# Web-Push surveys and the worldwide challenge of being neither too far ahead nor behind our respondents

For

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By

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# While change seems constant in economically advanced societies, it occurs unevenly among people

- Some people are innovators, others are early adopters, some are late adopters and still others may be described as laggards (Rogers, Diffusion of Innovations).
- It takes years if not decades for the complete adoption of new technologies to happen.
- I did my first internet survey in 1997, and 20 years later I am still trying to figure out how to get the general public to accept going onto the internet to respond to surveys.
- Resolving this challenge is the focus of this presentation.

# A half-century of change in data collection modes and methods

| | |
|---|---|
| 1960's | Face-to-face only acceptable Mode |
| 1970's | Telephone and Mail became "possibilities" and expanded sponsorship capabilities |
| 1980's | RDD Voice Telephone became dominant |
| 1997ff. | Internet became possible and, eventually, practical |
| 2000ff. | Transitions: Desktop ➡ Laptop ➡ Tablet ➡ Smartphone |
| 2007ff. | For some, smartphone is sole device |

Conclusion: We have gone through huge changes and are now doing so with increasing speed.

# Society and Culture have changed how people are able and willing to connect to household surveys

- Voice telephone is no longer a dominant way of communicating.
- Less sharing within households of communication portals (e.g. mobile phone and personal email addresses).
- Access to adults is under individual rather than community control.
- Huge shift from mediated contact (bank tellers, travel planning and merchandise purchases) to direct and mostly electronic connections.
- Household composition less formal and less stable over time.
- Great heterogeneity in household resources and use of newer technologies.

# The survey consequences of these changes for conducting 21st century surveys.

- Tailored design of using different survey modes for different populations and situations is replacing use of standard approach for all surveys
- Multi-mode surveys are replacing single mode surveys
- Self-administered surveys are replacing interviewer-mediated surveys
- Visual communication that delivers meaning through four languages (words, symbols, numbers and graphics) is replacing aural communication and word focus.
- Unified question construction needs to be done across modes instead of individually maximizing design for individual modes.
- A focus on respondent motivation is replacing a singular focus on cognition that prevailed in the 1990's.

# Organization of this talk, in four parts

I. How the "acceleration of change" challenge has affected survey methodology.
2. Brief summary of my efforts to develop an effective web-push data collection methodology.
3. Some uses of web-push methods in other countries and barriers to greater use.
4. Research challenges I hope that some of you and others might address.

# Part 1. How the rate of technological, cultural and social change is affecting survey design

# We are in an age of accelerating change

- In 2016, Thomas Friedman* pinpointed a dramatic change in how we do things in our daily lives.
- The Apple I-Phone was released in 2007 with the world's best media player, best telephone and best way to get to the Web.
- It combined five radios in different bands with huge advancements in processing power, RAM, flash memory and was controlled by software instead of buttons—all in a device one could slide into a small purse or pocket.

* Friedman, Thomas. *Thank you for being late: An Optimist's guide to thriving in the age of accelerations.* Farrar, Straus and Giroux*, New York)*

# Moore's law revisited

- Moore's law (doubling computer power every 2 years or so) is not coming to an end! Instead it has expanded to:
  - Memory units that store and retrieve information
  - Networking systems within and across computers
  - Software applications  for performing tasks within and between computers
  - Sensors (movement, language, light, sound, etc.)
- The survey impact  of these changes are likely to be quite large.

# However, Moore's Law applied to all matters computer, is running into another powerful law

- Human adaptation to changes in technology, accelerates more slowly than technologies allow.
- Our survey design challenge is how to create data collections methods that are neither too far ahead nor behind our desired respondents.
- This concern places us squarely in an era of mixed-mode surveying for the foreseeable future that includes smartphones.

# Part 2. Development of web-push data collection methodologies and (some of) what we have learned

# What is web-push data collection?

- A initial request sent by postal mail for survey respondents to complete questionnaires over the Internet instead of answering by other survey modes.
- Paper, telephone and/or face-to-face response modes are typically offered later in the data collection response to improve response rates and/or lower nonresponse error.
- Multiple follow-up contacts (telephone, face-to-face)modes may be used if available and costs warrant.

# Voice telephone now faces a perfect storm of problems--response, sampling and cultural fit

- RDD surveys:
  - Single digit response rate in U.S. from 35% to 9% (Dutwin and Lavrakas, 2016)
  - Need to combine individual (cell) and household (land) lines.
  - Greater need for brevity, but additional questions needed to correct for area code transportability, ownership of cell/landline access, not driving a vehicle, age of respondent, etc.
  - People likely to answer phone only once, so that it is becoming a "one chance to persuade" (in 5 seconds or less) methodology
- But, **cultural** change is the biggest problem; most telephone communications are asynchronous texts and emails. This is the new "normal".

# The Internet is not yet an effective replacement of telephone for household surveys

- Email addresses have no standard format as was the case for telephone, e.g. 509-334-xxxx.
- People typically have more than one email address.
- Response rates to email are typically no better than telephone rates, except when list and a close trustworthy relationship exists, e.g. registrants for a meeting, clients, and students.
- A bias in coverage and personal internet skills towards being younger with greater education.

# A potential solution, for now

- Mixed-mode surveys: Using multiple contact and/or response modes:
  - To improve coverage.
  - Improve number of opportunities to persuade people to respond.
  - Improve response rates.
  - Lower nonresponse error.
- In 2007 my research team began a series of experiments using postal addresses, our best coverage for households in the U.S., to contact people with the aim of pushing them to the Internet.
- Details of the results and their application are available elsewhere: (see Dillman, Smyth and Christian,2014, Dillman, Hao and Millar, 2016).

# The research approach used for developmental studies: 2007-2014

- Goals was to conduct a series of “push to web” experiments, taking what we learned from one test, make changes and run the next test.
- There are two kinds of research:
  - Tightly controlled experiments--Individually add or subtract 1 or 2 specific procedures, so if there is a difference in response we know the reason.
  - Break-out research, of building the best combination of ideas we think practical. If we get a positive effect we can’t say why, but it provides a basis for then adding or subtracting elements in future research.
- We were doing the latter, or what I called at the time a “kitchen sink” experiment, i.e. doing everything we could reasonably fit together for getting households to respond over the web.

# Design Features of the Experiments (1)

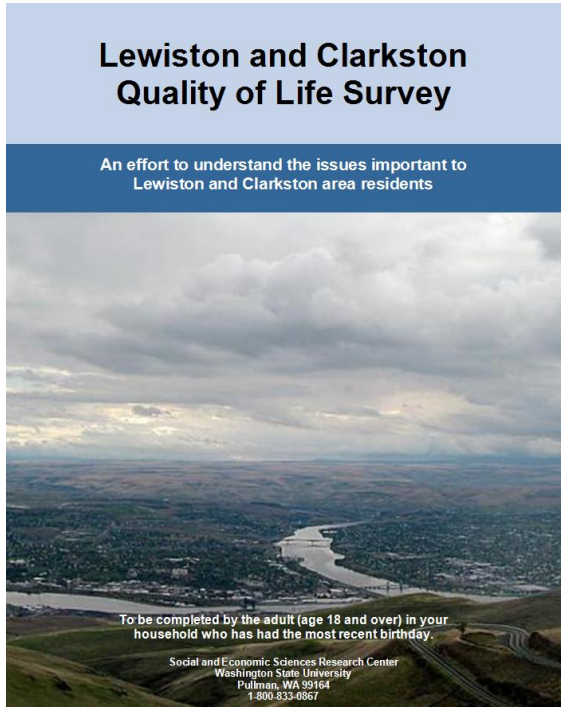
- Address-based samples.
- Undid old mail strategies, e.g. name personalization, envelopes, use of postcard.
- Respondent selection, adult with most recent birthday or most knowledgeable household member.
- 20+ minute surveys (70-140 questions, on 12 pages in postal version of questionnaire)
- A variety of topics—community satisfaction to water and electricity management priorities

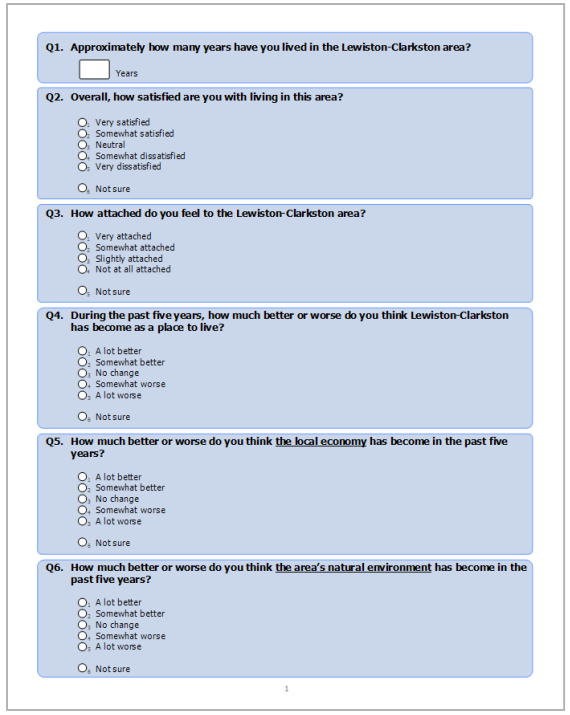
# Design Features of the Experiments (2)

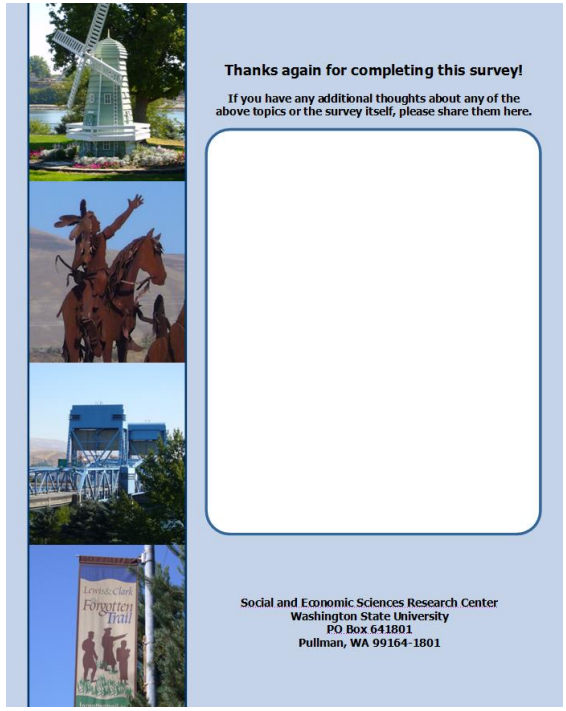
- 4-5 postal contacts, paper questionnaire provided in 3rd or 4th contact.
- $4 -5 token incentive with request to respond.
- Unified mode construction to reduce measurement differences.
- Tailor to population with graphic design and color.

# Mail Questionnaire tailored with topic, who should respond, and back-page pictures

Use of tailored images to help connect respondents to survey and to place an emphasis on study area instead of on survey source. 90 responses requested

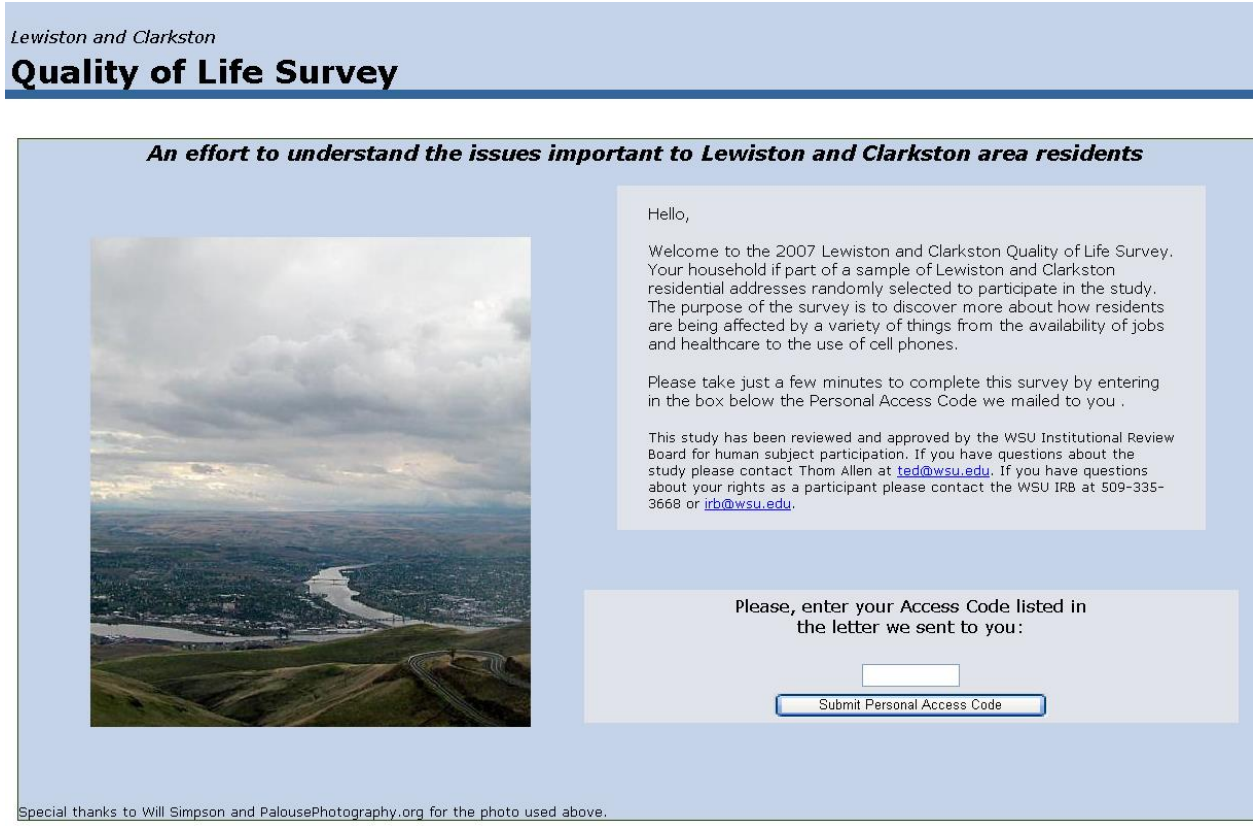


# Web questionnaire was similarly tailored

- Used an entry page similar to front cover of paper survey, still focusing on making the survey recognizable through familiar images.



# Mail (on left) and web (on right) unified to control measurement

**Q1. Approximately how many years have you lived in the Lewiston-Clarkston area?**

☐ Years

**Q2. Overall, how satisfied are you with living in this area?**

1. Very satisfied
2. Somewhat satisfied
3. Neutral
4. Somewhat dissatisfied
5. Very dissatisfied

6. Not sure

**Q3. How attached do you feel to the Lewiston-Clarkston area?**

1. Very attached
2. Somewhat attached
3. Slightly attached
4. Not at all attached

5. Not sure

**Q4. During the past five years, how much better or worse do you think Lewiston-Clarkston has become as a place to live?**

1. A lot better
2. Somewhat better
3. No change
4. Somewhat worse
5. A lot worse

6. Not sure

**Q5. How much better or worse do you think the local economy has become in the past five years?**

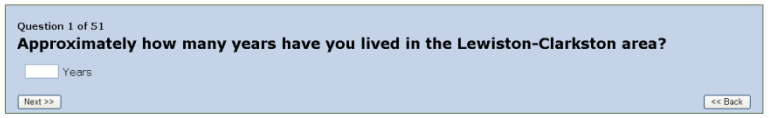
1. A lot better
2. Somewhat better
3. No change
4. Somewhat worse
5. A lot worse

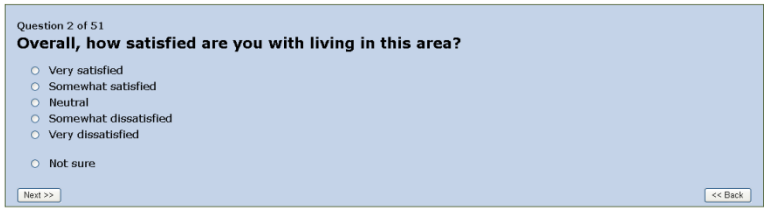
6. Not sure

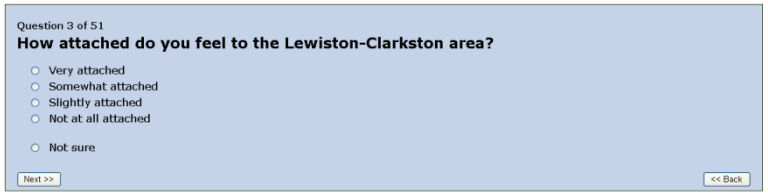
**Q6. How much better or worse do you think the area's natural environment has become in the past five years?**

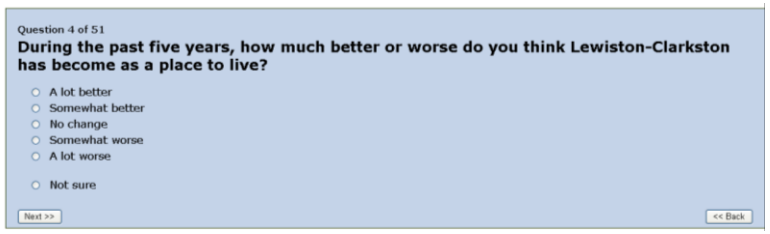
1. A lot better
2. Somewhat better
3. No change
4. Somewhat worse
5. A lot worse

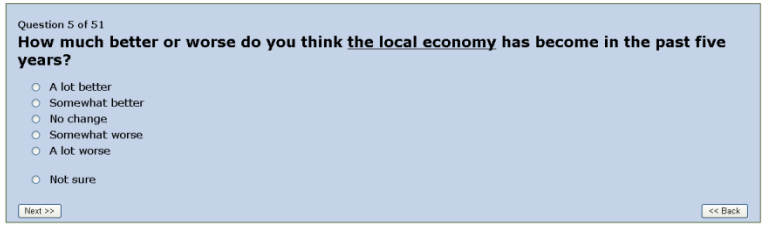
6. Not sure

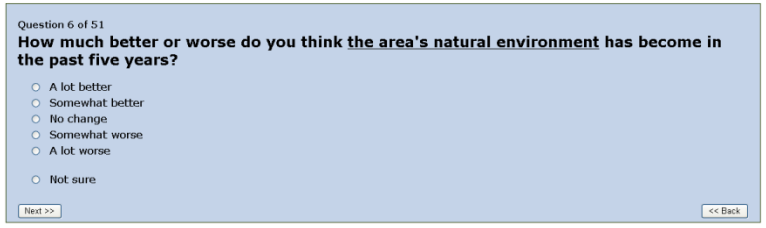


# How the first experiment produced the breakthrough; 2007 Lewiston-Clarkston Study

- 51 numbered questions, 90 responses, 10 pages (paper)—a 20 minute (if it were telephone) conversation
- Four contacts.
  1. Pre-notice letter.
  2. Questionnaire (or web request).
  3. Thank-you post card.
  4. Replacement questionnaire (adjusted by treatment).
- $5 token cash incentive included with mail questionnaire or web contact

(Later studies would change number and nature of contacts)

# We compared four treatments

1. **Mail preference with web mention: Send mail questionnaire and mention web with initial request**

2. **Push-to-mail: Send mail questionnaire but withhold mention of web for about two weeks**

3. **Push-to-web: Web invitation with no mail questionnaire, but explain that mail questionnaire will be sent in about two weeks**

4. **Equal mail/web preference: It is your choice!**

# Initial withholding of mail drove 41% to the web; paper follow-up added 14%. Offering choice drove ~80% to mail ☹.

| Treatments | Web (%) | Paper(%) | Total (%) |
|---|---|---|---|
| Mail preference with web mention | 4 | 58 | 62 |
| Push-to-Mail (web in third contact) | 1 | 70 | 71 |
| **Push-to-web Mail questionnaire sent in 3rd of 4 contacts** | **41** | **14** | **55** |
| **Equal preference (choice)** | **13** | **50** | **63** |

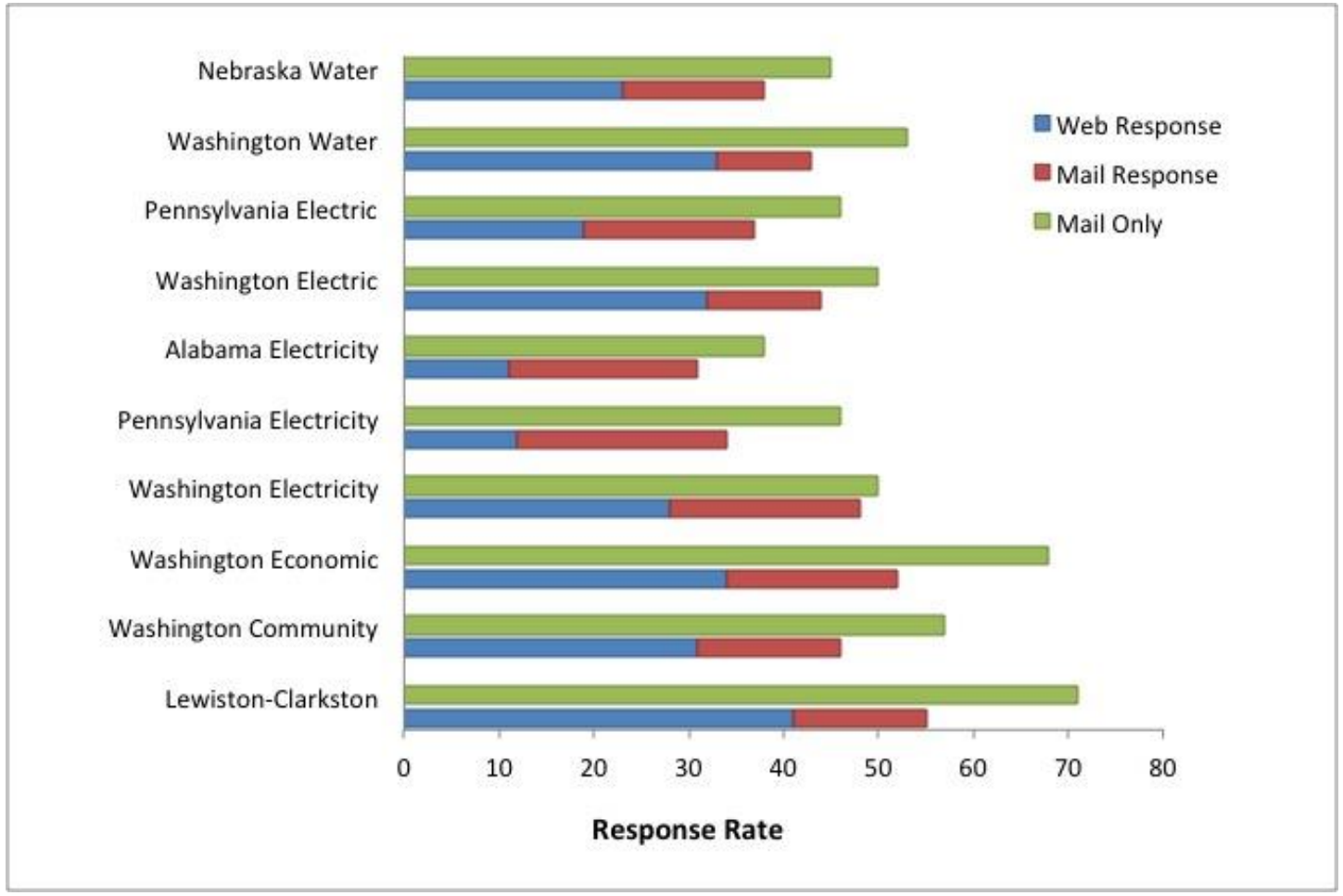
# Initial success encouraged us to do more large-scale tests to evaluate the web-push methodology

1. Lewiston, ID-Clarkston, WA Survey 2007
2. Washington Community Survey 2008
3. Washington Economic Survey 2009
4. WA, PA, AL Tri-state Electricity Survey 2011
5. WA and NE Water Management Survey 2012

Research goal was to refine through subtraction and addition experiments, e.g. token cash incentives, other state populations, questionnaire design, respondent selection, location of sponsor, etc.)

~ 28 additional experiment treatments, with successful treatments being carried forward. (Chapter 11 of Dillman, Smyth and Christian. 2014.)

# Summary results; mail only (mean, 53%) vs. web-push (mean, 43%, with 62% over the web) response rates for 10 tests of 12 page (70-140 questions) conducted 2007-2014 (Dillman, 2017)



# Certain "multiple mode" approaches don't work in beneficial ways.

- Offering up-front choice of enclosed paper questionnaire vs. web response, produces mostly paper (70-80%) returns, thus increasing processing costs.
- Psychologically, "preference" for a particular mode is not a powerful determinant of response.
- In addition, finding out preferred mode and then offering it is time-consuming and costly because of having to design different implementation systems for sample segments.
- Six features for making web-push methods work, and the reasons, follow:

# Six features of web-push designs using a postal mail start that improve response

## 1 An initial mail contact provides opportunities to legitimize use of internet by the respondent.

- Fear of internet links (phishing or malware consequences) is now a bigger barrier to response over the internet than lack of access in most developed countries.
- World-wide information services, from hotel and plane reservations to encyclopedias, are making internet connections almost mandatory.
- Providing a letter with sponsors physical location, telephone number and other ways of contacting sponsors assists with survey and sponsor legitimation.

# Design features for Improving Response

## 2 Mail contact allows inclusion of token cash incentives that further legitimize the survey and increase response rates.

- Asking people to go from postal letter to a computer to respond to a survey is a demanding switch.
- A household survey experiment showed that enclosing $5 with the request, resulted in 32% of respondents answering over the web, compared to 13% without it (Messer and Dillman, 2011).
- Offering chance of prize and/or post-payment for responding are not effective substitutes, but sending post-payments for responding in addition to the initial cash incentives may be effective.
- Letting recipient know response is mandatory (e.g. U.S. Decennial Census) is an effective substitute for getting people to go from paper request to their computer.

# Design features for Improving Response (continued)

**3 Offer different response modes sequentially to increase response rates.**

a. A major reason for following mail request to respond over the Internet, with offer for responding by a different mode (mail, telephone and/or in-person) is that it will improve response rates significantly.

b. For example, in 2016 Canadian Census, 68% of all households responded on Internet, 20% to a postal questionnaire follow-up, and 10% to in-person interview.

# Design features for Improving Response

**4 In addition, offering different response modes sequentially will reduce non-response error.**

a. Repeated household surveys have found that follow-up paper questionnaire respondents have less education, lower incomes, and are older (Dillman, 2017).

b. Telephone follow-up calls (when numbers are available) may also lower nonresponse error by bringing in older, less educated, people. Previous mail contacts legitimize use of telephone.

c. In-person visits serve similar purpose in Censuses.

# Design features for Improving Response

**5 When combining data across modes, it is necessary to understand how aural vs. visual communication affects answers, and utilize that knowledge to obtain common measurement across all survey modes.**

a. This means maintaining the same question structure as well as the same wording.

b. The proliferation of smartphones is making this an especially difficult challenge.

# Reliance on visual modes (web and mail) requires evaluating much more than question wording.

- Four languages contribute to question meaning:
  - Numbers (e.g. 1,2, 3)
  - Symbols (e.g. →)
  - Graphical display (size, shape, consistency, etc.)
  - (and) words
- We have to evaluate all four! (Christian, Leah and Don A. Dillman, 2004)

# Unified mode construction needs to replace maximizing question design for each mode.

- There are two major sources of measurement differences between modes: wording and question structure. (Christian, Leah and Don A. Dillman, 2004)
- In single mode studies, we learned to maximize BOTH for each mode (e.g. check-all questions for web and mail, and forced choice for telephone).
- Other examples:
  - Withheld categories (e.g. no opinion)
  - Grids on mail and laptops vs. individual items on smartphones.
  - Long fully labeled scales (interviews) vs. short scales (smartphones)
  - Drop down menus (web) vs. full display of choices (mail)

# In addition, getting smartphone responses to even the best presented queries has become more of a problem

- Survey requests swiped away based on the appearance of just a few words.
- Legitimacy of all email requests cannot be easily ascertained.
- Asking people to respond when in the midst of daily work and life activities is not always or even mostly convenient.
- Greater access to respondents—wakeup to goodnight—doesn't increase the likelihood of response.

# Design features for Improving Response

**6 Multiple contacts are essential for achieving satisfactory response rates and will be more effective if sent by a different contact mode, whenever possible.**

a. The importance of multiple contacts is a consistent finding from research across all survey modes—telephone, in-person, mail and email.

b. However, for all modes it is increasingly easy to ignore or dismiss repetitious contacts.

c. The effectiveness of follow-up contacts can be improved by use of a different mode or means of contact if different contact information is available.

d. Email augmentation of postal contacts is especially helpful for pushing respondents to the web, as shown by this example:

# Example: Use of two contact modes and two response modes to improve response from survey of dissertating graduate students.

Day 1- Postal request to respond by web (web-push).

Day 3- 1st Email Augmentation

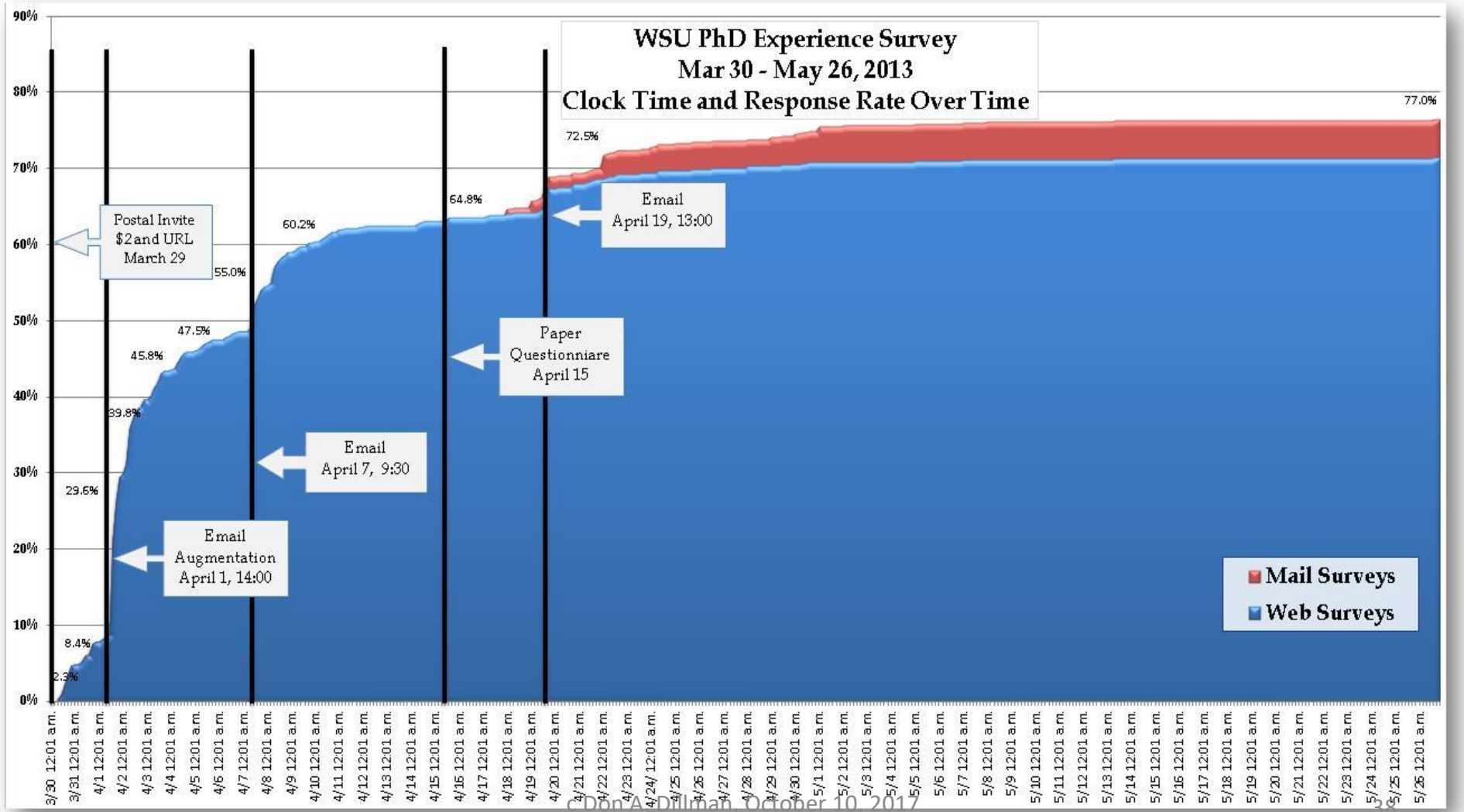
Day 8- 2nd Email augmentation

Day 16- Postal Follow-up with mail questionnaire

Day 21- 3rd Email augmentation

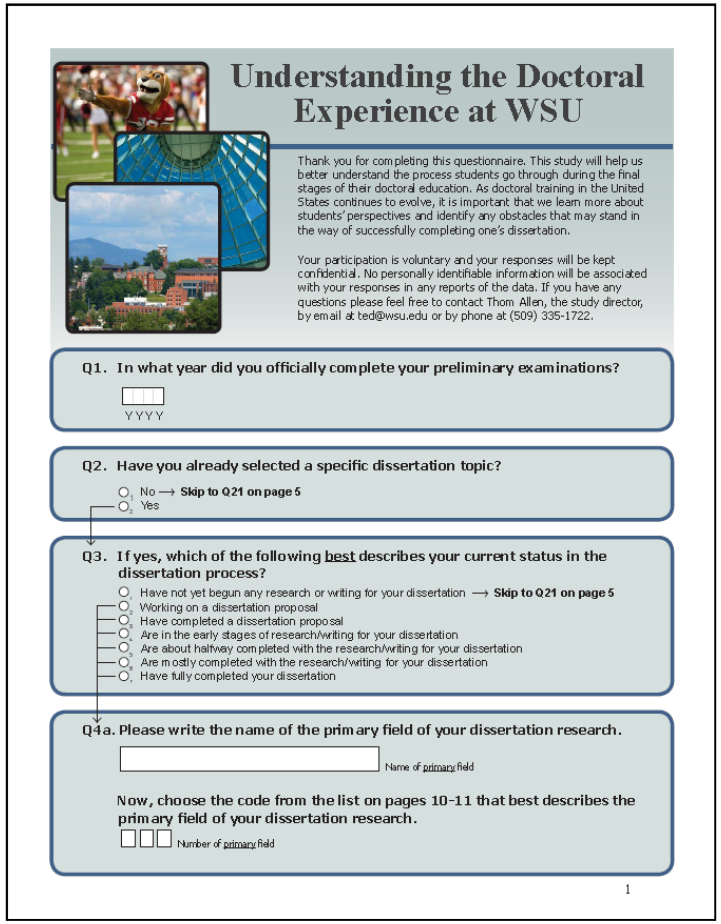
Our goal was to make it easier to respond over the web by providing an electronic link to "make it easier for you to respond over the web". (Theoretical basis is social exchange theory).

# Email Augmentation of "letter+$2" pushed response rates up 21 percentage points in 10 hours, and 40 points in five days! It makes sense—we are helping people relate to the survey.



# Late offer of Mail increased email responses as well as paper responses

- The paper questionnaire went to 200 individuals, 32% responded.
- Response rate increased an additional 12 percentage points after postal questionnaire sent; ½ responded by paper and ½ by web.
- Showing respondents what the survey was about provided a fresh stimulus that supported response by either mode.
- Final response was 77% (normal response for email only survey would have been about 20-25%)



Understanding the Doctoral Experience at WSU

Thank you for completing this questionnaire. This study will help us better understand the process students go through during the final stages of their doctoral education. As doctoral training in the United States continues to evolve, it is important that we learn more about students' perspectives and identify any obstacles that may stand in the way of successfully completing one's dissertation.

Your participation is voluntary and your responses will be kept confidential. No personally identifiable information will be associated with your responses in any reports of the data. If you have any questions please feel free to contact Thom Allen, the study director, by email at ted@wsu.edu or by phone at (509) 335-1722.

Q1. In what year did you officially complete your preliminary examinations?

YYYY

Q2. Have you already selected a specific dissertation topic?

No → Skip to Q21 on page 5
Yes

Q3. If yes, which of the following best describes your current status in the dissertation process?

Have not yet begun any research or writing for your dissertation → Skip to Q21 on page 5
Working on a dissertation proposal
Have completed a dissertation proposal
Are in the early stages of research/writing for your dissertation
Are about halfway completed with the research/writing for your dissertation
Are mostly completed with the research/writing for your dissertation
Have fully completed your dissertation

Q4a. Please write the name of the primary field of your dissertation research.

Name of primary field

Now, choose the code from the list on pages 10-11 that best describes the primary field of your dissertation research.

Number of primary field

1

# To summarize, here are the six recommendations for making web-push methods work

1. Start with mail contact to legitimize the survey sponsor and web request.
2. Provide incentive with the first contact to focus attention on the request.
3. Provide different response modes in sequence to improve response rates.
4. Also provide different response modes to improve likelihood of response from initially underrepresented groups.
5. Utilize knowledge of how visual and aural communication produce different measurement outcomes to develop unified mode constructions across all questionnaire modes and smartphone developments.
6. Send multiple communications by different contact modes to enhance earlier communications.

# Part 3. Some World-wide Uses of web-push data collection

# Examples of Web-push surveys from mail start

- U.S. National Survey of College Graduates since 2010 (web→mail→telephone)
- 2011 Estonia Census (web → in-person)
- American Community survey since 2013 (web→mail→telephone→in-person)
- 2015 Japanese Census (web→mail→in-person)
- 2016 Australian Census (web→mail→in-person)
- 2016 Canadian Census (web→mail→in-person)
- Switzerland regional surveys (web→mail→in-person)

# Additional Examples of Web-push surveys from mail start

- Flanders-Belgium (web→mail)
- United Kingdom Longitudinal Surveys (web→mail→in-person)
- Private sector gas and electric customer surveys (web→mail→telephone)
- The Netherlands, multiple household surveys (web→mail→in-person?)
- U.S. National Child Health Survey (Phase 1 screening, web + mail, Phase 2 data collection, web+mail)

# Other surveys web-push surveys, including some in the planning stages

- All 28 European Union members, Fundamental Rights Survey
- Germany GESIS Panel and other surveys
- United States 2020 Census
- United Kingdom 2021Census
- United Kingdom Active Lives Survey
- City, County, State and Province surveys in many countries

# Different countries face different challenges

- Different countries and sponsors have different possibilities for contact.
  - Postal addresses.
  - City/country residential listings.
  - Voter registration lists.
- Some address lists have names; others do not.
- Some countries are trying to replace telephone, others are looking for lower cost alterative to in-person interviews.
- Some surveys need very high responses; others do not.
- Some surveys have email addresses and/or telephone numbers; others do not

# The future of web-push surveys

- We are well passed the time in which a single way of doing surveys would dominate data collection.
- This is a “tailored design” era of fitting methods and combinations of survey modes to the survey situation.
- Whether the use of web-push surveys increases depends upon a lot of considerations, one of which the extent to which certain challenges can be resolved.

# Part 4. Emerging Issues that require solution-oriented research

# 1. Obtaining the right respondent

- Some address lists require respondent selection. The Kish household listing approach and most-recent birthday methods seem not to work well.
- Researchers continue to question these approaches, but we have not yet come up with better ones.
- A recent paper suggests that how we explain who should respond to household increases the likelihood that respondent-selection will work (Olson and Smyth, Public Opinion Quarterly, Summer 2017.) But, more work needs to be done.

# 2. How can we obtain and link postal, email, and telephone contact information?

- Email augmentation seems very powerful—we can clearly make it easier to respond over the Internet with electronic links, but we've not yet been able to find and link email to postal addresses in a comprehensive (high coverage) manner.
- Finding and linking telephone numbers is biased towards older, more established households. The power of telephone is likely to be much greater as a follow-up contact, rather than as an initial contact.
- Many surveyors don't request more than one contact mode, but when possible this is now very helpful for improving coverage.

# 3. What makes web-push communications effective?

- One reason web-push is effective is that the initial postal contact **legitimizes** responding over the Internet.
- Multiple postal and other types of contacts makes it possible to get more messages into a household, which if done well, provides multiple chances to encourage completion of a questionnaire.
- The contrast with RDD telephone and only 3-5 seconds of contact is huge!
- A systems approach is needed, focusing on how to get the initial envelope opened, where an incentive should be placed so it will help get the first letter read, how subsequent communications need to change to better target non-respondents, how a paper questionnaire can be designed and connected to getting more people to respond over the web, etc.
- Past research has not been focused in this way. We can do better.
- If I were starting my career over, this is where I would probably focus my research!

# 4. Is it time to rethink the legitimization and use of incentives

- Incentives are more acceptable than in the past.
- Pushing respondents from mail contact to web-response has succeeded in sample surveys because of incentives sent with the request.
- Incentives should probably not be used in some situations , for example, mandatory Census questionnaires.
- We need to get past the pre vs. post “payment” debate.
- Instead we need to consider:
  - Using both pre and post incentives in complementary ways.
  - Consider dividing pre-incentives between initial mode and alternative mode.
  - Link post incentives to mode of (most desired) response.

# 5. Should we "push" smartphone alternatives to laptops and tablets?

- Unified-mode construction of survey questions remains important.
- Smartphones are forcing a reconsideration of how we ask questions. Branching works, but too many words does not.
- Some question formats do not work well on smartphones, and this raises concerns about formats like 0-10 scales, labelling vs. not labelling scales, grids with lengthy item labels and scale choices.
- Responding on smartphones is comfortable for some, but not others.
- Their use raises multiple questions, and I suspect more are on the horizon.

# Conclusion

- Over the course of my career I have become used to things changing and ideas I once thought were pretty good ones, needing to change.
- Thus, I expect the ideas I have described today are destined to change.
- I also think we are past the era of talking about “the best survey method” and we are going to be in a mixed-mode kind of era for quite awhile.
- I am also feeling optimistic. At the beginning of this century there was a great deal of talk about all survey modes producing poor response rates and estimates.
- Web-push mixed-mode surveys may be turning that around.
- It gives us more tools to work with (e.g. multiple means of contact and communication) and thus reasons for optimism.

# Concluding Observations

- This is a challenging time for survey methodology.
- Mixed-mode designs are not anyone's preferred way of doing surveys, but provide a means of coping with disjuncture between what we would like respondents to do and what they are able and willing to do.
- Web-push methods are a means of attempting to bridge the gap between technological change (Moore's Law) and human adaptation.
- To adapt it seems likely we'll continue to do what survey methodologists have always tried to do—be neither too far ahead nor behind where our respondents are.

# For additional detail on ideas included in this presentation, these sources should be especially helpful

- Dillman, D.A., Smyth, J.D., Christian, L.M. (2014). *Internet, Phone, Mail and Mixed-Mode Surveys; The Tailored Design Method 4th edition.* Available from: John Wiley Co. Hoboken, NJ
- Dillman, D.A. (2017). *The promise and challenge of pushing respondents to the web in mixed-mode surveys. Survey Methodology, Statistics Canada. Vol.43 (1)* http://www.statcan.gc.ca/pub/12-001-x/2017001/article/14836-eng.pdf

# Additional articles, page 1


1. Edwards, Michelle L., Don A. Dillman and Jolene D. Smyth. 2014. An Experimental Test of the Effects of Survey Sponsorship on Internet and Mail Survey Response. Public Opinion Quarterly. 78 (3): 734-750.

3. Messer, Benjamin L., Michelle L. Edwards, & Don A. Dillman. (2012). "Determinants of Web & Mail Item Nonresponse in Address-Based Samples of the General Public." Survey Practice, April:. http://wwww.surveypractice.org

4. Smyth, J.D., Dillman, D.A., Christian, L.M., & O'Neill, A. (2010). "Using the Internet to survey small towns and communities: Limitations and possibilities in the early 21st century." American Behavioral Scientist 53: 1423-1448.

5. Messer, Benjamin L. and Don A. Dillman. 2011. "Surveying the General Public Over the Internet Using Address-Based Sampling and Mail Contact Procedures." Public Opinion Quarterly 75(3):429-57.

6. Millar, Morgan M. and Don A. Dillman. 2011. Improving Response to Web and Mixed-Mode Surveys. Public Opinion Quarterly 75 (2): 249-269

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8. Dillman, D.A., Smyth, J.D., Christian, L.M. 2014. Internet, Phone, Mail and Mixed-Mode Surveys; The Tailored Design Method 4th edition. (John Wiley Co. Hoboken, NJ)

9. Edwards, Michelle L., Don A. Dillman and Jolene D. Smyth. 2014. An Experimental Test of the Effects of Survey Sponsorship on Internet and Mail Survey Response. Public Opinion Quarterly. 78 (3): 734-750.

10. Dillman, Don A., Feng Hao, Morgan M. Millar. 2016. Chapter 13. Improving the Effectiveness of Online Data Collection by Mixing Survey Modes. In Fielding, Nigel, Raymond M. Lee and Grant Blank. The Sage handbook of Online Research Methods, 2nd edition. Sage Publications, London.

# Thank you!

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