# New Data Types and Surveys: Opportunities and Challenges Part VIII

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# Thanks …

- Funder
  - The European Research Council (ERC) for funding the WEB DATA OPP project
- Organizers and staff
  - For a great job organizing this workshop
  - For letting me participate
- Presenters and participants
  - For your role in making this an enjoyable and interesting workshop
- Collaborators
  - For letting me try out new ideas and test assumptions

# Procedural Notes

- This is a talk, not a presentation
- It is a philosophical talk, not an empirical one
- The slides are simply meant to help me remember what to say
- This workshop is about challenges, so I want to challenge us in different ways
- This is “Part VIII” because I have used the phrase “Opportunities and Challenges” in seven previous invited talks
  - 2002 technology developments

# A Quote (Or Two)

- Given that this is likely to be the last keynote I give, I decided to have a little self-indulgent fun
- I enjoy pithy little sayings and quotes, and have sprinkled a few through my talk
- Here's one, more commonly associated with weddings than workshops:
  - "Something Olde, Something New, Something Borrowed, Something Blue … A Sixpence in your Shoe." (Old English Rhyme)
  - This talk contains all but the sixpence

# A Little Bit of Personal History

- “What's past is prologue” (William Shakespeare, The Tempest)
- I’ve been studying the use of technology in surveys for over 30 years
  - My first computer
  - New technologies quote
- I caught the tail end of the CATI transition, but was involved in the CAPI transition, as well as email surveys, Web, SMS, mobile devices, wearables, etc.
- This gives me a somewhat unique perspective on current technology developments in surveys

# “What’s Past is Prologue”

- Each new wave of technology brings a predictable set of reactions
  - There are those who claim it will fundamentally change the way we do surveys, replacing existing methods
  - There are those who claim it will end surveys as we know it
- The hype cycle is a well-known phenomenon
- Be careful about getting caught up in the hype

# Two More Quotes

- “It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of light, it was the season of darkness, it was the spring of hope, it was the winter of despair …” (Charles Dickens (1859), *A Tale of Two Cities*)
- “Plus ça change, plus c’est la même chose” (The more things change, the more they remain the same) (Alphonse Karr, 1849)

# Tensions or Trade-Offs

- The yin and yang of survey research[1]
  - Glass is half full versus half empty
  - Two sides of the same coin
- Every challenge comes with an opportunity, and *vice versa*
- The next few slides list a few related tensions regarding the application of new technologies to surveys

[1]International Field Directors and Field Technologies Conference, 2005

# Balancing Tensions or Trade-offs 1

- Balance between representation and measurement
  - In trying to improve measurement, we may be making it harder for some to participate
  - Do we want to maximize participation (data completeness) or maximize quality, even if it means excluding some?
  - Can we do both?

# Balancing Tensions or Trade-offs 2

- Balance between standardization and customization
  - One-size-fits-all versus inclusion / adaptation / responsive design
  - The latter suggests we should accept different forms of input, even if it means an increase in complexity and measurement differences, as long as we can include more respondents

# Balancing Tensions or Trade-offs 3

- Balance between what we (as researchers) want and what respondents (or nonrespondents) want
  - Researcher-centered versus respondent-centered
  - Getting respondents to do things which make it better for us (e.g., better quality data) versus meeting respondents' expectations or needs (respondent-centered approach)
  - We often pay lip-service to the latter (e.g., reducing respondent burden) in order to serve the former (e.g., getting more data)

# Balancing Tensions or Trade-offs 4

- Balance between technology and people
  - Our focus should be on the people using the technology, rather than on the technology itself
  - Sometimes we get so enamored with the new technology that we forget why we are doing this in the first place
  - Technologies are just tools. They are the means to an end, not an end in themselves
  - Maslow's Hammer, Kaplan's Law, Drunkard's Search
- An example: mobile web surveys

# Implications

- The preceding may suggest some skepticism about new technologies
- Should we be pursuing research on new technologies?
  - Especially if some early results seems disappointing
- My response is “yes”, but with some caveats (see later)

# Some Thoughts and Suggestions

# Some Thoughts and Suggestions 1

- Read*
  - Before you design your study, find out what has been done before and how what you propose will add to our knowledge
  - Read beyond our own narrow field
  - Frame your study in the broader context

*A recent example: https://doi.org/10.1093/jrssig/qmae007
https://doi.org/10.1371/journal.pone.0264360

# Some Thoughts and Suggestions 2

- Don't only look at what works and what doesn't, but why something works, and for whom
  - "Don't be so obsessed with measuring things right that we forget to measure the right things" *
- Answering the "why" question (why does X work [or not work] better than Y?) helps advance theory and knowledge
  - One example: trust
- Always think of the statistical interactions
  - "For whom (or under what circumstances) does X work better than Y" is a more interesting question than "does X work better than Y"



* Paraphrasing Randy Pausch, co-director of Carnegie Mellon's Entertainment Technology Center

# Some Thoughts and Suggestions 3

- Be careful about generalizing only from our own experiences
  - Just because we are fascinated by new tools and technologies, doesn't mean that everyone else is
  - Don't fall into the universality trap: "Everyone" is on social media, uses tool or device X, etc.
    - There are still people who do not use social media (I am one!)
    - The wide variety of devices and tools suggests people want choice
  - This is related to understanding our participants' needs, preferences, and concerns (see next slide)

# Some Thoughts and Suggestions 4

- Understand participants' needs, preferences, and concerns
  - The move from computer-assisted interviewing to self-administration has taken away our direct interaction with respondents
  - It has turned our respondents from people into data
  - It has dehumanized the subjects of our study
  - We are losing the ability to see things from their perspective

# Some Thoughts and Suggestions 5

- Think beyond the current set of technologies or tools
  - Think about how your findings can have broad generalizability
    - Related to the point about theory
  - Don’t focus too much on what is possible now, but on what can be possible in the future
  - Two old examples:
    - Doorstep CAPI
    - Audio-CASI

# Concluding Thoughts

# Concluding Thoughts 1

- Regardless of the particular technology, the fundamentals are still important
  - The total survey error perspective – first articulated by Deming* in 1944 – is still relevant
  - The trade-off between measurement and representation is informed by this perspective
- Good "theory" stands the test of time
  - Generalizable lessons applicable beyond the current study or technology

*Deming, W.E. (1944), "On Errors in Surveys." *American Sociological Review*, 9 (4): 359-369.

# Concluding Thoughts 2

- Don’t focus so much on the “what” that we lose sight of the “why”
  - Always keep the big picture in mind
- Take the long view
  - Think about what impact our work will have in 5-10 years, rather than immediately
  - Think beyond the current technologies

# Concluding Thoughts 3

- Be serious about giving voice to respondents
  - Find ways to interact with real respondents (e.g., small-scale participant observation, qualitative work)
  - Technology can also enable, giving respondents an opportunity to speak their mind
    - Open questions are making a come-back because of technologies that make it easier for respondents to tell us what they think and advances in methods to summarize and analyze open responses
  - This also means an obligation to listen to what they have to say

Singer, E., and Couper, M.P. (2017), "Some Methodological Uses of Responses to Open Question and Other Verbatim Comments in Quantitative Surveys." *Methods, Data, Analyses*, 11 (2): 115-134

# Concluding Thoughts 4

- Don’t be afraid of “failure”
  - “The most exciting phrase to hear in science, the one that heralds new discoveries, is not ‘Eureka!’ but ‘That’s funny...’.” Isaac Asimov
  - Finding support for a preconceived expectation is often easier
  - True progress and breakthroughs often arise from unexpected observations or anomalies that pique one’s curiosity and force one to rethink assumptions
  - Take some risks
  - Relax!

# Finally…

- Every challenge is also an opportunity
  - … for every Eeyore there is a Tigger

# Thank You!

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# Presentation in 2002

- At the International Conference on Improving Surveys, I talked about four technology-related developments:
  - The move from interviewer-administration to self-administration
  - The move from verbal outputs/inputs to visual and haptic outputs/inputs
  - The move from fixed to mobile computing
  - The move from discrete surveys to continuous measurement
- Sound familiar?

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# My First PC: Apple IIe

- 1.02 MHz processor
- 64 Kb RAM
- No hard drive
- Two floppy drives, with 360 Kb memory each

We've come a long way!

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# New Technologies

- "*New technologies* is a historically relative term. We are not the first generation to wonder at the rapid and extraordinary shifts in the dimension of the world and the human relationships it contains as a result of new forms of communication, or be surprised by the changes those shifts occasion in the regular pattern of our lives."
  - (Carolyn Marvin (1988), *When Old Technologies Were New*, p. 3)

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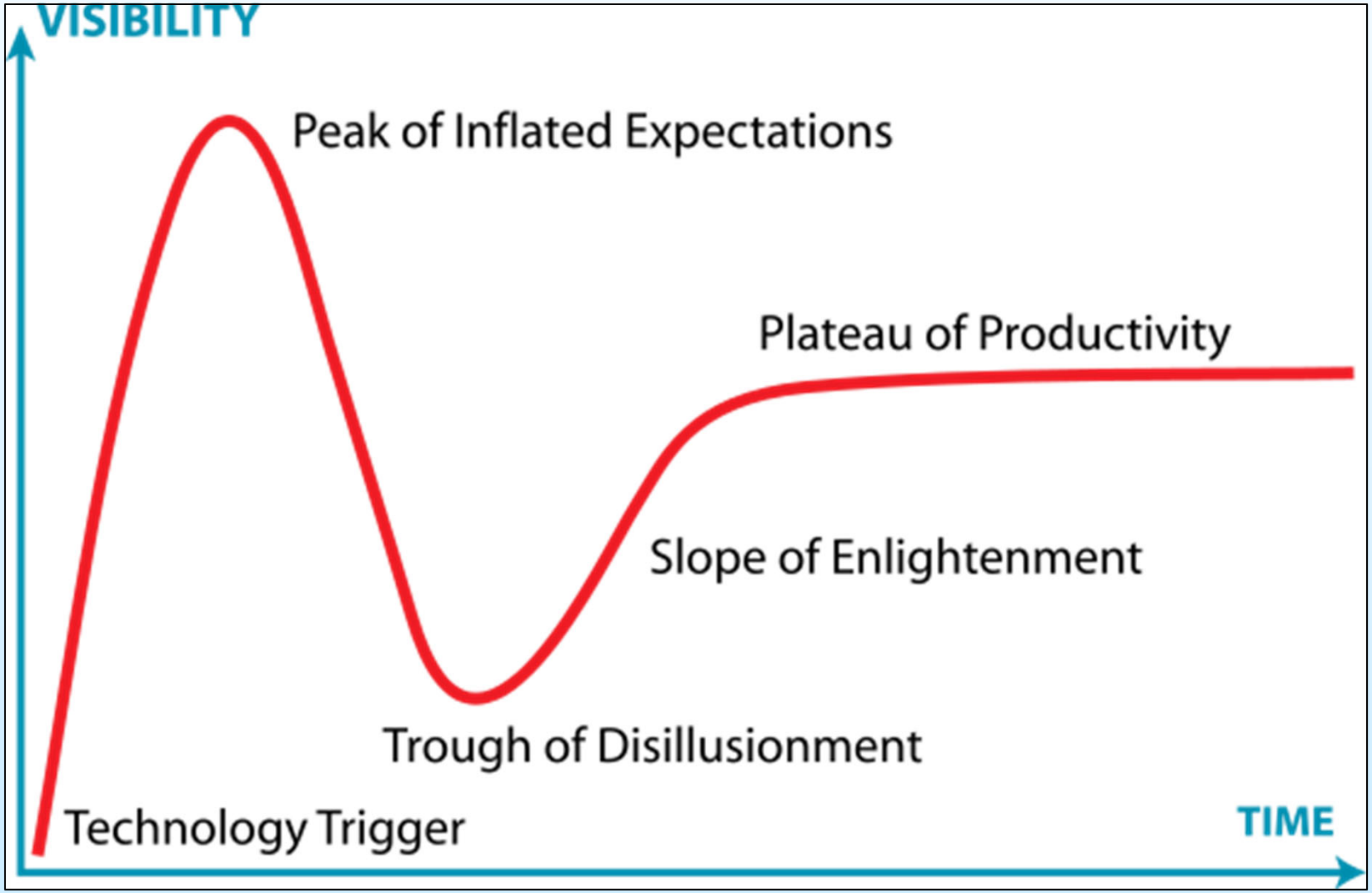
# The Hype Cycle




Source: Gartner Group

# Maslow's Hammer or Kaplan's Law

- Maslow's hammer:

> "If all you have is a hammer, everything looks like a nail."

Source: Abraham Maslow (1966, p. 15), *The Psychology of Science*.

- Kaplan's law of the instrument:

> "Give a small boy a hammer, and he will find that everything he encounters needs pounding"

Source: Abraham Kaplan (1964, p.28), *The Conduct of Inquiry: Methodology for Behavioral Science.*

# The “Streetlight Effect” or the “Drunkard’s Search”

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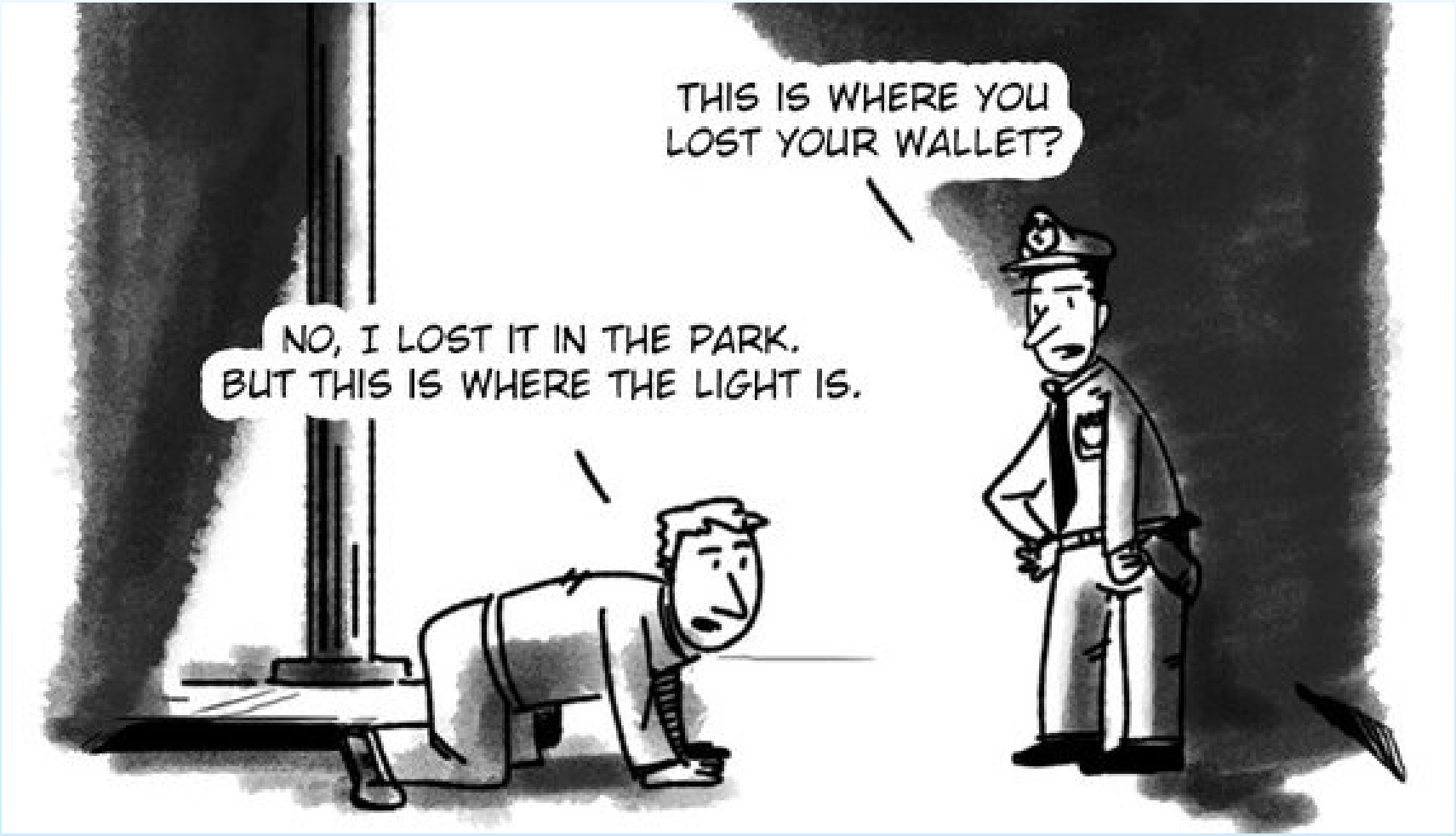


Based on an old Sufi tale

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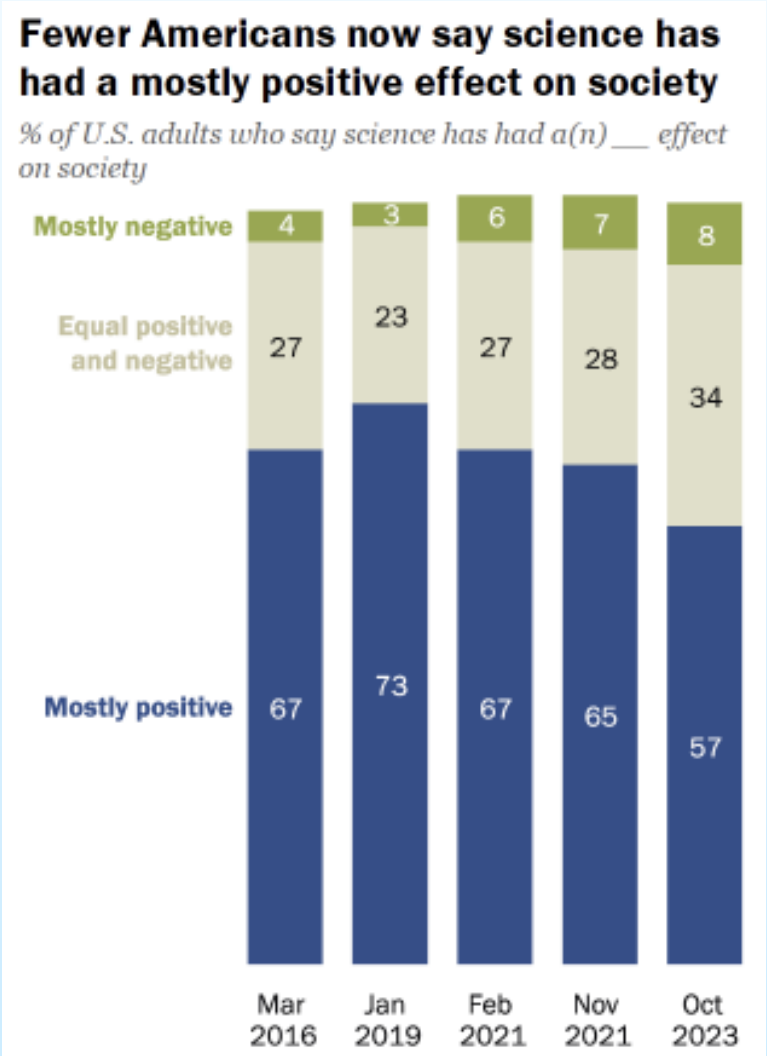
# An Example: Mobile Web Surveys

- At first, the goal was to discourage people from using mobile devices
  - Evidence of lower data quality on mobile
- Then the goals was to encourage people to use mobile devices
  - To exploit the added features of mobile
- Now the focus is on optimizing the design of surveys to minimize differences between devices
  - Acknowledges that some will use mobile devices but others will (or can) not

# Trust in Science




https://www.pewresearch.org/science/2023/11/14/americans-trust-in-scientists-positive-views-of-science-continue-to-decline/

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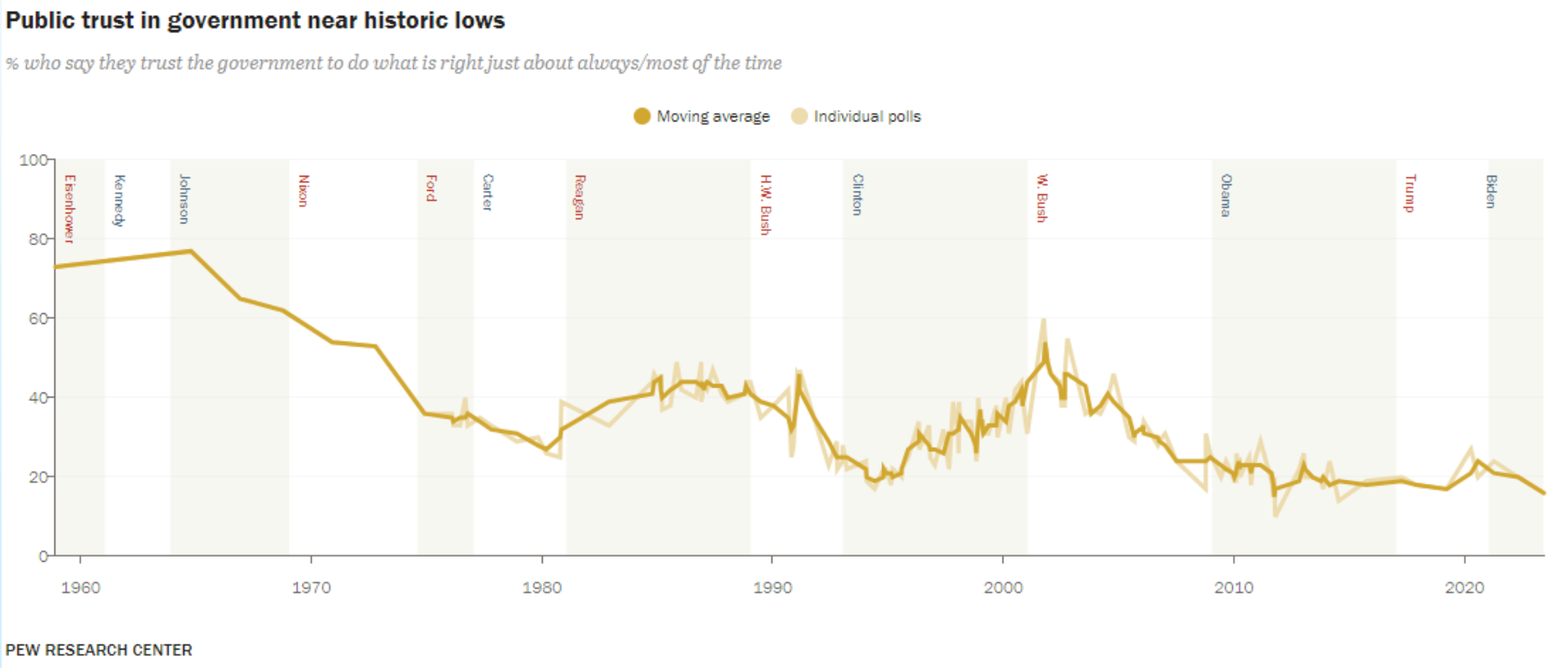
# Trust in Government




https://www.pewresearch.org/politics/2023/09/19/public-trust-in-government-1958-2023/

# Doorstep CAPI Interviews

- In the early days of CAPI, there were concerns about the size and weight of laptop computers, especially for short doorstep interviews
- Based on ergonomic tests in the early 1980s, Statistics Sweden determined the optimal weight for a handheld CAPI computer to be 1 kg
- No manufacturer was producing laptops anywhere close to that

# Doorstep CAPI Interviews

- We* designed a study to test optimal weights for carrying and holding, and tested several prototype laptops available on the market at the time
- Built wooden boxes with lead weights to determine optimal weights
- Ran a series of tests with BLS interviewers

*Couper, M.P., & Groves, R.M. (1992), "Interviewer Reactions to Alternative Hardware for Computer-Assisted Personal Interviewing." *Journal of Official Statistics*, 8 (2): 201-210.

# Laptop Computers not Designed for Standing Interviews

# Laptops Don’t Always Work on Lap Tops

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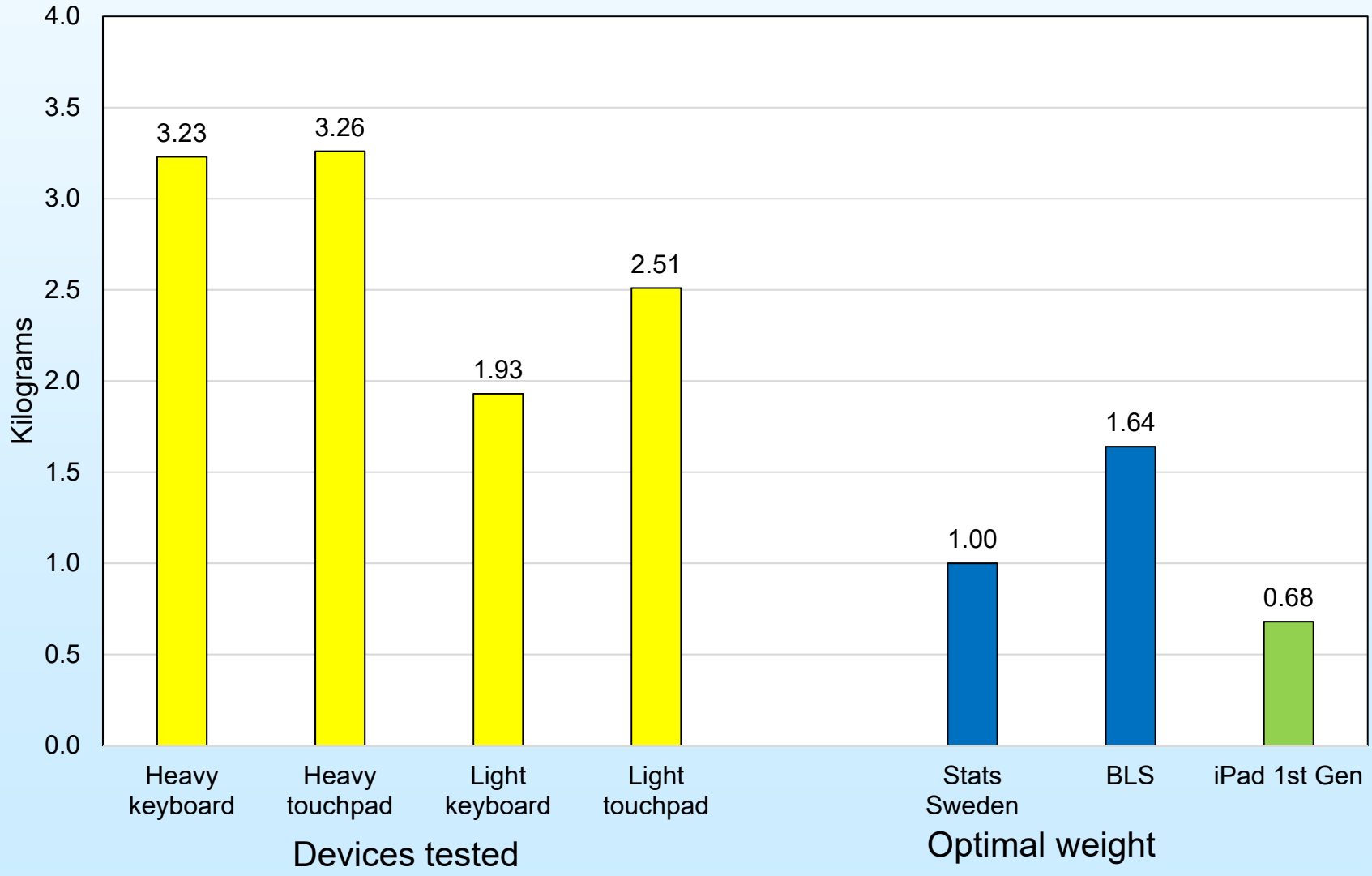
# Weight for Holding Computers



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# Early Audio-CASI Example

Source: Research Triangle Institute, 1995 NSFG