

The Decennial Census Digitization and Linkage Project

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Trent Alexander
University of Michigan

Katie Genadek
U.S. Census Bureau

Any conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau. All results were approved for release by the Census Bureau's Disclosure Review Board (CBDRB-FY21-ERD002-022).

Overview

- **How we got into this**
- How we link data
- Adding the 1940 Census
- Adding the 1950 through 1990 Censuses
- Access and plans



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New data may be unusable for research and planning

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GSA 2021 Annual Scientific Meeting

Nov 10, 2021 to Nov 13, 2021

Virtual

November Virtual Office Hours

Nov 17, 2021

Virtual

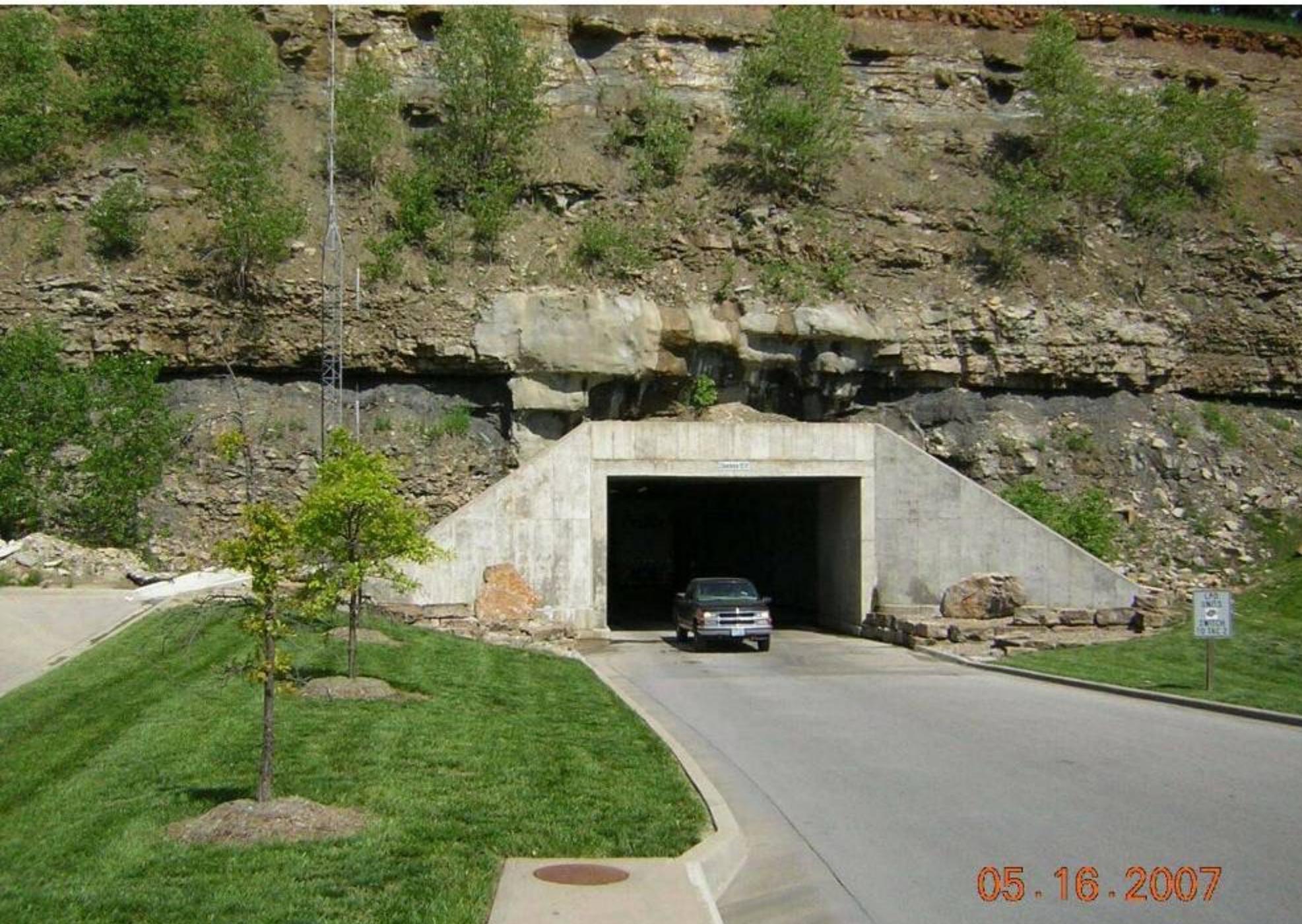
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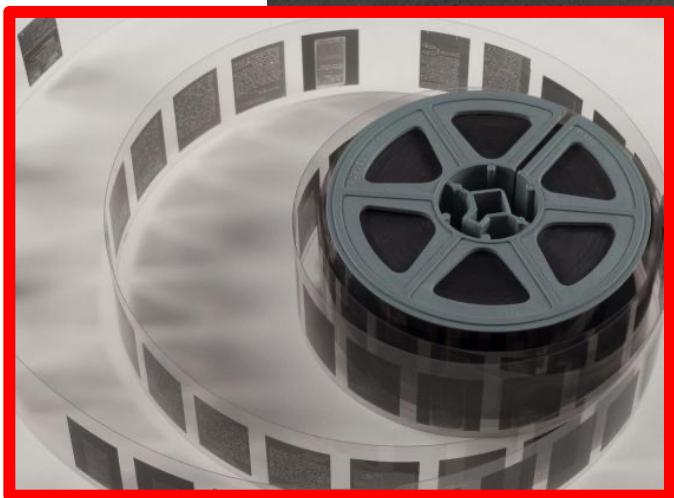








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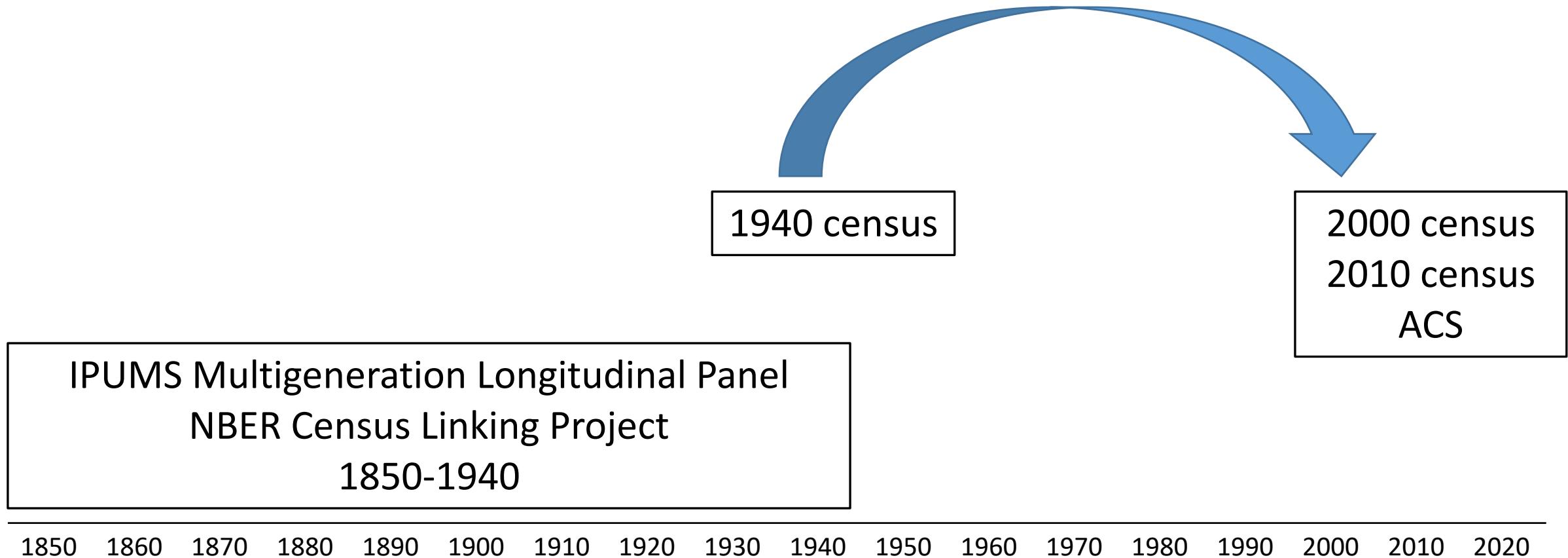
Available large-scale U.S. Census linkages

IPUMS Multigeneration Longitudinal Panel
NBER Census Linking Project
1850-1940

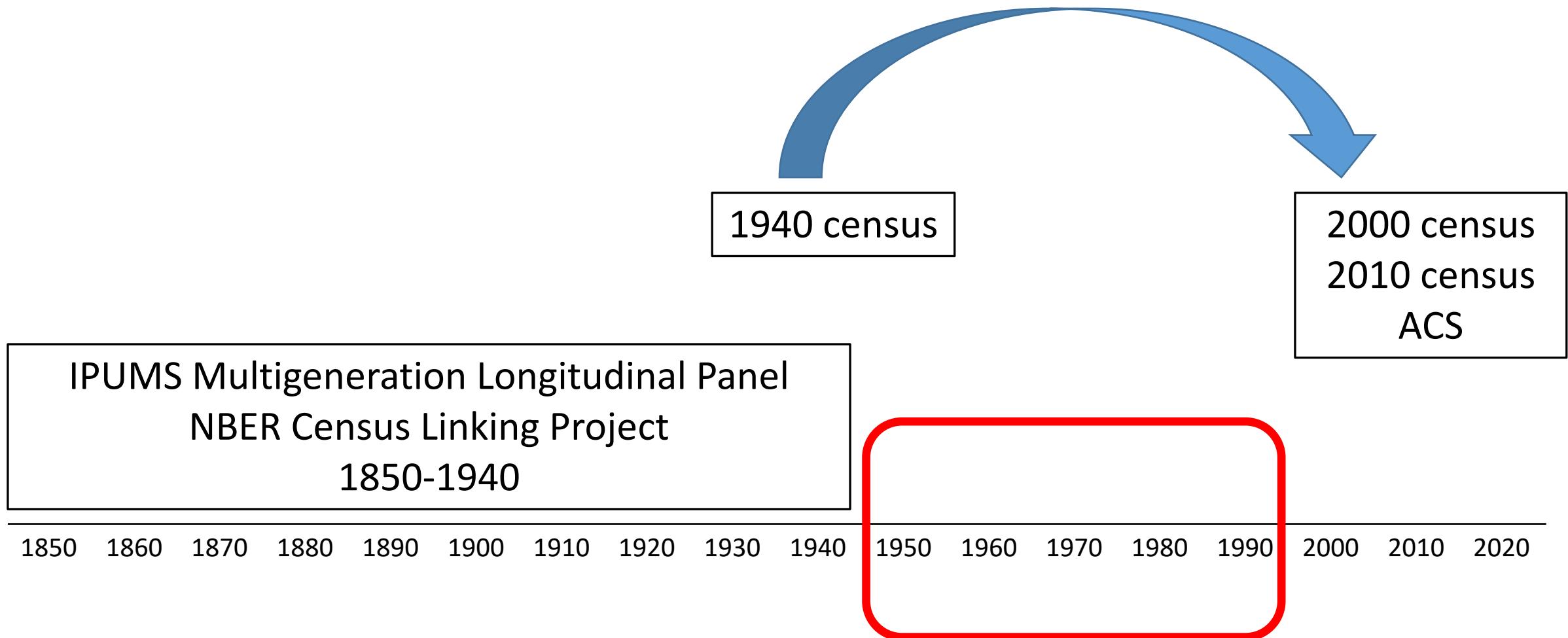
1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

2000 census
2010 census
ACS

Available large-scale U.S. Census linkages



Available large-scale U.S. Census linkages



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Linkage is very important at the Census Bureau

Section 6 of Title 13 of the U.S. Code

“may call upon any other department, agency, or establishment of the federal government...States, counties, cities, or other units...”

“...to the maximum extent possible...shall acquire and use information available from any source referred to [above] instead of conducting direct inquiries.”

Selected data sources acquired and linked by the Census Bureau

Federal data	State data	Third party data
<ul style="list-style-type: none">• Internal Revenue Service• Housing and Urban Development• Childcare Development Fund• Medicaid and Medicare• Social Security Administration• Office of Personnel Management• Veteran's Administration• U.S. Postal Service• Selective Service	<ul style="list-style-type: none">• Unemployment Insurance• Women, Infants, and Children• Temporary Assistance for Needy Families• Supplemental Nutrition Assistance Program• Low Income Energy Assistance Program• Child Care Subsidy	<ul style="list-style-type: none">• Contact frame• Public schools• Property and tax foreclosure

How the Census Bureau links records

Cases linked to a composite file built from administrative records

- Linkage with name, date of birth, sex, birthplace, address
- Uses standard techniques of data cleaning and probabilistic matching
- Matched cases are assigned a “Protected Identification Key” (PIK)

Blocking strategies in PIK assignment

Records receive scores through each of several “modules”

1. SSN Block
2. Address Block
3. Address Proximity Block
4. Name Block
5. Date of Birth Block

Low-scoring records are passed to the next module

The SSN and Address Blocks Determine Most PIKs

Percent of PIKed Records by Each Blocking Strategy		
	2010 Census	2010 Medicare
Social Security Number Block	-	99.9%
Address Block	94.1%	0.03%
Address Proximity Block	2.1%	-
Name Block	3.7%	0.05%
Date of Birth Block	0.2%	-
Records with PIKs	284,000,000	51,500,000

Linkage rates for decennial censuses

	Records with PIK assigned	% of all records with PIK
2010 Census	283,000,000	91%
2000 Census	249,000,000	89%
1940 Census	54,000,000	41%

Administrative data coverage: availability and gaps

Easiest to assign PIKs:

- Taxpayers
- Workers
- Persons on Medicare (most of the 65+ population)
- Persons receiving housing/medical/food assistance
- Men who ever registered for Selective Service

Harder to assign PIKs:

- Mobile and transient populations
- Residents without SSN
- Children not claimed on tax forms

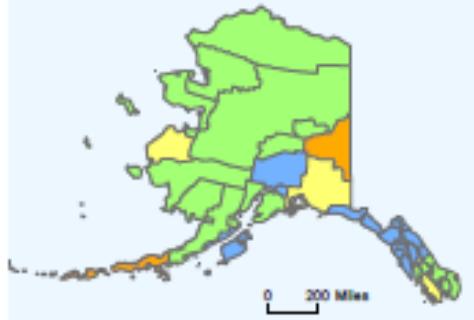
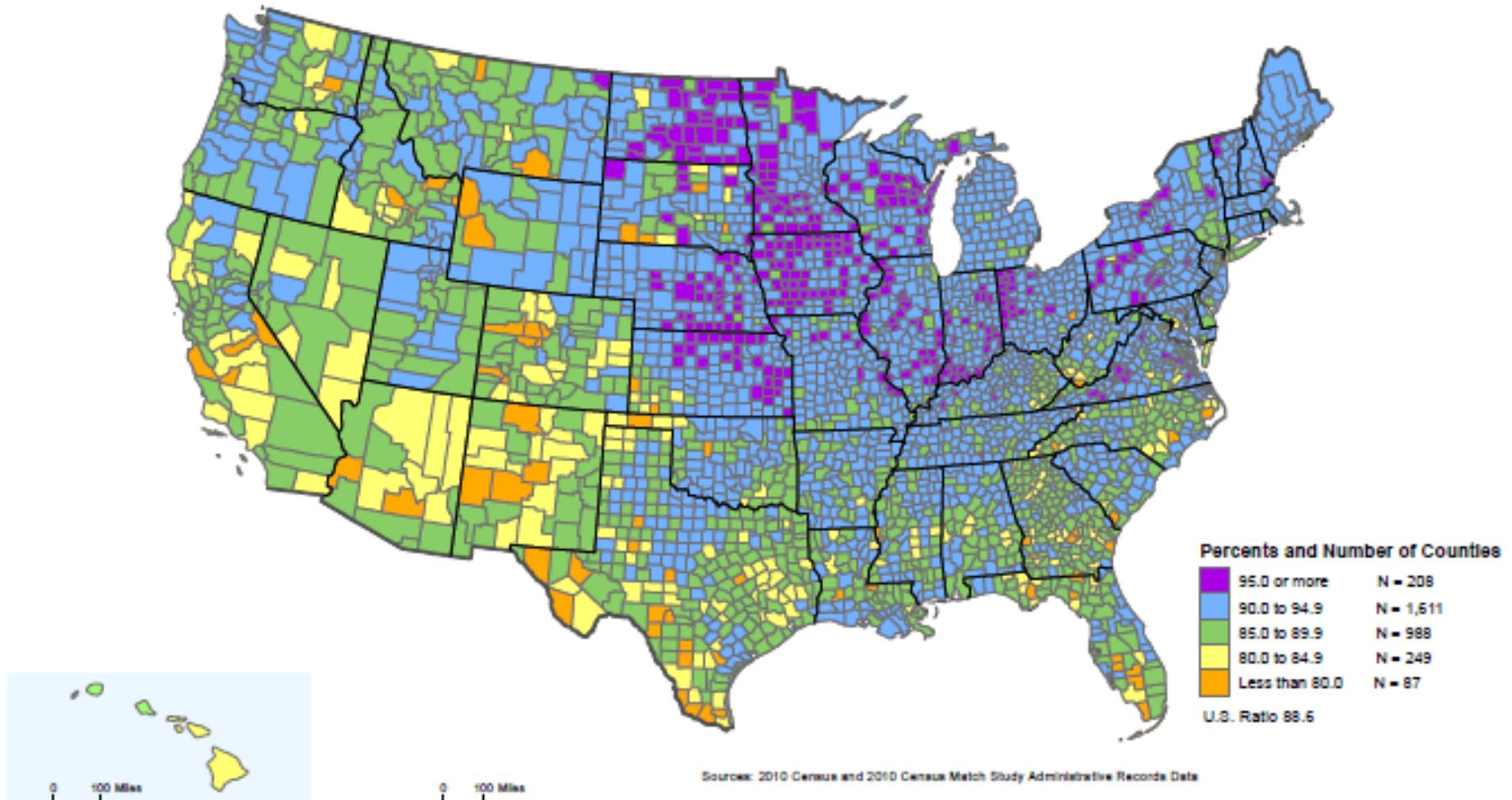


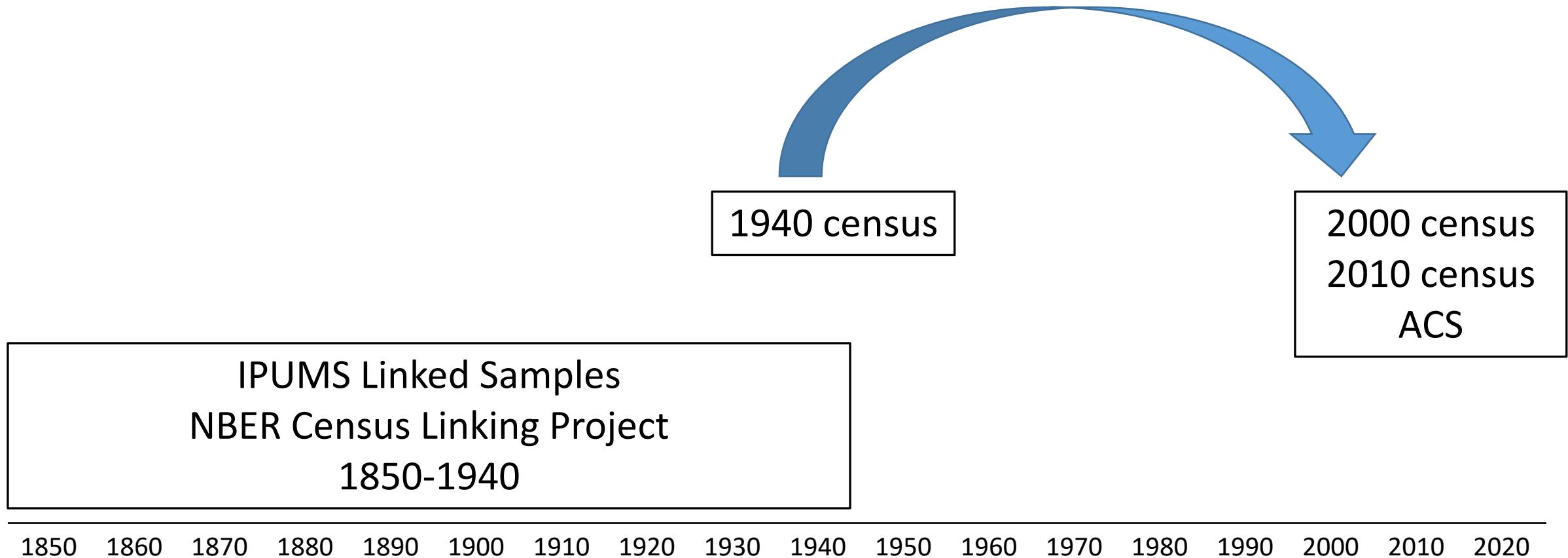
Figure 6. Match Ratio of 2010 Census and Administrative Records Persons by County



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Available large-scale U.S. Census linkages



Complete Count Census Data 1850-1940

The screenshot shows a web browser window for the IPUMS USA website (https://usa.ipums.org/usa/complete_count.shtml). The page features a dark blue header with the IPUMS USA logo and navigation links for LOG IN, HOME, SELECT DATA, MY DATA, FAQ, and HELP. Below the header is a horizontal banner with six small images depicting various people in different settings. The main content area has a light gray background. On the left, a sidebar under the 'DATA' heading includes links for BROWSE AND SELECT DATA, DOWNLOAD OR REVISE EXTRACTS, ANALYZE DATA ONLINE, and IPUMS REGISTRATION. The right side features a large section titled 'IPUMS COMPLETE COUNT DATA' with text explaining the dataset's scope and history. At the bottom, there is another section with links for VARIABLES, SAMPLES, USER'S GUIDE, GEOGRAPHIC TOOLS, and FAQ.

IPUMS USA

https://usa.ipums.org/usa/complete_count.shtml

LOG IN | IPUMS.ORG

HOME | SELECT DATA | MY DATA | FAQ | HELP

DATA

BROWSE AND SELECT DATA

DOWNLOAD OR REVISE EXTRACTS

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IPUMS REGISTRATION

DOCUMENTATION

VARIABLES

SAMPLES

USER'S GUIDE

GEOGRAPHIC TOOLS

FAQ

RESOURCES

ENUMERATION FORMS

IPUMS COMPLETE COUNT DATA

By 2020, IPUMS-USA will make freely available to researchers worldwide 100% count U.S. Census microdata through 1940. This dataset will include over 650 million individual-level (1850-1940) and 7.5 million household-level records (1790-1840). The microdata represents the fruition of longstanding collaborations between IPUMS and the nation's two largest genealogical organizations—Ancestry.com and FamilySearch—to leverage genealogical data for scientific purposes. This new microdata collection is possible due to the donations of an unprecedented scale of digitized census data by both Ancestry.com and FamilySearch.

Preliminary data from 1900-1940 is currently available, as well as full count files from 1850 and 1880. All data are coded and anonymous and can be downloaded via the IPUMS-USA extract system. The IPUMS also has a limited set of licenses to grant for access to the original restricted data with names and string variables. Please email ipums@umn.edu for more information.

Census obtained the Complete 1940 Census from IPUMS in 2015

1940 Census (N=132 million)		2000 Census (N=282 million)
Name in 1940		Name in 2000
Age		Date of Birth
Sex		Sex

~2 million links, almost no women

1940 Census (N=132 million)		2000 Census (N=282 million)
Name in 1940		Name in 2000
Age		Date of Birth
Sex		Sex

1940 Census (N=132 million)	Admin Records Composite (IRS, SSA, Medicare, HUD)
Name in 1940	Full name (+alternate names)
Age	Date of Birth
Sex	Sex
State/country of birth	State/country of birth
Parents' names	Parents' names

54 million links

1940 Census (N=132 million)	Admin Records Composite (IRS, SSA, Medicare, HUD)	
Name in 1940	Full name (+alternate names)	
Age	Date of Birth	
Sex	Sex	
State/country of birth	State/country of birth	
Parents' names	Parents' names	

	Admin Records Composite (IRS, SSA, Medicare, HUD)	2000 Census (N=282 million)
	Full name (+alternate names)	Name in 2000
	Date of Birth	Date of Birth
	Sex	Sex
	Place of residence (address)	Place of residence (address)

249 million links

	Admin Records Composite (IRS, SSA, Medicare, HUD)	2000 Census (N=282 million)
	Full name (+alternate names)	Name in 2000
	Date of Birth	Date of Birth
	Sex	Sex
	Place of residence (address)	Place of residence (address)

1940 Census (N=132 million)	Admin Records Composite (IRS, SSA, Medicare, HUD)	2000 Census (N=282 million)
Name in 1940	Full name (+alternate names)	Name in 2000
Age	Date of Birth	Date of Birth
Sex	Sex	Sex
State/country of birth	State/country of birth	
Parents' names	Parents' names	
	Place of residence (address)	Place of residence (address)
	Social Security Number	

54 million links

249 million links

1940 Census (N=132 million)	Admin Records Composite (IRS, SSA, Medicare, HUD)	2000 Census (N=282 million)
Name in 1940	Full name (+alternate names)	Name in 2000
Age	Date of Birth	Date of Birth
Sex	Sex	Sex
State/country of birth	State/country of birth	
Parents' names	Parents' names	
	Place of residence (address)	Place of residence (address)
	Social Security Number	

26 million links

1940 Census (N=132 million)		2000 Census (N=282 million)
Name in 1940		Name in 2000
Age		Date of Birth
Sex		Sex
State/country of birth		
Parents' names		Place of residence (address)

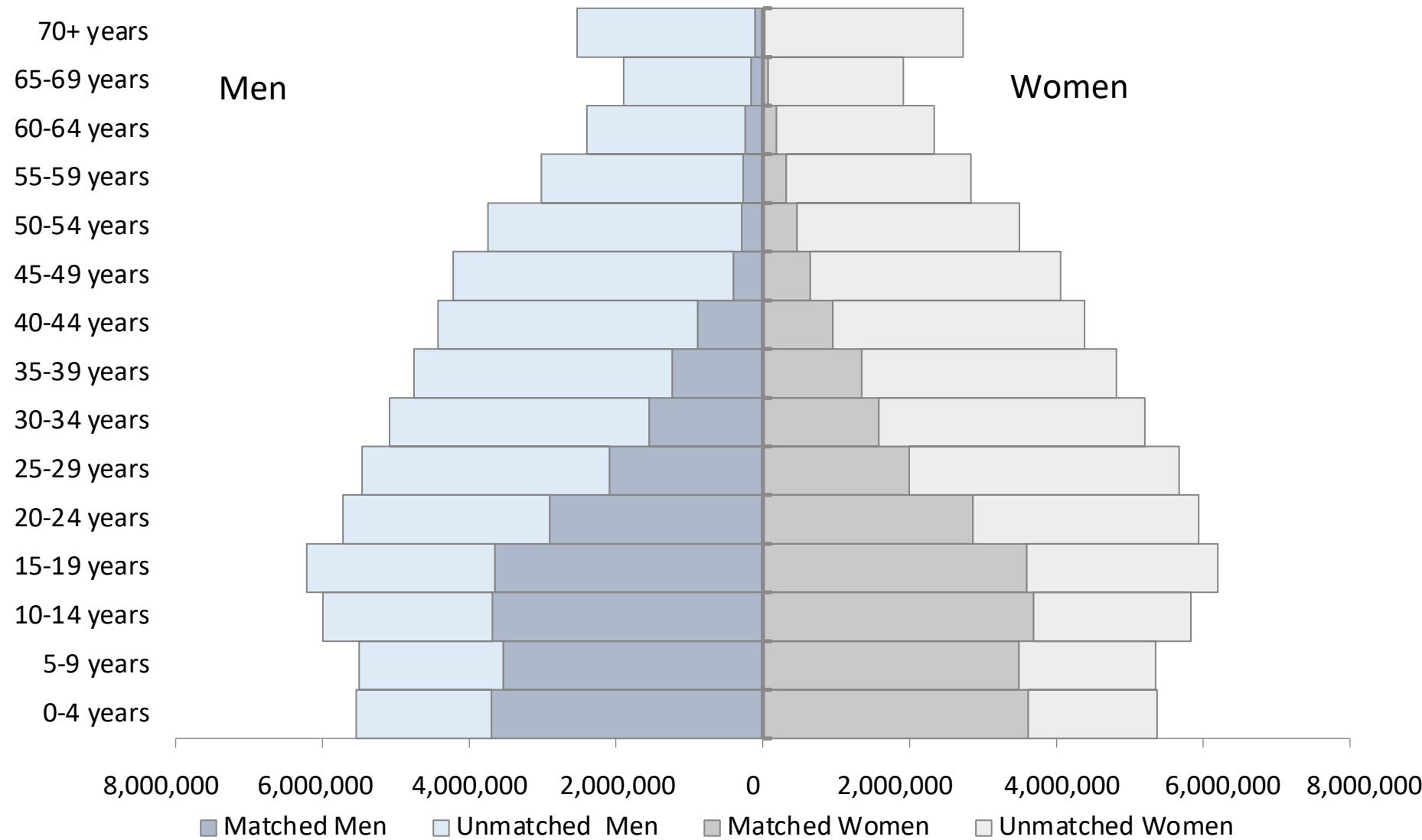
Note: if every possible link had been successful, we would have expected 41 million links

Data representativeness

Linked cases are not representative of the 1940 population

- Young are much more likely to be linked than older respondents
- White respondents more likely to be linked than non-White respondents
- Native-born respondents more likely to be linked than foreign-born
- Respondents in Northeast and upper Midwest more likely to be linked than those in South and West

PIKs in the 1940 Census by Age and Sex



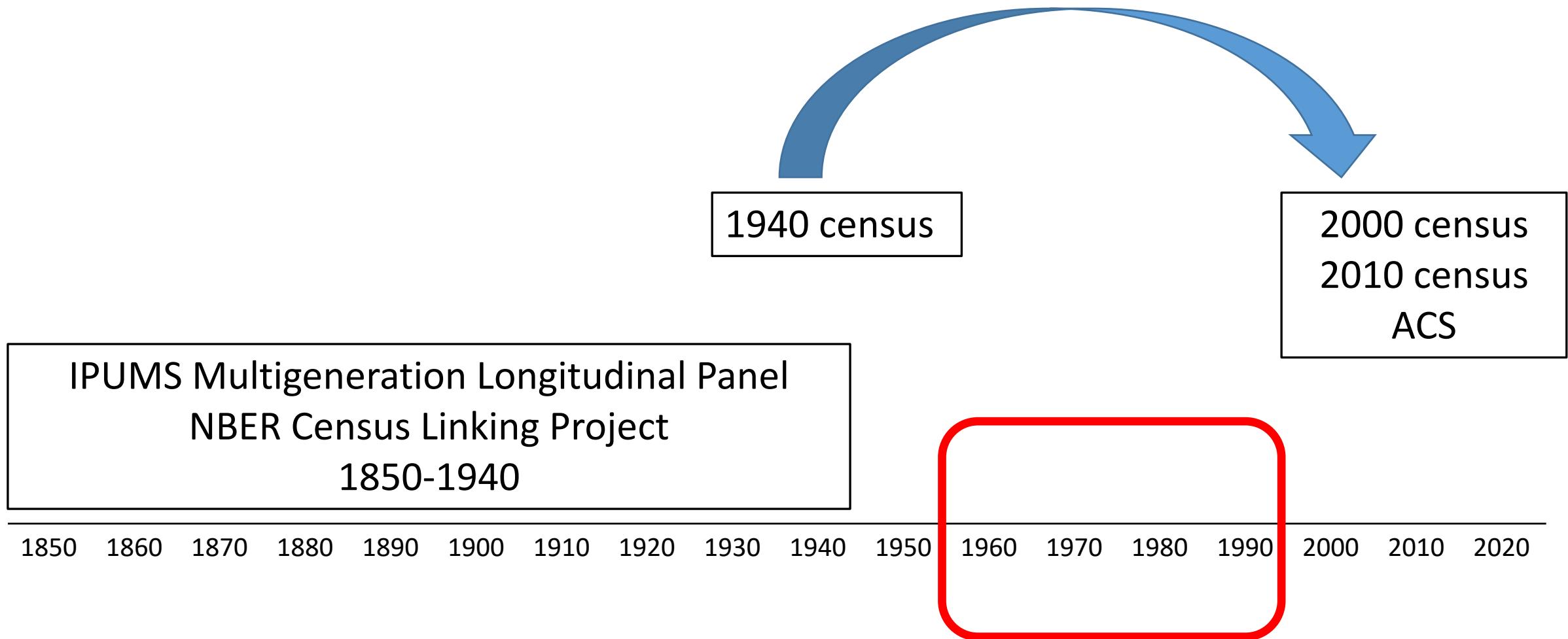
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Why is this difficult?

- Microdata files for 1960-1990 do not include names.
- Names were handwritten on census forms.
- Census forms are on 250,000 microfilm reels.
- Forms and data are highly restricted to protect respondent confidentiality.

1960-1990 recovery started in June 2021





Microfilm Scanning began in Summer 2021



PLEASE ALSO ANSWER HOUSING QUESTIONS ON PAGE 3												PLEASE ALSO ANSWER HOUSING QUESTIONS ON PAGE 3											
PERSON 1			PERSON 2			PERSON 3			PERSON 4			PERSON 5			PERSON 6								
Last name Please fill one column → for each person listed in Question 1a on page 1.		Last name		Last name		Last name		Last name		Last name		Last name		Last name									
First name Middle initial		First name Middle initial		First name Middle initial		First name Middle initial		First name Middle initial		First name Middle initial		First name Middle initial		First name Middle initial									
2. How is this person related to PERSON 1? Fill ONE circle for each person. If Other relative of person in column 1, fill circle and print exact relationship, such as mother-in-law, grandparent, son-in-law, niece, cousin, and so on.				If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter		If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter		If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter		If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter		If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter		If a RELATIVE of Person 1: ○ Husband/wife ○ Brother/sister ○ Natural-born ○ Father/mother ○ or adopted ○ Grandchild ○ son/daughter ○ Other relative ○ Stepmom/ ○ Stepdad/ stepdaughter									
START in this column with the household member (or one of the members) in whose name the home is owned, being bought, or rented. If there is no such person, start in this column with any adult household member.				If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative		If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative		If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative		If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative		If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative		If NOT RELATED to Person 1: ○ Roomer, boarder, or foster child ○ Unmarried partner ○ Housemate, roommate ■ ○ Other nonrelative									
3. Sex Fill ONE circle for each person.		○ Male ○ Female		○ Male ○ Female		○ Male ○ Female		○ Male ○ Female		○ Male ○ Female		○ Male ○ Female		○ Male ○ Female									
4. Race Fill ONE circle for the race that the person considers himself/herself to be. If Indian (Amer.), print the name of the enrolled or principal tribe.		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)		○ White ○ Black or Negro ○ Indian (Amer.) (Print the name of the enrolled or principal tribe.)									
If Other Asian or Pacific Islander (API), print one group, for example: Hmong, Fijian, Laotian, Thai, Tongan, Pakistani, Cambodian, and so on.		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)		○ Eskimo ○ Aleut Asian or Pacific Islander (API)									
If Other race, print race.		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API		○ Chinese ○ Filipino ■ ○ Asian Indian ○ Hawaiian ○ Samoan ○ Korean ○ Guamanian ○ Vietnamese ○ Other API											
5. Age and year of birth a. Print each person's age at last birthday. Fill in the matching circle below each box.		a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0	a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0	a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0	a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0	a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0	a. Age 0 0 0 0 0 1 0 1 0 0 2 0 2 0 0 3 0 3 0 0 4 0 4 0 0 5 0 5 0 0 6 0 6 0 0 7 0 7 0 0 8 0 8 0 0 9 0 9 0 0	b. Year of birth 1 1 1 1 1 0 9 9 9 9 2 0 2 0 2 0 3 0 3 0 3 0 4 0 4 0 4 0 5 0 5 0 5 0 6 0 6 0 6 0 7 0 7 0 7 0 8 0 8 0 8 0 9 0 9 0 9 0										
6. Marital status Fill ONE circle for each person.		○ Now married ○ Widowed ○ Divorced		○ Separated ○ Never married		○ Now married ○ Widowed ○ Divorced		○ Separated ○ Never married		○ Now married ○ Widowed ○ Divorced		○ Separated ○ Never married		○ Now married ○ Widowed ○ Divorced									
7. Is this person of Spanish/Hispanic origin? Fill ONE circle for each person.		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		○ No (not Spanish/Hispanic) ○ Yes, Mexican, Mexican-Am., Chicano ○ Yes, Puerto Rican ○ Yes, Cuban ○ Yes, other Spanish/Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)									
If Yes, other Spanish/Hispanic, print one group.																							
FOR CENSUS USE →												→ FOR CENSUS USE											

PERSON 7

NOW PLEASE ANSWER QUESTIONS H1a-H7D FOR YOUR HOUSEHOLD

Last name	Middle initial	
First name	Middle initial	
If a RELATIVE of Person 1:		
<input type="radio"/> Husband/wife <input type="radio"/> Natural-born son/ daughter <input type="radio"/> Stepson/ stepdaughter	<input type="radio"/> Brother/sister <input type="radio"/> Father/mother <input type="radio"/> Grandchild <input type="radio"/> Other relative	
If NOT RELATED to Person 1:		
<input type="radio"/> Roomer, boarder or foster child <input type="radio"/> Housemate	<input type="radio"/> Unmarried partner <input type="radio"/> Other nonrelative	
<input type="radio"/> Male	<input type="radio"/> Female	
<input type="radio"/> White <input type="radio"/> Black or Negro <input type="radio"/> Indian (Amér.) (Print the name of the enrolled or principal tribe): <input type="radio"/> Eskimo <input type="radio"/> Aleut		
<input type="radio"/> Asian or Pacific Islander (API) <input type="radio"/> Chinese <input type="radio"/> Filipino		
<input type="radio"/> Japanese <input type="radio"/> Asian Indian		
<input type="radio"/> Hawaiian <input type="radio"/> Korean		
<input type="radio"/> Samoan <input type="radio"/> Vietnamese		
<input type="radio"/> Guamaman <input type="radio"/> Other API		
<input type="radio"/> Other race (Print race): <input type="radio"/> Other		
a. Age	b. Year of birth	
0 0 0 0 0	1 8 0 0 0	
1 0 1 0 1	9 0 1 0 1	
2 0 2 0 2	3 0 3 0 3	
3 0 3 0 3	4 0 4 0 4	
4 0 4 0 4	5 0 5 0 5	
5 0 5 0 5	6 0 6 0 6	
6 0 6 0 6	7 0 7 0 7	
7 0 7 0 7	8 0 8 0 8	
8 0 8 0 8	9 0 9 0 9	
<input type="radio"/> Now married <input type="radio"/> Widowed <input type="radio"/> Separated <input type="radio"/> Never married <input type="radio"/> Divorced		
<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Am., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Hispanic (Print one group, for example: Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.)		
<input type="radio"/> Yes <input type="radio"/> No		

H1a. Did you leave anyone out of your list of persons for Question 1a on page 1 because you were not sure if the person should be listed — for example, a temporary baby still in the hospital, or a person who stays here once in a while and has no other home?

Yes, please print the name(s) and reason(s). No

H1b. Did you include anyone in your list of persons for Question 1a on page 1 even though you were not sure that the person should be listed — for example, a visitor who is staying here temporarily or a person who usually lives somewhere else?

Yes, please print the name(s) and reason(s). No

H2. Which best describes this building? Include all apartments, flats, etc., even if vacant.

A mobile home or trailer
 A house or building detached from any other house
 One-family house attached to one or more houses
 A building with 2 apartments
 A building with 3 or 4 apartments
 A building with 5 to 9 apartments
 A building with 10 to 19 apartments
 A building with 20 to 49 apartments
 A building with 50 or more apartments
 Other

H3. How many rooms do you have in this house or apartment? DO NOT count bathrooms, porches, balconies, foyers, halls, or half-rooms.

1 room 4 rooms 7 rooms
 2 rooms 5 rooms 8 rooms
 3 rooms 6 rooms 9 or more rooms

H4. Is this house or apartment —

Owned by you or someone in this household with a mortgage or loan?
 Owned by you or someone in this household free and clear (without a mortgage)?
 Rented for cash rent?
 Occupied without payment of cash rent?

H5a. If this is a ONE-FAMILY HOME —

H5a. Is this house on ten or more acres?

Yes No

H6. Is there a business (such as a store or barber shop) or a medical office on this property?

Yes No

Answer only if you or someone in this household OWNS OR IS BUYING this house or apartment —

H6. What is the value of this property; that is, how much do you think this house and lot or condominium would sell for if it were for sale?

Less than \$10,000 \$70,000 to \$74,999
 \$10,000 to \$14,999 \$75,000 to \$79,999
 \$15,000 to \$19,999 \$80,000 to \$89,999
 \$20,000 to \$24,999 \$90,000 to \$99,999
 \$25,000 to \$29,999 \$100,000 to \$124,999
 \$30,000 to \$34,999 \$125,000 to \$149,999
 \$35,000 to \$39,999 \$150,000 to \$174,999
 \$40,000 to \$44,999 \$175,000 to \$199,999
 \$45,000 to \$49,999 \$200,000 to \$249,999
 \$50,000 to \$54,999 \$250,000 to \$299,999
 \$55,000 to \$59,999 \$300,000 to \$339,999
 \$60,000 to \$64,999 \$400,000 to \$499,999
 \$65,000 to \$69,999 \$500,000 or more

H7a. Answer only if you PAY RENT for this house or apartment —

H7a. What is the monthly rent?

Less than \$20 \$375 to \$399
 \$20 to \$99 \$400 to \$424
 \$100 to \$124 \$425 to \$449
 \$125 to \$149 \$450 to \$474
 \$150 to \$174 \$475 to \$499
 \$175 to \$199 \$500 to \$524
 \$200 to \$224 \$525 to \$549
 \$225 to \$249 \$550 to \$599
 \$250 to \$274 \$600 to \$649
 \$275 to \$299 \$650 to \$699
 \$300 to \$324 \$700 to \$749
 \$325 to \$349 \$750 to \$999
 \$350 to \$374 \$1,000 or more

H7b. Does the monthly rent include any meals?

Yes No

FOR CENSUS USE

A. Total persons	B. Type of unit Occupied	C. Vacant	D. Months vacant	E. DO	ID
<input type="radio"/> 0	<input type="radio"/> First form	<input type="radio"/> Regular	<input type="radio"/> 1 less than 6 up to 12	<input type="radio"/> LR	<input type="radio"/> 1
<input type="radio"/> 1	<input type="radio"/> Cont'n	<input type="radio"/> Usual home elsewhere	<input type="radio"/> 1 up to 2	<input type="radio"/> TC	<input type="radio"/> 1
<input type="radio"/> 2			<input type="radio"/> 12 up to 24	<input type="radio"/> RC	<input type="radio"/> 1
<input type="radio"/> 3			<input type="radio"/> 24 up to 6	<input type="radio"/> JIC	<input type="radio"/> 1
<input type="radio"/> 4				<input type="radio"/> P/F	<input type="radio"/> 1
<input type="radio"/> 5				<input type="radio"/> R	<input type="radio"/> 1
<input type="radio"/> 6				<input type="radio"/> I/T	<input type="radio"/> 1
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Keying training and truth data completed Nov 2022

Screenshot of the DCDL Data Entry application interface:

The application title is "DCDL Data Entry". The URL in the browser is "localhost:7000/EntryApp/".

Decennial Census Digitization and Data Linkage

The Decennial Census Digitization and Linkage project (DCDL) is an initiative to produce linked restricted microdata files from the decennial censuses of 1960 through 1990. This tool enables hand-entry of data from a subset of scanned images of the historical files, an essential part of developing a scalable tool to capture respondent information so that individuals can be studied over time.

User jbid789 has completed data entry for 0 / 2 images.

The current reel is from 1990. Next image (2 remaining):



Code Image

Recent images

image	year	type	complete?	updated	problem?	EDIT
-------	------	------	-----------	---------	----------	------

Click the buttons below to view sample record entry pages for each year.

[View 1960](#)

[View 1970](#)

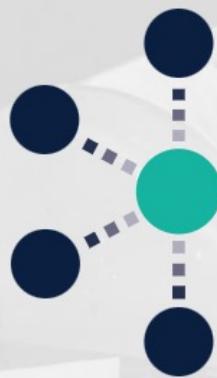
[View 1980](#)

Handwriting recognition is underway



Linking will begin in late 2023

- Build administrative records composite from
 - SSA Numident
 - 1969-1994 IRS 1040 full universe files
 - SSA Master Beneficiary Record
- Link each census to the year-specific composite
- Investigate further entity resolution for those without SSNs
- Evaluate error using the PSID and the 2000 census



DECENNIAL
CENSUS

DIGITIZATION
AND LINKAGE

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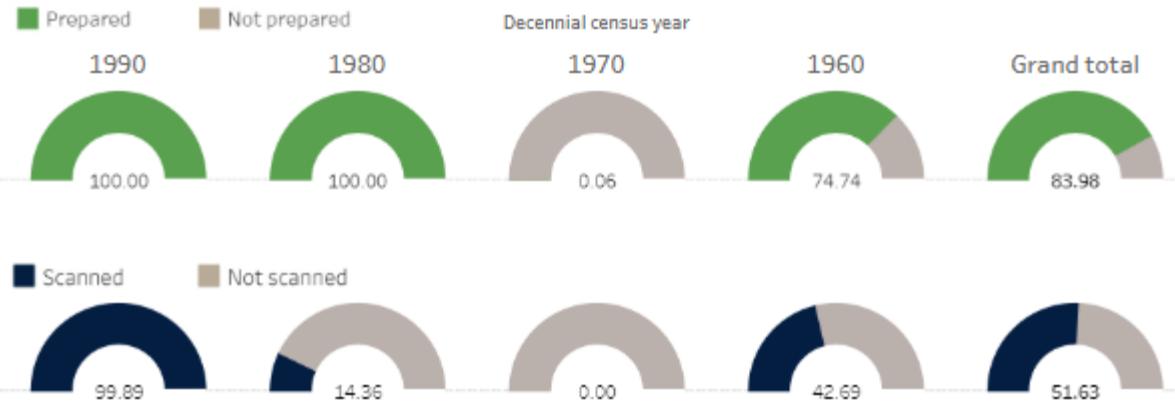
[Contact](#)

Progress on Microfilm Reel Preparation and Scanning by Decennial Census Year

All microfilm reels are checked and cataloged. In addition, for 1960-1980, each reel is unwound, trailing film is attached, and rewound. Microfilm reels containing images from the decennial censuses are then digitally scanned on specialized high-speed scanning equipment to create digital images of the original forms.

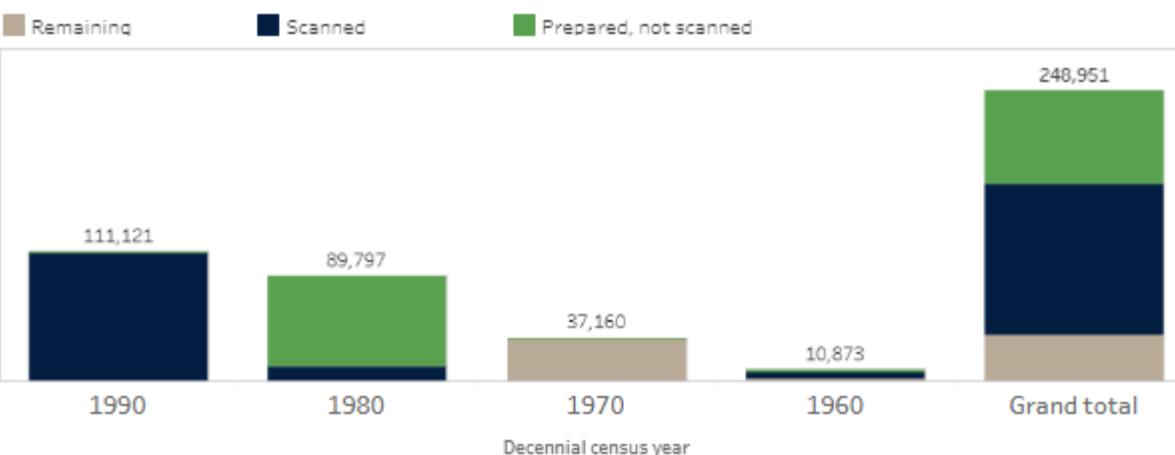
www.census.gov/dcdl

Percent Completion of Reel Preparation and Scanning



Note: The percentage of total microfilm reels prepared for scanning, scanned by decade, and in total is represented.

Overall Number of Completed Digitization by Decennial Census Year

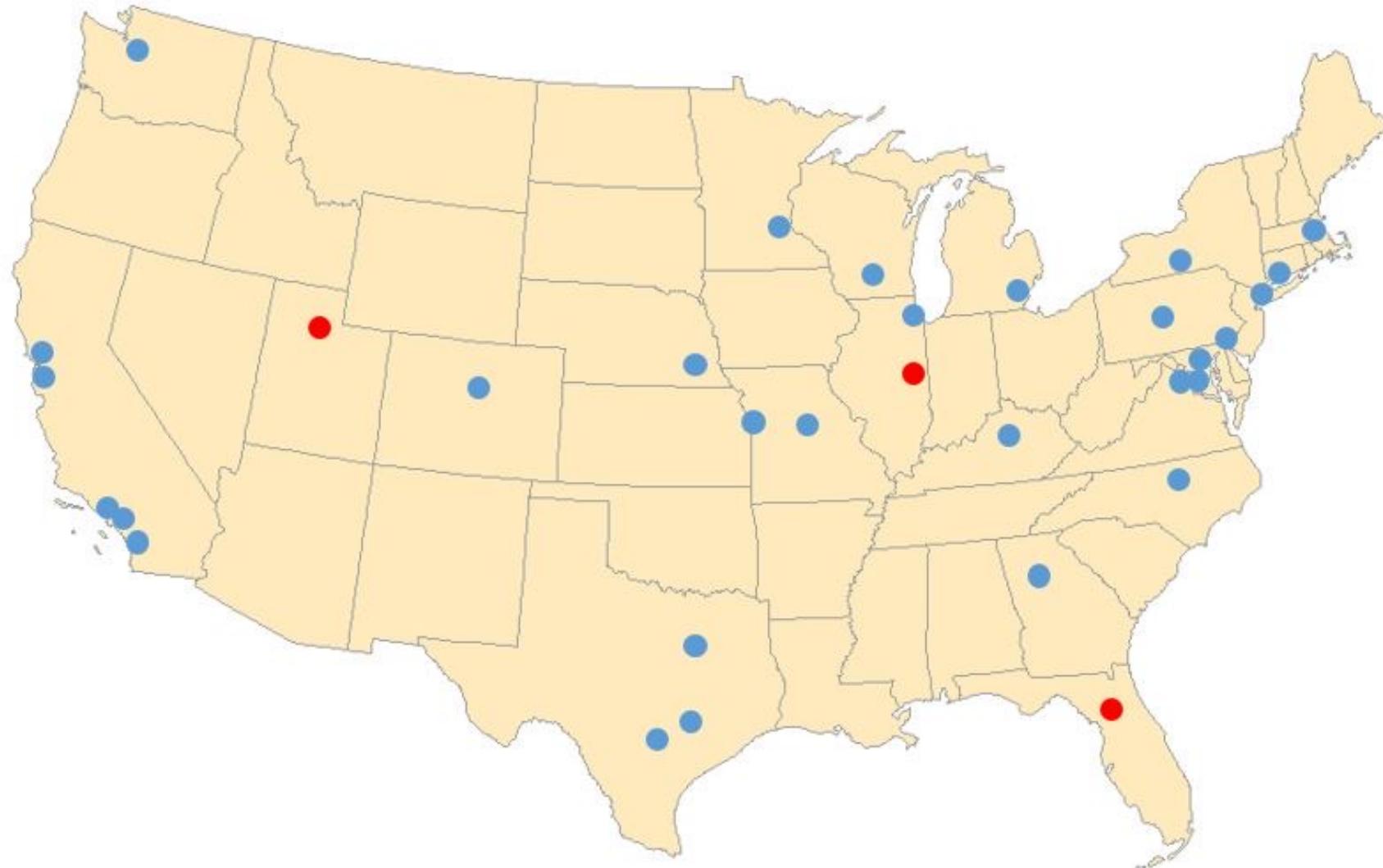


Note: The total number of microfilm reels prepared but not scanned, prepared and scanned, and yet to be prepared and scanned are represented.

Overview

- How we got into this
- How we link data
- Adding the 1940 Census
- Adding the 1950 through 1990 Censuses
- **Access and plans**

Federal Statistical Research Data Centers



Do Grandparents and Great-Grandparents Matter? Multigenerational Mobility in the US, 1910-2013

Joseph Ferrie, Catherine Massey, Jonathan Rothbaum

NBER Working Paper No. 22635

Issued in September 2016

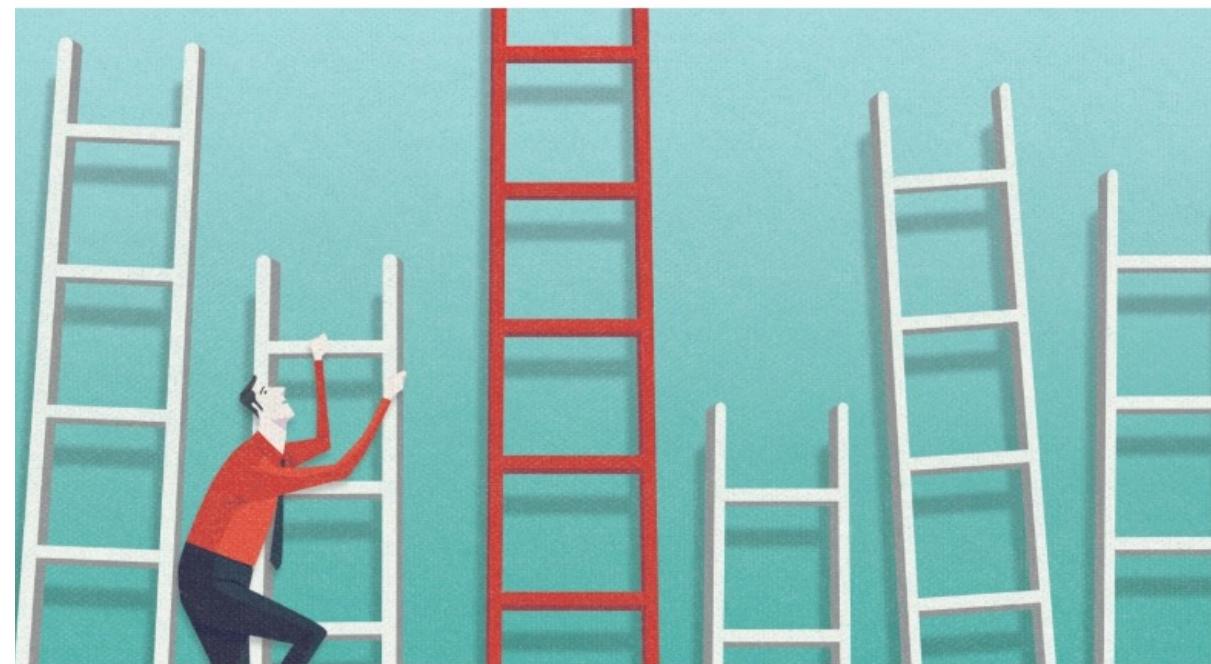
NBER Program(s): DAE ED LS

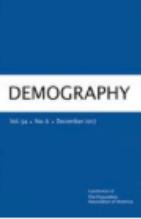
Studies of US intergenerational mobility focus almost exclusively on the transmission of (dis)advantage from parents to children. Until very recently, the influence of earlier generations could not be assessed even in long-running longitudinal studies such as the Panel Study of Income Dynamics (PSID). We directly link family lines across data spanning 1910 to 2013 and find a substantial "grandparent effect" for cohorts born since 1920, as well as some evidence of a "great-grandparent effect." Although these may be due to measurement error, we conclude that estimates from only two generations of data understate persistence by about 20 percent.

Wonkblog

Striking new research on inequality: 'Whatever you thought, it's worse'

By Ana Swanson October 6, 2016





Demography

December 2017, Volume 54, Issue 6, pp 2249–2271 | [Cite as](#)

Second-Generation Outcomes of the Great Migration

Authors

[Authors and affiliations](#)

J. Trent Alexander, Christine Leibbrand , Catherine Massey, Stewart Tolnay



AP

The Great Migration: The First Moving-to-Opportunity Project

BRENTIN MOCK JAN 25, 2018

Did black migrants from the South put their children in a better economic position? A new study provides some answers.



America's Churning Races: Race and Ethnicity Response Changes Between Census 2000 and the 2010 Census

Carolyn A. Liebler¹ · Sonya R. Porter² ·
Leticia E. Fernandez² · James M. Noon² ·
Sharon R. Ennis²

Published online: 19 January 2017
© Population Association of America 2017

Abstract A person's racial or ethnic self-identification can change over time and across contexts, which is a component of population change not usually considered in studies that use race and ethnicity as variables. To facilitate incorporation of this aspect of

The image shows the top navigation bar of the NPR website. It includes the NPR logo (a red circle with white letters), a "DONATE NOW" button, and links for "HOURLY NEWS", "LISTEN LIVE", and "PLAYLIST".

CODE SW!TCH®

RACE. IN YOUR FACE.



SUBSCRIBE

June 9, 2014 · 9:09 AM ET



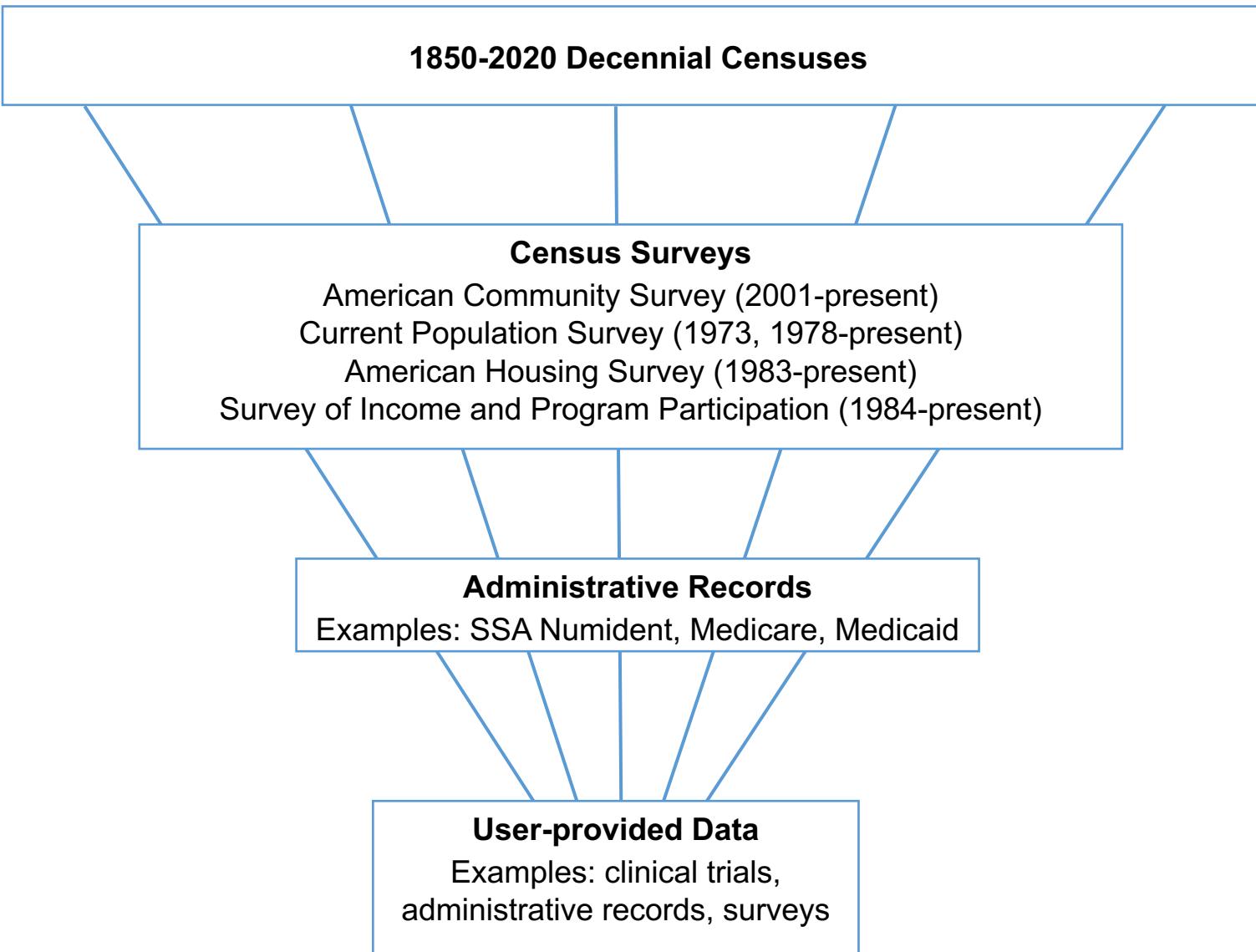
GENE DEMBY



This post has been updated.

We tend to think of a race as a static thing, but it's always been much more slippery.

Expected Longitudinal Infrastructure by 2026



Questions?

Trent Alexander
jtalex@umich.edu

