# *Electoral System vs. The Popular Vote*

Charles M. Biles, Ph.D.

nia977.wix.com/drbcap

University of Alaska Southeast

6 September 2017

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*Electoral System*
*vs.*
*The Popular Vote*

Advice

Charles M. Biles, Ph.D.
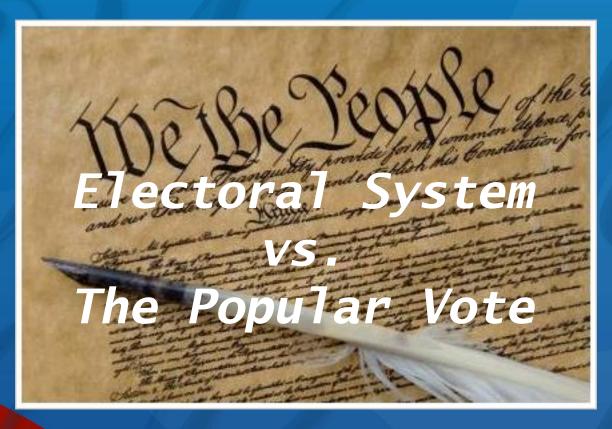nia977.wix.com/drbcap

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# Question

What is an election?

# Question

What is the difference between a war and an election?

# Question

A prime goal of democracy is to replace wars with elections by replacing bullets with ballots.

# An Election

## The Electorate

## Voters

Suffrage:  Who can vote?

# An Election

Ballots

One person – one vote?

# An Election

## Who wins?

Ballots

The
2016
Presidential
Election

# The Electorate

# Two Models

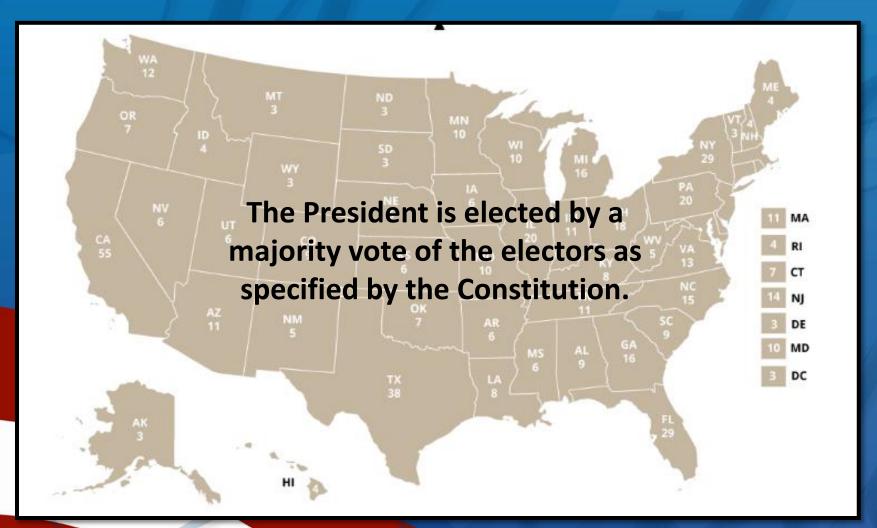➢ States Model

➢ Electoral College Model

# The States Model

In a presidential election the *electorate* consists of the 50 states plus the District of Columbia.

The *ballot* is not one-state, one-vote. A state's ballot is weighted as described by the *electoral system* in the Constitution.

# Electoral College Model



**The President is elected by a majority vote of the electors as specified by the Constitution.**

538 electors

# The Electoral College

The College consists of a slate of electors from each state. The number of electors equals the number of members of Congress—the number of representatives and senators.

Amendment XXIII (ratified 1961) allows the District of Columbia three electors.

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# The Electoral System

The electoral system is a *process*.

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✓ National Election Day   10 November 2016.

In a presidential election when you vote
for candidate X you are voting for the slate
of elector's pledged to candidate X.

# The Electoral System

The electoral system is a *process*.

- ✓ National Election Day   10 November 2016.
- ✓ Electors Day   19 December 2016

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- ✓ National Election Day   10 November 2016.
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- ✓ National Election Day    10 November 2016.
- ✓ Electors Day    19 December 2016
- ✓ Submission Day    28 December 2016
- ✓ Decision Day    6 January 2017
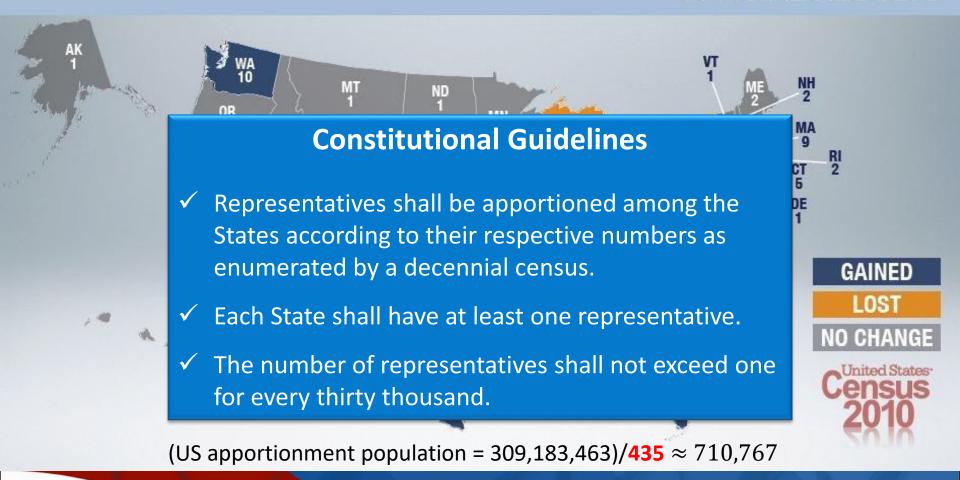
# The Electoral System

The electoral system is a *process*.

✓ National Election Day   10 November 2016.

✓ Electors Day   19 December 2016

✓ Submission Day   28 December 2016

✓ Decision Day   6 January 2017

➢ Inauguration Day   20 January 2017

National Conference of State Legislatures

AK
1

WA
10

MT
1

ND
1

VT
1

ME
2

NH
2

MA
9

RI
2

CT
5

DE
1

## Constitutional Guidelines

✓ Representatives shall be apportioned among the States according to their respective numbers as enumerated by a decennial census.

✓ Each State shall have at least one representative.

✓ The number of representatives shall not exceed one for every thirty thousand.

**GAINED**
**LOST**
**NO CHANGE**

United States·
Census
2010

(US apportionment population = 309,183,463)/**435** $\approx$ 710,767
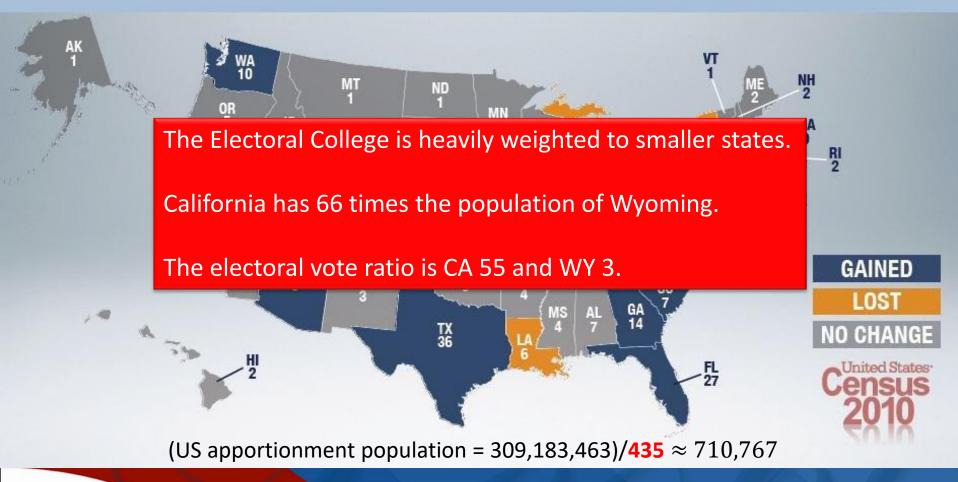
http://www.census.gov/2010census/data/apportionment-data.php

Note: $50 \leq h \leq 10306$ by constitutional constraints.

The Electoral College is heavily weighted to smaller states.

California has 66 times the population of Wyoming.

The electoral vote ratio is CA 55 and WY 3.

(US apportionment population = 309,183,463)/**435** ≈ 710,767

http://www.census.gov/2010census/data/apportionment-data.php

Note: $50 \leq h \leq 10306$ by constitutional constraints.

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Distributing 435 seats among 50 states according to their respective populations is a math problem.

# A Math Skill

How do I average two nonnegative whole numbers?

What is the average of 8 and 12?

# The Average

Example:  ave(8,12)  =

Maximum ➢ max(8,12)  =  12

Minimum ➢ min(8,12)  =   8

Arithmetic Mean ➢ AM(8,12)  =  10

# The Average

Example:  ave(8,12)  =

| Maximum | ➢ max(8,12)  =  12 |
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Harmonic Mean    ➢   HaM(8,12)   =   $\dfrac{2}{\frac{1}{8} + \frac{1}{12}}$   = 9.6

28

# The Average

Example:  ave(8,12)  =

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Arithmetic Mean  ➢  AM(8,12)  =  10

Harmonic Mean  ➢  HaM(8,12)  $= \dfrac{2}{\frac{1}{8} + \frac{1}{12}}$  = 9.6

Geometric Mean  ➢  GeM(8,12)  $= \sqrt{8 \times 12}$  ≈ 9.8

# Apportionment by Priority

Step 1.   Give one seat to each state.

Step 2.   Attach a priority number to each state.

Step 3.   Award seats one at a time by priority until the desired House size is reached.

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*Priority number
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n seats*

# Apportionment by Priority

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$$\text{Priority number for a state with } n \text{ seats} = \frac{state\ population}{ave(n,n+1)}$$

# Five Averages

<p style="text-align:right">ave</p>

- Greatest Divisors     max
- Harmonic Means     HaM
- Equal Proportions     GeM
- Major Fractions     AM
- Smallest Divisors     min

# The Last Seat

Who got the 435th seat?

|                    |     | ave | 435 |
|--------------------|-----|-----|-----|
| • Greatest Divisors | | max | IL  |
| • Harmonic Means    | | HaM | MN  |
| • Equal Proportions | | GeM | MN  |
| • Major Fractions   | | AM  | NC  |
| • Smallest Divisors | | min | WA  |

# The Last Seat

If one increases the size of the House to 436, then who gets the 436th seat?

|  |  | 435 | 436 |
|---|---|---|---|
| • Greatest Divisors | max | IL | WA |
| • Harmonic Means | HaM | MN | CA |
| • Equal Proportions | GeM | MN | NC |
| • Major Fractions | AM | NC | MO |
| • Smallest Divisors | min | WA | PA |

# The Last Seat

If one increases the size of the House to 436, then who gets the 436th seat?

| | | 435 | 436 |
|---|---|---|---|
| • Greatest Divisors | max | IL | WA |
| • Harmonic Means | HaM | MN | CA |
| • Equal Proportions | GeM | MN | NC |
| • Major Fractions | AM | NC | MO |
| • Smallest Divisors | min | WA | PA |

# The 2016 Presidential Election

The popular vote:

| | | |
|---|---|---|
| Hillary Clinton: | 65,853,516 | 48.18% |
| Donald Trump: | 62,984,825 | 46.09% |
| Others: | 7,850,896 | 5.73% |

Federal Election Commission
Official 2016 Presidential General Election Results

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The Electoral College vote:

Hillary Clinton:  227

Donald Trump:  304

Others:        7

https://en.wikipedia.org/wiki/United_States_presidential_election,_2016

# The Popular Vote

Arguably, on 4 other occasions in U. S. history the electoral and popular systems produced different results.

1. John Quincy Adams vs. Andrew Jackson   1824

2. Rutherford B. Hayes vs. Samuel Tilden   1876

3. Benjamin Harrison vs. Grover Cleveland   1888

4. George Bush vs. Al Gore   2000

# 1876

| Candidate | Party | Popular Vote | Electoral Vote |
|---|---|---|---|
| Rutherford B. Hayes (OH) | Republican | 4,034,142 | 185 |
| Samuel J. Tilden (NY) | Democratic | 4,286,808 | 184 |
| Peter Cooper (NY) | Greenback | 83,726 | --- |

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Lesson: Hayes' Electoral College victory was an artifact of the method used for congressional apportionment.

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Lesson:  Hayes' Electoral College victory was an artifact of the method used for congressional apportionment.

The original apportionment based on the 1870 census used one method.  The 1872 supplement act added nine seats but used a different method.   The methods agreed except for two seats: the original method would have awarded the seats to Illinois and New York, but the supplement method awarded those seats to New Hampshire and Florida.

# 2000

| Candidate | Party | Popular Vote | Electoral Vote |
|---|---|---|---|
| George W. Bush  (TX) | Republican | 5,443,633 | 271 |
| Albert Gore  (TN) | Democratic | 5,538,163 | 266 |
| Ralph Nader  (DC) | Green | 250,017 | --- |
| Patrick Buchanan (VA) | Reform | 149,115 | --- |

# 2000

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Lesson:   Bush's Electoral College victory was an artifact of the size of the House of Representatives.

# House Size Effects

Consider the Electoral College vote based on House sizes 50 - 1000.

For all House sizes smaller than 492 Bush wins, larger than 597 except 655 Gore wins.

Between 492-597 there are 24 ties, Bush wins 53 times, and Gore wins 29 times.

http://www.thirty-thousand.org/pages/Neubauer-Zeitlin.htm

Also, Michael Neubauer and Joel Zeitlin, Apportionment and the 2000 Election, *The College Mathematics Journal* 34(1), January 2003: 2-10.

# 2000

The 2000 election showed another potential problem.  The number of electoral votes each state gets is tied to the decennial census.  Although the election was in 2000, apportionment of the House was based on the 1990 census.  An election held in a census year is based on a population that is ten years old.

What would have been the result of Bush vs. Gore if the Electoral College were based on the 2000 census?

# 2000

In comparison with the 1990 census the 2000 census shifted 12 House seats affecting 18 states.

Accordingly, the electoral vote would have changed from

Bush 271 and Gore 266
to
Bush 277 and Gore 259.

# **Reform**

Over the past 200 years, over 700 proposals have been introduced in Congress to reform or eliminate the Electoral College.  There have been more proposals for Constitutional amendments on changing the Electoral College than on any other subject.

https://www.archives.gov/federal-register/electoral-college/faq.html#whyec

# Today's Debate

Resolved:  The electoral system should be replaced by the popular vote system.

What's the Popular Vote System?

# The 2016 Presidential Election

The popular vote:

|                   |            |        |
|-------------------|------------|--------|
| Hillary Clinton:  | 65,853,516 | 48.18% |
| Donald Trump:     | 62,984,825 | 46.09% |
| Others:           | 7,850,896  | 5.73%  |

The Electoral College vote:

| Hillary Clinton: | 227 |
|------------------|-----|
| Donald Trump:    | 304 |
| Others:          | 7   |

# The 2016 Presidential Election

The popular vote:

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|---|---|---|
| Hillary Clinton: | 65,853,516 | 48.18% |
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# Fairness

Individual Sovereignty:

> Each voter gets the same ballot with the same instructions and is free to vote as they choose within these constraints.

One Person —  One Vote

# Question 1

Should there be a uniform national presidential ballot?

Ballots differ among states.  GA, IN, OK listed 3 candidates; CA 5; AK 6; TN 7; UT 10; CO 22.

http://www.politico.com/2016-election/results/map/president

# Question 1

Should there be a write-in provision?

Today 9 states do not allow a write-in.

https://ballotpedia.org/Ballot_access_for_presidential_candidates

# Question 2

Should there be uniform suffrage for a national popular vote?

# A National Popular Vote

- Abolishing the electoral system requires a constitutional amendment.

- A uniform national vote procedure requires federal legislation concerning ballot access, suffrage, ballot structure, and election mechanics.

A
Moderate
Alternative

# State Sovereignty

Keep voting as a "state's rights" matter.
Ballot access, ballot structure, suffrage, voting mechanics should be left up to each state.  Then count the certified popular vote in each state as is currently done.

# National Popular Vote Bill

An Act ratifying an interstate compact to elect the President and Vice-President of the United States by national popular vote.

➢ A state's slate of electors will be awarded to the candidate with a plurality of the national (instead of statewide) popular vote.

➢ The law takes effect when the compact of states ratifying the National Vote Bill reaches at least 270 electoral votes.

*Should the electoral system
be replaced by
a popular vote system?*

*Should the U. S. move to a
national popular vote for
President and Vice-President?*

# HB 175

An Act ratifying an interstate compact to elect the President and Vice-President of the United States by national popular vote.

➢ Alaska's slate of electors will be awarded to the candidate with a plurality of the ~~statewide~~ national popular vote.

➢ The law takes effect when the compact of states ratifying the National Vote Bill reaches 270 electoral votes.

*Should the United States move to a*
*a popular vote system*
*to elect the President*
*and*
*Vice-President?*

# Democracy

## What is an Election?

### *One Person — One Vote*

We the People of the United States, . . .

http://www.theconstitutionproject.com/portfolio/one-person-one-vote/

# Thank You

http://www.nia977.wix.com/drbcap

Charles M. Biles, Ph.D.

# Congressional
# Apportionment

HOME   BIO   NEWS & EVENTS   RESOURCES   CONTACT

## Constitutional Congregressional Apportionment Problem

How many seats in the U. S. House of Representatives does each state get?

An answer is presented as an historical narrative with relevant and timely applications in an upcoming book, *The History of Congressional Apportionment.*

Chapter 1. Congressional Apportionment Based on the Census: 1790.
Chapter 2. Congressional Apportionment Based on the Census: 1800-1840.
Chapter 3. Congressional Apportionment Based on the Census: 1850-1890.
Chapter 4. Congressional Apportionment Based on the Census: 1900-1930.
Chapter 5. Congressional Apportionment Based on the Census: 1940-2010.
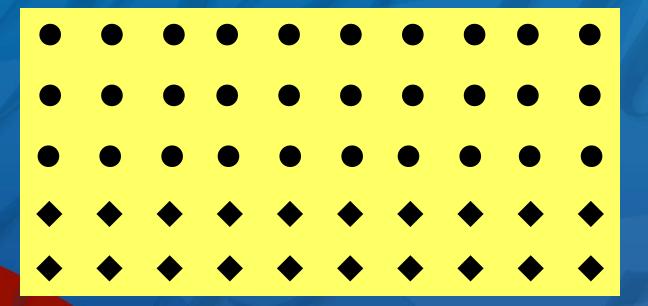Chapter 6. An Historical Overture.

*NEW*

**UNDER CONSTRUCTION**
**Charles Biles**
*The History of Congressional Apportionment*
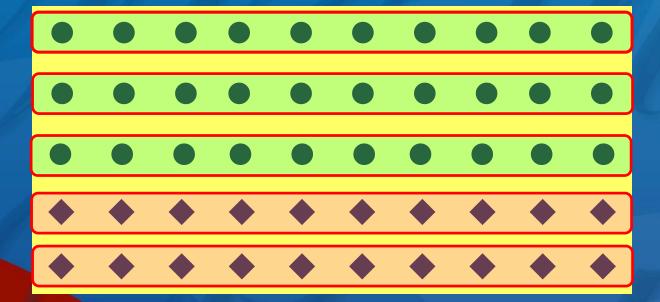
**HSU Press**
Last update: 13 June 2017.

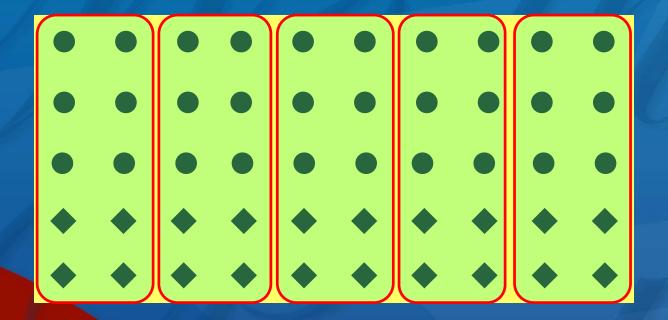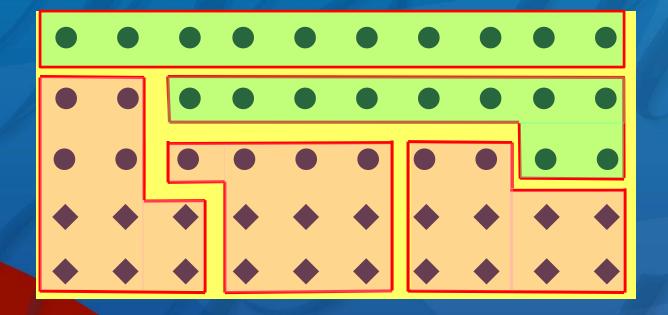Cover Graphic courtesy of
The West Virginia Record

# Gerrymandering



Apportion into five districts.

# Gerrymandering

# Gerrymandering

# Gerrymandering

U.S. Census Bureau
PRIORITY VALUES FOR 2010 CENSUS

| HOUSE SEAT | PRIORITY VALUE | STATE ABBREVIATION | STATE SEAT |
|---|---|---|---|
| 51 | 26404774 | CA | 2 |
| 52 | 17867470 | TX | 2 |
| 53 | 15244803 | CA | 3 |
| 54 | 13732760 | NY | 2 |
| 55 | 13364865 | FL | 2 |
| 56 | 10779704 | CA | 4 |
| 57 | 10315788 | TX | 3 |
| 58 | 9096490 | IL | 2 |
| 59 | 9004938 | PA | 2 |

https://www.census.gov/population/apportionment/files/Priority%20Values%202010.pdf