Including Respondent Perspectives in International Survey Development to Improve Quality and Comparability of Data across Languages

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About the Speakers

- Center for Behavioral Science Methods at the U.S. Census Bureau
  - Main mission: questionnaire design and pretesting
  - Language and Cross-Cultural Research Group
    - Review and pretesting of survey translations in non-English languages
    - Research impact of language on quality of our data as well as other measurement issues
  - Main areas of focus:
    - 1. Self administered paper and internet questionnaires
    - 2. Interviewer administered questionnaires
    - 3. Supplemental survey materials: Brochures, letters, website landing pages

Outline of the talk

1. Complexity of multilingual survey design: An example

2. Survey Translation (brief overview)

3. Pretesting of survey instruments in a cross-cultural, multilingual context
   - 3a: Expert review
   - 3b: Cognitive interviewing
   - 3c: Usability testing

4. Emerging methods for multilingual questionnaire design

1. The Complexity of Multilingual Survey Design

- Goals:
  - To ask the same questions across diverse types of survey respondents both within and across language groups
  - Comparable understanding by respondents
  - Collection of parallel data across diverse populations

An Example of Complexity: Education Level

- Asking about education level on the American Community Survey (ACS)
- About the ACS:
  - Monthly survey: samples 3.5 million U.S. addresses per year
  - Multi-mode:

    Internet → mail → telephone → in-person
  - Spanish versions:

    Stateside and Puerto Rico

Translating the ACS Education Questions: Types of Issues Uncovered

ACS education question wording:

"The next questions are about schooling and education. At any time <u>in the last 3 months</u>, have you attended school or college? Include only nursery or preschool, kindergarten, elementary school, home school, and schooling that leads to a high school diploma or a college degree."

Issues identified through testing:

- Confusing terms,
- Complex question wording
- Conceptual mismatch across cultures

Spanish translation of ACS education question

"Las siguientes preguntas son sobre instrucción y educación. En cualquier momento <u>durante los últimos 3 meses</u>, ¿asistió usted a una escuela o universidad? Incluya sólo guardería infantil o preescolar, kindergarten, escuela elemental, enseñanza en el hogar y escuela que conduce a un diploma de escuela secundaria o un título universitario."

- Enseñanza en el hogar/ "teaching in the home"
  - Online classes, Bible school, lessons taught by parents
    - Culture, table manners, moral principles

Additional Issue: Use of ambiguous terms

Q: "What is the highest degree or level of school you have COMPLETED?"

 Response: "regular high school diploma"

 Spanish: "Diploma de escuela secundaria"

Results: U.S.: 12 years schooling

   Puerto Rico, Nicaragua, Peru, Venezuela: ok

   Mexico/Colombia: 9 years schooling

ACS Education Question: Solutions Attempted

1. Revision of confusing terms: attended → studied / asistió → estudió
2. Add English language term in parenthesis
   - Enseñanza en el hogar (home school)
3. Add definition: "read as necessary" / help text
   - Home school is…
4. Grouping appropriate terms for different countries together
   - Diploma de escuela secundaria o preparatoria (high school)

Results: Mixed

Successful:
- ➤ Replacement of confusing terms with synonyms
- ➤ Add English language term in parenthesis (home school) (especially in PR)

Not so successful: <u>need for adaptation</u>!
- ➤ Optional help text/definition while keeping confusing term
- ➤ Grouping appropriate terms for different countries together

2. Survey Translation: (Brief overview)

General (traditional) guidelines

Translation should:

- use same register as source

- not clarify or omit material from source

- contain equivalent qualifiers and modifiers to source but in appropriate order for target language
    - A red car.
    - Un coche rojo

Survey Translation: Problems with Assumptions

1. Is it possible and desirable to match register across languages?

2. Is it possible not to omit content from the source text and that no added explanation is needed?

3. Do equivalent qualifiers and modifiers exist across languages?

(See also Harkness, J.A., Braun, M., Edwards, B., Johson, T.P., Lyberg, L. Mohler, P., Pennel, B., Smith, T.W. (eds) (2010). <u>Survey Methods in Multinational, Multiregional, and Multicultural Contexts.</u> New Jersey, Wiley.)

Survey Translation: Current best practices

- Team or committee translation
  - Variety of expertise such as linguistic, cultural, survey methodology, subject matter
  - Team members each review whole survey or divide into segments
  - Reconciliation/adjudication meeting
  - Review, pretesting and documentation as critical components

- Knowledge of and experience with survey translation is important

3. Pretesting of survey instruments: Some example pretesting methods

- Pre-field methods
  - *3a. Expert review*
  - *3b. Cognitive testing*
  - *3c. Usability testing* (Geisen & Bergstrom 2017)
- Field methods
  - Behavior coding
  - Split panel field testing
  - Field observation
  - *4. Online non-probability panels*

3a. Expert Review

- Expert review can be completed as a step prior to respondent pretesting, or as a very basic evaluation of a translation when respondent pretesting is not possible due to time or budget constraints (Goerman et al 2018)
  - If translation was completed with a single translator, this method can incorporate a committee approach in the review step
- Expert review typically entails 3 or more independent reviewers who are fluent in the target language with a variety of backgrounds
  - Subject-matter expertise
  - Certified translator
  - Methodological expertise (e.g., survey methodoligst)

Expert Review

- Procedure
  - Independent research and review
  - Compiling reviewer comments
  - Consensus meetings
  - Documenting recommendations

- Advantages
  - Lower cost and potentially faster than in-person testing

- Disadvantages
  - Ideally, expert review should supplement but not replace respondent testing since respondents often react differently than "experts" to a text

Bringing in Respondent Perspectives: Cognitive Interviewing & Usability Testing

- 3b. Cognitive interviewing involves testing surveys via one-on-one interviews to evaluate whether respondents interpret, comprehend and respond to survey questions as intended. Respondents answer survey questions and are then asked probes to gauge interpretation/understanding.
  - Paper or interviewer administer surveys (telephone or in-person)
- 3c. Usability Pretesting traditionally focuses on the user experience when accomplishing tasks in web applications or web surveys
  - Efficiency
  - Effectiveness
  - Satisfaction

Typical cognitive interview methods/ probes

- Concurrent or retrospective probing

Probe types:

- Think aloud procedure

- Meaning oriented probes

- Process oriented probes

- Paraphrasing probes

- Recall probes

Resource: Willis, G. (2005). Cognitive Interviewing: A Tool for Improving Questionnaire Design. London, Sage.

Pretesting of Survey Instruments: Cognitive Testing in 3M* Contexts

- Little comparative pretesting research, however more related to cognitive testing than to other methods

- Often lack of complete pretesting of multi-lingual/multi-cultural instruments in practice

*Multinational, multiregional, multicultural

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Typical uses of cognitive testing in 3M projects

1. Part of development of cross-cultural/ cross-national instruments (eg. European Social Survey development)

2. To test pre-existing or newly developed translations for use within a country (eg. U.S. Census Bureau and other agencies)

- Main Goals:
    1. Identify terms, concepts, or questions that function differently across cultures
    2. Identify and test new revisions that would create more parallel questions across languages

Caveat: Cultural differences among cognitive interview/usability testing respondents

- Cognitive testing method developed with Western respondents in mind

- Evidence that some language/cultural groups have difficulty with typical techniques and probe wording
  - Spanish, Chinese, Korean and Russian speakers in U.S. (Goerman, 2006; Pan et al., 2010)

- Ongoing research on target populations for web instruments in non-English languages (how bilingual? How internet proficient? How form literate?)
  - Spanish (Goerman, 2018; Garcia Trejo, 2017)

2 Examples to illustrate the importance of Respondent Testing

Example 1: Difficulty with parallel meaning: ACS Advance letters

- Letters translated into Spanish, Chinese, Korean, Vietnamese and Russian
- Messages:
  - Survey will be coming, response required, why important
- Issues varied by language:
  - Too long, strange order, intimidating legal language, hard to understand main point

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ACS Advance letters: Solutions

English (Western) letter writing conventions:

- Main message first
- Background or detailed information later

Asian language letter writing conventions:

- Politeness, establish common ground
- Main message at end

Solution: Change ordering of letter, include additional explanation for relevant languages

* Pan, Hinsdale, Schoua-Glusberg, Park (2006)

http://www.census.gov/srd/papers/pdf/rsm2006-09.pdf

Example 2: Difficulty with Parallel meaning: Names, English v. Russian

Confusion about "middle initial" in Russian:

Replacement with Первая буква отчества (first letter of patronymic) in second round of testing

4. Emerging Methods in Survey Translation and Pretesting

4a. Optimizing web design to improve language access

4b. Research on data quality in online cognitive testing

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4a. Emerging Methods: Optimizing Web Design to Improve Language Access

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Internet access and digital affinity

- In our experience pretesting multilingual surveys, internet use is not necessarily synonymous with digital affinity*

Internet Use
-Social media
-Emailing
-Texting
-Googling
-Apps

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Digital Affinity
-Online banking
-Online shopping
-Filling out applications
-Paying bills

*García Trejo, Yazmín A., and Alisú Schoua-Glusberg. 2017. "Device and Internet Use among Spanish-Dominant Hispanics: Implications for Web Survey Design and Testing." *Survey Practice* 10 (3).

Is internet access enough?

- Internet access and usage are necessary but not sufficient to enable completion of surveys online

- Translation of text is also not enough

- Adaptations may be necessary to help respondents complete unfamiliar tasks:
  - Accessing websites via URLs
  - Toggling languages
  - Security procedures

The best translation in the world is not helpful if respondents cannot access your translated materials online.

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Tips for designing URLs

- If possible, URLs should
  - Be delivered electronically
  - Be searchable
  - Be short and simple
  - Send respondents directly to target-language version of landing page. (Try not to send them to a landing page in English where they need to toggle the language.)

Respondent expectations for online surveys

- Many respondents in non-English interviews react in surprise when they receive bilingual mailing materials but then follow a URL to a landing page in English.
    - Some use the machine translation offered by their browsers.
    - Many break off without even searching for a toggle. Why?

Gricean maxims

- Gricean Maxims (Grice, 1976) are conversational norms that say that when two people communicate,
    1. Each assumes the other is trying to *cooperate* in order to convey information
    2. Each tries to give information that is *relevant* using a method that is *understandable*.

Respondents assume we will take them to the most relevant resources

Gricean maxims and online surveys

- When the U.S. Census Bureau mails participants a letter in Spanish, participants assume the Census Bureau knows that they speak Spanish.

- The participants follow the URL, and when the page is in English, they assume that if a Spanish page were available, the Census Bureau would have sent participants to the Spanish page from the Spanish letter.

- Therefore, there must not be a Spanish version available.

- This is not surprising because they often encounter situations in the U.S. where no Spanish translation is available to them.

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Tips for setting up language toggles

- Whenever possible, take users directly to the target-language landing page

- Try to put the language toggle in a prominent position relative to the task the respondent will be completing

What is a "prominent position?"

❌ Text in English.
❌ Not prominent.
❌ Mobile version harder to notice:

Primary task

This is where most respondents' eyes are attracted on the screen

Select Language ▾

United States Census Bureau | FAQ | Instruct...

Welcome to the 2016 Census Test.

You will need the materials ... order to start. All the information that you provide will remain confidential.

Please Log In

Please enter the 14-digit User ID found below the barcode on the materials we mailed to you.

User ID:

[ ] - [ ] - [ ]

Login

If you do not have a User ID, click here.

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Alternate designs being researched

Mobile Design

✓ Toggle menu text is shorter. Currently doing A/B testing of "English" versus "Languages."

✓ Menu is "sticky" and stays at the top of the screen when you scroll

✗ Mobile design still not prominent

- It's quick and easy. The 2020 Census questionnaire will take about 10 minutes to complete.
- It's safe, secure, and confidential. Your information and privacy are protected.
- Your response helps to direct billions of dollars in federal funds to local communities for schools, roads, and other public services.
- Results from the 2020 Census will be used to determine the number of seats each state has in Congress and your political representation at all levels of government.

Getting

- You n...
  quest...
- Do n...
  butto...
- For b...
  Safar...

✓ Additional toggle located near primary task

ONS 🌐 ENGLISH ▾

Shape your future
START HERE ➤

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Census 2020

Start Questionnaire
Comenzar el cuestionario
开始问卷调查
Bắt đầu Bản Câu Hỏi
설문지작성시작
+ More languages

Census 2020

≡

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United States®
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Welcome to the 2020 Census

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Tips for setting up language toggles

- Make sure the toggle is "sticky" and stays at the top of the screen when scrolling.
  - Above the fold in mobile designs
- Some platforms allow programmers to optimize which version of a page is displayed based on the user's browser settings
  - More research is needed on how often browser language settings are correct
- Another option is a forced choice design, where users are asked to select their language to continue

Experimenting with a forced choice toggle

- The number of participants accessing the Spanish version of the survey was lower than anticipated, despite using a design that optimized language based on respondent's browser settings.

- Experiment: Test group of users shown a forced choice language question on the second screen of the instrument; Control group received no intervention

Experiment results

- We found a small but statistically significant improvement in the number of respondents accessing the Spanish instrument*.

- There was no differential dropout by condition, which suggests English-speakers were not adversely impacted

- After 2 weeks of data collection, we implemented the forced choice design for all users

- Results may have been more robust without optimization based on respondents' browser settings, and if the forced choice question appeared on the first screen (instead of the second)

*Meyers, M., Eggleston, C., and Otero Class, B. "Improving User Experience for Spanish-speaking Respondents by Evaluating a Language Toggle Experiment in the Household Pulse Survey." Forthcoming.

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Tips for language toggle visual cues

- Be careful about icons (e.g., flags)
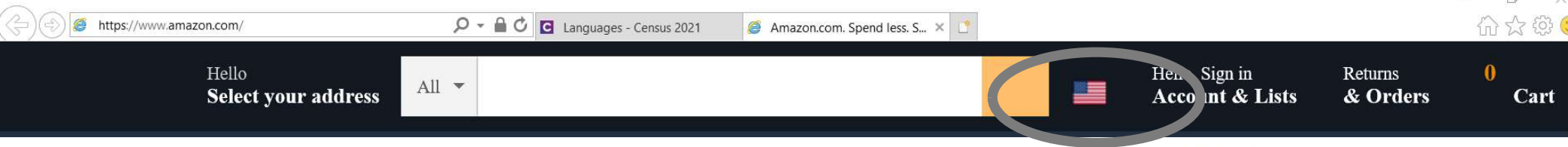
Alternatives

- List languages in both the target language and English when possible
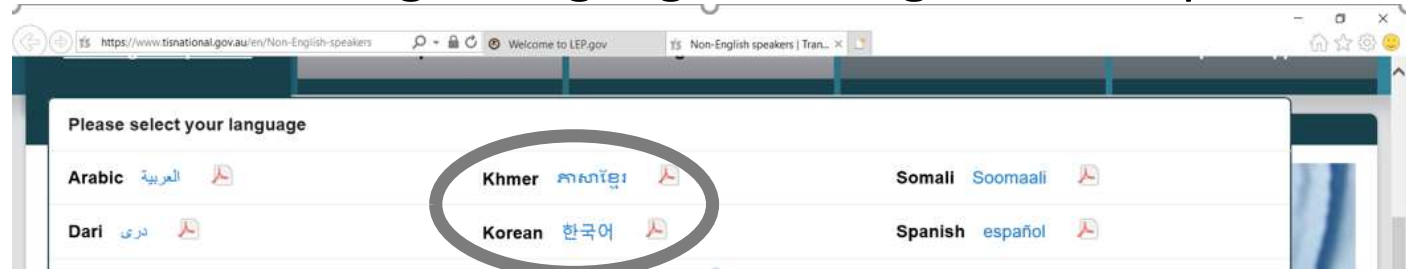
Language Toggle Design

- Digital.gov Multilingual Community of Practice recently set up a task force to provide recommendations on this issue.
  - Recommendations will be posted on the United States Web Design Systems site in fall of 2022, but are available on request
- U.S. Census Bureau has been conducting non-probability online panel testing with monolingual and bilingual respondents to compare different designs
  - Data analysis in progress – stay tuned!

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4b. Emerging Methods: Research on Data Quality in Online Cognitive Testing

Background

- Usage of Online opt-in panels is increasing.
- Online panel providers have tools to "scrub" data, but little is known about how these processes are calibrated in other languages.
    - There might be few staff dedicated to non-English languages
    - Algorithms that detect data quality problems may be optimized for English but not optimized for other languages.
- How can we tell if the data quality in opt-in online panels is comparable across languages?
- We used data from open-ended responses to online cognitive interviews to explore data quality issues across languages.

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Research Questions

- How can open-ended probes serve to identify response quality issues in online cognitive interviews using online opt-in panels in English and Spanish?

- Are response quality issues identified in open-ended probes different (or similar) across English and Spanish responses in online cognitive interviews using a large U.S. based online opt-in panel?

- If poor quality cases (i.e., disingenuous respondents) are identified, are open-ended probes helpful in determining which responses should be eliminated and/or replaced?

Data

Concept	Description
Data	Online cognitive interviews to pretest questions for the 2020 Census Attitudes Survey using an online opt-in panel.
Languages	English and Spanish.
Dates	July 2019.
Contents	18 survey questions and 13 probes.
Number of cases	463 unedited completed cases (265 in English and 198 in Spanish).
Completion rate	0.14%

Methods

Coding scheme (Kennedy et al. 2021).

Nvivo

Exploratory analysis

Findings, Limitations and Future Research

Source: Icons from the Noun Project https://thenounproject.com/

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This paper has been reviewed for disclosure avoidance and approved under CBDRB-FY19-546.

Coding categories for problematic responses

1. Incomplete responses

2. Non sequitur

3. Copied survey text

4. Random typing

5. Profanity
6. Repetitive textual pattern

7. Respondent discloses they are not a Spanish-speaker

Can Open-ended probes identify response quality issues in online panels in English and Spanish?

Average of Valid Responses and Problematic Responses Across Probes By Language

Source: 2020 U.S. Census Attitudes Survey.

This paper has been reviewed for disclosure avoidance and approved under CBDRB-FY19-546.

Do Open-ended probes in Spanish have more response quality issues than in English?

Type of Problematic Responses by Language
Average Percentage Across Probes

■ English
■ Spanish

Y-axis: Average Percentage (0% to 100%)
X-axis: Type of Problematic Responses

Type	English	Spanish
Incomplete responses	7%	6%
Non sequitur	26%	26%
Copied survey text	1%	2%
Random typing	21%	7%
Profanity	2%	2%
Respondent discloses they are not Spanish speakers	0%	3%
Repetitive textual pattern	42%	54%

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Are open-ended probes helpful in determining which responses should be eliminated and/or replaced?

- We defined "speeders" for the purposes of this exploratory research as participants whose time to complete the main survey was less than 4 minutes in each language.

Quartile of the duration of the survey	Average number of problems (13 probes)
English	
Q1 (0-25) "Speeders"	8.2
Q2 (25-50) "Speeders"	3.9
Q3 (50-75)	2.5
Q4 (75-100)	2.4
Spanish	
Q1 (0-25) "Speeders"	9.8
Q2 (25-50) "Speeders"	8.3
Q3 (50-75)	4.5
Q4 (75-100)	3.3

This paper has been reviewed for disclosure avoidance and approved under CBDRB-FY19-546.

Selected Findings

Research Questions	Selected findings
1. Can open-ended probes identify response quality issues in online panels in English and Spanish?	▪ Analysis of open-ended probes identified response quality issues in English and Spanish.
2. Do open-ended probes in Spanish have more response quality issues than in English?	▪ Evidence of more problematic responses in Spanish compared to English.
3. Are open-ended probes helpful in determining which responses should be eliminated and/or replaced?	▪ Exploratory analysis of open-ended probes helps identify problematic behaviors that are missed when only using more traditional methods for verifying data quality issues like "speeders."

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Limitations

- The raw data that we started with was likely of poorer quality than what researchers might typically receive from online opt-in panels.

- Respondent burden is greater when answering open-ended probes as compared to closed-ended items.

Further Research

- Discuss and develop standards for recruitment with opt-in panel vendors when including non-English-speaking respondents.

- Conduct research comparing online opt-in panels across vendors.

- The study of non-response bias in online pretesting studies may become a necessary topic of discussion.

Take-aways for researching with online non-probability panels

- Ask online panel vendors about their recruitment strategies.

- Add language related questions to your screener that align with your research questions when needed.

- Add open-ended probes and analyze them (if time permits) along with your traditional data quality checks.

How can new agencies start to implement these methods?

- Factor translation and pretesting into development schedules

- Become familiar with best practices and existing resources (see next 2 slides for examples)

- Collaborate with others who have experience with the methods

- Plan for adaptations needed to make translations accessible online

- Consider how open-ended responses can help researchers better understand the quality of data collected in online panels

- Start small, implement new methods little by little or with a smaller number of languages at first

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Survey Translation Resources

1. Goerman, P.L., Meyers, M., and Garcia Trejo, Y. (2018). "The Place of Expert Review in Translation and Questionnaire Evaluation for Hard-to-Count Populations in National Surveys". GESIS Proceedings Band 9 Surveying the Migrant Population. GESIS 2018, 116 S Online: available: https://www.ssoar.info/ssoar/bitstream/handle/document/58074/ssoar-2018-behr-Surveying_the_Migrant_Population_Consideration.pdf?sequence=1

2. Cross Cultural Survey Guidelines: http://www.ccsg.isr.umich.edu/translation.cfm

3. European Social Survey guidelines: http://www.europeansocialsurvey.org/docs/round6/methods/ESS6_translation_guidelines.pdf

4. Pan, Y., Sha, M. and Park, H. (2020) The Sociolinguistics of Survey Translation. New York: Routledge.

5. U.S. Census Bureau Translation Guidelines https://www.census.gov/srd/papers/pdf/rsm2005-06.pdf

Multilingual Pretesting Resources

- Cross-cultural survey guidelines
  http://www.ccsg.isr.umich.edu/pretesting.cfm

- Geisen, E. and Romano Bergstrom, J. (2017). Usability Testing for Survey Research. Cambridge, Elsevier, Inc.

- International Workshop on Comparative Survey Design and Implementation http://www.csdiworkshop.org/

- Q-bank database, hosted by National Center for Health Statistics http://www.cdc.gov/QBANK/Home.aspx/

Including Respondent Perspectives in International Survey Development to Improve Quality and Comparability of Data across Languages

Thank you!

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