

# **Historical Perspectives on the Federal Statistical System**

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# Outline and Themes

- Examination of the “federal statistical system” as a public resource to understand how to find and use its data:

Description

Origins and structure

Guidance for use

# **Federal Statistical System**

## **Today**

- Decentralized: Census, BLS, NASS, NCHS, NCES, BJS, etc.
- 98 agencies with statistical activities; 13 lead agencies
- Federalized: states also provide data through coordinating arrangements: vital statistics

# Federal Statistical System

- Chief Statistician resides in OMB and coordinates the system through “forms clearance” and budget authorizations.
- Legislative grounding is in the Paperwork Reduction Act of 1995.
- A diverse system.

# Federal Statistical System

- Overall budget of about \$6.8 billion/year (exclusive of decennial census).
- About 40% of expenditures in 13 lead agencies
- Current challenges:
  - Respondent cooperation.
  - Fiscal resource constraints.
  - International comparability.
  - More detailed data
  - Access to data
  - Statistical agency independence
  - Human capital – next generation...

# Budgets: Large Agencies (millions of \$)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request
Bureau of the Census: Current Program	\$ 289	\$ 276	\$ 289
Periodic Programs	891	634	711
Bureau of Labor Statistics	610	609	618
Bureau of Economic Analysis	93	92	97
Statistics of Income (SOI)	39	40	40
National Agricultural Statistics Service	123	117	116
Census of Agriculture	33	42	63
Economic Research Service	82	78	77
Energy Information Administration	95	105	116
National Center for Health Statistics	139	139	162
National Center for Education Statistics	126	127	133
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Bureau of Transportation Statistics	24	25	38
Science Resources Statistics, NSF	42	44	42

# Origins and Structure

- History helps!
  - The 1787 Constitution created the platform of the system.
  - The Constitution created two different types of statistical or public data collection and reporting:
    - the decennial census
    - the reports on government revenue and expenditures

# **Understanding the Statistical System**

- As embedded in the larger political, social, economic and demographic situation of the US
- As shaping the larger political, social, economic and demographic situation of the US
- As a technical system

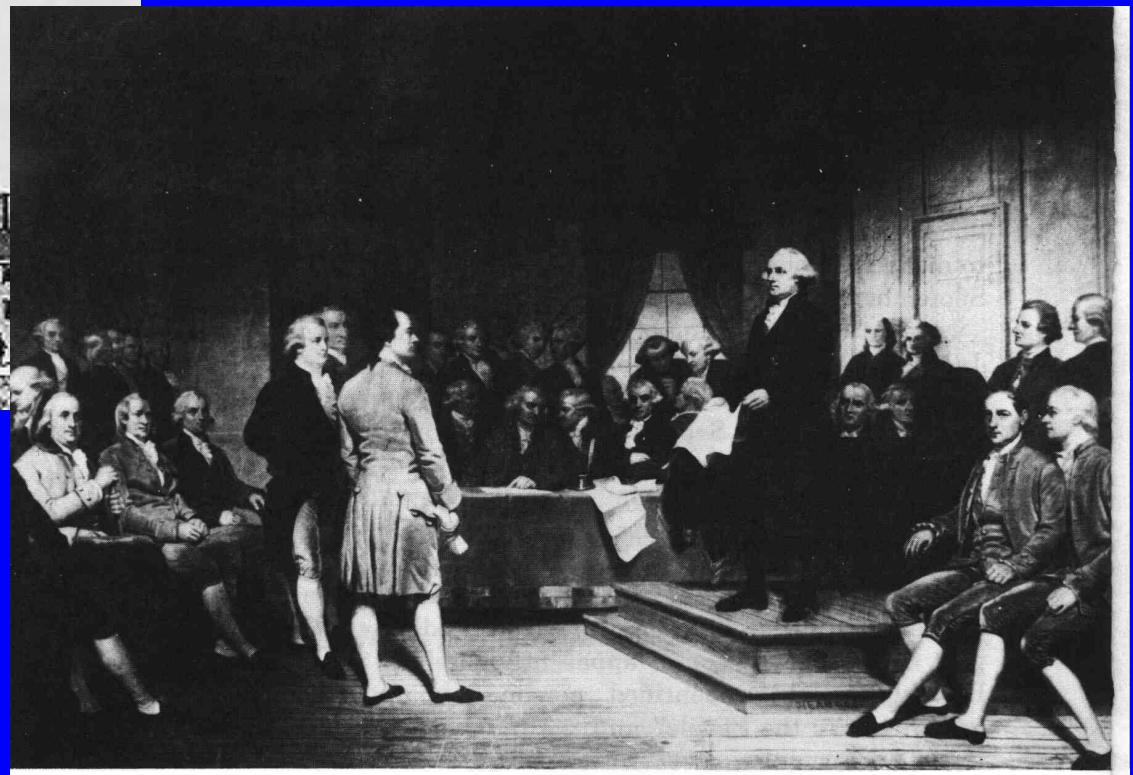
# **Useful Distinctions**

- Survey Data: Data collected for research or policy purposes only, usually sampled: CPS, SIPP, ACS
- Administrative Data: Data collected for administrative functions and then reused or reorganized for statistical data analysis: state unemployment records; tax records, property records, medical records.

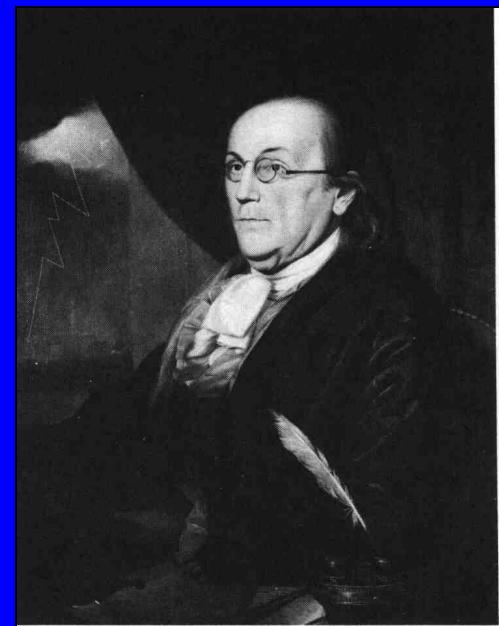
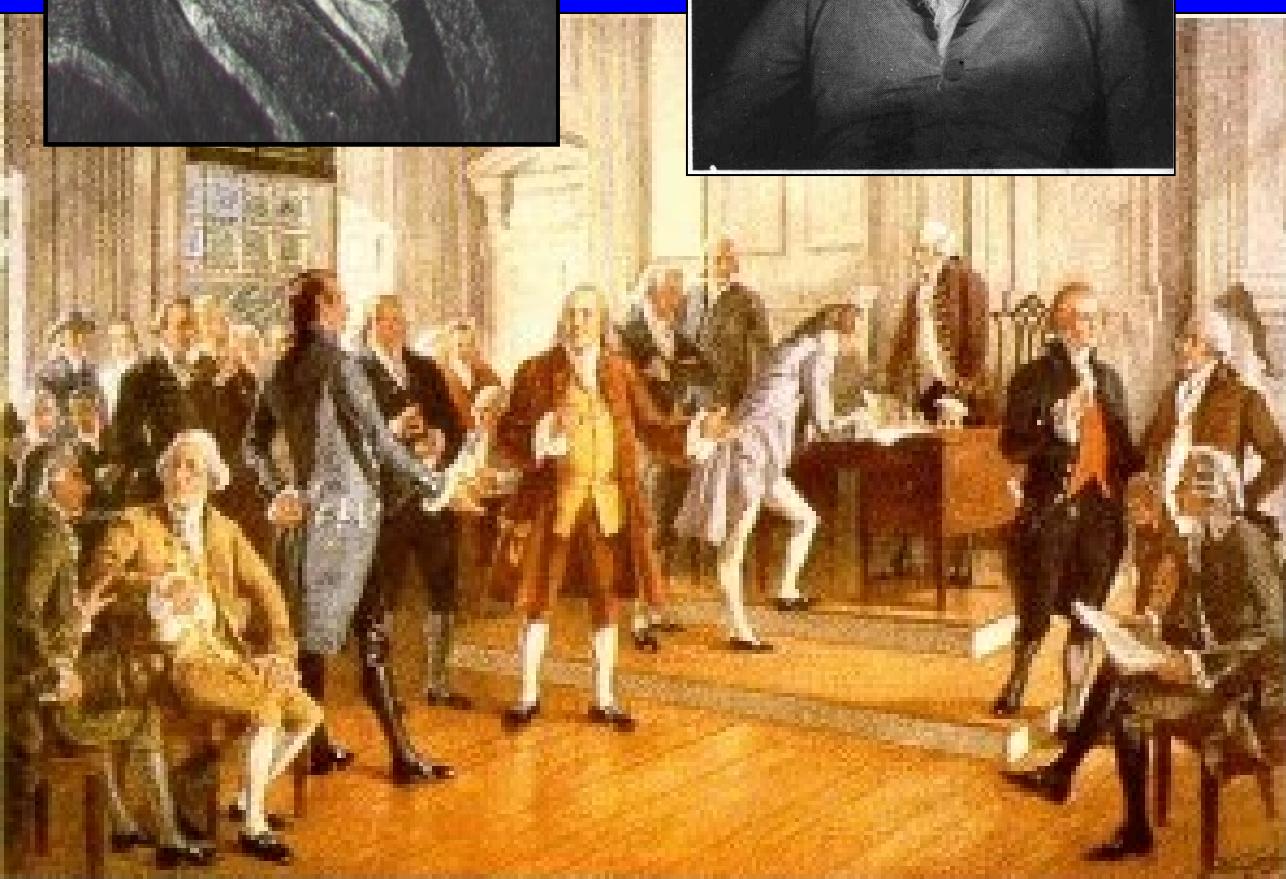
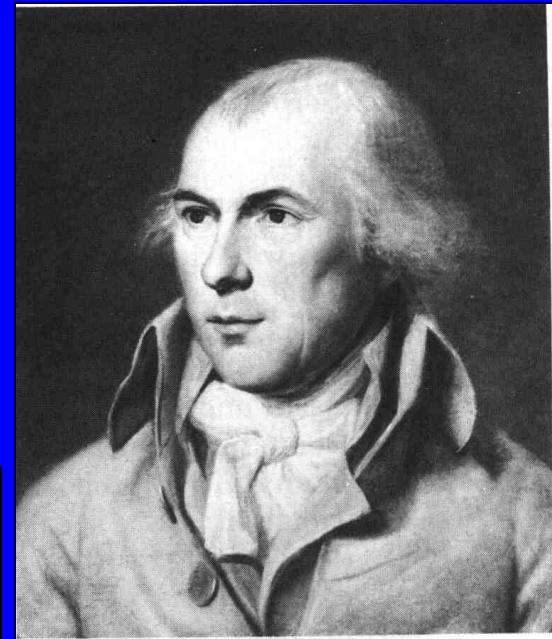
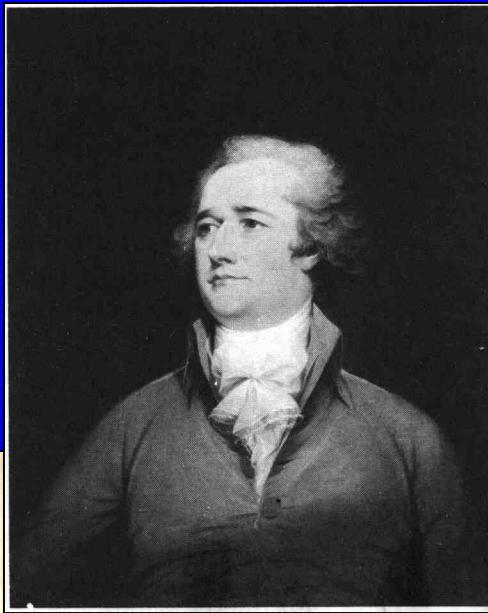
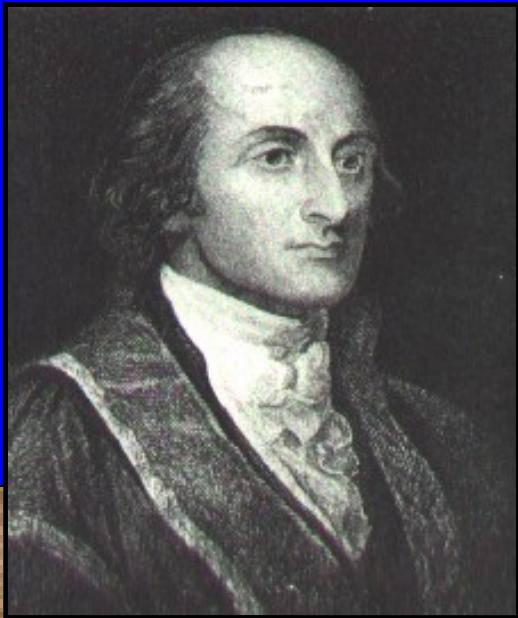
# Institutional and Some Technical History

- “Constituting” the system: 1780s
- Implementing the system in the long 19<sup>th</sup> century, 1790-early1900s.
- The centralization/coordination debate, 1900-1940s
- The modern system

# Building the American State



We the People  
of New-Hampshire,  
Rhode-Island and I  
tations, Connecticut, New-York, N  
sylvania, Delaware, Maryland, Virgi  
nia, South-Carolina, and Georgia, do  
and establish the following Constitutio  
ment of Ourselves and our Posterity.



# Article 1, Section 2, of the U.S. Constitution

- "Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers....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."

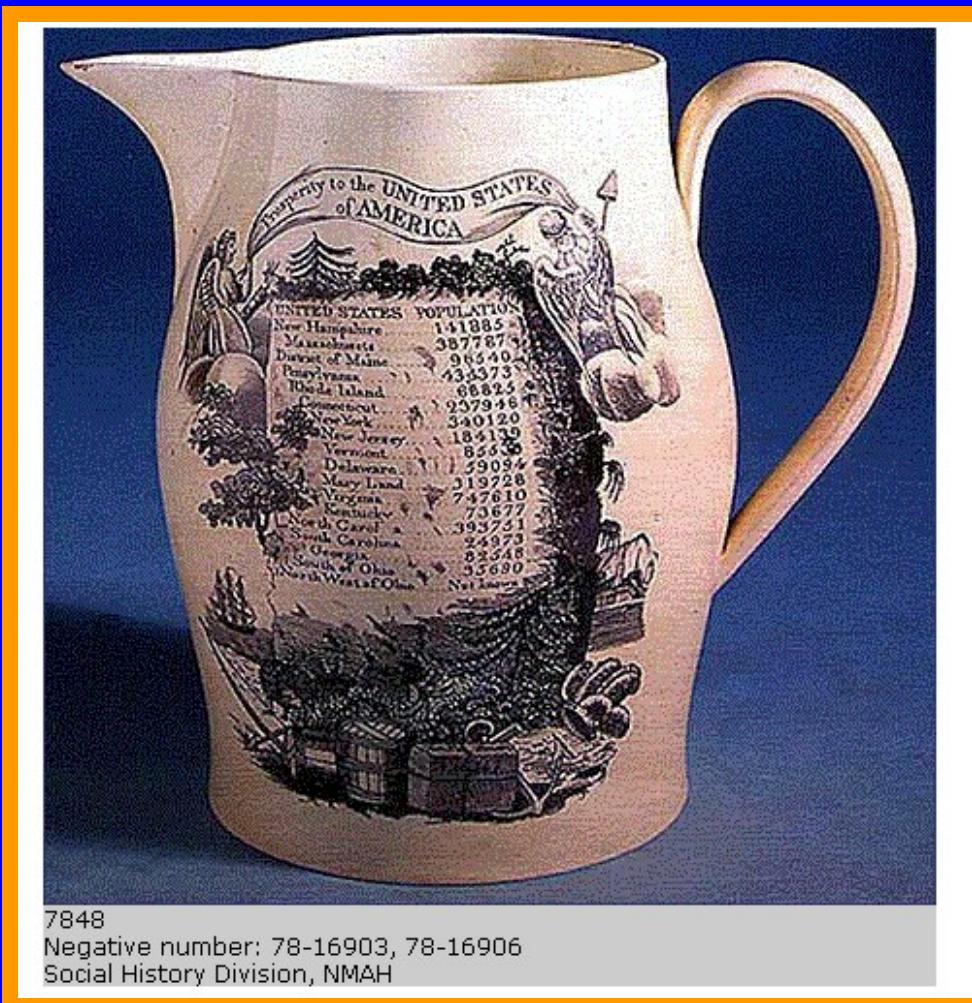
# **Importance of the Census**

- The United States was the first nation in the history of the world to take a population census and use it to allocate seats in a national assembly according to population.

# Implementing the System

- First census was taken in 1790.
- The House of Representatives and Electoral College was first reapportioned in 1792
- Immediately, government officials and the general public recognized the significance of the new system for allocating representation.

# Pitcher Commemorating the 1790 Census



# Census Publications

RETURN  
OF THE WHOLE  
NUMBER OF PERSONS  
WITHIN THE  
SEVERAL DISTRICTS  
OF THE  
UNITED STATES,  
ACCORDING TO  
AN ACT PROVIDING FOR THE ENUMERATION OF  
THE INHABITANTS OF THE UNITED STATES;<sup>1</sup>

PASSED MARCH THE FIRST, ONE THOUSAND SEVEN  
HUNDRED AND NINETY-ONE.

81-266

PHILADELPHIA PRINTED:  
LONDON REPRINTED, AND SOLD  
BY J. CHAPMAN, GOSWELL-ROW, LUDGATE-STREET.  
1793.

TOWNS, ETC., UNDER THE FOLLOWING DIVISIONS:

- I. NUMBER OF FAMILIES—PLATE NUMBER OF ADULTS AND CHILDREN—MILITIA.
- II. POPULATION BY MIGRATION OF COUNTRY.
- III. NATIVITY OF THE INHABITANTS.
- IV. AGE AND SEX—SEXES, MARITAL STATUS, AND FAMILIES.
- V. OCCUPATIONS OF THE INHABITANTS.
- VI. RELIGION, MANNER OF DRESS, AND HABITS.
- VII. COLOR, RACE, MIGRATION, AND LOCALITY.
- VIII. AFTERNOON SCHOOL ATTENDANCE, AS REQUESTED BY FAMILIES.
- IX. ADDITION OF OTHER INFORMATION RELATING TO CHILDREN AND INFANTS.
- X. INFORMATION, INCORPORATING, AND TRAINS OF THE POPULATION.
- XI. ADDITION OF TRADES AND INDUSTRIES, TRADE PRINCIPAL TRADES, AND MANUFACTURES, ETC.
- XII. INFORMATION AND PREDOMINANT OCCUPATIONS.
- XIII. LABORERS OTHER THAN FARMERS.
- XIV. CHURCHES, CHURCH PROPERTY, ETC.

WITH AN INTRODUCTION, READING AND THE APPENDIX TAKEN FOR THE UNITED STATES COMPARED WITH THE PREVIOUS CENSUS OF 1790—STATISTICS AND LAWS OF CONGRESS RELATING TO THE CENSUS IN THE SAME PERIOD—RATIO TABLES OF INCREASE AND DECREASE OF CITIES AND STATES, ETC., IN THE AND AGES, AND COLOR—TABLES OF POPULATION OF EVERY COUNTY, TOWN, VILLAGE, ETC., IN THE UNITED STATES, ALPHABETICALLY ARRANGED—COMPARISON WITH PREVIOUS CENSUSES, ETC.

## AN APPENDIX,

EXCERPTS

NOTES UPON THE TABLES OF EACH OF THE STATES, ETC.

J. D. B. DeBOW,  
SUPERINTENDENT OF THE UNITED STATES CENSUS.

WASHINGTON:  
ROBERT ARMSTRONG, PUBLIC PRINTER.  
1853.

## CENSUS

FOR

1820.

## COMPENDIUM

### ENUMERATION OF THE INHABITANTS AND STATISTICS

#### OF THE UNITED STATES,

AS MAILED

AT THE DEPARTMENT OF STATE, FROM THE RETURNS OF THE SIXTH CENSUS,

#### COUNTIES AND PRINCIPAL TOWNS;

EXCERPTS

#### THE POPULATION, WEALTH, AND PROBLEMS OF THE COUNTRY;

ETC.

TABLES OF APPROPRIATIONS, ARMY, NAVY, POST, AND THE NUMBER OF REPRESENTATIVES, AS MADE IN THE CONSTITUTION FROM THE FIRST CONSTITUTION, AND THE NUMBER OF REPRESENTATIVES ACCORDING TO THE FIFTH, SIXTH, SEVENTH, EIGHT, AND NINTH CONSTITUTIONS; AND THE NUMBER OF REPRESENTATIVES EACH STATE WILL BE ENTITLED TO ACCORDING TO THE ELEVENTH CONSTITUTION, AND THE NUMBER OF REPRESENTATIVES EACH STATE WILL BE ENTITLED TO ACCORDING TO THE TWELFTH CONSTITUTION, AND ACCORDING TO THE NUMBER OF REPRESENTATIVES EACH STATE WILL BE ENTITLED TO ACCORDING TO THE THIRTEENTH CONSTITUTION.

ETC.

#### AN ABSTRACT OF EACH PRECEDING CENSUS.

PREPARED AT THE DEPARTMENT OF STATE.

WASHINGTON:  
PUBLISHED BY THOMAS ATKINS  
1821.

## H CENSUS—VOLUME I.

### THE STATISTICS

OF THE

## ON OF THE UNITED STATES,

EMBRACING  
S OF RACE, NATIONALITY, SEX, SELECTED AGES,  
AND OCCUPATIONS.

TO WHICH ARE ADDED

### THE STATISTICS

OF

WE AND ILLITERACY, OF SCHOOLS, LIBRARIES, NEWS-PERIODICALS, CHURCHES, PAUPERISM AND CRIME, OF AREAS, FAMILIES, AND DWELLINGS.

COMPILED,

### ORIGINAL RETURNS OF THE NINTH CENSUS,

(JUNE 1, 1870.)

UNDER

SECTION OF THE SECRETARY OF THE INTERIOR,

ETC.

FRANCIS A. WALKER,  
SUPERINTENDENT OF CENSUS.

WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1872.

# Francis Edmonds, *Taking the Census, 1853*





THE GREAT TRIBULATION.

Cover Maxima!—"I just want to know how many of you is deaf, dumb, blind, insane, and idiotic—likewise how many convicts there is in the family—what all your ages are, especially the old woman and the young ladies—and how many dollars the old gentleman is worth!"

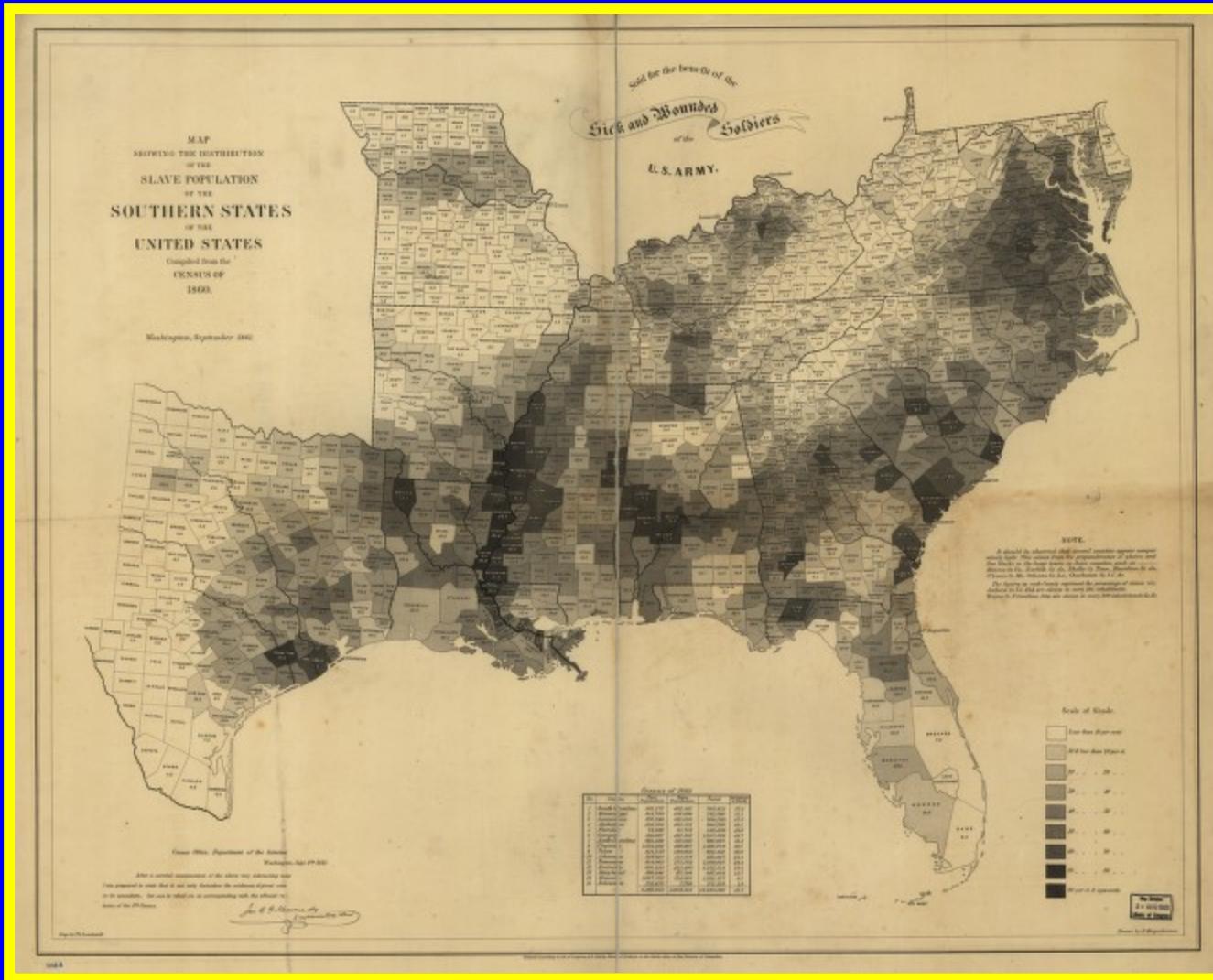
(Tremendous sensation all round the table.)

# “The Great Tribulation,” *The Saturday Evening Post,* 1860

# First Reading of the Emancipation Proclamation



# Civil War Demographic Map



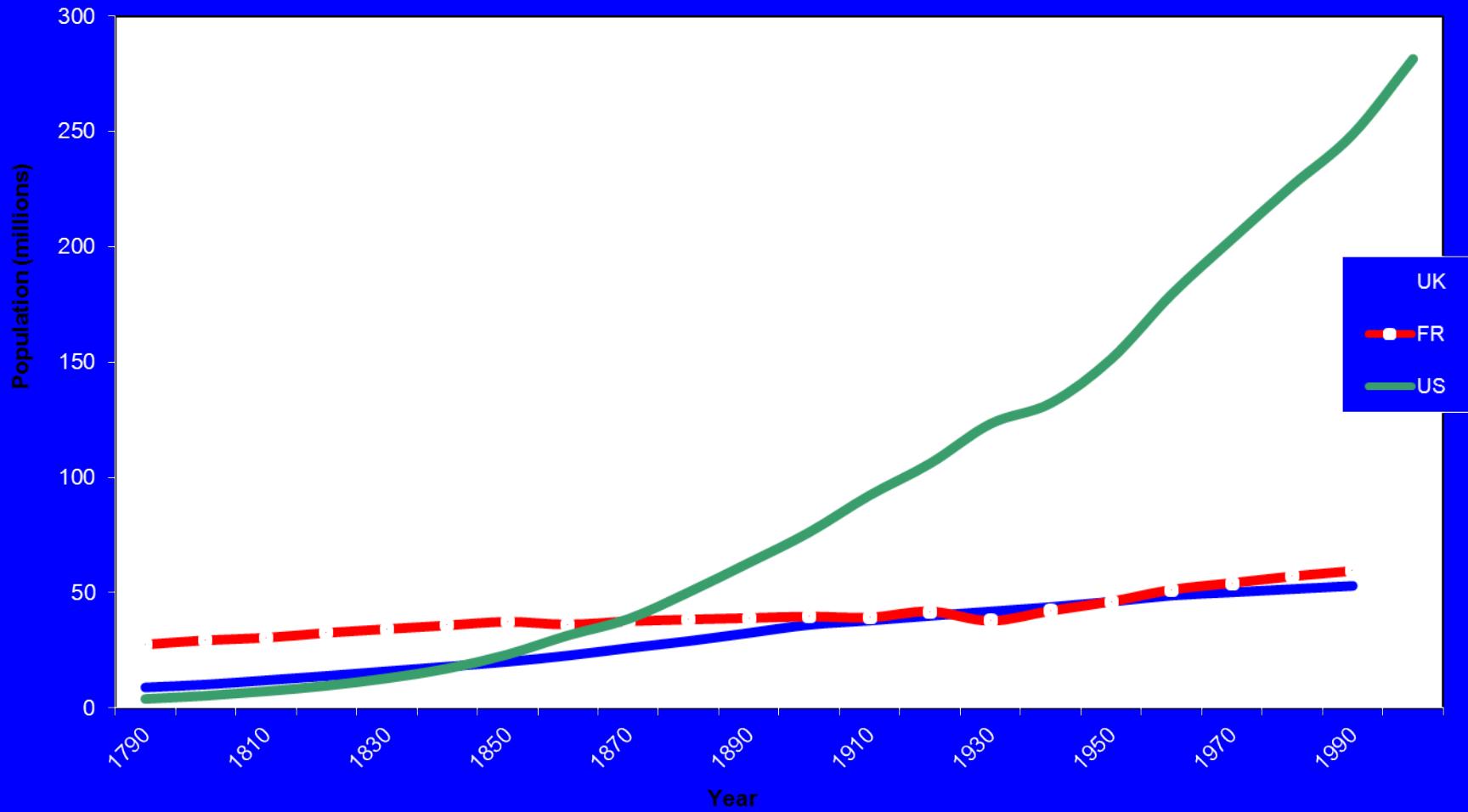
# **Importance of the Census**

- The U.S. has had one of the most demographically dynamic and diverse populations in the history of the world.
- The combination of the census as mechanism to adjust power and resources each decade, in conjunction with the demographic dynamism and diversity, made the census and the statistical system truly central to the functioning of the society and state

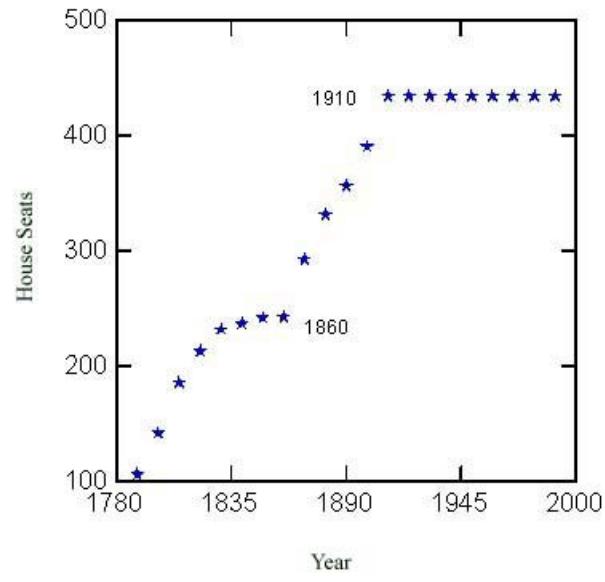
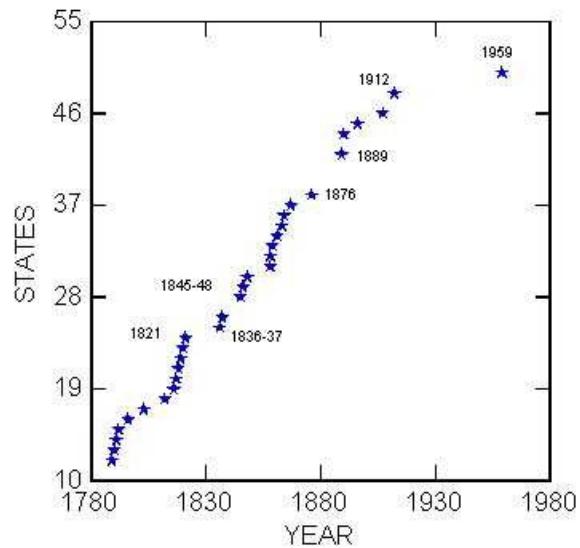
# **From 3.9 million to 314 million**

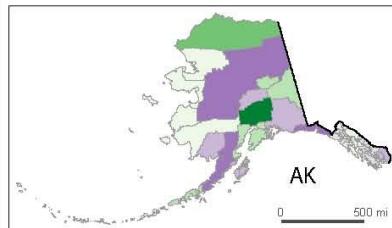
- 13 states have become 50 states.
- House of Representatives grew from 65 to 435 members.
- The average congressional district today is larger than the total population of any of the original 13 states in 1790.
- Growth has been differential: some states and local areas lose while others gain.

## Population Growth, 1790-2000



# Admitting States to the Union and Growing the House of Representatives

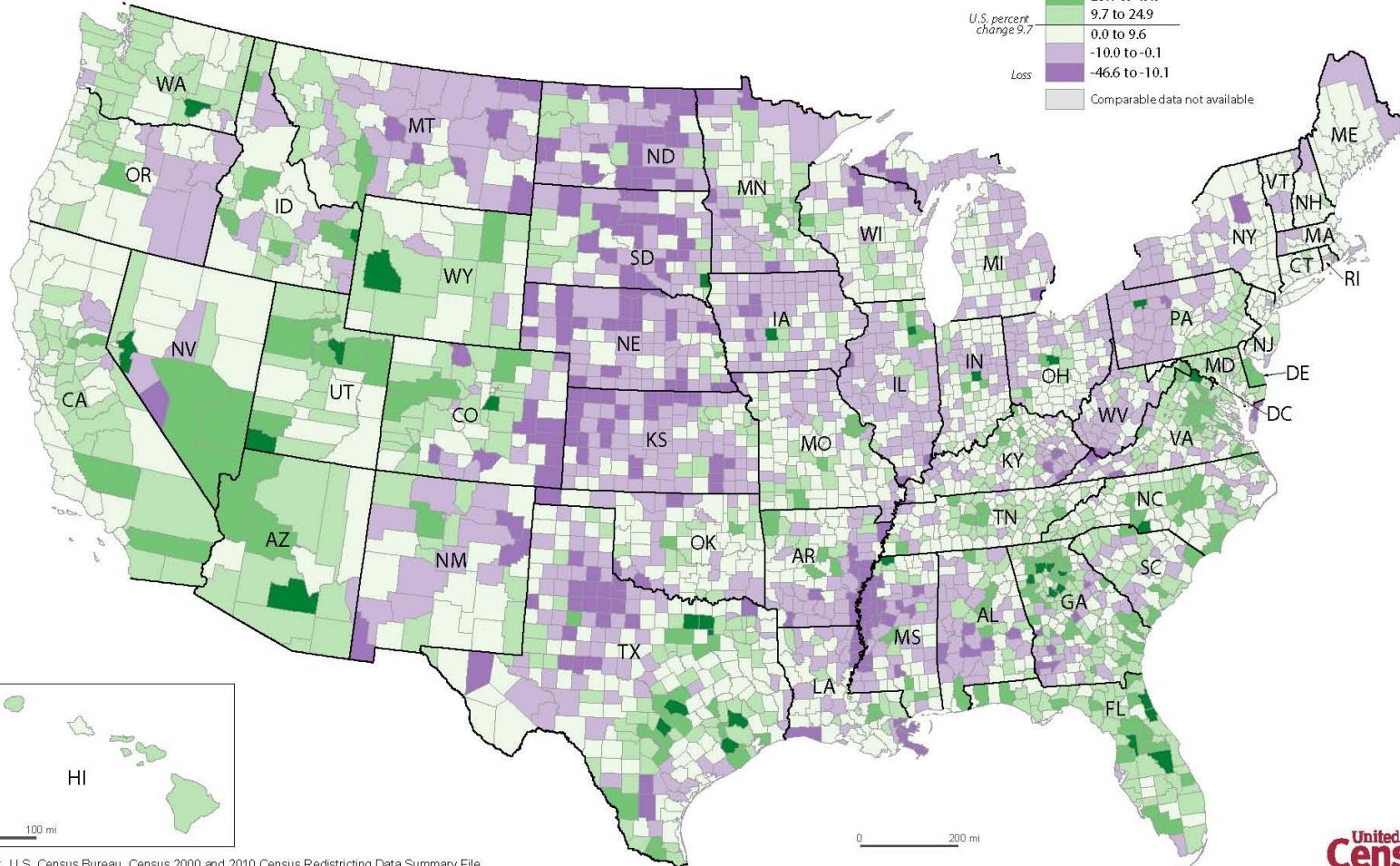




## 2010 Census Results - United States

### Percent Change in Population: 2000 to 2010

Percent Change by County or County Equivalent	
Gain	50.0 to 110.4
	25.0 to 49.9
	9.7 to 24.9
	0.0 to 9.6
-Loss	-10.0 to -0.1
	-46.6 to -10.1
U.S. percent change 9.7	
Comparable data not available	



Source: U.S. Census Bureau, Census 2000 and 2010 Census Redistricting Data Summary File  
For more information visit [www.census.gov](http://www.census.gov).

# **Administrative History of the Census, 1790-1902**

- From 1790 to 1902, a temporary agency in the Department of State or Interior.
- Until 1880 the US marshals and their assistants served as the field staff.
- Over the years, Congress added the collection of agricultural, manufacturing, mortality, disability statistics to the decennial.
- A very large administrative operation during the census period, but administrative discontinuity.
- Congress considered proposals for a permanent census office but did not act on them until 1902.

# **Meanwhile....**

- The other constitutionally mandated “leg” of the system developed.

# Economic and Administrative Statistics

- Article 1, Section 9: “a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time.”
- Article 2, Section 3: The President “shall from time to time give to the Congress Information of the State of the Union and recommend to their Consideration such Measures as he shall judge necessary and expedient.”

# **Implications....**

- Administrative records of the revenue and expenditure of government were collected and published, making it feasible to develop administrative statistics.
- The government created an administrative structure to collect, analyze and publish the data.

# Private Publications of Federal Statistics Begin Very Early!

- Timothy Pitkin, *A Statistical View of the Commerce of the United States of America* (1816)
- Adam Seybert, *Statistical Annals: Embracing Views of the Population, Commerce, Navigation, Fisheries, Public Lands, Post-Office Establishment, Revenues, Mint, Military and Naval Establishments, Expenditures, Public Debt and Sinking Fund, of the United States of America, Founded on Official Documents, 1789-1818*

# **Routine Statistical Reporting Started in the Treasury Department**

- 1820: The Secretary of the Treasury began to prepare annual statistical accounts of the commerce of the US with foreign countries.
- 1840-1860s: Congress authorized hiring of clerks, regular publication of reports.

# The Treasury Department and Permanent Statistical Offices

- 1866, Bureau of Statistics established in the Treasury Department.
- 1878, the Bureau of Statistics published the first edition of the Statistical Abstract of the United States.

# **Statistical Agencies Established in Other Departments**

- Agriculture Department: 1862
- Bureau of Education: 1867
- Bureau of Labor: 1884
- Immigration Statistics: collected in the Treasury Department and State Department

# At the Dawn of the Twentieth Century...

- The United States was recognized as a pioneer in statistical methodology and technology: machine tabulation of the census began in 1890.
- Congress had been successfully reapportioned 12 times, 46 states were in the union, and legislatures had learned to redistrict on the basis of geographic growth and change.
- Routine, reliable data poured out from federal statistical offices, guided policy development on the tariff and taxation, immigration policy, disability, labor relations, and many more areas.

STATISTICAL ABSTRACT

OF THE

UNITED STATES.

1902.

TWENTY-FIFTH NUMBER.

Population, Finance, Commerce, Agricultural and  
other leading Products, Mining, Railroads and  
Telegraphs, Immigration, Education, Public  
Lands, Pensions, Postal Service,  
Prices, Tonnage, etc.

PREPARED BY THE BUREAU OF STATISTICS, UNDER THE DIRECTION  
OF THE SECRETARY OF THE TREASURY.

BUREAU OF THE CENSUS LIBRARY

WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1903.

The World of  
Printed  
Reports:  
*Statistical  
Abstract, 1902,  
580 pages*

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# The Development of Data Series...

- Price, Expenditure, and Cost of Living Measurement as an example of continuous measurement for almost 150 years.

09/47  
PUBLIC DOCUMENT.....

.....No. 31.

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SIXTH ANNUAL REPORT

OF THE

NEDL

BUREAU OF STATISTICS OF LABOR.

---

MARCH, 1875.

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BOSTON:

WRIGHT & POTTER, STATE PRINTERS,  
79 MILK STREET (CORNER OF FEDERAL).

1875.

Cost of  
Living  
Measurement

## PART IV.

## CONDITION OF WORKINGMEN'S FAMILIES.

- CHAP. I.—INTRODUCTION.  
 CHAP. II.—EXTENT OF OUR INVESTIGATIONS, AND THEIR REPRESENTATIVE VALUE.  
 CHAP. III.—INDIVIDUAL PRESENTATION OF THE CONDITION OF FAMILIES.  
 CHAP. IV.—COST OF LIVING.  
 CHAP. V.—RENTS.—CONDITION OF WORKINGMEN'S HOMES.  
 CHAP. VI.—FUEL.  
 CHAP. VII.—FOOD.  
 CHAP. VIII.—BOOTS AND SHOES.—DRY GOODS.—CLOTHING.  
 CHAP. IX.—SUNDRIES.  
 CHAP. X.—GENERAL SUMMARY.

No. 10.	CARPENTER.	american.
BARNINGS of father,	.	\$716
son, aged 15,	.	<u>330</u>
		\$1,016

**CONDITION.**—Family numbers 6, parents and 4 children from four to sixteen years of age; two go to school, including the oldest girl, who also helps the mother at home. Occupy a tenement of 9 rooms pleasantly situated, with agreeable surroundings and a small flower-garden attached. The house is well furnished and parlor carpeted. Own a piano and sewing-machine. Family dresses well and attends church.

**Food.**—*Breakfast.* Bread and butter, meat or fish, cake, tea.  
*Dinner.* Bread and butter, meat, potatoes, vegetables, pickles, pie or pudding.  
*Supper.* Bread, butter, cold boiled meat, doughnuts, or gingerbread, cheese and  
     tea. Baked beans Sunday morning.

COST OF LIVING.								\$681
Bent,	-	\$290 00	Fish,	-	\$12 00	Dry goods,	-	\$50 00
Fuel,	-	50 15	Milk,	-	33 25	Papers,	-	8 00
Groceries,	-	334 60	Boots and shoes,	-	27 80	Religion,	-	12 00
Meat,	-	134 64	Clothing,	-	107 00	Sundries,	-	29 05

No. 11.	CARPENTER.	American.
EARNINGS of father,	+	\$639
son, aged 16,	+	300
		939

**CONDITION.**—Family numbers 6, parents and 4 children from seven to sixteen years of age; go to school. Have a moment of 6 rooms, about three-quarters of a mile from this village, in a good neighborhood and the surroundings clean, pleasant and healthy. The rooms are well furnished and carpeted. Have sewing and other labor saving machines. Family dresses well and attends church.

**Food.**—*Breakfast.* Bread, butter, meat or eggs, cake and tea.  
*Dinner.* Bread, butter, meat, potatoes, vegetables, pickles, pie or pudding.  
*Supper.* Bread, butter, sauce or canned-fruit, doughnuts and tea.

No. 12.	CARPENTER.	American.
EARNINGS of father,		\$722

**CONDITION.**—Family numbers 3, parents and one child fourteen years of age, who goes to school. Live in a tenement of 3 rooms, well located, with very pleasant and healthy surroundings. The apartments are well furnished and the parlor carpeted. Have a sewing and other labor saving machines. Family dresses well and attends church.

**Food.**—*Breakfast.* Bread, butter, with the raisins left from dinner, or eggs, cake, coffee.  
*Dinner.* Bread, butter, meat, potatoes, pickles, vegetables, pie, tea.  
*Supper.* Bread, butter, cake, cheese, sausages.

COST OF LIVING.							
Rent, . . . . .	\$120.00	Fish, . . . . .	\$8.00	Dry goods, . . . . .	\$19.00		
Fuel, . . . . .	46.00	Milk, . . . . .	25.44	Papers, . . . . .	9.00		
Groceries, . . . . .	231.79	Boots and shoes, . . . . .	24.00	Souceries, . . . . .	8.00		
Meat, . . . . .	69.24	Clothing, . . . . .	67.00	Sundries, . . . . .	56.00		

# **Followed by Cost of Living Survey Series (archived at ICPSR)**

- **Investigator:** United States Department of Labor. Bureau of Labor Statistics.
- The Cost of Living Survey series was created by the United States Department of Labor, Bureau of Labor Statistics (BLS), with the goal of estimating the cost of living of a "typical" American family.
- ICPSR retrieved the raw data and created electronic files in the 1980s

# **ICPSR Cost of Living Survey Series**

- COST OF LIVING OF INDUSTRIAL WORKERS IN THE UNITED STATES AND EUROPE, 1888-1890 (ICPSR 7711),
- COST OF LIVING IN THE UNITED STATES, 1917-1919 (ICPSR 8299), and
- STUDY OF CONSUMER PURCHASES IN THE UNITED STATES, 1935-1936 (ICPSR 8908).

# **Followed by...Consumer Expenditure Survey Series**

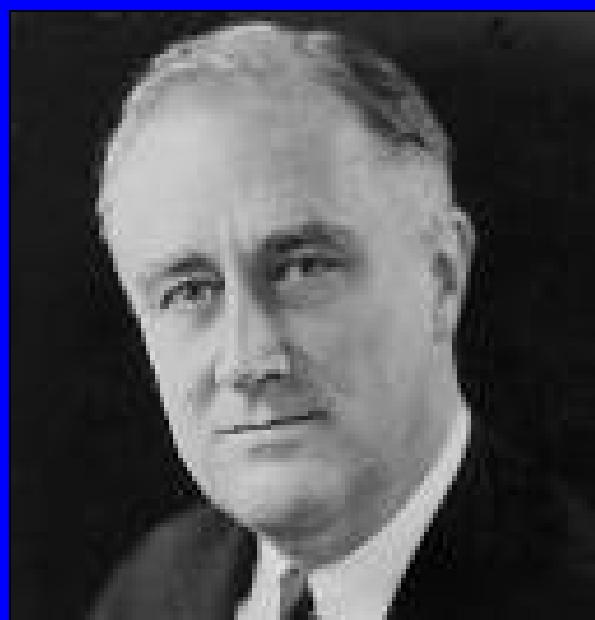
- The Consumer Expenditure Survey (CES) series... provides a continuous flow of information on the buying habits of American consumers and also furnishes data to support periodic revisions of the Consumer Price Index.
  - (1) a quarterly Interview Survey in which each consumer unit in the sample is interviewed every three months over a 15-month period, and
  - (2) a Diary Survey completed by the sample consumer units for two consecutive one-week periods.

# But most data series and administrative processes were not so continuous....

- The statistical system at the turn of the 20<sup>th</sup> century was somewhat anarchic and duplicative.
- Many of the thornier issues of the Constitutional era continued to plague the statistical system.
- The country had a “politics of population.”

# Twentieth Century, 1900-1940

- By 1902, the Census Bureau was one of many statistical agencies.
- In 1903, with the organic act creating the Department Commerce and Labor, Congress mandated consolidation and coordination.
- It failed.



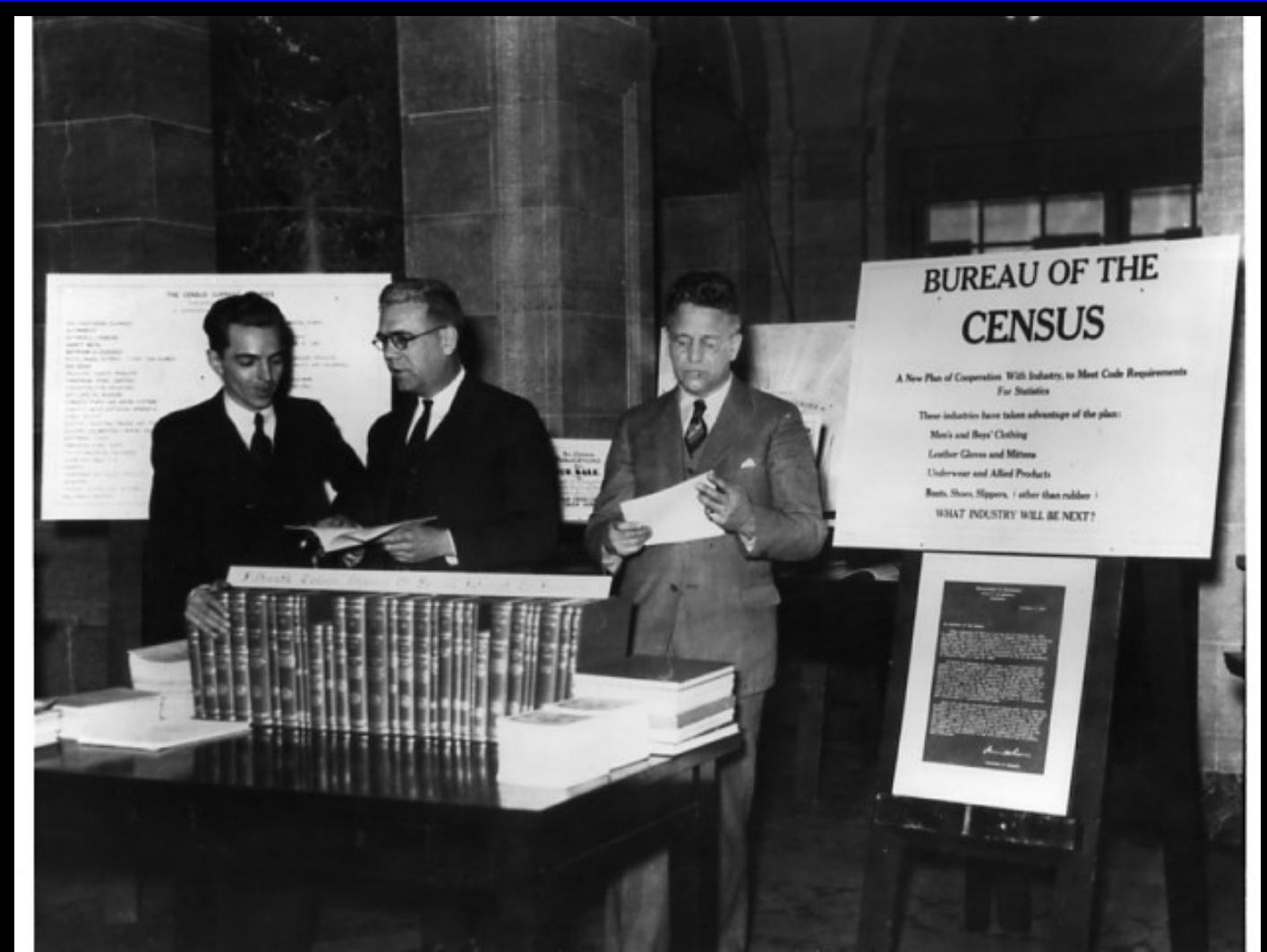
# Coordination and the Politics of Population

- Theodore Roosevelt's problem: merging agencies with traditions of administrative data and survey data.
- Herbert Hoover's problem: the reapportionment battles of the 1920s, the only time in the history of the republic that Congress refused to reallocate House seats among the states on the basis of the census results.
- Franklin Roosevelt's problem: the Great Depression and measuring unemployment.

# Trying Again...and Learning to Live with Decentralization

- Bureau of Efficiency, 1920s
- COGSIS, Committee on Government Statistics and Information Services, 1930s
- 1940: Position of Chief Statistician created in the consolidation of the Bureau of the Budget (now OMB)
- 1942: Federal Reports Act mandated “forms clearance.”

# Stuart A. Rice, first Director of Statistical Standards



U. S. DEPARTMENT OF COMMERCE  
HARRY L. HOPKINS, SECRETARY  
BUREAU OF THE CENSUS  
WILLIAM LANE AUSTIN, DIRECTOR



STATISTICAL ABSTRACT  
OF THE  
UNITED STATES  
1938  
SIXTIETH NUMBER

COMPILED BY  
KATHLEEN H. DUGAN, *Editor*  
UNDER THE SUPERVISION OF  
DR. JOSEPH A. HILL, *Chief Statistician, Statistical Research*

*Bureau of the Census  
Library*

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1938

For sale by the Superintendent of Documents, Washington, D. C. - - - - Price \$1.50 (Buckram)

The World of  
Printed  
Reports (still):  
*Statistical  
Abstract, 1938,  
882 pages*

LETTER OF TRANSMITTAL

DEPARTMENT OF COMMERCE,  
BUREAU OF THE CENSUS,  
*Washington, D. C., February 6, 1939.*

SIR: I have the honor to submit herewith for publication the sixtieth issue of the Statistical Abstract of the United States. This annual volume is a compilation of authoritative statistics relating to the social and economic condition of the population and to the industrial, commercial, and governmental activities of the Nation. It is designed to serve as a convenient reference work for businessmen, economists, statisticians, students, and others who may have need of a statistical compendium covering a wide range of subjects.

The first 34 issues of the Abstract were prepared and published by the Bureau of Statistics, originally a bureau of the Treasury Department and later of the Department of Commerce and Labor, and the next 25 by the Bureau of Foreign and Domestic Commerce, now of the Department of Commerce. The present volume was prepared in the Bureau of the Census under the direction of Kathleen H. Dugan and the supervision of the late Dr. Joseph A. Hill, chief statistician for the Division of Statistical Research.

Realizing the importance of the early publication of this volume, the Bureau has not considered making any material changes in its form or content as compared with the recent previous issues; nor are any radical changes contemplated for the future or believed to be necessary. The Bureau plans, however, to introduce such revisions or new features as will add to the usefulness of the volume, and in that connection will welcome suggestions from those who use the Abstract as a book of reference.

The statistical tables contained in the Abstract are compilations of data collected by the various statistical agencies of the Federal Government, by several State agencies, and by a considerable number of nongovernmental organizations. Many of these agencies have rendered valuable assistance not only in supplying advance data but also in the actual preparation of tables for inclusion in the Abstract. Special mention on this account is due the following-named agencies of the Federal Government: The Bureau of Foreign and Domestic Commerce, the Bureau of Fisheries, and the Bureau of Marine Inspection and Navigation, of the Department of Commerce; the Bureau of Agricultural Economics, the Forest Service, and the Weather Bureau, of the Department of Agriculture; the Office of Education, the General Land Office, and the Bureau of Mines, of the Department of the Interior; the Immigration and Naturalization Service and the Bureau of Labor Statistics, of the Department of Labor; the Bureau of Internal Revenue, of the Treasury Department; the Farm Credit Administration; the Federal Communications Commission; the Board of Governors of the Federal Reserve System; the Interstate Commerce Commission; the United States Maritime Commission; the Social Security Board; and the Veterans' Administration.

Respectfully,

WILLIAM LANE AUSTIN,  
*Director of the Census.*

To HON. HARRY L. HOPKINS,  
*Secretary of Commerce.*

# Meanwhile...

- The American economy and population continued to grow.
- The statistical sciences went through repeated revolutions in measurement techniques and theory in sampling and inferential statistics
- The computer revolution began to revolutionize the collection, analysis, and presentation of statistics
- The decentralized system built the National Income and Products Accounts, regular measurement of employment and unemployment, an array of new survey and administrative records data systems.

# Technical Processes

- Collection – administrative or survey
- Cleaning, editing, coding
- Sorting, ordering, listing, and compilation
- Tabulation, cross tabulation (adding, summing)
- Presentation, publication

# Census, 1790-1880

- Technology was paper
- All processes short of printing for publication done by hand, long hand
- Type setting done by hand.
- Until records reached 50,000,000 for the 1880 census!

69 in the year one thousand eight hundred and twenty. A. B. as-  
 70 sistant to the marshal of (or secretary of )  
 71 Schedule of the whole number of persons within the divi-  
 72 sion allotted to A. B.

	Name of the county, parish, township, town, or city, where the family resides.
	Names of heads of families.
	Free white males under ten years.
	Free white males of ten and under sixteen.
	Free white males of sixteen, and under twenty-six, including heads of families,
	Free white males of twenty-six and under forty-five, including heads of families.
	Free white males of forty five and upwards, including heads of families,
	Free white females under ten years of age.
	Free white females of ten and under sixteen.
	Free white females of sixteen and under thirty-six, including heads of families.
	Free white females of twenty-six and under forty five, including heads of families.
	Free white females of forty-five and upwards, including heads of families.
	All other persons except Indians not taxed.
	Slaves.

1 Sec. 2. *Be it further enacted*, That every assistant, fail-  
 2 ing or neglecting to make a proper return, or making a false re-  
 3 turn, of the enumeration to the marshal, (or secretary,) within

# Early Census Schedule

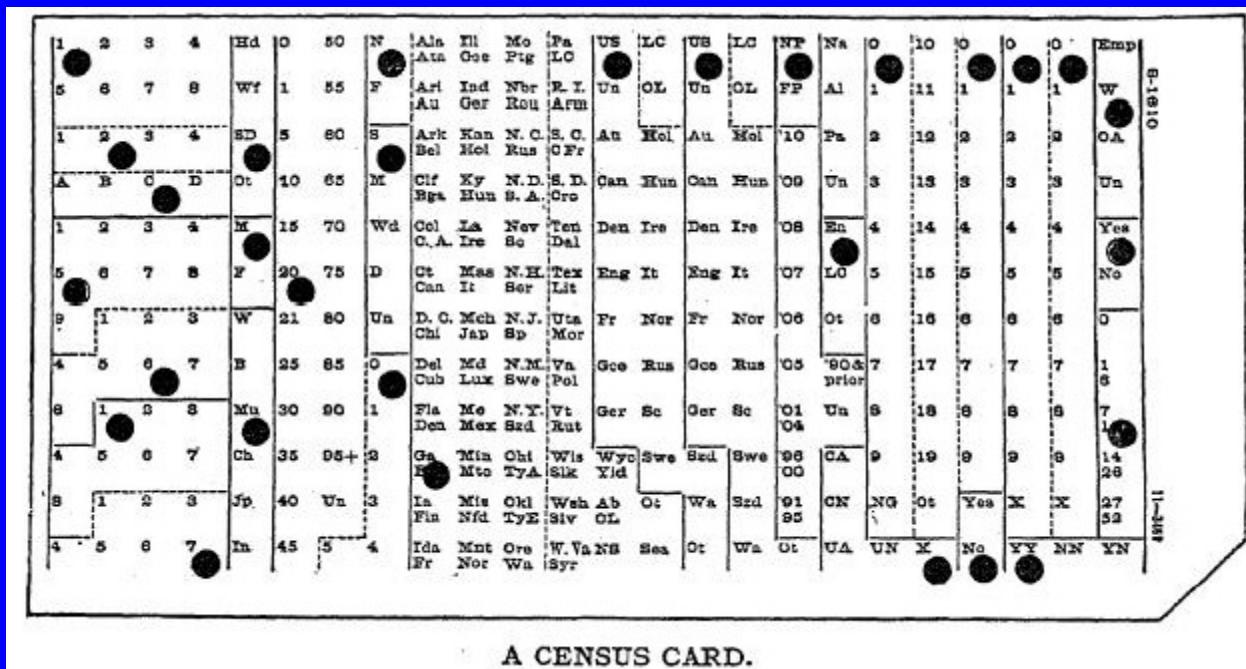
# Individual Level Form

**SCHEDULE I.—FREE INHABITANTS** in **The County of** **and State of**  
**enumerated by me on the day of , 1850.** **Assistant.**

# Census, 1890-1940

- Collection – administrative or survey
- Cleaning, editing, coding
- **Add a step, transfer information to punch card by copying information to card**
- Sorting, ordering, listing, and compilation
- **\*\*\*\*Sort cards by machine\*\*\*\***
- Tabulation, cross tabulation (adding, summing)
- **\*\*\*\*Tabulate cards by machine\*\*\*\***
- Presentation, publication
- **\*\*\*\*Read results directly to print medium\*\*\*\***

# 1910 census punch card



# Punch card operators, WWII



# 1950 census schedule

# Accelerating technical capacity

- 1950: UNIVAC computer processing
- 1960: FOSDIC machine reading of hand written responses
- 1970: Mail census
- 1970s: Terminal data entry
- 1980: Micro computers
- 1990s: Web
  - Presentation
  - Storage and downloading
  - On line tabulation

# Census, 1960

- Collection – administrative or survey
- Cleaning, editing, coding
- \*\*\*\* Transfer records (information) to tape by machine reading of paper form (FOSDIC)\*\*\*\*
- Sorting, ordering, listing, and compilation
- \*\*\*\*Sort records by computer\*\*\*\*
- Tabulation, cross tabulation (adding, summing)
- \*\*\*\*Tabulate records by computer \*\*\*\*
- Presentation, publication
- \*\*\*\*Read results directly to print medium\*\*\*\*

# Fast Forward, 2010

- Collection – administrative or survey
- Cleaning, editing, coding
- Transfer records (information) to electronic storage by machine reading paper form (OCR)
- Sorting, ordering, listing, and compilation
- \*\*\*\*Sort records by computer\*\*\*\*
- Tabulation, cross tabulation (adding, summing)
- \*\*\*\*Tabulate records by computer \*\*\*\*
- Presentation, publication
- \*\*\*\*Read results directly to electronic summary file for use with web extraction tool\*\*\*\*

# The Changing World of Data Analysis

- Through 1950s, only government agencies had the capacity (technical and financial) to collect and process replicated, geographically complex and variable rich data sets.
- Academic or private research was limited to secondary analysis or significantly smaller data collections.

# The Changing World of Data Analysis: 1960s

- The computer revolution began the process of the ‘democratization’ of data
- Federal government began production of “public use” microdata files
- Federal government proposed the creation of a “data bank” for integration, and coordination of and research using federally collected data.

# The Changing World of Data Analysis: 1960s

- Congress challenged the initiative after complaints about privacy and the threat of “Big Brother.” Further grand development stopped.
- Statistical system, academic and private researchers quietly continued discussions of new forms of data dissemination

# Issues

- Privacy and Confidentiality
- Technical Access
- Metadata Development
- Skills Training
- Who pays?

# Privacy and Confidentiality Viewed Historically

- Through 1950s, the concerns about privacy and confidentiality were related to:
  - (1) collection, e.g., rogue enumerators or office staff;
  - (2) concern of government misuse of the data.
- The confidentiality pledge, first informal, was codified starting with Census Proclamation, 1910, and statutory law.
- Rule: statistical information not to be used for “taxation, regulation or investigation”
- No disclosure of individual case information

# Census Proclamations

## TAFT ANNOUNCES NEW CENSUS

Issues Proclamation Asking People to Co-operate.

## ALL RECORDS TO BE SECRET.

Declares It Is Duty of Citizens to Aid Enumerators.

Washington, D. C., March 14.—[Special.]—President Taft today issued a proclamation urging all persons throughout the States "to answer promptly, completely and accurately all inquiries addressed to the enumerators or other employés engaged in the taking of the decennial census."

The work of taking the census will begin one month from tomorrow. The proclamation is issued for the purpose of informing those ignorant of its work; they are expected to co-operate with employés of the census bureau, and will be subject to penalties if they fail to do so.

The president reassures the public that information will be treated as confidential, saying that "every employé of the bureau is prohibited, under heavy penalties, from disclosing any information which comes to his knowledge."

This part of the proclamation does not still the fears of many persons that information required of them may be some way to the detriment of their or business interests.

The sole purpose of the census, the president states, is to fulfill the requirements of the United States constitution, for the purpose of determining the representation of the several states in the national house of representatives.

(Chicago Tribune Press Service.)  
Washington, D. C., Nov. 22.—[Special.]—By official proclamation President Hoover today urged all citizens to give honest answers to the government employés charged with taking the fifteenth decennial census of the United States.

The work of obtaining the data for the census begins April 1, 1930. President Hoover gave assurances

## PRESIDENT ASKS ALL TO GIVE AID TO THE CENSUS

Washington, D. C., Dec. 13.—[Special.]—The census bureau today made public a proclamation issued by President Wilson calling on all the people of the country to give aid to the taking of the census, which is to begin on Jan. 2.

The proclamation states that the main purpose of the census is to obtain accurate statistics on which to base the representation in congress. It calls attention to the fact that all

that no person could be harmed in any way by furnishing such information as is asked by the enumerators or other employés of the census bureau.

"It is of the utmost importance to the interests of all the people that this census should be a complete and accurate report of the population and resources of the nation," President Hoover said.

"The sole purpose of the census is to secure general statistical information regarding the population and resources of the country, and replies are required from individuals only to permit the compilation of such general statistics. The census has nothing to do with taxation, with military or jury service, with the compulsion of school attendance, with the regulation of immigration, or with the enforcement of any national, state, or local law or ordinance."

"There need be no fear," continued Mr. Hoover, "that any disclosure will be made regarding any individual person or his affairs."

BURNS FROM SOUP FATAL  
John Lobedz, 40 years old, 1300 Crittenton street, died at the county hospital yesterday of burns which he suffered Nov. 11 when he spilled a bottle of soup on his chest while removing it from the stove.

due protection of the rights and interests of the persons furnishing information every employé of the census bureau is prohibited under heavy penalty from disclosing any information which may thus come to his knowledge."

READY FOR CHICAGO WORK  
According to John J. Gaynor, census supervisor of the first district, there are 2,200 men prepared to begin work here Jan. 2.

## CAN'T GET AROUND CENSUS TAKERS, SAYS MANIFESTO

All Over 18 Must Answer;  
Secrecy Assured.

(Chicago Tribune Press Service.)  
Washington, D. C., Feb. 10.—All questions in the decennial census, which will begin April 1, must be answered by every person over 18 years of age. President Roosevelt stated today in proclaiming the census.

In making this statement the President indirectly answered charges raised in congress by Senator Charles W. Tobey Jr., N. H., and others that certain questions in the census constitute an invasion of privacy. The proclamation gave assurance that the census information will be held in strict confidence.



Senator Tobey.

WANTS CONGRESS REAPPOINTED.  
At the same time Mr. Roosevelt took occasion to prod the house for failure to make a new census.

# **Section of Title 13**

- **Sec. 9. Information as confidential...**(a) Neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, or local government census liaison may...
  - Use the information furnished under the provisions of this title for any purpose other than the statistical purposes for which it is supplied; or
  - Make any publication whereby the data furnished by any particular establishment or individual under this title can be identified; or
  - Permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports....

# Confidentiality Practices, 1900-1960s

- Practices were clarified and codified by trial and error, and rethinking cases of disclosure
- Early examples (from population census disclosures)
  - Using census age data as evidence to prosecute employers for hiring underage workers (1920s)
  - Using census age data to prosecute draft dodgers (1917-1918)



## "It's OK Boys. You can tell him everything... He's the Census Man!"

You're right, Rafe! The Census-Taker hasn't got any connection with the "Fevrecoons." Anything anybody tells him is strictly confidential. By law, Census facts and figures can't be shown to the tax people, the police, or anybody else.

The Census-Taker asks us important to you and your family. Your answers will help leaders in industry, business, labor and civic groups to plan such things as better schools, better roads, better housing, better distribution of such services as telephones, gas, water, and electricity.



Radio and newspapers will do their best to tell you beforehand what most of the questions are. Watch for them and have your answers ready.

Like other American business firms, we believe that business has a responsibility to contribute to the public welfare. This advertisement is therefore sponsored by

### NAME OF SPONSOR

Public service advertisement prepared by the Advertising Council, Inc., as part of the 1950 Census information campaign.

#### WHAT TO DO WHEN THE CENSUS-TAKER COMES

1. Ask him to show his official card. This identifies him as an employee of the Census Bureau.
2. Be friendly. Invite him in, or will stay only a few minutes.
3. In non-English speaking houses, have an adult or older child ready to translate.
4. Answer all questions sincerely and honestly. Remember—the information you give is strictly confidential. Under law, it is not available to any individual or any other Government agency.



# Confidentiality Practices

- By the 1960s, the current rules and practices were in place.
- They became the rationale for procedures for anonymizing public use files.
- How do they apply to the new environment of intensive, data rich, possibilities generated by improvements in computing power, statistical technique and analytic capacities?

# **Final Thoughts**

- More technical innovation is likely
- Public data require technical expertise and knowledge to manage and maintain
- The processes are labor intensive
- The processes are politically sensitive

**Thank you. For more  
information...**

Margo Anderson

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