

Reinterview Detection and Prevention at Census: New Initiatives

Aref N. Dajani and Rodrick J. Marquette
U.S. Census Bureau

Curbstoning Seminar Part III
Washington Statistical Society
Mathematica, Washington, DC
June 9, 2015

Disclaimer: The views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.

Acknowledgements

- Quality Assurance Branch, Decennial Statistical Studies Division
 - Frank Anderson
 - Samantha Fish
 - Rebecca Fulk
 - Leah Marshall
 - Tracey McNally
 - Jordan Misra
 - Heather Parks
 - Glenn Wolfgang
- Quality Assurance and Measurement Error Team, Demographic Statistical Methods Division
 - Steve Clark
 - Tremika Finney
 - Deloris Higgins
 - Jimmie Scott
 - Phyllis Singer
 - Kenisha Staine

Roadmap

- QA and the RI Program
- Recent OIG Investigation into RI@Census
- GPS for detecting curbstoning
- QA Initiatives
 - Recent
 - In process
 - Upcoming
- Recap and Final Thoughts

What is Quality Assurance (QA)?

- QA is the planned and systematic actions necessary to provide adequate confidence that a process meets proposed quality standards
- QA is built into the entire survey lifecycle
 - Data collection and review
 - Statistical review and disclosure avoidance

Reinterview (RI)

- RI is a second interview to determine whether:
 - the outcome of the original interview was correct as recorded
 - it was conducted in accordance with established interview standards.

RI looks to...

- Determine whether the correct units were visited
- Verify that certain items were asked during the interview
- Identify interviewers who did not follow proper interviewing procedures
- Detect falsification on the part of the interviewers



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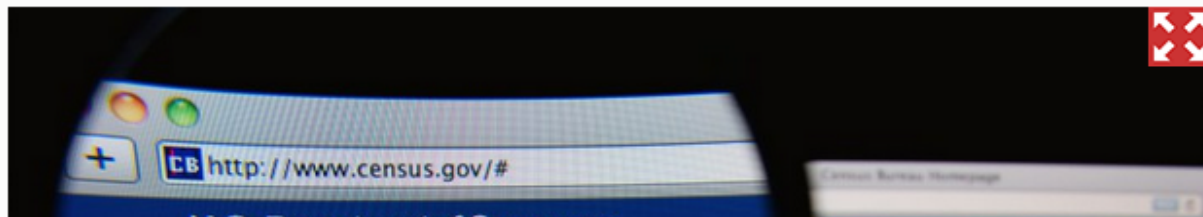
BUSINESS



Census playing a game of seek-and-go-hide

By John Crudele

June 16, 2014 | 10:53pm



CPS and Philadelphia

- The New York Post
- The Department of Commerce Office of the Inspector General (OIG)
- The Census Bureau rallied together to respond.



INVESTIGATIVE REPORT

U.S. Census Bureau

Unsubstantiated Allegations that
the Philadelphia Regional Office
Manipulated the Unemployment
Survey Leading up to the 2012
Presidential Election to Cause a
Decrease in the National
Unemployment Rate

FOR PUBLIC RELEASE
REPORT NUMBER 14-0073
MAY 1, 2014

U.S. Department of Commerce
Office of Inspector General
Office of Investigations

Recommendations from the OIG Report

- Implement an independent quality assurance process for all survey operations
- Ensure that all survey supervisors tasked with detecting and preventing survey data falsification are properly utilizing all available tools to safeguard against such misconduct

CPS Falsification Mitigation: What We Did

- We formed an inter-directorate Census Bureau-wide Quality Assurance Working Group
- Together, we wrote a white paper on best and current practices
- CPS initiated Quality Control Reinterview Centralization
- **Result...**



PREPARED STATEMENT OF

JOHN H. THOMPSON
DIRECTOR
US CENSUS BUREAU

"U.S. Census Bureau: Addressing Data Collection Vulnerabilities"

**Before the House Subcommittee on Federal Workforce, US Postal Service and the Census
US House of Representatives**

18 September 2014

Good afternoon. On behalf of the U.S. Census Bureau, I want to thank Chairman Farenthold, Ranking Member Lynch, and the Subcommittee on Federal Workforce, U.S. Postal Service & the Census for the opportunity to discuss the data collection and quality assurance procedures used in the Current Population Survey (CPS).

**HOUSE COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
U.S. CONGRESS JOINT ECONOMIC COMMITTEE**



**U.S. CENSUS BUREAU:
ADDRESSING DATA COLLECTION VULNERABILITIES**

**STAFF REPORT
PREPARED FOR CHAIRMAN DARRELL E. ISSA,
CHAIRMAN BLAKE FARENTHOLD, AND CHAIRMAN KEVIN BRADY
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
U.S. HOUSE OF REPRESENTATIVES
U.S. CONGRESS JOINT ECONOMIC COMMITTEE
113TH CONGRESS
SEPTEMBER 18, 2014**

III. Executive Summary

On November 18, 2013, a New York Post story by John Crudele described how a Census Bureau employee falsified responses to a survey that measured the unemployment rate, among other things. Crudele reported that the falsified data may have boosted the unemployment rate in advance of the 2012 presidential election, and that the falsification occurred with the knowledge of senior Census Bureau employees. Crudele wrote:

“In the home stretch of the 2012 presidential campaign, from August to September, the unemployment rate fell sharply — raising eyebrows from Wall Street to Washington. The decline — from 8.1 percent in August to 7.8 percent in September — might not have been all it seemed. The numbers, according to a reliable source, were manipulated. And the Census Bureau, which does the unemployment survey, knew it.”

The House Committee on Oversight and Government Reform and the Joint Economic Committee jointly investigated the allegations. The findings in this report are based on the Committees' review of thousands of documents obtained during the course of the joint investigation, as well as witness interviews. **Documents and testimony obtained by the Committees did not show a link between the data falsification that occurred in the Philadelphia Regional Office and the national unemployment rate.** The documents and testimony did show, however, that the Current Population Survey is vulnerable to data falsification and that **the Census Bureau needs to make common sense reforms to protect the integrity of survey data.**

Okay, we smiled. We were happy...

...then we got back to work.

Using GPS to detect curbstoning

- Background – 2010 Census Address Canvassing
- Curbstoning Clusters
- Long Strands
- Detection & Prevention
- Limitations
- Next Steps

2010 Census Address Canvassing

- First operation of the Census
- Updates our list of housing units
- Handheld computer
- Used Global Positioning System (GPS)
- Relative coordinates
- Dependent quality control – acceptance sampling

Curbstoning clusters

- Clusters of GPS coordinates at:
 - Single houses
 - Coffee shops
 - One spot along the road
- 19,500 assignments had at least one curbstoning cluster

Ideal example

Green – GPS; White – Manual



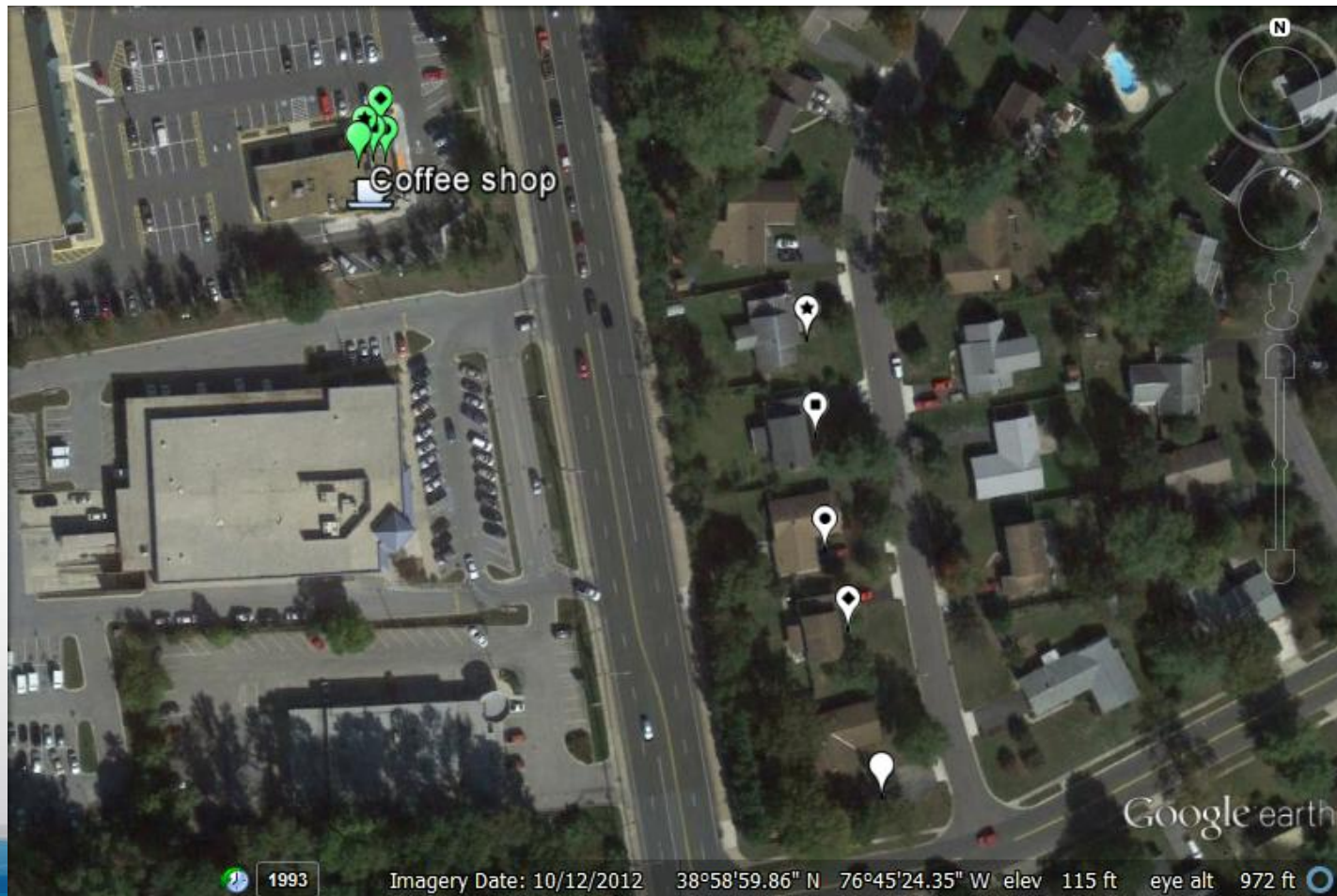
Curbstoning cluster example

Green – GPS; White – Manual



Curbstoning cluster example

Green – GPS; White – Manual



Defining curbstoning clusters

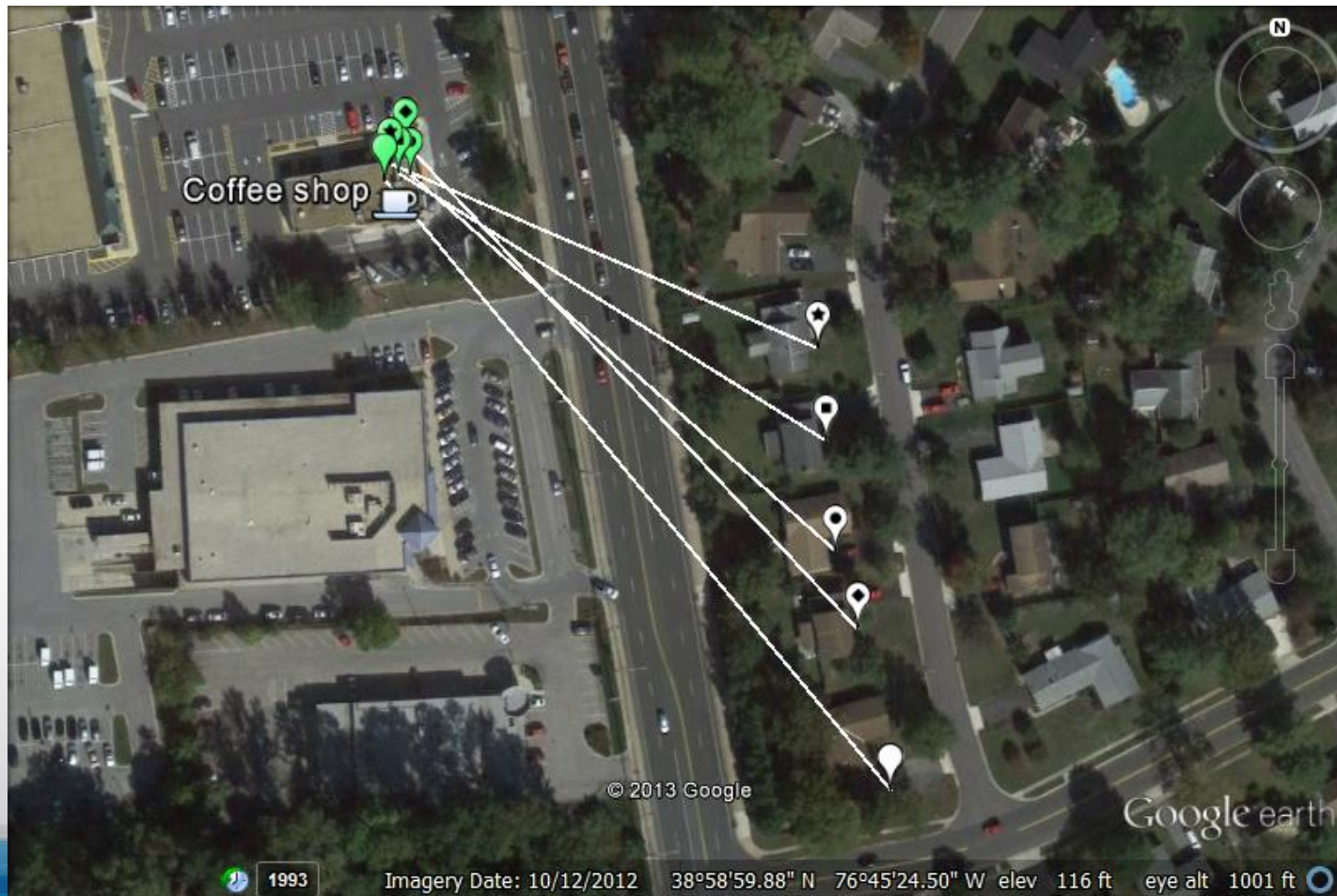
- Definition: Six or more housing units in 25 foot (7.6 meters) radius
 - Difficult to compute - duplicates
- Analysis: Squares of about 40 ft (12.2 m)
 - 6 or more units in a square or adjacent squares counted as a curbstoning cluster
- Excluded multi-housing unit structures

Compared to Dependent Quality Control

- Assignments with curbstoning clusters more likely to fail DQC:
 - 13.7% versus an overall 8.4% DQC failure rate
- Assignments with “long strands”:
 - 14.6% of assignments with long strands failed DQC

Long strand example

Green – GPS; White – Manual



Comparing curbstoning clusters and long strands

- Overlap: 0.81%
 - Detect different assignments
 - 15.7% of assignments with both failed DQC
- Pursue both methods for the 2020 Census
 - Improve interviewing too

2020 Census plans

- Field operations use smartphones and tablets with GPS
- Use GPS in two ways:
 - Detection
 - Prevention

Detection

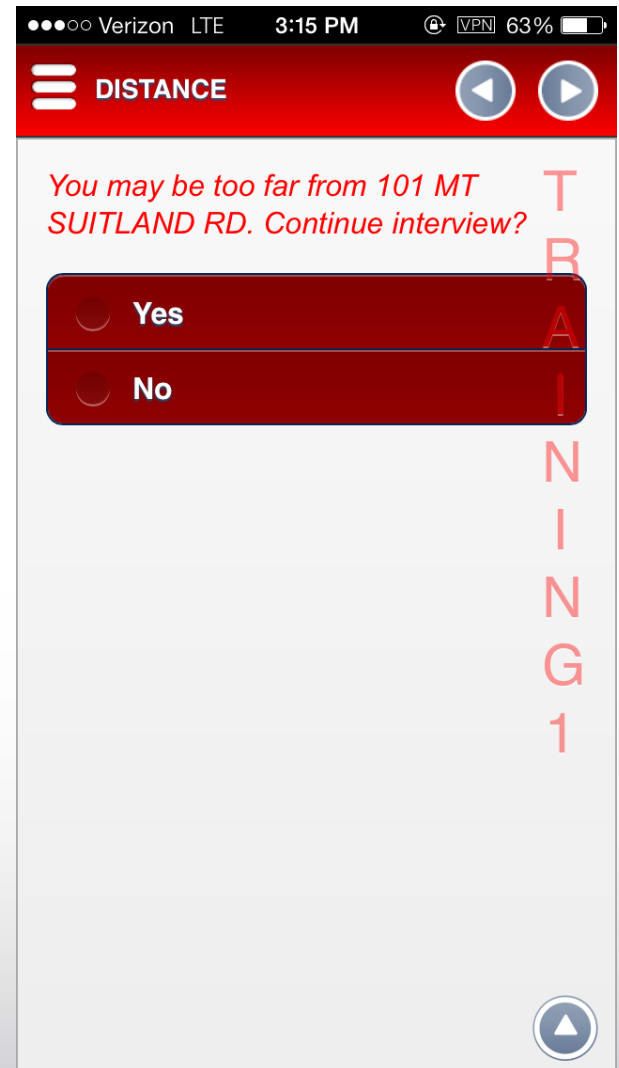
- Control system will alert managers
- Flag assignments with large strand lengths for further review
- Working on methods to detect curbstoning clusters quickly
- May be affected by prevention steps

Good faith error example



Prevention

- Warn the user if they are “too far” from the housing unit
- User can override
- Warn user if they place 6th housing unit within given radius



Limitations

- Hardware GPS accuracy may not meet Census standards
 - Need to test for this purpose
- GPS has some error
 - May only be able to detect large discrepancies

Next steps

- Find a way to detect curbstoning clusters in the field
- Refine strand length rules
 - Urban versus rural
- Avoid too many false warnings
- Test using multi-housing unit structures

Quality initiatives recently implemented

- Certain discrepancies now automatically cause manager to suspect falsification
- Others cause suspected falsification at the discretion of field staff

Quality initiatives in process of implementation

RI centralization at the telephone centers
(Slide 1 of 2)

- RI will be conducted in the field
 - for interviews conducted by observation only (no contact)
 - when a contact telephone number is unavailable
 - if the telephone center is not able to contact the household after a predetermined number of contacts or after a predetermined period of time.

Quality initiatives in process of implementation

RI centralization at the telephone centers
(Slide 2 of 2)

- Ensures even greater independence between the RI and the production interview field representative.
- Was implemented first for CPS in July 2014.

Quality initiatives in process of implementation

Computer Audio Recorded Interviewing (CARI)

- Records production interviews
- Provides additional information if a reinterview results in a suspected falsification
- Respondent may opt to not consent to being recorded
- Production field representatives with a high nonconsent rate may be sent for supplemental RI
- Implemented in SIPP in February 2015

Upcoming quality initiatives to be implemented

Consolidation of Administrative Data and Survey Paradata

- Provides additional information if a reinterview results in a suspected falsification
- To be coordinated across directorates

Upcoming quality initiatives to be implemented

Redesign of the Reinterview Sample

- Changing sample to select cases after completion of the production interview, instead of pre-selecting cases, to follow Decennial practice
- May result in fewer supplemental RI selected by field managers

Recap

- QA is the planned and systematic actions necessary to provide adequate confidence that a process meets proposed quality standards
- Reinterview and upcoming quality initiatives will better ensure the quality of our data from interview through data release

Final thoughts

- We have the obligation to respond to concerns
- Our goal is to build quality into our processes
- That, in turn, builds quality into our products
- Our many quality assurance programs help the Census Bureau “protect the integrity of survey data”
- We’re in it together 😊

That's all!

Aref N. Dajani, DSMD

(301) 763-1797

Aref.N.Dajani@census.gov

Rodrick J. Marquette, DSSD

(301) 763-2987

Rodrick.J.Marquette@census.gov



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