		
LUSO - SOUTH AFRICAN PARTY		LUSAP		
NATIONAL PARTY - NASIONALE PARTY		NP		
INKATHA FREEDOM PARTY - IQEMBU LENKATHA YENKULULEKO		IFP		

P.W.V.

Folketingsvalget 2019



Sæt X i rubrikken til venstre for et partiavn eller et kandidatavn.

Sæt kun et X på stemmesedlen.

Du må ikke udfylde rubrikken med andet end et X, da din stemmeseddel så bliver ugyldig.

Du kan få blyet din stemmeseddel, hvis du bliver foraktet.

A. Socialdemokratiet

<input type="checkbox"/> Mathias Jørgensen	<input type="checkbox"/> Kasper Sand Kjær
<input type="checkbox"/> Jeppe Bruus	<input type="checkbox"/> Anne Sina
<input type="checkbox"/> Morten Rasmussen	<input type="checkbox"/> Simon Pihl Sørensen
<input type="checkbox"/> Mette Dufhuus	<input type="checkbox"/> Mathias Testag

B. Radikale Venstre

<input type="checkbox"/> Sofie Carsten Nielsen	<input type="checkbox"/> Abbas Razi
<input type="checkbox"/> Søren Lindgreen	<input type="checkbox"/> Dennis Schmeck
<input type="checkbox"/> Mads Høj Jensen	<input type="checkbox"/> Peter Socovic
<input type="checkbox"/> Susanne Wad Leth	<input type="checkbox"/> Jesper Velling

C. Det Konservative Folkeparti

<input type="checkbox"/> Rasmus Jensen	<input type="checkbox"/> Mads Scheldebeck
<input type="checkbox"/> Rasmus Bjørn-Kjelson	<input type="checkbox"/> Lise Skov
<input type="checkbox"/> Steffen Rasmussen	<input type="checkbox"/> Henrik Sørensen

D. Nye Borgerlige

<input type="checkbox"/> Jeppe Jørgensen	<input type="checkbox"/> Rasmus Funder
<input type="checkbox"/> Annette Madsen	<input type="checkbox"/> Lene Mathsen
<input type="checkbox"/> Hans Blomberg	<input type="checkbox"/> Claus Børge Sørensen

E. Klaus Riskær Pedersen

<input type="checkbox"/> Peter Høft	<input type="checkbox"/> Anette Prang
-------------------------------------	---------------------------------------

F. SF – Socialistisk Folkeparti

<input type="checkbox"/> Søren Børst	<input type="checkbox"/> Nils Christian Børst
<input type="checkbox"/> Vivi Nor Jacobsen	<input type="checkbox"/> Børst Skovby
<input type="checkbox"/> Marianne Bjørn	<input type="checkbox"/> Jacobine Schmidt
<input type="checkbox"/> Ina Sørensen	<input type="checkbox"/> Henrik Lund

I. Liberal Alliance

<input type="checkbox"/> Jacob B. Olsen	<input type="checkbox"/> Michael Melchior
<input type="checkbox"/> Steffen Larsen	<input type="checkbox"/> Anders Vest
<input type="checkbox"/> Mette Kristoffersen	

K. Kristendemokraterne

<input type="checkbox"/> Jacob Rasmussen	<input type="checkbox"/> Sara Sejergaard
<input type="checkbox"/> Johannes Gundersen	<input type="checkbox"/> Kim Gundersen
<input type="checkbox"/> Lars Sejergaard	

O. Dansk Folkeparti

<input type="checkbox"/> David Olsen	<input type="checkbox"/> Mikkel Døhrner
<input type="checkbox"/> Pia Rasmussen	<input type="checkbox"/> Kim Rasmussen
<input type="checkbox"/> Kenneth Kristensen Børst	<input type="checkbox"/> Anders Gertsen Olsen
<input type="checkbox"/> Mette Christensen	<input type="checkbox"/> Anette Skotte

P. Stram Kurs

<input type="checkbox"/> Henrik Westermann Sørensen	<input type="checkbox"/> Ejner Rasmussen
<input type="checkbox"/> Kim Jensen	

V. Venstre, Danmarks Liberale Parti

<input type="checkbox"/> Colette Bruus	<input type="checkbox"/> Mads Foged
<input type="checkbox"/> Flemming Andersen	<input type="checkbox"/> Mikkel Madsen
<input type="checkbox"/> Christian Dal	<input type="checkbox"/> Charlotte Munch
<input type="checkbox"/> Søren Elvén	<input type="checkbox"/> Kim Vind

Ø. Enhedslisten – De Røde Grønne

<input type="checkbox"/> Søren Rasmussen	<input type="checkbox"/> Anders Madsen
<input type="checkbox"/> Søren Sørensen	<input type="checkbox"/> Helle B. Jensen
<input type="checkbox"/> Søren Børst	<input type="checkbox"/> Tobias Clausen
<input type="checkbox"/> Anne Berg	<input type="checkbox"/> Søren Rasmussen

A. Alternativet

<input type="checkbox"/> Søren Sørensen	<input type="checkbox"/> Anders Sørensen
<input type="checkbox"/> Marianne Victor Hansen	<input type="checkbox"/> Kim Christensen
<input type="checkbox"/> Kim Rasmussen	<input type="checkbox"/> Thomas Andersen
<input type="checkbox"/> Søren Børst	

Uden for partierne

<input type="checkbox"/> Christian B. Olsen	<input type="checkbox"/> Mads Pihl
---	------------------------------------

The only proportional electoral system that doesn't employ a party list is the single transferable vote.

The single transferable vote (STV) is a candidate-centered preferential voting system used in multimember districts.

In STV systems, candidates that surpass a specified quota of first-preference votes are immediately elected.

In successive counts, voters from eliminated candidates and surplus votes from elected candidates are reallocated to the remaining candidates until all the seats are filled.

STV example

- District magnitude is 3.
- 20 voters.
- 5 candidates: Bruce, Shane, Sheila, Glen, and Ella.
- Droop quota: $\lceil 20 / (3 + 1) \rceil + 1 = 6$

Results from 20 Ballots in an STV System

VOTING ROUND	AAAA	BB	CCCCCCCC	DDDD	E	F
1ST	BRUCE	SHANE	SHEILA	SHEILA	GLEN	ELLA
2ND	SHANE	BRUCE	GLEN	ELLA		
3RD			ELLA	GLEN		

STV in a 3-Seat District with 20 Voters

CANDIDATES						
VOTING ROUND	BRUCE	SHANE	SHEILA	GLEN	ELLA	RESULT
1ST	AAAA	BB	CCCCCCCC DDDD	E	F	SHEILA IS ELECTED, AND SHEILA'S SURPLUS VOTES ARE REALLOCATED.
2ND	AAAA	BB	CCCC DD	E CCCC	F DD	SHANE IS ELIMINATED.
3RD	AAAA BB		CCCC DD	E CCCC	F DD	BRUCE IS ELECTED.
4TH	AAAA BB		CCCC DD	E CCCC	F DD	ELLA IS ELIMINATED, AND GLEN IS ELECTED.

STV systems, click [▶ here](#)

Mixed Electoral Systems

A **mixed electoral system** is one in which voters elect representatives through two different systems, one majoritarian and one proportional.

Most mixed systems employ multiple electoral tiers.

An electoral tier is a level at which votes are translated into seats.

The lowest electoral tier is the district or constituency level. Higher tiers are constituted by grouping together different lower-tier constituencies, typically at the regional or national level.

In a mixed system, it's typically the case that a majoritarian system is used in the lowest tier (district level) and a proportional system is used in the upper tier (regional or national level).

There are two basic types of mixed systems.

1. An **independent mixed electoral system** is one in which the majoritarian and proportional components of the electoral system are implemented independently of one another.
2. A **dependent mixed electoral system** is one in which the application of the proportional formula is dependent on the distribution of seats or votes produced by the majoritarian formula.

Translating Votes into Seats in an Independent Mixed System

	Votes won in each electoral district					National district votes won	Seats won			
	1	2	3	4	5		% of votes won	SMDP	List PR	Total
Party A	3,000	3,000	3,000	3,000	3,000	15,000	60	5	3	8
Party B	2,000	2,000	2,000	2,000	2,000	10,000	40	0	2	2
Total	5,000	5,000	5,000	5,000	5,000	25,000	100	5	5	10

In most dependent mixed systems, individuals have two votes.

- One vote is for the representative at the district level (candidate vote).
- One vote is for the party list in the higher electoral tier (party vote).

Translating Votes into Seats in a Dependent Mixed System

	Votes won in each electoral district					National district votes won	Seats won			
	1	2	3	4	5		% of votes won	SMDP	List PR	Total
Party A	3,000	3,000	3,000	3,000	3,000	15,000	60	5	1	6
Party B	2,000	2,000	2,000	2,000	2,000	10,000	40	0	4	4
Total	5,000	5,000	5,000	5,000	5,000	25,000	100	5	5	10