

Data graphics

Assembled by Nicholas G Reich for
Data Analysis and Visualization using R
a SADRI workshop at UMass

11 & 12 July 2012

IF ONLY WE COULD FLY THE ATLANTIC!

ONE WAY BY WHICH THE ICEBERG DANGER WOULD BE AVOIDED



This diagram tells its own story of how we have conquered time and space. The problem of flying to America is now well within the bounds of possibility. Mr. James V. Martin, in an aeroplane fitted with floats, proposes to attempt a flight across the Atlantic, from Newfoundland to Ireland, next August, and, if successful, believes that he can cover the two thousand miles in forty hours. Once accomplished, it will not be long before the journey is made in a single day.

DRAWN BY TED TREEST

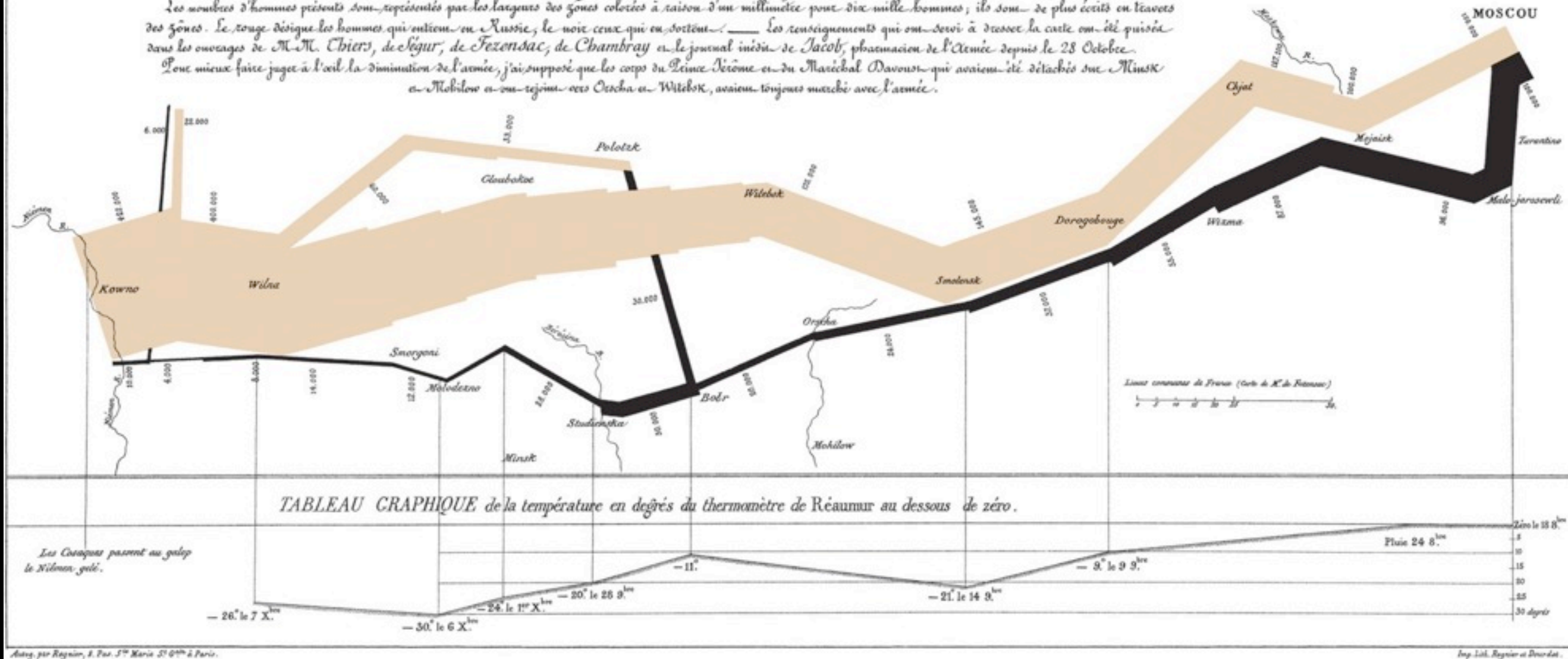
<http://infographicsnews.blogspot.com/2012/04/titanic-infographics-from-1912.html>

Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui entrent en Russie, le noir ceux qui en sortent. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Thiers, de Ségur, de Fozensac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout qui avaient été détachés sur Minsk et Mohilow et qui rejoins vers Orescha et Wiltschok, avaient toujours marché avec l'armée.



Napoleon's March to Moscow,
created by Charles Joseph Minard (1781 – 1870)
<http://sunnyspells.files.wordpress.com/2008/01/minardmap1.jpg>

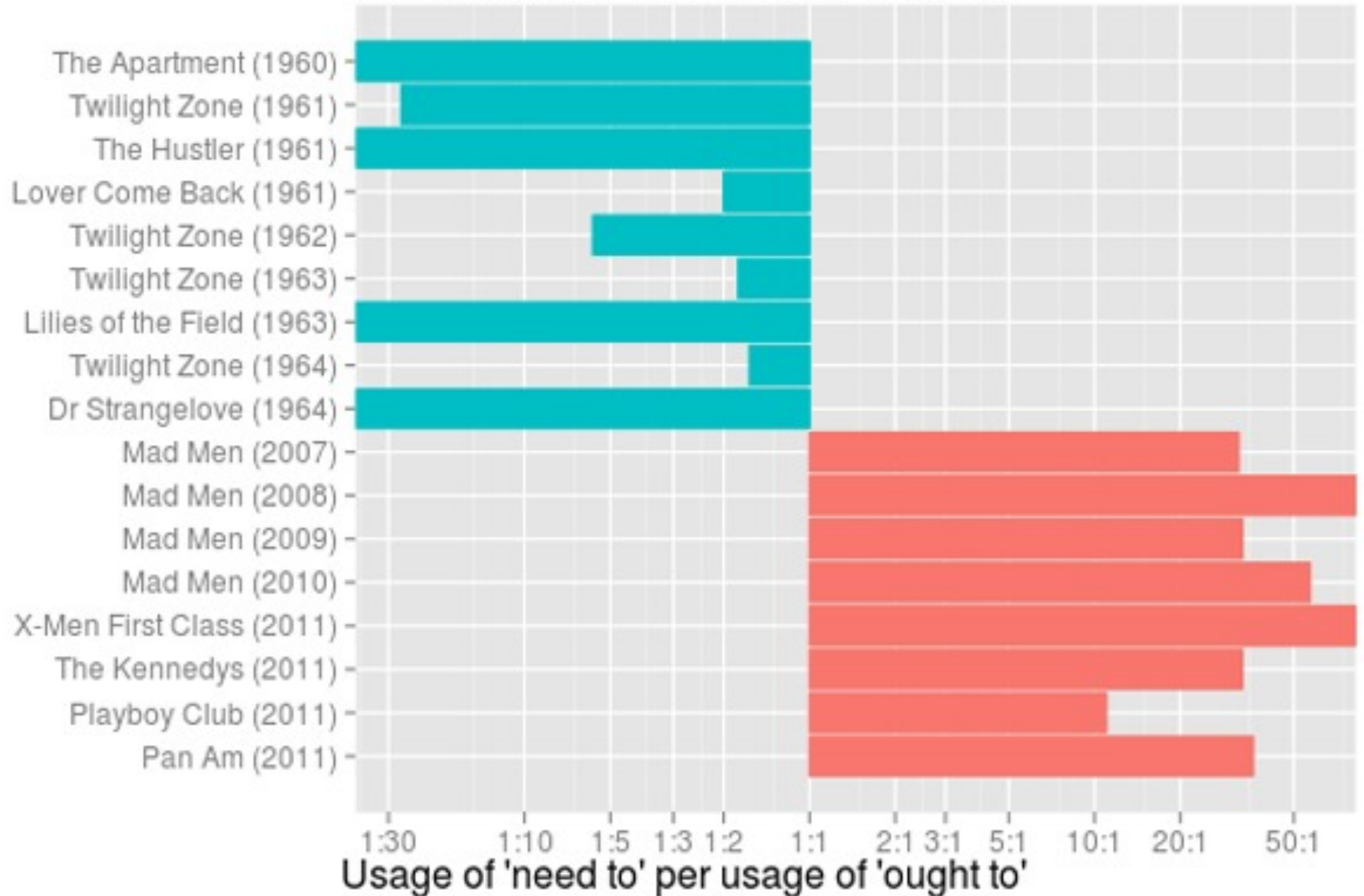
American Military Casualties in Iraq

Viewed by soldier's home state



<http://dougkanter.files.wordpress.com/2012/02/iraq2-3.jpg>

60s movies use 'ought to' more: modern ones set then use 'need to'

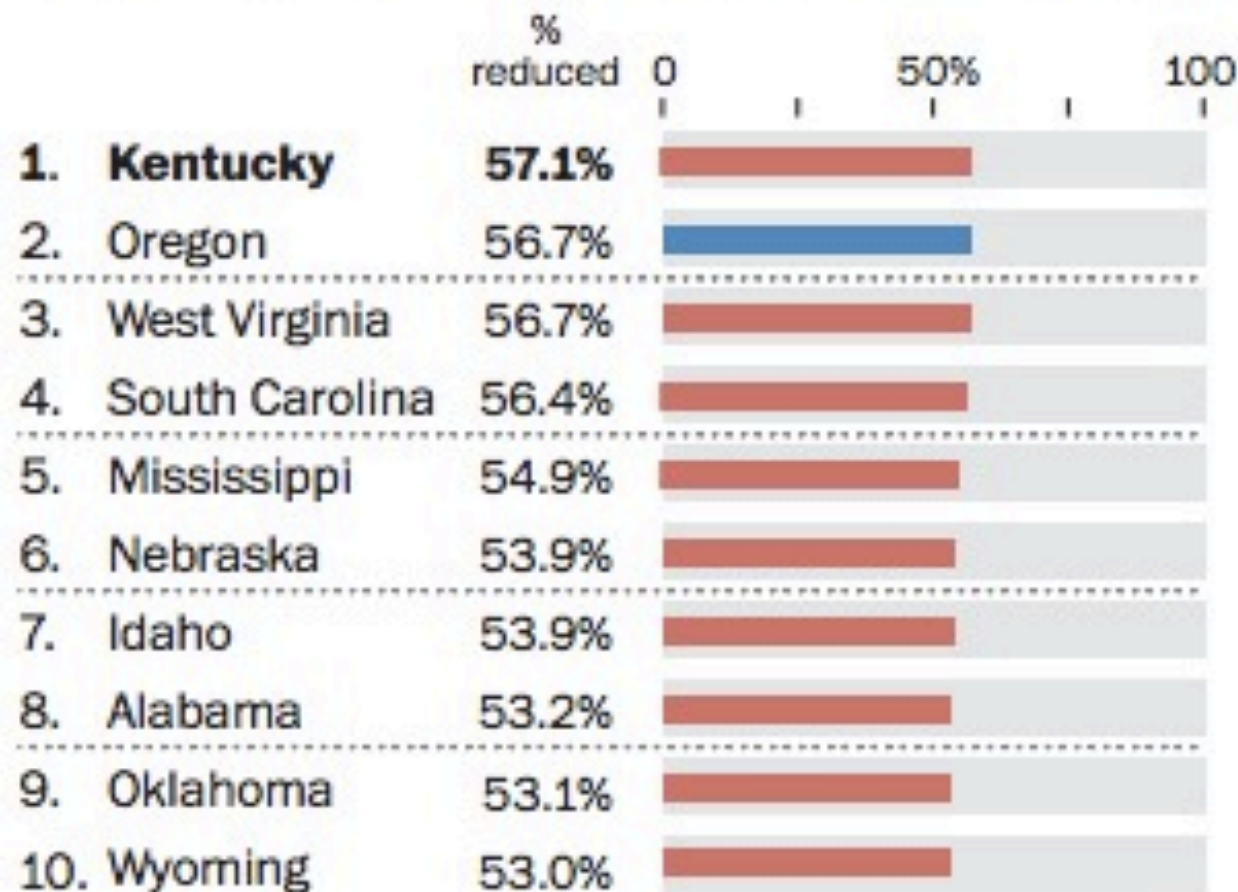


<http://www.theatlantic.com/entertainment/archive/2012/03/the-foreign-language-of-mad-men/254668/>

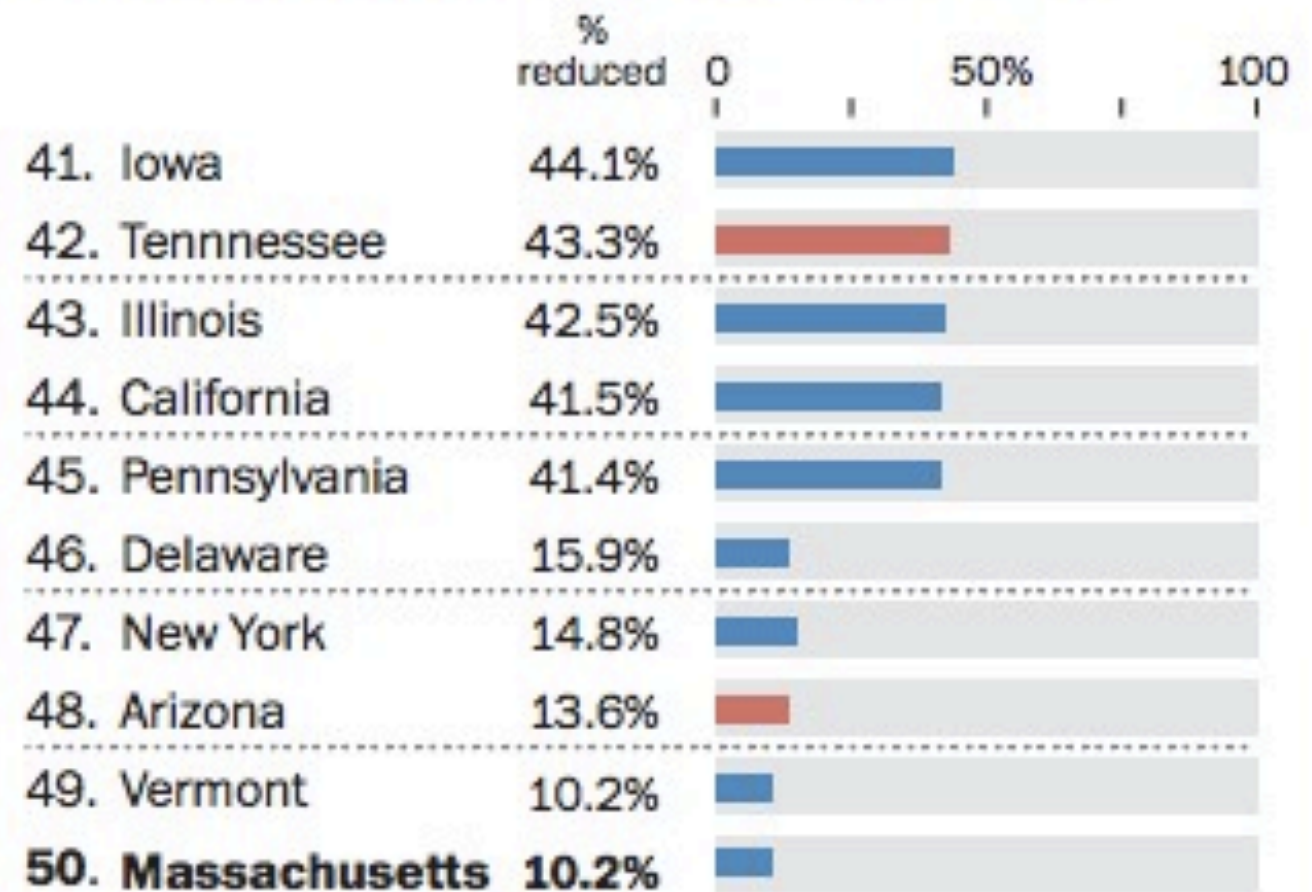
The Atlantic: The Foreign Language of 'Mad Men', March 21 2012

Ten states that will benefit the most

The number of uninsured adults earning less than 133 percent of the poverty line is expected to decrease by:



Ten states that will benefit the least

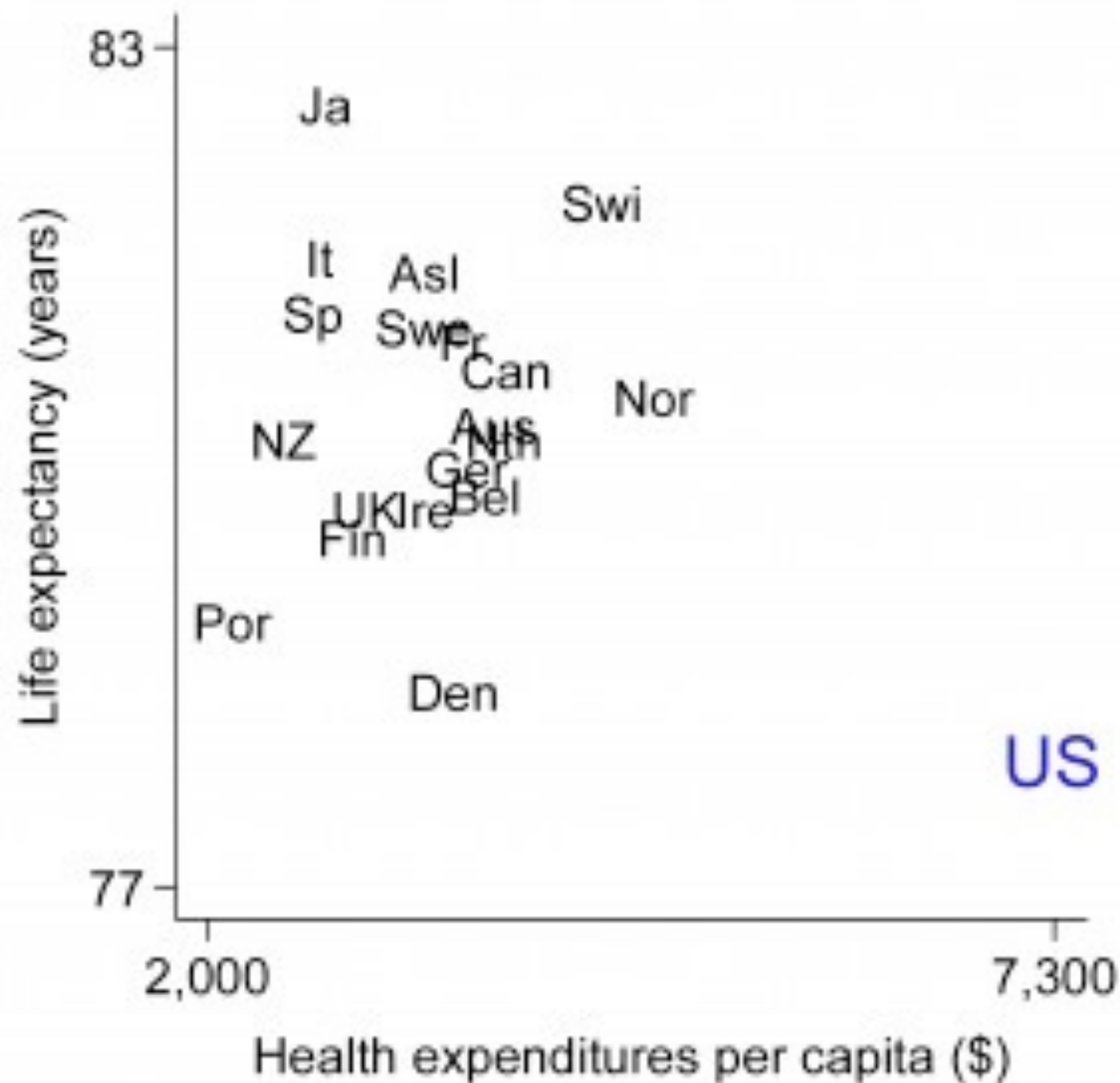


■ States that Obama won majority vote in 2008 presidential election ■ States that McCain won

Source: The Henry J. Kaiser Family Foundation, U.S. Department of Health and Human Services

THE WASHINGTON POST

The Affordable Care Act's big giveaway to stingy red states, 7/3/2012 Washington Post
<http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/07/03/the-affordable-care-acts-giveaway-to-stingy-red-states>



Life expectancy by health expenditures per capita, 2007

Health expenditures are total (public and private), in PPP-converted US dollars. Data source: OECD.

From blog Consider the Evidence by Lane Kenworthy, professor of Soc and Political Sci at UAZ.
<http://lanekenworthy.net/2011/07/10/americas-inefficient-health-care-system-another-look/>



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INVEST: Summary

599.41 +6.89 (1.16%)

After Hours: 599.50 +0.09 (0.02%)

Jul 3, 3:07PM EDT

NASDAQ real-time data - Disclaimer

Currency in USD

Range 594.00 - 600.00

52 week 342.50 - 644.00

Open 594.88

Vol / Avg. 8.62M/14.76M

Mkt cap 560.49B

P/E 14.61

Dividend 2.65

EPS 41.02

Shares 935.06M

Beta 1.21

Inst. own 69%

+1 4.6k



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HPQ	Hewlett-Packard C...	20.36	+0.20	0.99%		40.15B
DELL	Dell Inc.	12.68	+0.30	2.38%		22.18B
CCUR	Concurrent Comput...	4.05	+0.13	3.32%		35.05M
DGII	Digi Internationa...	10.09	-0.17	-1.66%		259.88M
LVGY	Lenovo Group Limi...	16.30	-0.38	-2.29%		8.42B
SGI	Silicon Graphics ...	6.75	+0.17	2.58%		215.56M
SNDK	SanDisk Corporation	37.12	+0.21	0.57%		9.04B
SYNA	Synaptics, Incorp...	29.27	+0.79	2.77%		985.79M
MSFT	Microsoft Corpora...	30.76	+0.20	0.65%		258.41B
AVID	Avid Technology, ...	8.19	+0.35	4.46%		317.15M

Dow Jones	12,943.82	0.56%	
Nasdaq	2,976.08	0.84%	
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Businessweek - Jun 29, 2012
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- C** Apple Expands iTunes to 12 New Asian Countries
ValueWalk - Jun 27, 2012
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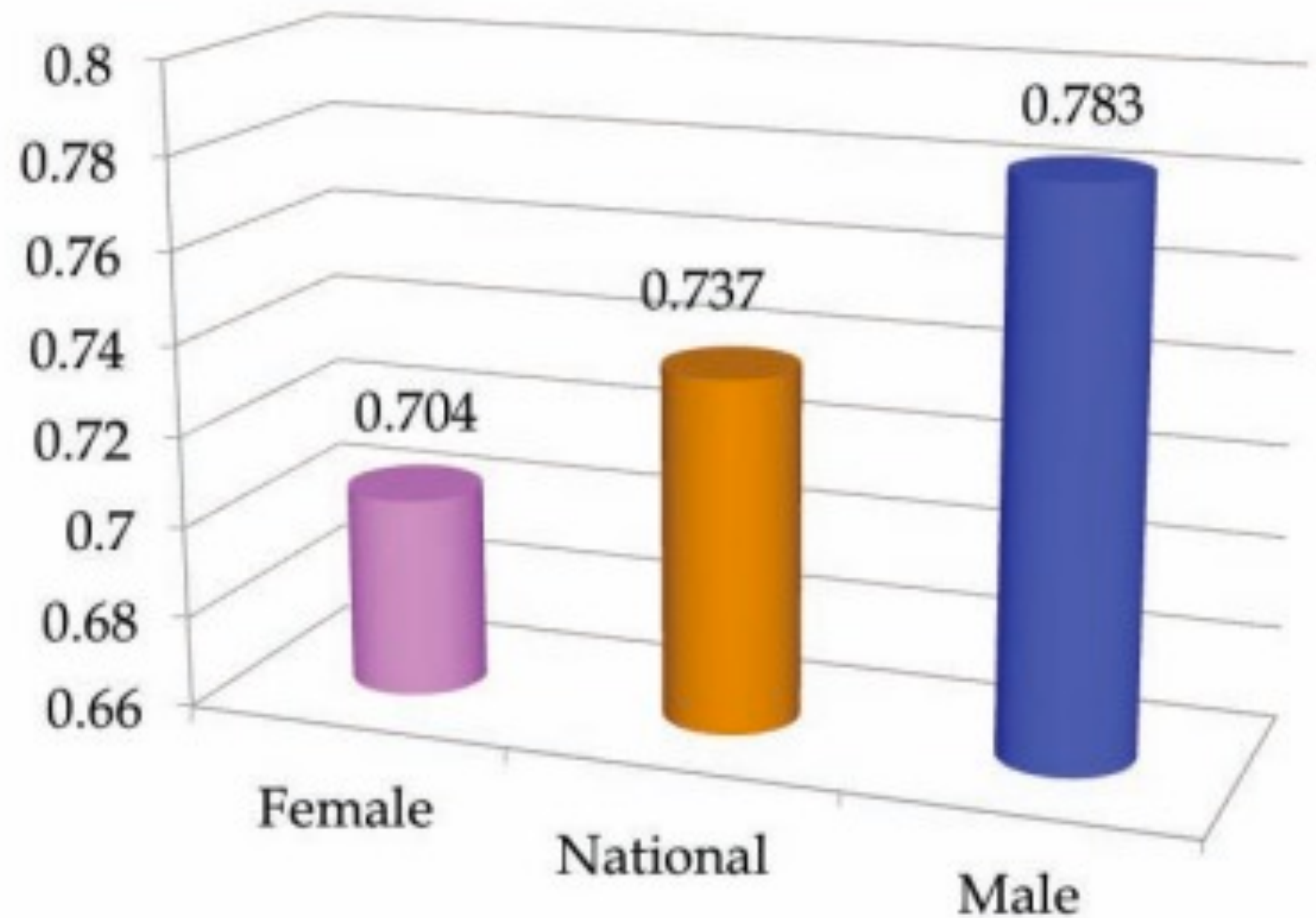
Apr 24, 2012
Q2 2012 Apple Inc. Earnings Conference Call

Apr 24, 2012
Q2 2012 Apple Inc. Earnings Release

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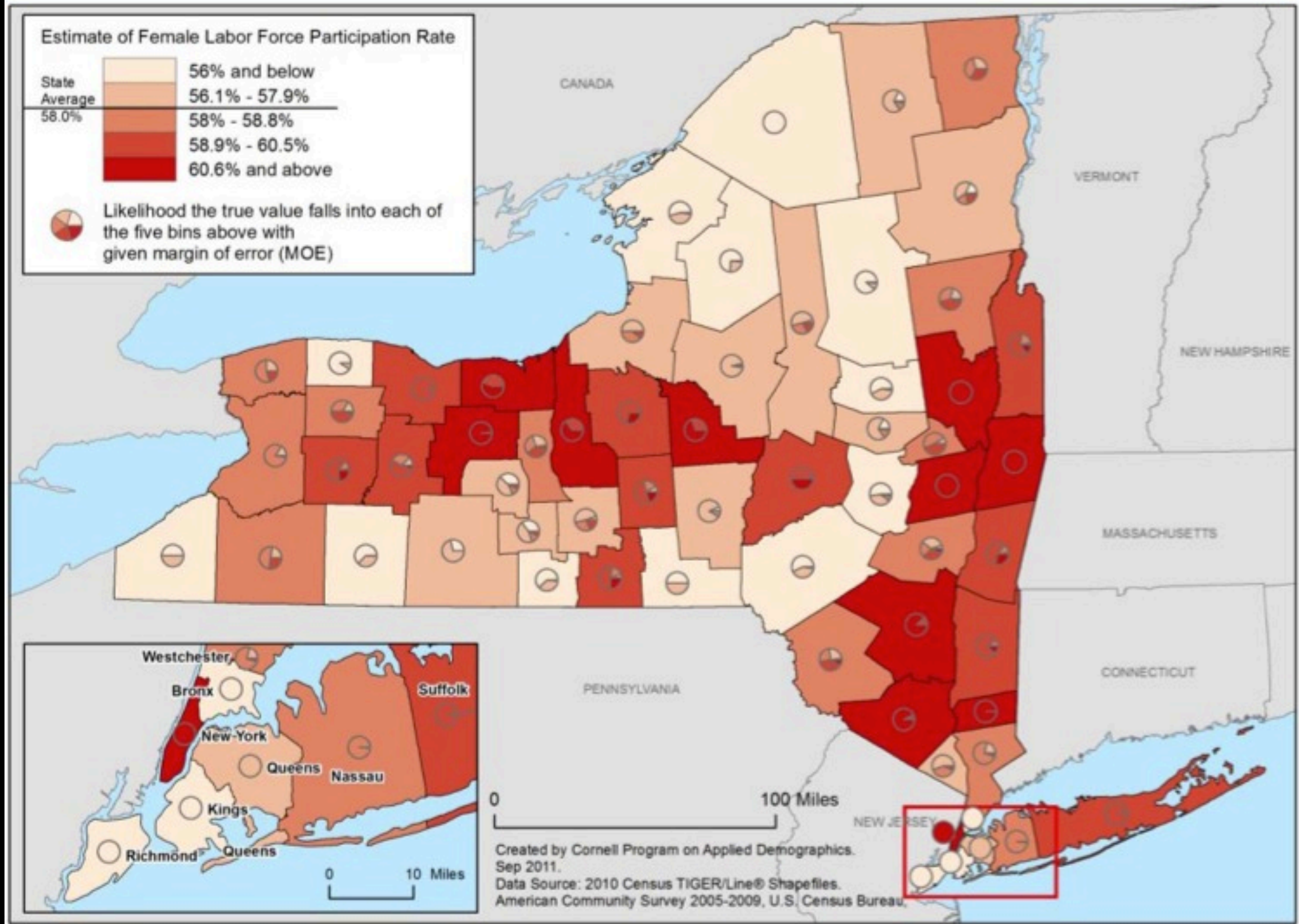
Key stats and ratios

Figure 11: GNH index by gender



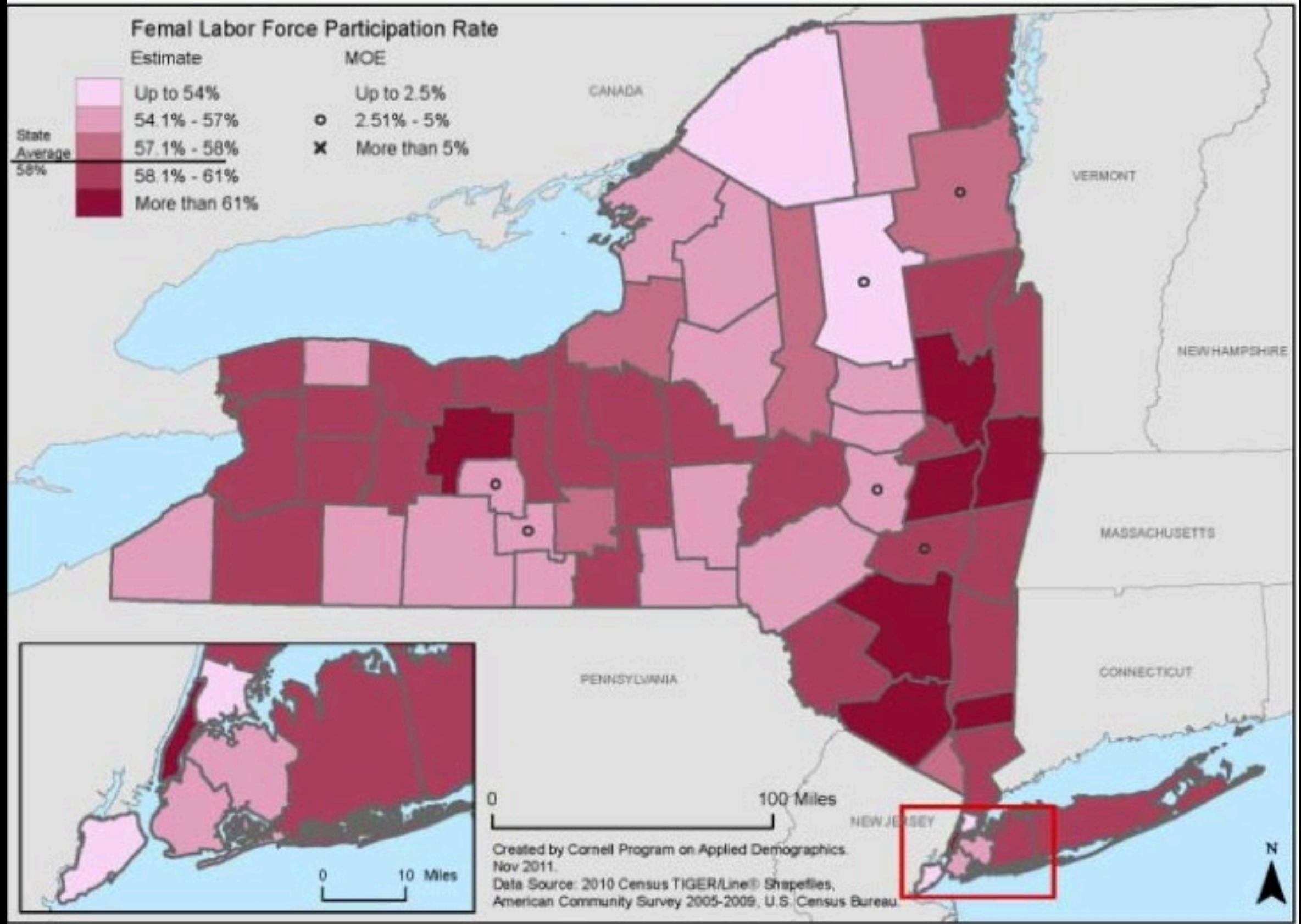
From the World Happiness Report by the United Nations (2012)
<http://www.earth.columbia.edu/articles/view/2960>

Female Labor Force Participation Rate

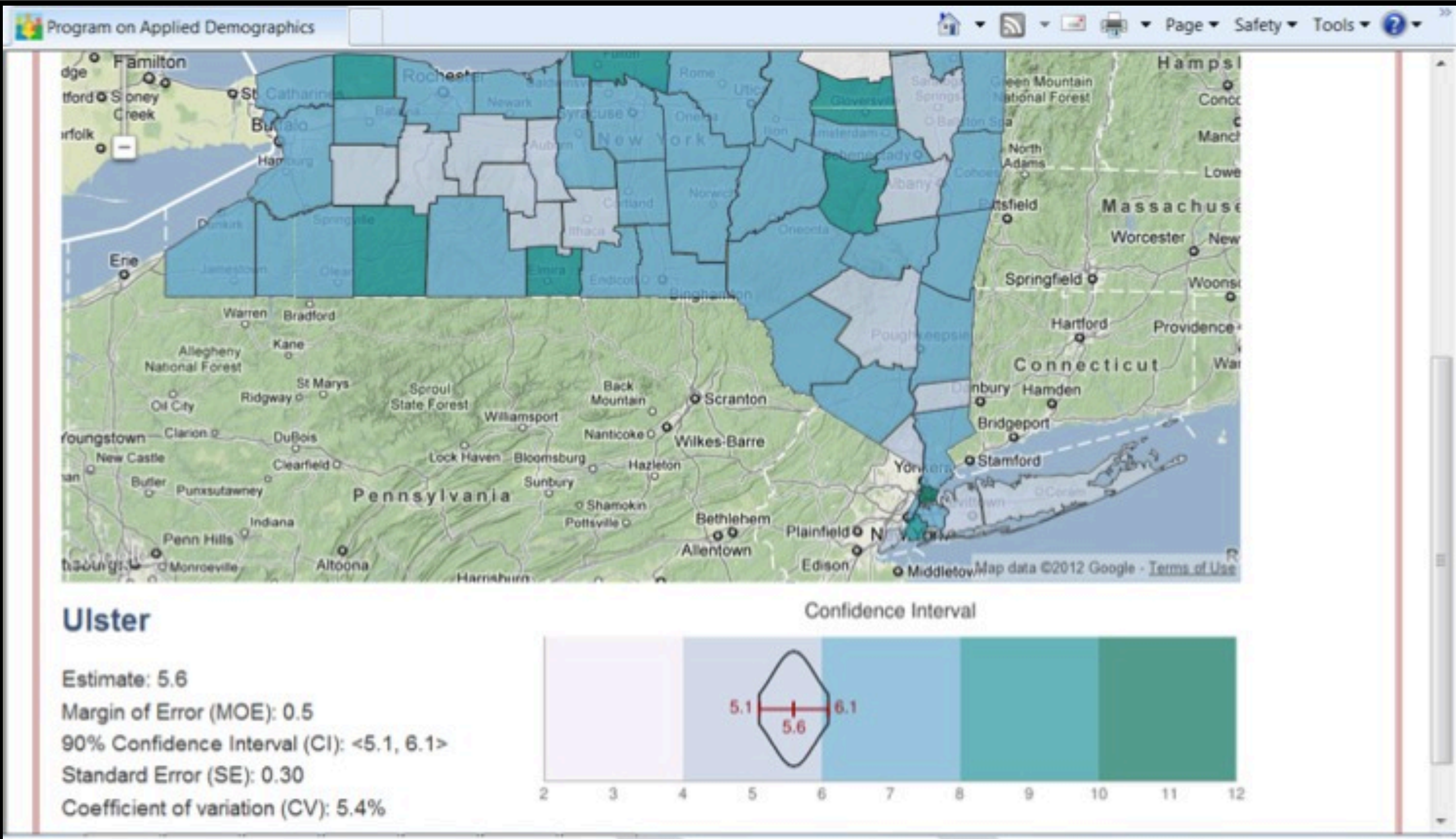


From Alternative Strategies for Mapping ACS Estimates and Error of Estimation
Cornell Population Center Seminar, Ithaca, New York, February 2012

NYS Female Labor Force Participation Rate



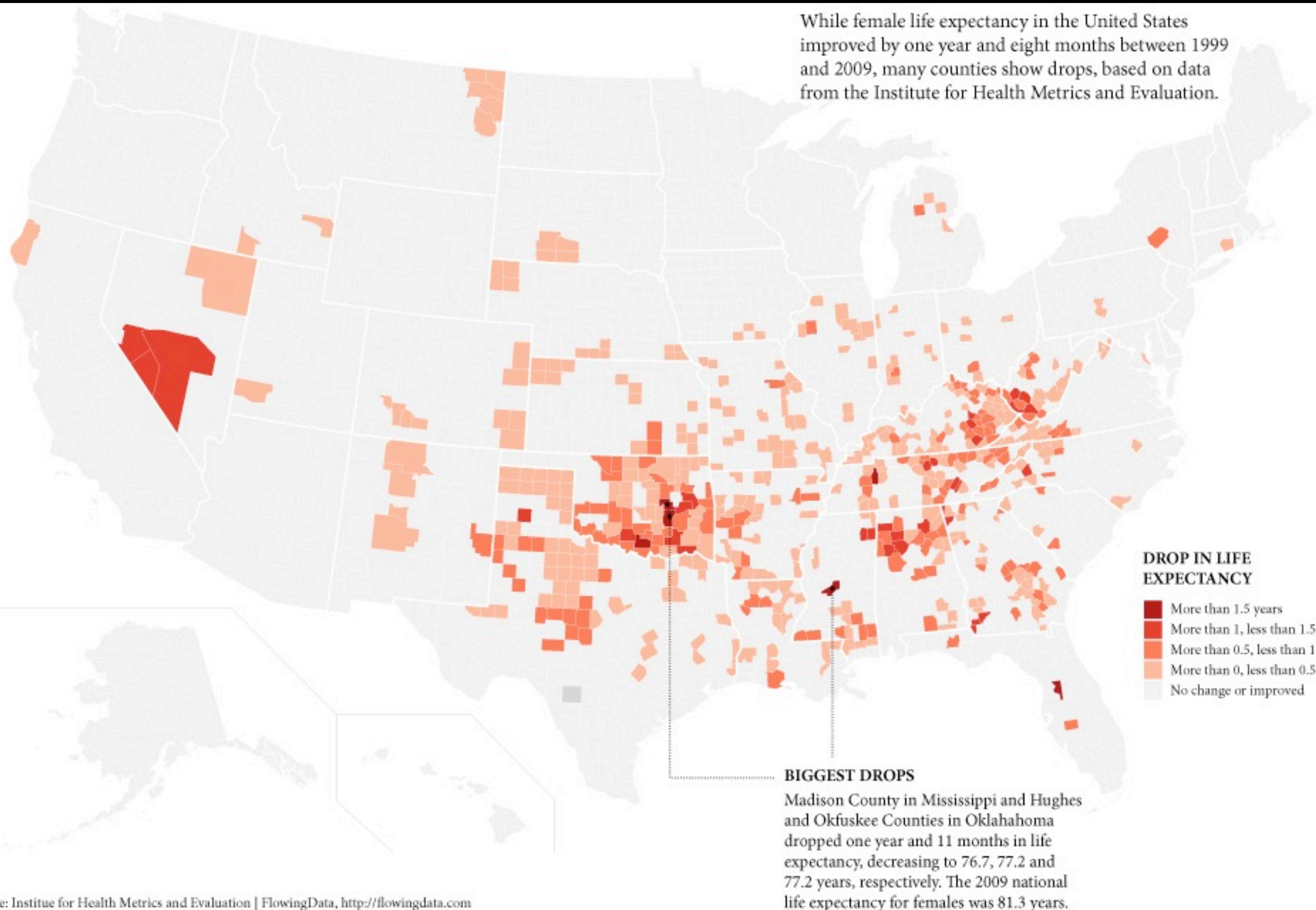
From Alternative Strategies for Mapping ACS Estimates and Error of Estimation
Cornell Population Center Seminar, Ithaca, New York, February 2012



[http://pad.human.cornell.edu/papers/annex/
uncertaintymap_fullinfo.cfm](http://pad.human.cornell.edu/papers/annex/uncertaintymap_fullinfo.cfm)

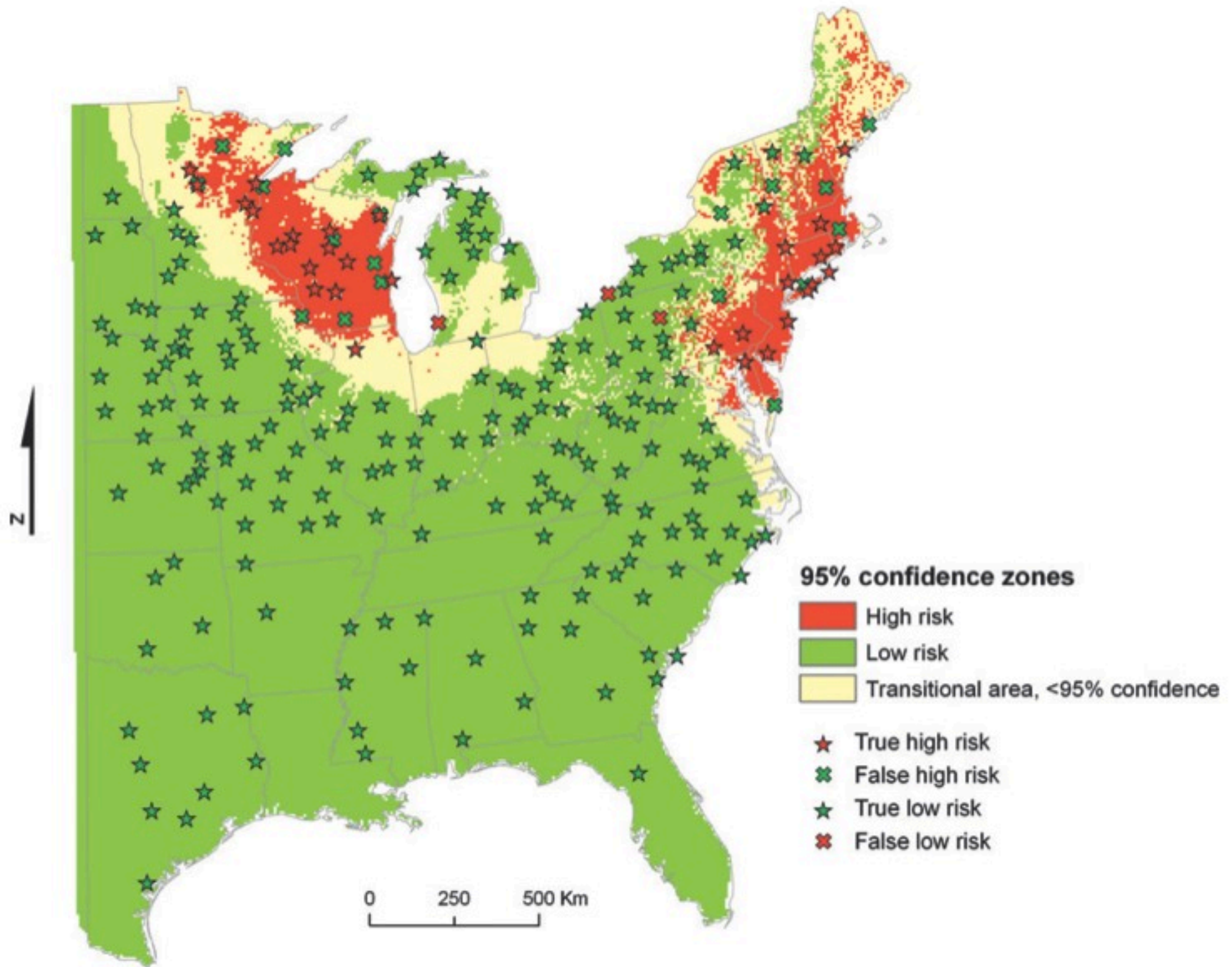
From Alternative Strategies for Mapping ACS Estimates and Error of Estimation
Cornell Population Center Seminar, Ithaca, New York, February 2012

While female life expectancy in the United States improved by one year and eight months between 1999 and 2009, many counties show drops, based on data from the Institute for Health Metrics and Evaluation.



Source: Institute for Health Metrics and Evaluation | FlowingData, <http://flowingdata.com>

<http://flowingdata.com/2012/05/08/girls-expected-to-live-shorter-lives-in-some-counties/>



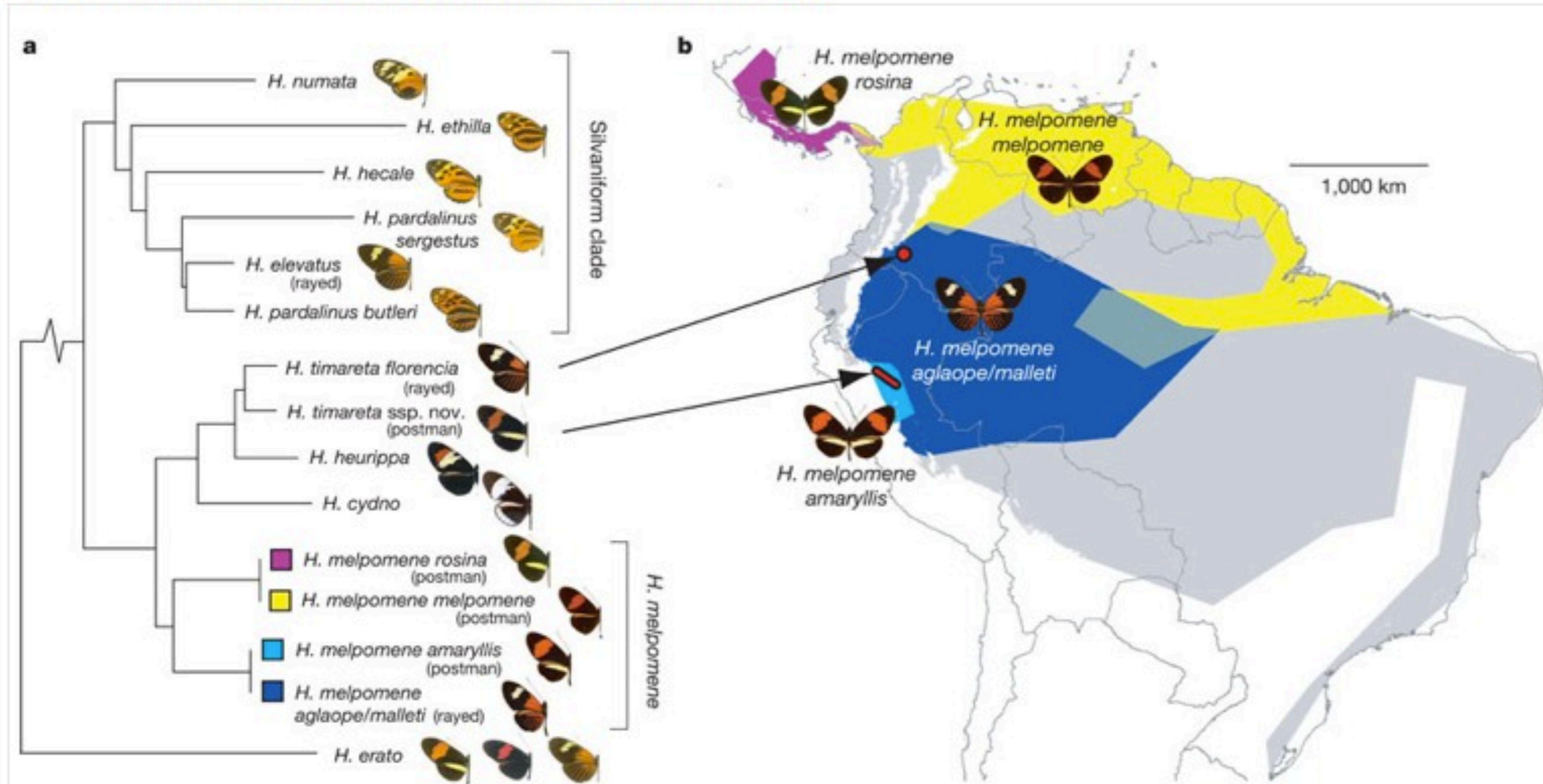
Human Risk of Infection with *Borrelia burgdorferi*, the Lyme Disease Agent, in Eastern United States.
Diuk-Wasser et al., Am J Trop Med Hyg, 2012.

From
Butterfly genome reveals promiscuous exchange of mimicry adaptations among species

The Heliconius Genome Consortium

Nature 487, 94–98 (05 July 2012) | doi:10.1038/nature11041

Figure 1: Distribution, mimicry and phylogenetic relationships of sequenced taxa.



a, Phylogenetic relationship of sequenced species and subspecies in the *melpomene*–silvaniform clade of *Heliconius*. *Heliconius elevatus* falls in the silvaniform clade, but it mimics colour patterns of *melpomene*–*timareta* clade taxa. Most other silvaniforms mimic unrelated ithomiine butterflies²⁴. b, Geographic distribution of postman and rayed *H. melpomene* races studied here (blue, yellow and purple), and the entire distribution of *H. melpomene* (grey). The *H. timareta* races investigated have limited distributions (red) indicated by arrows and mimic sympatric races of *H. melpomene*. *Heliconius elevatus* and the other silvaniform species are distributed widely across the Amazon basin (Supplementary Information, section 22).

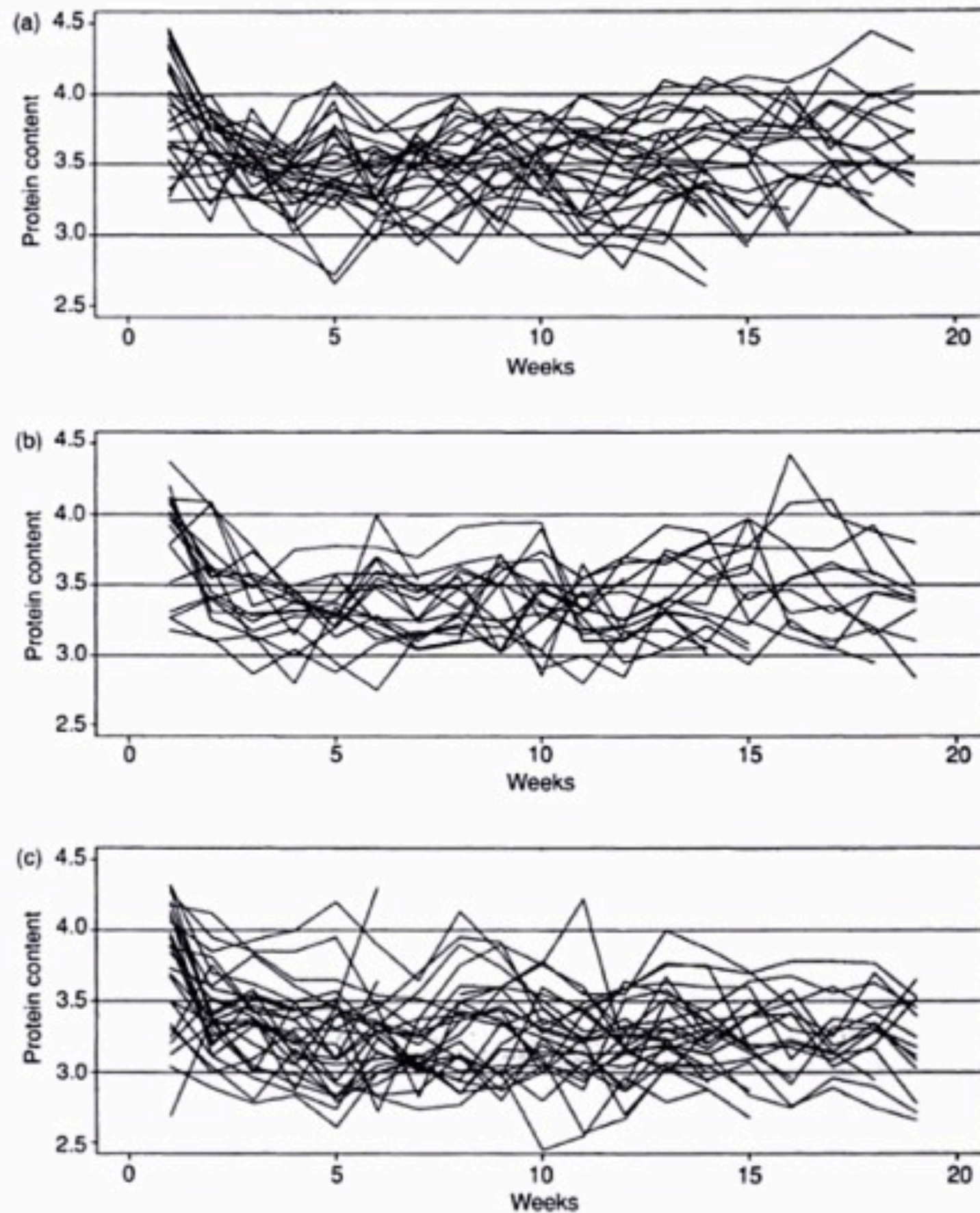


Fig. 1.4. Protein content of milk samples from 79 cows: (a) barley diet (25 cows); (b) mixed diet (27 cows); (c) lupins diet (27 cows).

From Analysis of Longitudinal Data, 2nd Ed.
Diggle et al.

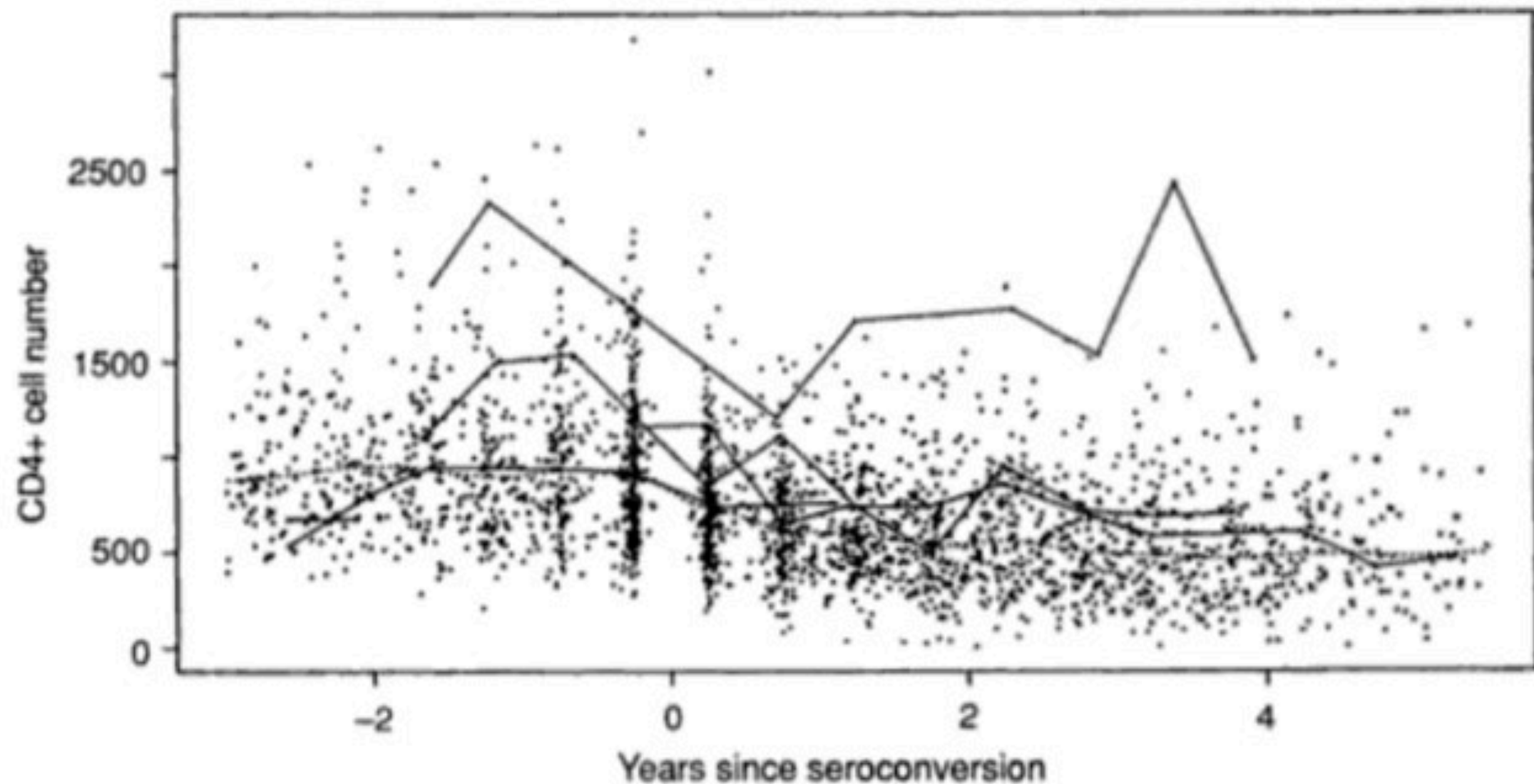


Fig. 1.2. Relationship between CD4+ cell numbers and time since seroconversion due to infection with the HIV virus. \cdot : individual counts; —: sequences of measurements for randomly selected subjects;: lowess curve.

From Analysis of Longitudinal Data, 2nd Ed.
Diggle et al.

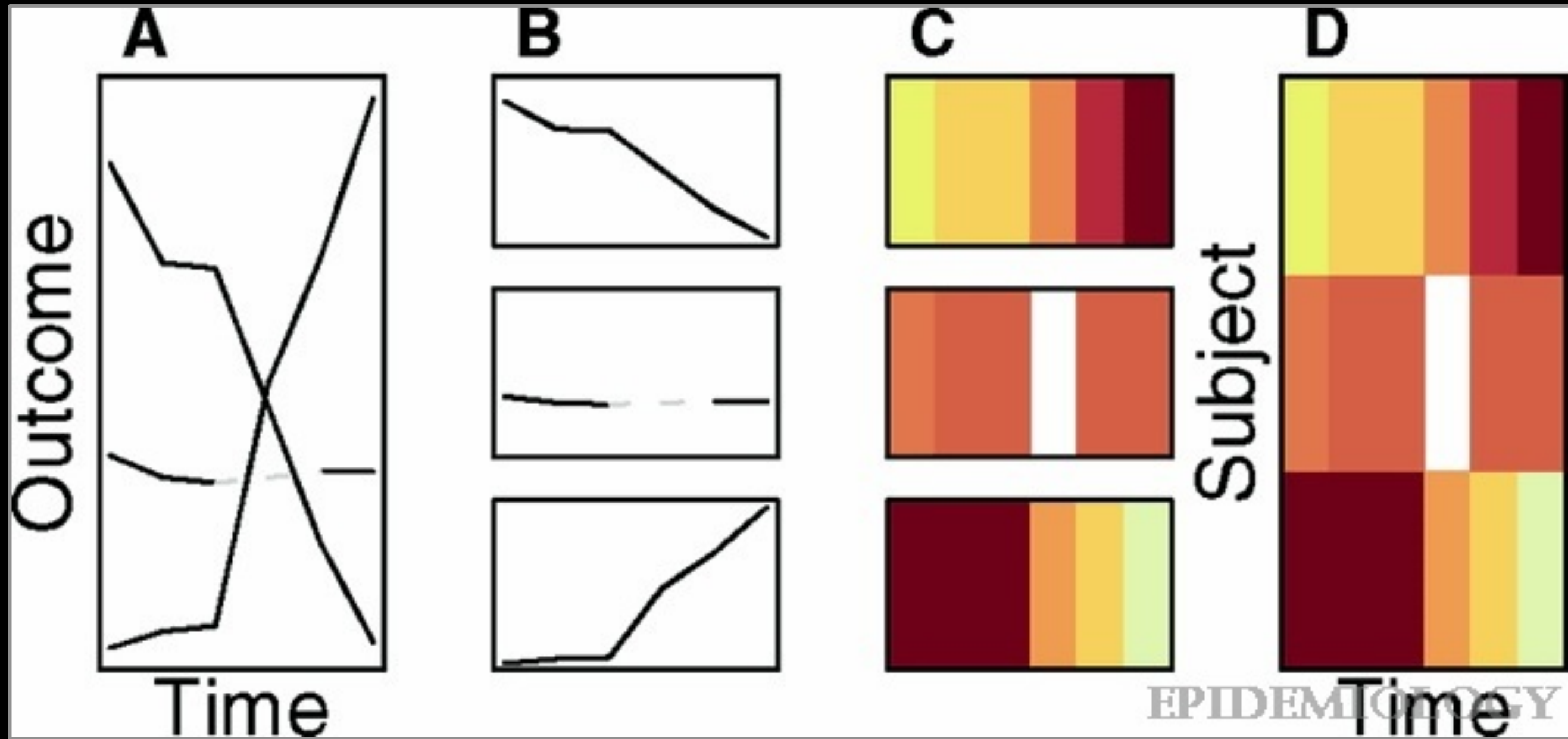


FIGURE 1. Lasagna plots as derived from spaghetti plots involve making noodles into layers. From left to right, (A) a spaghetti plot with 3 noodles where trajectories overlap. B, Extracting each noodle representing repeated measures on a subject, (C) a layer is made by letting color represent the outcome. D, Individual layers are then stacked to make a lasagna plot, with no overlapping of subject information.

Swihart, Bruce J.; Caffo, Brian; James, Bryan D.; Strand, Matthew; Schwartz, Brian S.; Punjabi, Naresh M. *Epidemiology*. 21(5):621-625, September 2010.

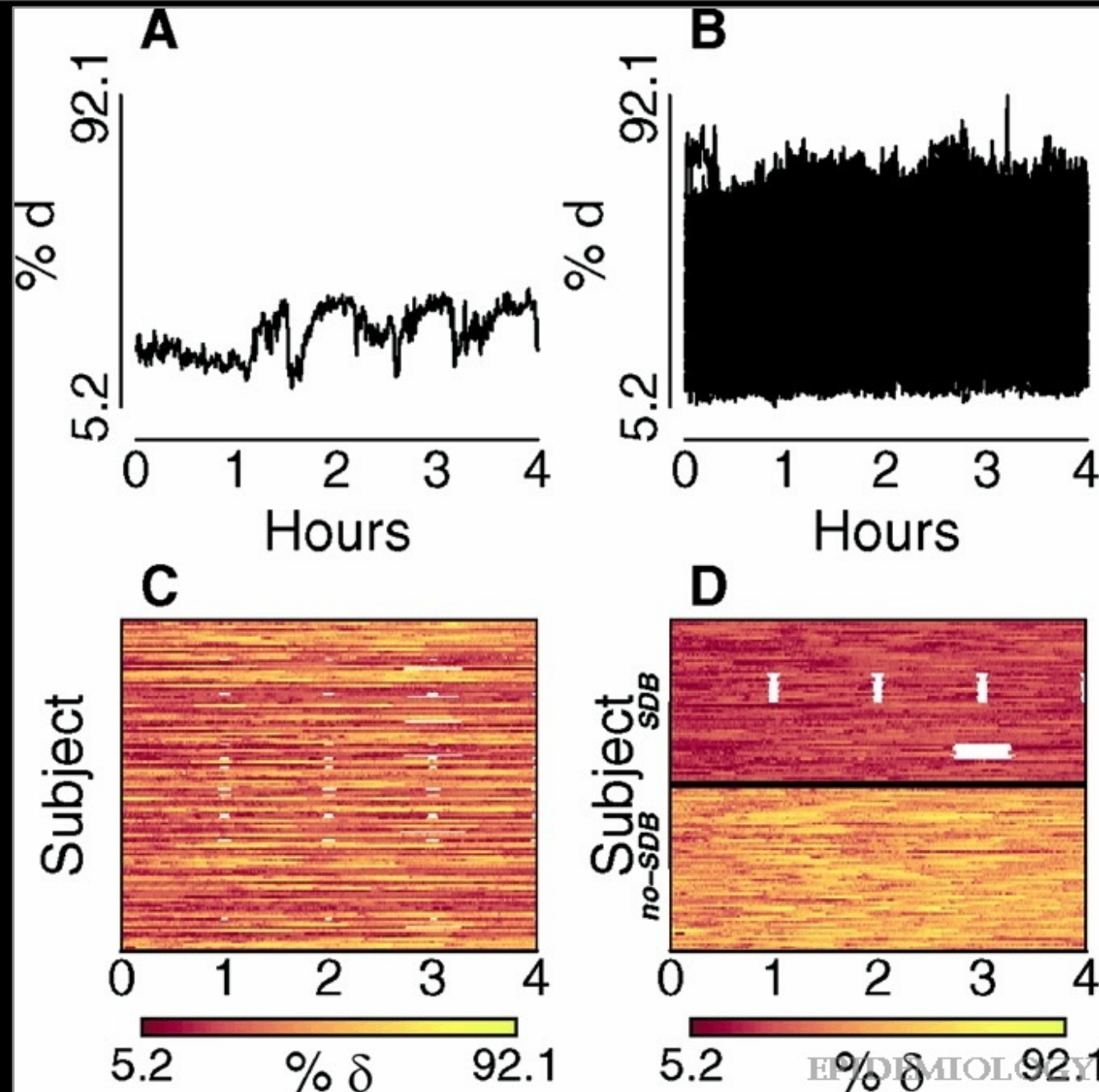


FIGURE 3. Two spaghetti plots and 2 lasagna plots of percent delta EEG power (“% δ ”) recorded every 30 seconds for the first 4 hours of sleep. A, Spaghetti plot for 1 subject and 479 measurements. B, Spaghetti plot for 118 subjects and 479 measurements each. C, Lasagna plot for the 118 (unsorted) subjects with color representing outcome. D, Lasagna plot of the 118 subjects entire-row sorted according to disease status (sleep-disordered breathing [SDB]) and date of recording within disease status, top-down. This dynamic sort reveals the diseased overall have less % δ EEG power and for some a pattern of intermittent missingness that occurs hourly over the night.

Swihart, Bruce J.; Caffo, Brian; James, Bryan D.; Strand, Matthew; Schwartz, Brian S.; Punjabi, Naresh M. *Epidemiology*. 21(5):621-625, September 2010.