Historical Lessons: How Statistics Underpin Our Democracy

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Teresa Sullivan's (2020) article "[Coming to Our Census: How Social Statistics Underpin Our Democracy \(and Republic\)](#)" reminds us of the central role that the discipline of statistics, statisticians, and the nation's statistical infrastructure play in the basic functions of government and the private economy in an advanced postindustrial society. She identifies several crucial challenges facing the nation's statistical infrastructure, using the upcoming 2020 census to exemplify both new challenges, like hacking, data privacy, or threats of fake news, with much older concerns over accuracy, trust in government, and whether the numbers can bear the political weight we place on them.

As a historian immersed in tracing the development of that statistical infrastructure and its legacy on our current dilemmas, I'd like to add some 'deep history,' if you will, to inform the public debate the nation is now having about these matters.

Historians do 'narrative,' explicating past events and understandings, generally to inform what historians call the 'usable past,' that is, history that informs what policymakers and the public are debating now, describe how we got here, and therefore how to think about the past we've inherited (Susman, 1964).

Sullivan reminds us that the American census was mandated in Article 1, Section 2, Paragraph 3 of the 1787 Constitution, originally to apportion tax obligations and representation in the House of Representatives and Electoral College among the states. The 2020 census will be the 24th decennial count. The federal government has taken the census every 10 years in the year zero, beginning in 1790. It's a relatively rare event in American political life. The United States is on its 45th president; the 116th Congress is currently in session.

One must look to the revolutionary and early national eras of American history to understand what the "framers," as they were called, had in mind at the time. What, in other words, were the issues, concerns, and dilemmas that they faced that prompted them to write a mandate for a population count into one of the foundational documents of the United States (Anderson, 2015).

They were not mimicking practices of other countries. No other nation at the time counted its population on a periodic basis and used the results to allocate political power or tax obligations to geographic areas.

Nor was there much of a discipline of statistics or a statistical profession at the time. American Statistical Association (ASA) members are generally aware that the ASA was founded in 1839 in Boston, a long time ago, but more than 50 years after the constitutional mandate. No, it wasn't 'science' that informed the framers' understandings.

Rather, what the framers confronted was the problem of building a stable state structure after the successful Revolutionary War and independence from Britain. Thirteen separate colonies had fomented revolution starting in the 1760s, formally declared their independence in 1776, and fought a successful war from the mid-1770s to 1781. The last British troops left in 1783. Throughout this period, the national government was rudimentary,

basically a Continental Congress made up of representatives of the rebelling colonies, and an army and navy to fight the British. These arrangements were codified in the Articles of Confederation, ratified in 1781.

This governmental structure was flawed from the outset. The Continental Congress had constant problems raising revenue, had no mechanisms to adjudicate conflicts among the 13 states, or between residents of different states. Administrative activity remained at the state level, using the colonial government structures that had been in place since the colony's founding. By the late 1780s, it was clear that the infant United States would not survive without stronger national structures and rules, and leaders called a convention in Philadelphia in May 1787 to address the issues.

It also quickly became clear that 'reforming' the Articles of Confederation would not suffice. The framers began planning for a totally new state structure. It was at that point that they began to confront just how difficult doing so was going to be, and to recognize that they required both innovative institutional forms and methods of compromising on hard issues. We know now that they succeeded and by September 1787 had written the document that has organized American state activity ever since.

The preamble to the Constitution set out goals and the logic of the provisions to follow:

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

The sovereign power of the state derived from the "superior power of the people," in James Madison's language (Madison, 1788). The document was also forward looking, designed to "secure the Blessings of Liberty" to the current generation and "our Posterity."

Grounding the sovereignty of the state in "the people," without any further specification, provided a general principle to guide other decisions on governmental organization, particularly the principle that the people should be represented in legislative assemblies. That in turn provided the logic for establishing the House of Representatives, with members elected by the people. A problem immediately arose, however, since the unit of representation in the Continental Congress was the state, or colony, equally weighted no matter the disparate population sizes of the states. The compromise solution in the convention was to establish a bicameral legislature, with a Senate representing the states composed of two members each elected by the state legislatures, and a House, with members elected by the people within each state, with seats apportioned according to the number of 'people' in the state.

A related issue involved national tax authority. On what basis would the national government raise revenue for its functions? This issue had bedeviled the Continental Congress during the Revolutionary Era, as the Congress had to requisition funds from the states for its activities. The question of apportioning obligations among the

states raised the issues of fairness, given the disparate economies, physical sizes, and population bases of the states. The Articles of Confederation theoretically apportioned tax responsibilities according to land assessments within each state. The provision didn't work, foundering on the question of how to account for the value of different types of land. In 1783 Congress proposed a new apportionment system, based upon triennial counts of population (Rakove, 1979).

That proposal began to define exactly who the 'people' were and thus the characteristics of the population to be counted. Congress decided that Indians in their tribal communities were not to be considered part of the sovereign people of the United States, even if resident within state borders. Congress excluded them from the count for tax responsibilities, creating the category, "Indians not taxed."

Slaves were the other problematic category of people. Southern state representatives argued that slaves should be excluded from the population counts. Representatives of northern states with few slaves saw free White Southerners trying to avoid their tax obligations. The compromise solution was the soon-to-become infamous "Three-Fifths Compromise," whereby "three-fifths of all other persons," that is, slaves, were to be counted along with the free population and indentured servants, but their overall number "discounted" to 60% in apportioning a state's tax obligation.

The proposed change in the Articles of Confederation never went into effect. The change had to be ratified by each state to be implemented, and it was still pending final ratification when the Constitutional Convention convened in 1787. But it did identify an apportionment rule that could be retasked to allocate political representation among the states in the new House of Representatives.

The framers took the tax proposal and wedded it to the provisions for representation in the House, and changed the requirement for a count from every 3 years to every 10 years. In the final language of Article 1, Section 2, Paragraph 3 of the new constitution:

Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons. The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.

With this language, the decennial census, and eventually the statistical system, were born.

1. Drawing Lessons From History

First, I have always been taken by the sheer contingency of it all. The task at hand was to establish a stable government. Had Congress in 1783 not had to wrestle with tax provisions and invent the Three-Fifths

Compromise and the category of Indians not taxed, would those notions have been incorporated into the much more theoretically rigorous constitutional debate of 1787? The Articles of Confederation provision was known and seemed to solve a problem at the time.

Certainly, the framers were well aware of the contradictions they were building into their structures. In the Federalist Papers, defending the new Constitution, James Madison and Alexander Hamilton, for example, acknowledged the “imperfections” of the new census apportionment rule. Particularly once the rule joined a state’s tax obligation to its political representation, it was very hard to justify counting slaves for legislative apportionment. They acknowledged that the “reasoning” behind the rule “may appear to be a little strained in some points,” but argued, “it is evidently the least objectionable among the practicable rules.” Some rule had to be found, and an imperfect rule was better than no rule at all (quoted in Anderson, 2015, p. 13).

Moreover, it is quite striking what isn’t defined in the constitutional provisions on the census and apportionment. The Constitution was silent on apportionment formulas and legislative districting rules. Beyond requiring that “The Number of Representatives shall not exceed one for every thirty Thousand, but each State shall have at Least one Representative,” the Constitution did not define the size of the House of Representatives. Voting rules for federal elections were delegated to state legislatures (Article 1, Section 4). The Constitution was silent on the how to theorize the question of the differences in the size of the electorate, that is, the voting population, and the population count for apportionment, what came to be called the “representative population.”

Accordingly, one has to look to the implementation of the census itself and its use for tax and legislative allocations to see how it all worked out in practice. And it’s in that practice that one can find the transformation of a seemingly simple mandate to count the population every 10 years to the creation of the Federal Statistical System.

The fact of periodic counting made it possible to understand the demographic reality of the United States. It turned out that not only was the United States innovating when it tied political representation to population growth and change, it also built a mechanism to manage the political stabilization of one of the most dynamic and diverse populations in the history of the world. Dare we call that the first ‘evidence-based policy making?’

The American population grew from 3.9 million people in 1790 to the approximately 330 million people today. Thirteen states became 50 states; the House size grew from 65 to 435 members. An overwhelmingly rural and agricultural society transformed into an industrial and postindustrial society. Each decade the census numbers reported the changes, and except for the 1920 census, shifted seats in the House of Representatives and Electoral College based on the numbers. The constitutional provisions the framers devised rewarded geographic areas that had growing populations. Areas with stable or declining population lost political power. As with elections, there are winners and losers and the losers have to concede power to the winners.

In other words, the constitutional provisions for a periodic census and reapportionment are truly central to the successful functioning of the American state. That recognition also drove political and scientific debate to address the silences in the original constitutional provisions, and to develop further rules and methods to assure that the provisions were ‘fair.’

A few early examples suffice to indicate the larger issues.

- At the very first census, Congress and the president discovered the ambiguities in the constitutional apportionment language. There was no apportionment formula specified in the Constitution. The emerging party differences in Congress led to two different formulas being proposed, which had different political results. President George Washington, allying with the emerging Jeffersonian faction, vetoed the bill proposed by the emerging Hamiltonian faction. A constitutional crisis loomed if the apportionment provision could not be implemented. Both sides compromised and Congress began to sponsor research on apportionment methods that continued for the next 150 years (Balinski & Young, 2001).
- The term ‘gerrymandering’ dates to the efforts by Massachusetts governor Elbridge Gerry to support legislative districts favorable to his political party—after the 1810 census (Duignan, 2019)!
- One of the first policy initiatives of the infant ASA was a challenge to reform the bad data in the 1840 census that seemed to show higher rates of black insanity in the North than in the South. South Carolina defender of slavery and Secretary of State John C. Calhoun, who oversaw the 1840 census, claimed that the data showed that African Americans went insane if freed from slavery. Massachusetts ASA leader, Edward Jarvis, undertook research to find the census errors. He succeeded, but Calhoun refused to correct the census results. Jarvis’s work was not completely fruitless, however. The publicity and attention led Congress to reform census methods in 1850, and initiated a long partnership between the infant statistical community and government officials in charge of the census (Anderson, 2015; Cohen, 1982; Grob, 1978).

There are literally dozens of such historical examples. It’s all that unfinished business and ambiguities in the census and apportionment rules, combined with the recognition of the political implications of the rules, that prompt the ongoing development of the statistical system.

2. The Cost of Compromise

Finally, it is important to recognize that in the process of creating the new state structures and processes, the framers also finessed, ignored, or denied the existence of evils that have plagued American society ever since. Most crucially, despite the eloquent language of the Declaration of Independence that “all men are created equal” and “endowed” with “unalienable rights” to “life, liberty, the pursuit of happiness,” the framers did not abolish the race-based slave labor system that underpinned a substantial proportion of the U.S. economy at the time. Regulation of labor conditions and slavery was left to the states. Article 1, Section 9, prohibited Congress from legislating on the international importation of slaves before 1808. Article 4, Section 3, authorized slave owners to claim the return of fugitive slaves escaping to another state.

The framers left to their 'posterity' the question of how to end the slave economy. Northern state legislatures in the original 13 colonies abolished slavery with a variety of provisions over the next generation. The Northwest Ordinance, the 1787 document that defined how new states could be formed in the territory west of Pennsylvania and north of the Ohio River, also banned slavery. It was one of the last acts of the old Continental Congress. The states of Ohio, Indiana, Illinois, Michigan, and Wisconsin joined the union as free states. Nevertheless, the institution of race-based slavery prospered in the southern states, and was actually strengthened economically in the 19th century as cotton replaced tobacco as the main U.S. export crop.

Census publications chronicled the disappearance of the slave labor system in the North while the "peculiar institution," as it came to be called, expanded dramatically in the South. The 1790 census reported 697,624 slaves. The 1840 census reported 2.5 million slaves in the United States. In the "free states," those that had legislated immediate or gradual emancipation, there were 1,129. By 1860, the slave population grew to just under 4 million (U.S. Bureau of the Census 1909, p. 133).

Ultimately, the 1787 constitutional structure did not provide a framework for the emancipation of the slave labor force and fulfilling the goals of the Declaration of Independence. Rather, Americans fought a Civil War from 1861 to 1865, the bloodiest war in the nation's history, to restructure the nation's economic and political system, and added three amendments to the Constitution. The Thirteenth Amendment ended the Three-Fifths Compromise and abolished slavery. The Fourteenth guaranteed birthright citizenship, and guaranteed all citizens, "born or naturalized in the United States, and subject to the jurisdiction thereof," due process and equal protection of the law. The Fifteenth Amendment provided that voting rights "shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude."

Those amendments placed new responsibilities on the census and the Federal Statistical System to continue monitoring the trajectory of the population, by race, region, and economic circumstance. The system then and now remains vulnerable if its fact/evidence functions are overwhelmed by political crisis. There are many historical examples of politicians who shoot the statistical messenger when they don't want to confront the underlying inequalities in the society.

Americans are still wrestling with the legacies of the 18th-century decisions of the framers, and the statistical system is still both a key element in the successful management of the controversies of the society, and an institution in development. The federal tax system, for example, was finally disentangled from a census apportionment in the Sixteenth Amendment, in 1913! The 1924 Indian Citizenship Act (1924) granted birthright citizenship to American Indians, ending the census category of Indians not taxed. The recent effort by the President Donald Trump administration to put a citizenship question on the 2020 census form once again raised the question of who "the people" are who constitute the authority of the state.

As Sullivan (2020) concludes, "statisticians with integrity" have come to be the "best defenders" of the statistical system as an essential "pillar of democracy." The institutional legacies of the past can be an albatross

on ‘posterity.’ Or, posterity, in this case the statistical profession that inherited the mandate to implement the instrumentalities of democratic government, can accept the mantle of responsibility to innovate and improve those instrumentalities to “form a more perfect union” for “our posterity.”

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