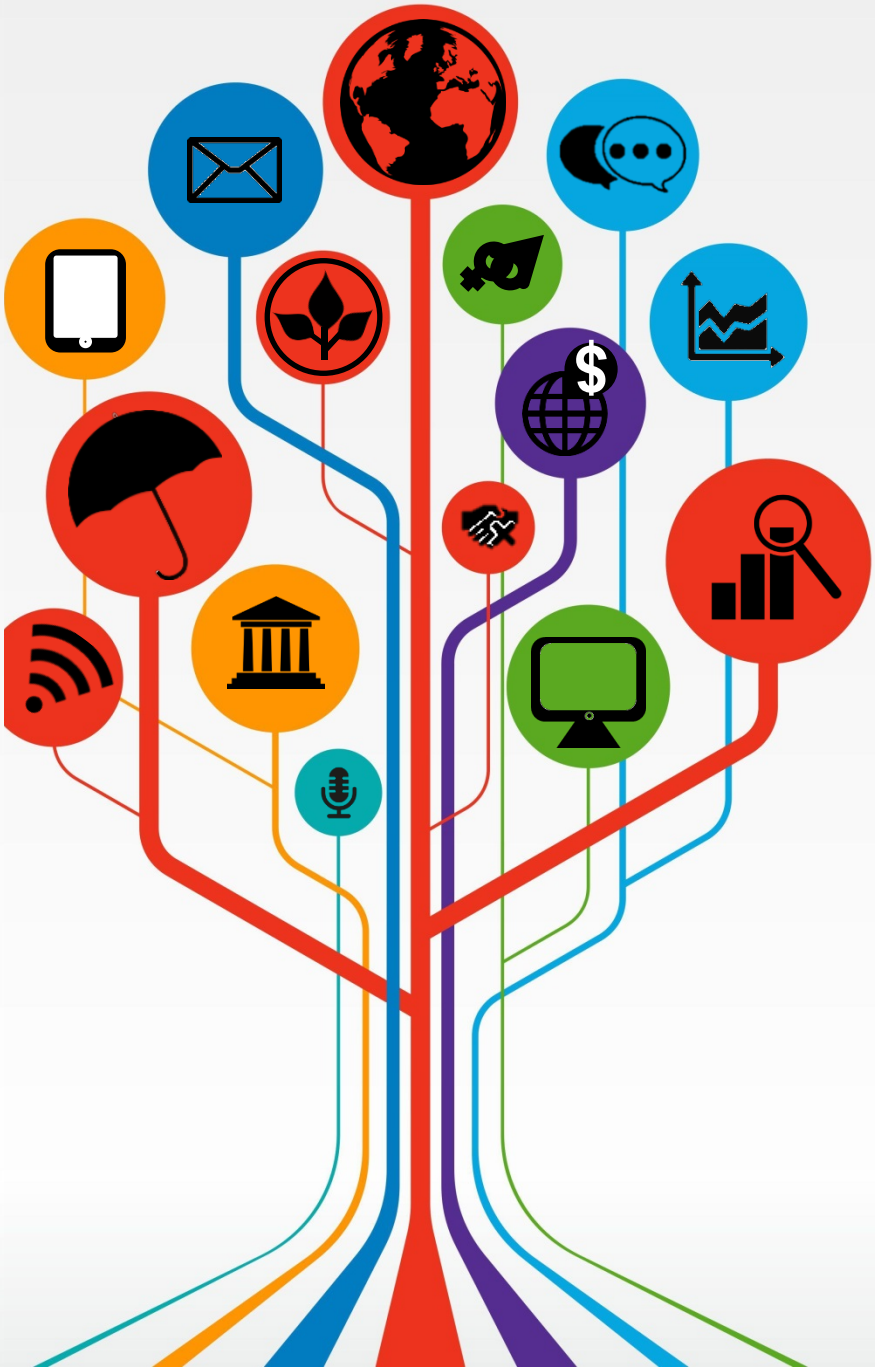
FIELD COORDINATOR WORKSHOP

Manage Successful Impact Evaluations

18 - 22 JUNE 2018
WASHINGTON, DC



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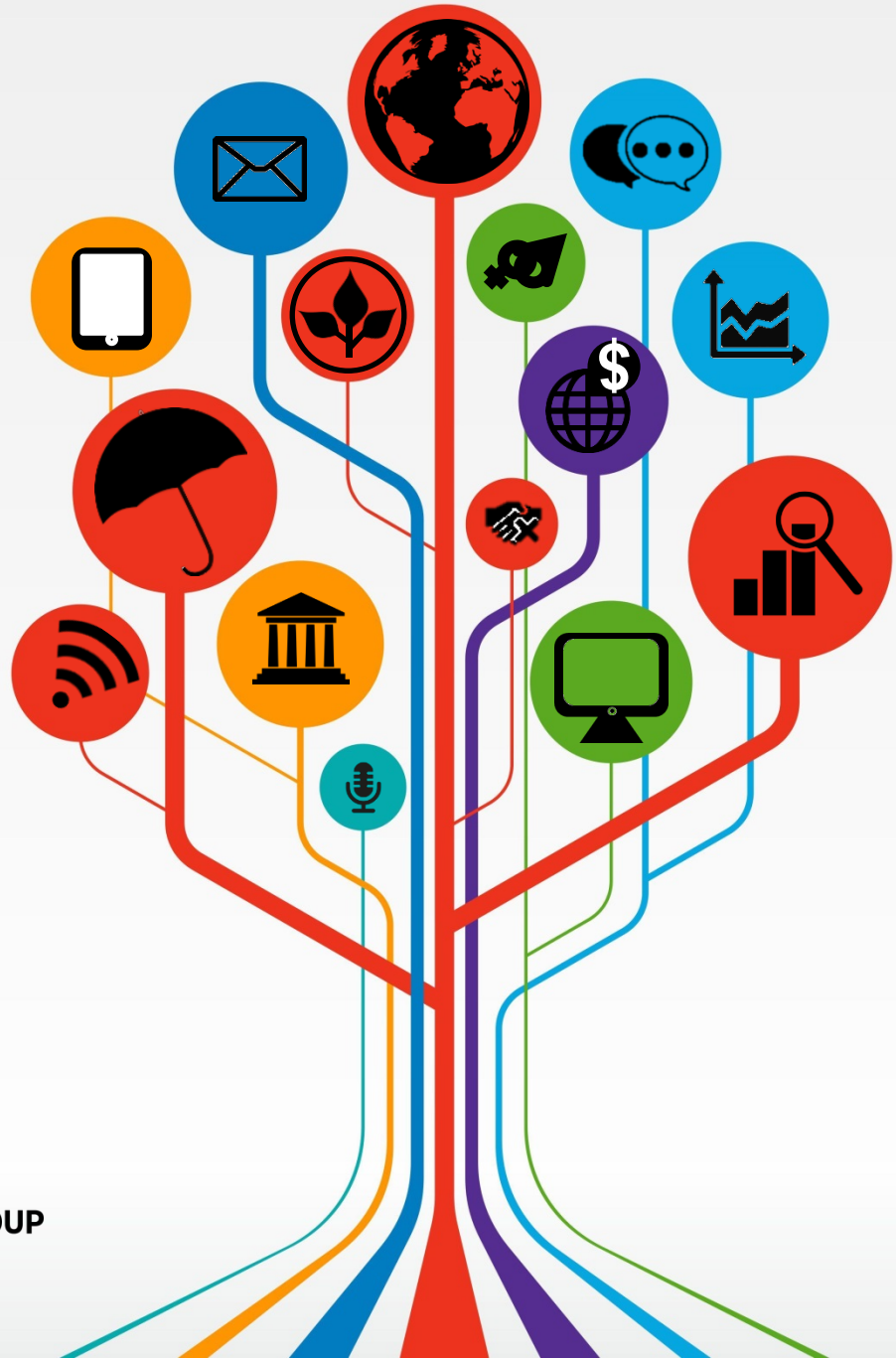
TRANSFORM DEVELOPMENT

WORLD BANK GROUP

Survey Instrument Design & Pilot

Maria Jones & Laura Costica

18 June 2018



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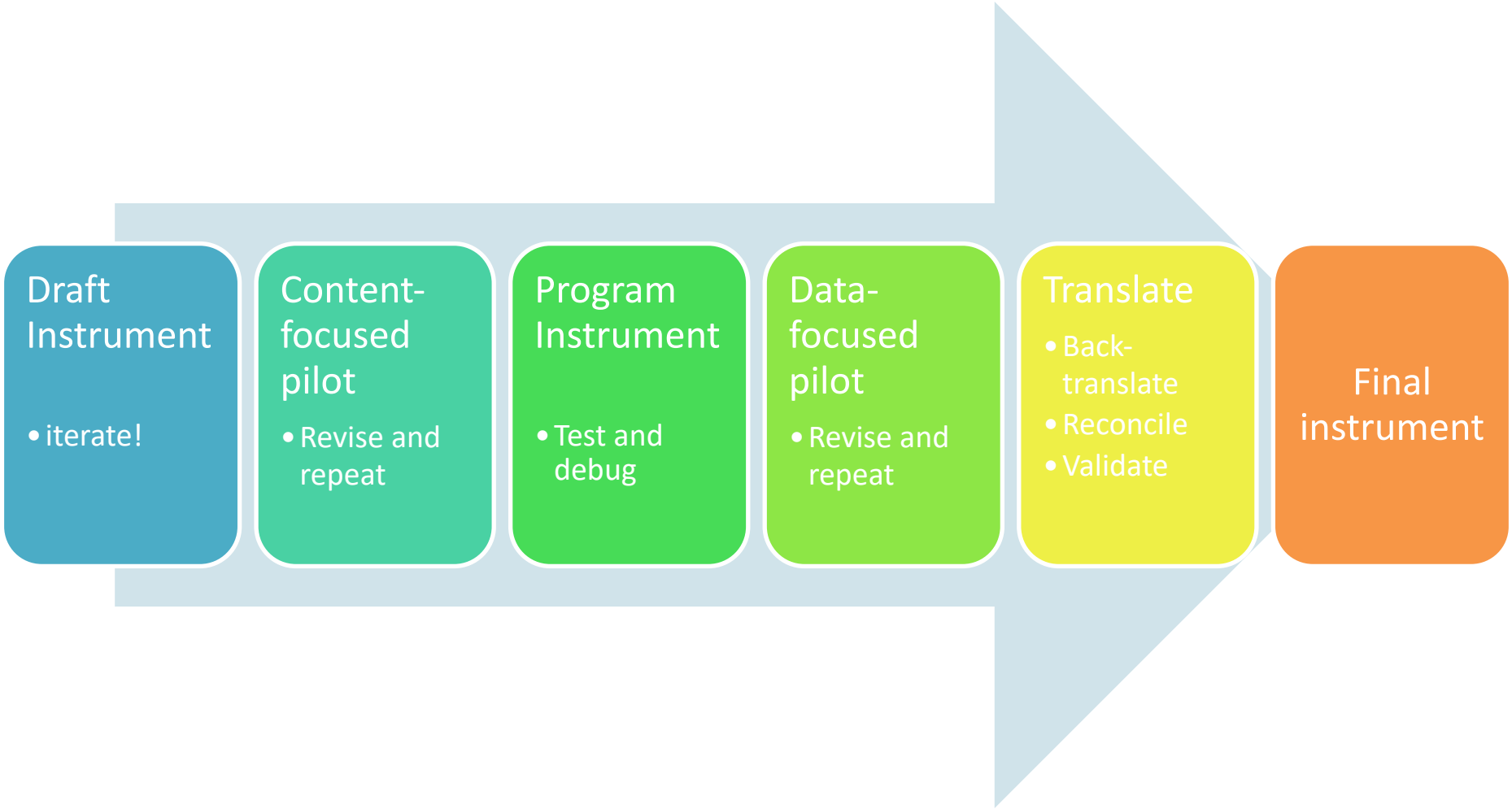
process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draft survey instrument

1. Start by outlining modules
   - Work from theory of change and pre-analysis plan
   - Input from research team (RT) critical

2. For each module:
   - Draft bullet list of key indicators
   - Discuss and agree on relevance and looping
     - Does the section apply to all HHs?
     - Repeat questions for all HH members?
     - Repeat for all plots a HH has or set a maximum?

3. Develop survey questions for each module
   - Do not start from scratch! (see next slide)

→ If a follow-up survey, work from the previous round, and only modify questions if absolutely necessary. Better to add or subtract than change.

draft survey instrument

- Do not create questions from scratch!

- Start with a literature review of existing, reliable, well-tested surveys
  - Surveys in same country (regardless of sector)
  - Surveys in same sector (regardless of country)
  - A good source is microdata.worldbank.org; all catalogued studies include questionnaires and related documentation

- Compile relevant questions from existing surveys for each module
  - Add a column noting source for each question (e.g. LSMS, DHS, original)

- New tools from DIME Analytics forthcoming …
  - Questionnaire library on the new World Bank SurveyCTO server
  - Gold Standard modules, reflecting best practices in content and programming

measurement challenges

- Think carefully about which indicators will be hard to measure
  - Things people do not know very well
  - Things people do not want to talk about
  - Abstract concepts

- Best to directly observe indicators whenever possible
  - Please read this sentence to me "…" is a better question than "Can you read a simple sentence?"

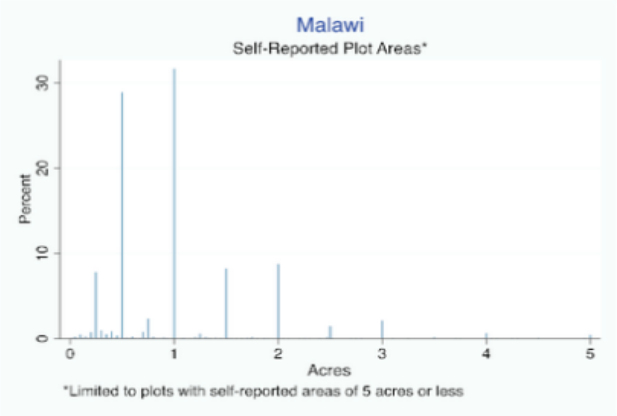
challenge 1: things people don't know well

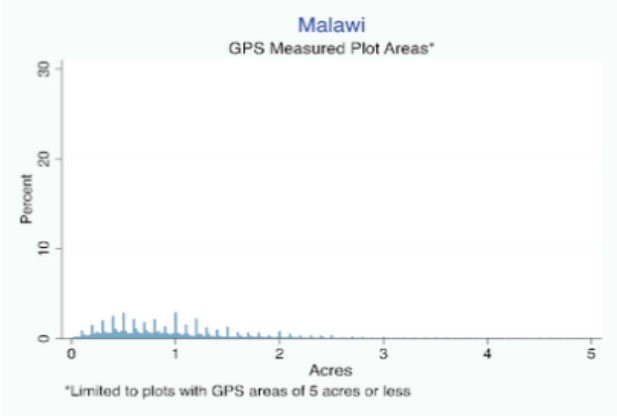
- Anything respondent has to estimate, particularly across time.
  - **Eg:** distance to grocery store, profit, consumption, income, plot size
  - Prone to error due to long recall, math errors, low levels of numeracy

- Strategies:
  - Avoid
    - E.g. through frequent follow-ups or diaries, or direct observation
  - Build consistency checks into the instrument
    - Error! Amount harvested < amount consumed.
    - Enumerator verifies with respondent in real time
  - Multiple measurements of same indicator
    - How many minutes does it take to walk to the grocery store?
    - How many miles away is the grocery store?

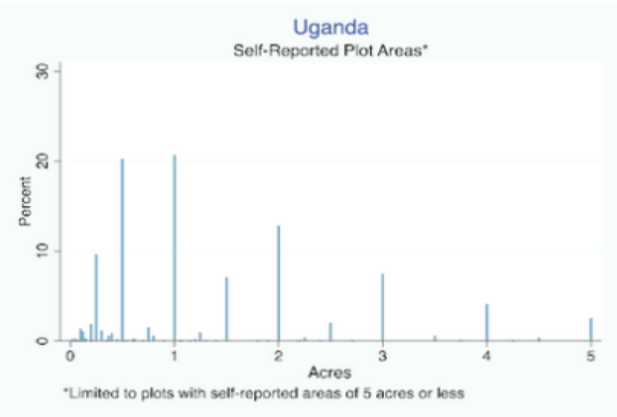
challenge 1: things people don't know well

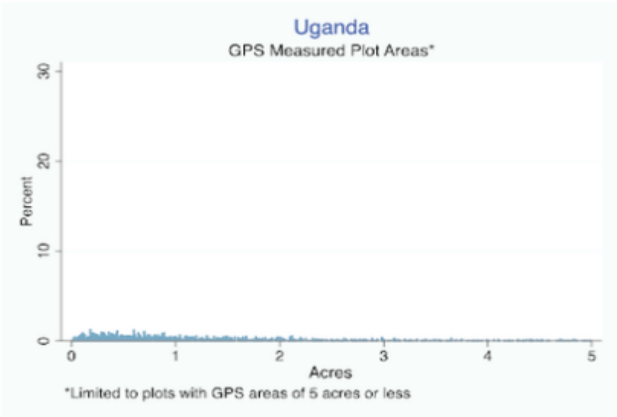
Malawi





Uganda





Carletto, Calogero; Gourlay, Sydney; Winters, Paul. 2013. *From guesstimates to GPStimates : land area measurement and implications for agricultural analysis (English)*. Policy Research working paper ; no. WPS 6550. Washington, DC: World Bank.

challenge 2: sensitive questions

- Anything socially “risky” or something painful
  - E.g. sexual activity, alcohol and drug use, domestic violence, etc
- Strategies:
  - Don’t start with the hard stuff!
  - Always ensure the comfort and privacy of respondent
  - Consider asking the question in third person
  - Possibility of self-administration of certain modules?
  - Frame questions to avoid social desirability bias
  - Methods: list randomization

challenge 2: sensitive questions

Question:	Estimated Prevalence per 100 Males in Population	
Have you ever . . .	*Paper Version*	*Audio-Computer Version*
Had sex with a prostitute	0.7	2.5
Had intercourse with a female	68.1	63.9
Made a girl pregnant	7.9	6.5
Had sex with another male	1.5	5.5
Taken street drugs using a needle	1.4	5.2

Data: 1995 Survey of Adolescent Males (aged 15-19)

F. Turner, Charles & Ku, Lydia & M Rogers, S & Lindberg, Laura & Pleck, Joseph & Sonenstein, Freya. (1998). Adolescent sexual behavior, drug use, and violence: increased reporting with computer survey technology. Science 280: 867-873. Science (New York, N.Y.). 280. 867-73. 10.1126/science.280.5365.867.

challenge 3: abstract concepts

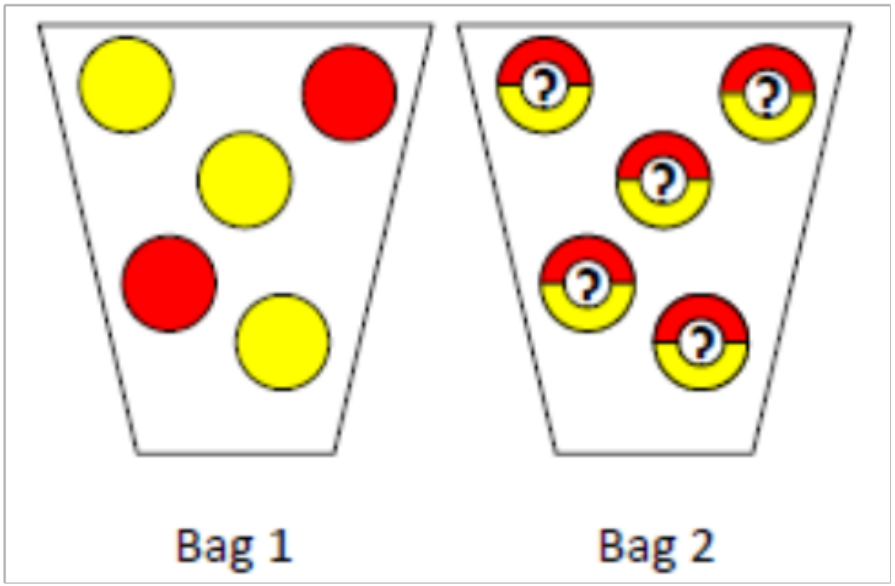
- **What: Empowerment, bargaining power, social cohesion, risk aversion…**
  - **Eg.** “I feel more empowered now than last year”

- **Strategies:**
  1. Define what you mean
  2. Choose the outcome
  3. Design a good measure

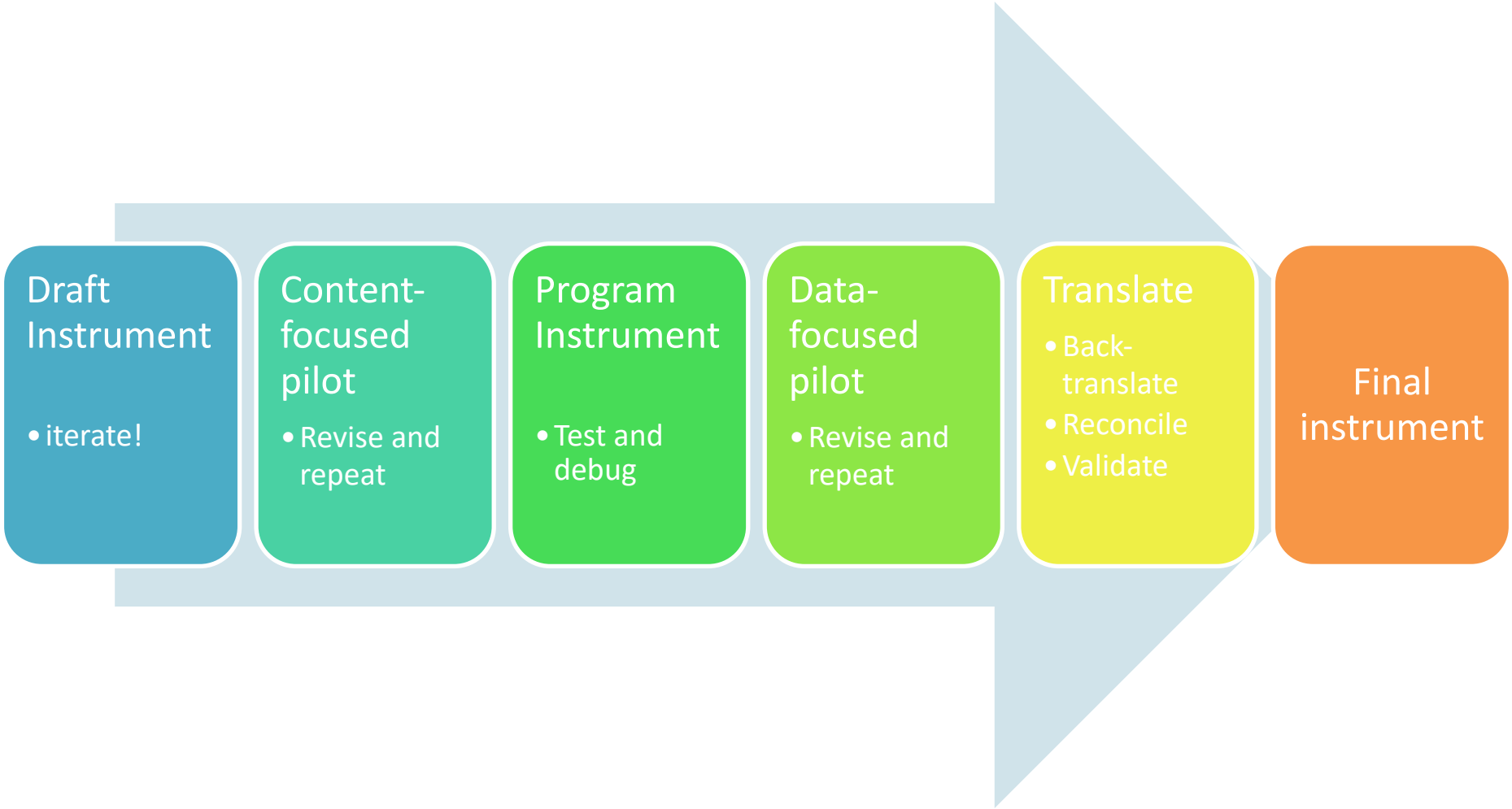
  E.g. “I decide together with my partner whether to send my child to private vs. public school”

challenge 3: abstract concepts

SECTION M: RISK AND AMBIGUITY AVERSION			
M1.1	You are going to play a game where you draw a ball out of a bag without looking. If the ball you choose is the "right" color, then you win. You get to decide which bag to choose the ball from. Bag One: In Bag One there are 4 RED balls and 6 YELLOW balls. You must pick a RED ball in order to win. Bag Two: In Bag Two there are 10 balls – some are RED and some are YELLOW. You decide what color ball wins. You must then pick this color ball to win. Which bag would you like to choose from?	1 = Bag 1 2 = Bag 2 88 = Don't know	|___|



process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content pilot

- "Pre-pilot"
  - **Objective**: Answer broad questions about survey design and context
  - **Mode**: Semi-structured interviews and focus groups
  - **Applies**: Necessary if designing survey from scratch
- Content-focused pilot
  - **Objective**: Missing questions? Missing answer options? Survey flow? Question wording? Survey length? Response variance?
  - **Mode**: Structured interviews
  - **Applies**: All new surveys. May omit for follow-up surveys *with few changes.*

why pilot on paper?

- Get **better information**
  - Record open-ended responses quicker
  - Draw lines and arrows between questions to suggest restructuring
  - Record observations and feedback in the margins
  - Make edits to wording or note translation problems directly in the text

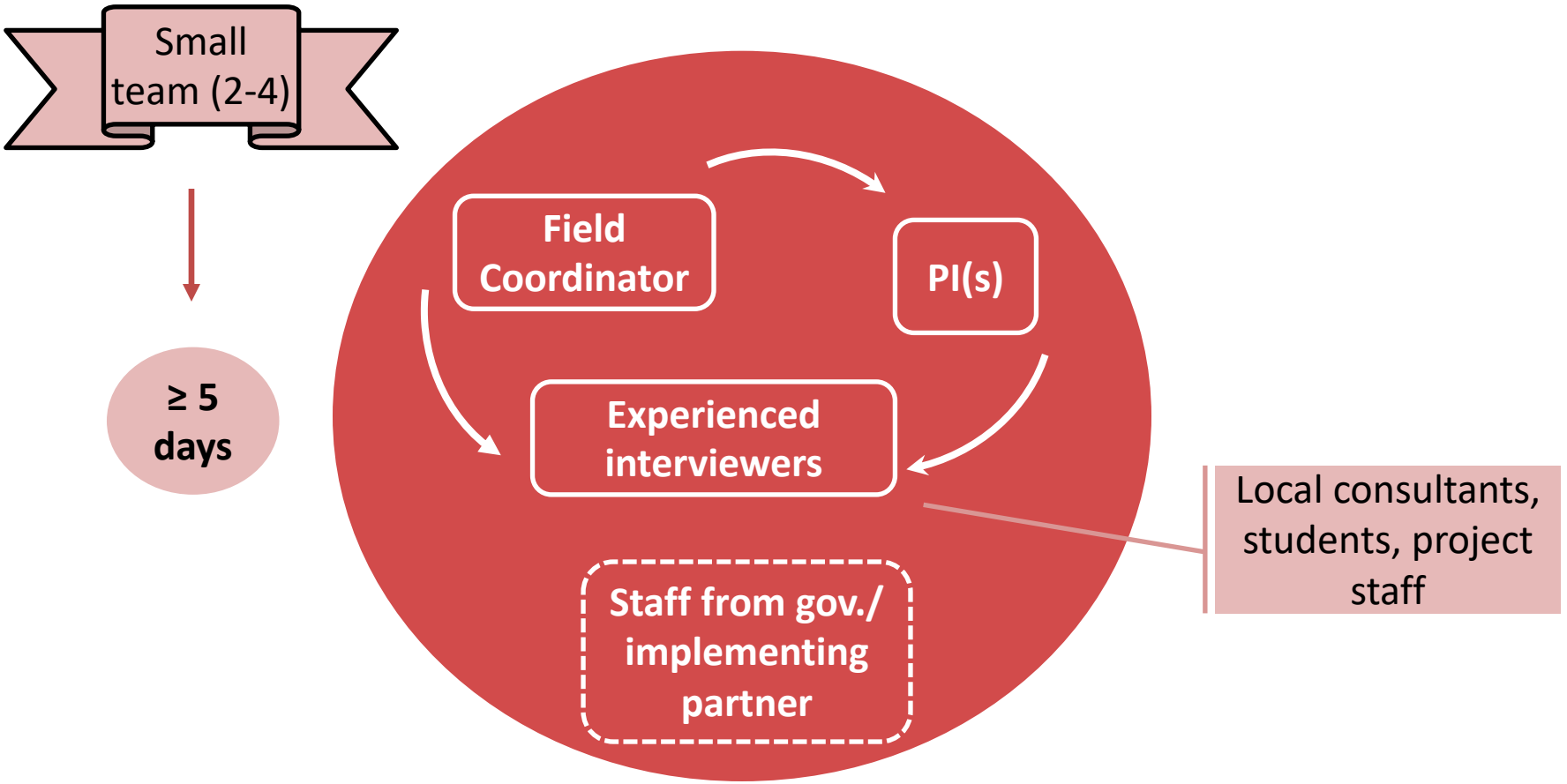
- **Pilot likely to result in significant changes** to the survey instrument
  - If already programmed, may hesitate to implement positive changes because of work required

- Revising programming can take longer than doing it from scratch

timeline

Pre-Pilot	1-2 weeks
Questionnaire Design	4 weeks
Questionnaire Translation	2-3 weeks
Content-focused pilot (& revisions)	2-3 weeks
IRB approval	{context dependent, concurrent to programming & data pilot}
Questionnaire Programming	4-6 weeks
Data-focused Pilot	2-3 weeks
Enumerator Training	2 weeks

who is involved?



planning an effective pilot

- Plan sufficient time for:
  - **Training** interviewers
  - Group **feedback**
  - **Revisions** based on feedback
- **Goal**: pilot until there are no more changes, min 1 week
  - PI present: debrief and edit survey at the end of each day
  - On your own: alternate pilot days with feedback days in which you debrief with PIs
- Take lots of **notes**! It will help focus enumerator training.

what to test?

Survey Design

- Do the **questions make sense** to the respondent?
  - Require explanations? Reaction time?
  - Follow-up with the enumerator (and possibly the respondent) on questions that seemed problematic: is the issue translation? Phrasing? Conceptual? Cultural?
- Are **answer options comprehensive**?
  - Ensure that all 'other' responses are specified and recorded
- Is the enumerator **following the scripted translations**?
  - If not, ask the enumerator to note any translation issues & discuss later
  - If you do not speak the language, you can still note if interviewer's questions were noticeably longer/shorter than the written question

what to test?

Interview flow and timing

- Interview **flow**?
  - Pauses may be areas where interviewers need more instruction
- Times when the **respondent looks bored**?
  - Uncomfortable? Losing interest?
- Could the **order of modules** be improved? The order of questions?
- **How long** is the interview?
  - For each module, note start and stop time
  - Pilot interviews will take at least twice as long as actual interviews: extra probing, notes, flow not great at the beginning

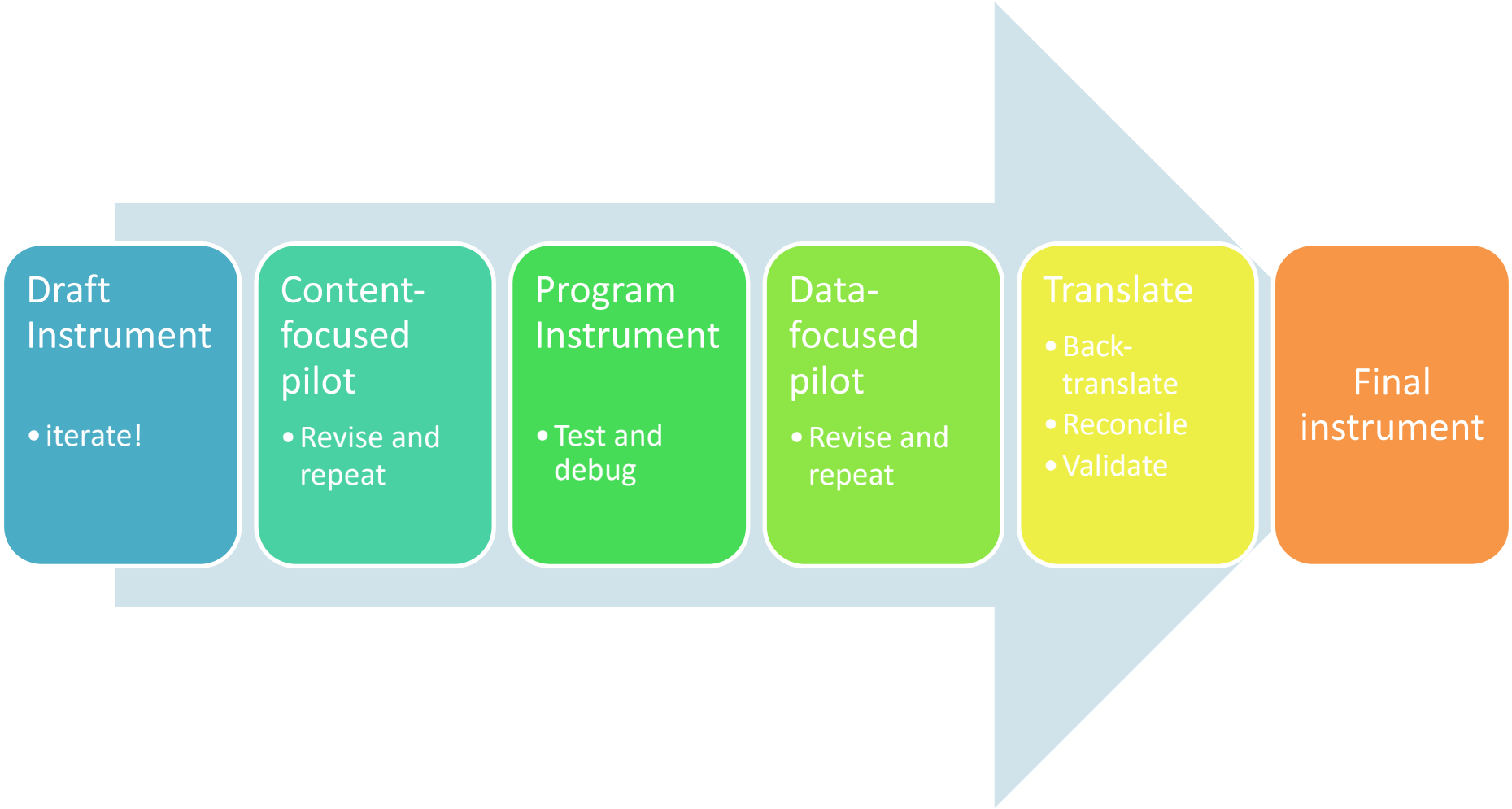
idea: 2-stage approach

- **LAB - First couple of days:**
  - Invite respondents to the office and be honest about the reason they're there - to help you refine your survey instrument
  - Encourage them to tell you if something is unclear or if they believe someone could interpret it differently
  - Ask them if they would interpret it any other way
  - Ask for their opinion on the answer options
- **FIELD – when you have a survey that you're happy with.**
  - Test it in a scenario that closer to the reality during fieldwork

don’t forget to test survey protocols!

- **Interview scheduling:**
  - Good/bad times?
  - Possible to book appointments?
- **Infrastructure**
  - Electricity? If blackouts are frequent, are there generators (and fuel)?
  - Coverage of mobile phone networks? Does mobile data work?
- **Sampling**
  - Use sampling protocol to select pilot respondents, to test
  - Is sample frame up-to-date?
  - If doing own listing, pilot listing survey
- **Geo-data**
  - If using tablet, how long to lock in signal? How accurate?
  - If using GPS unit, test and refine protocol for saving data

process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timeline

- After questionnaire content & design is finalized
  - Changing questionnaire design after programming is done is a very common cause of data quality problems
- Build in sufficient time for programming!
  - Time needed depends on
    - Length and complexity of instrument
    - Experience of primary programmer
      - and competing demands on their time
    - Whether programming will start from scratch
- Typical timeline
  - 2-3 weeks for programming
  - 2 weeks for testing, de-bugging, and revising

start with pseudo code

- Go back to your list of modules, and for each module describe at a high level what the code will do
  - Whether the module will apply to all
  - How it flows with other modules
  - Whether it is repeated

- After creating overall structure, add details
  - As details are added, language changes from plain English to something that closer to code

- Computer scientists very often write pseudo code with pen and paper or on a white board.

start with pseudo code

2.2 Pseudo Code

- Household Roster
  - Ask how many people in the household then repeat over that number to ask about name, age etc.
- Employment
  - repeat. One repeat for each household member over the age of 15
- Savings
  - Group. Ask if house hold have savings, if so ask savings question
- Access to Maternal Health
  - Group. If there is a female between the age of 16 and 45, then ask this module to the household head.

start with pseudo code

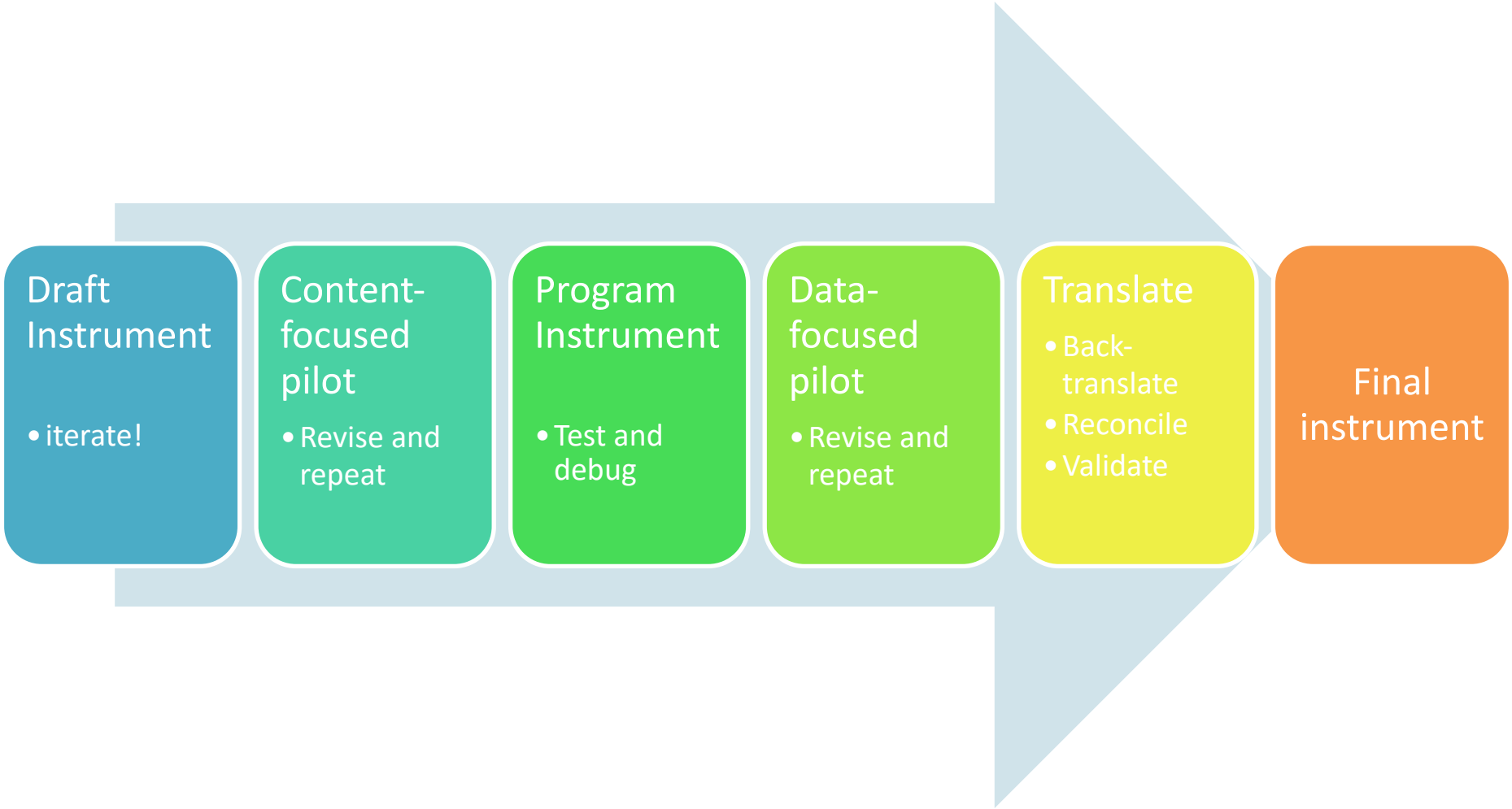
- The more time you spend on pseudo coding the easier the actual coding
- When you have a final draft, discuss with someone else in the project.
  - Proofreading pseudo code is just as useful as asking someone to proofread text documents
- Think about data quality checks you will implement (especially built-in range and consistency checks) as part of this process

programming

- Many software options available; programming principles are consistent across platforms

- DIME surveys typically use SurveyCTO
  - Recommended for upcoming DIME surveys as we have now have a WB enterprise server and developed technical support

process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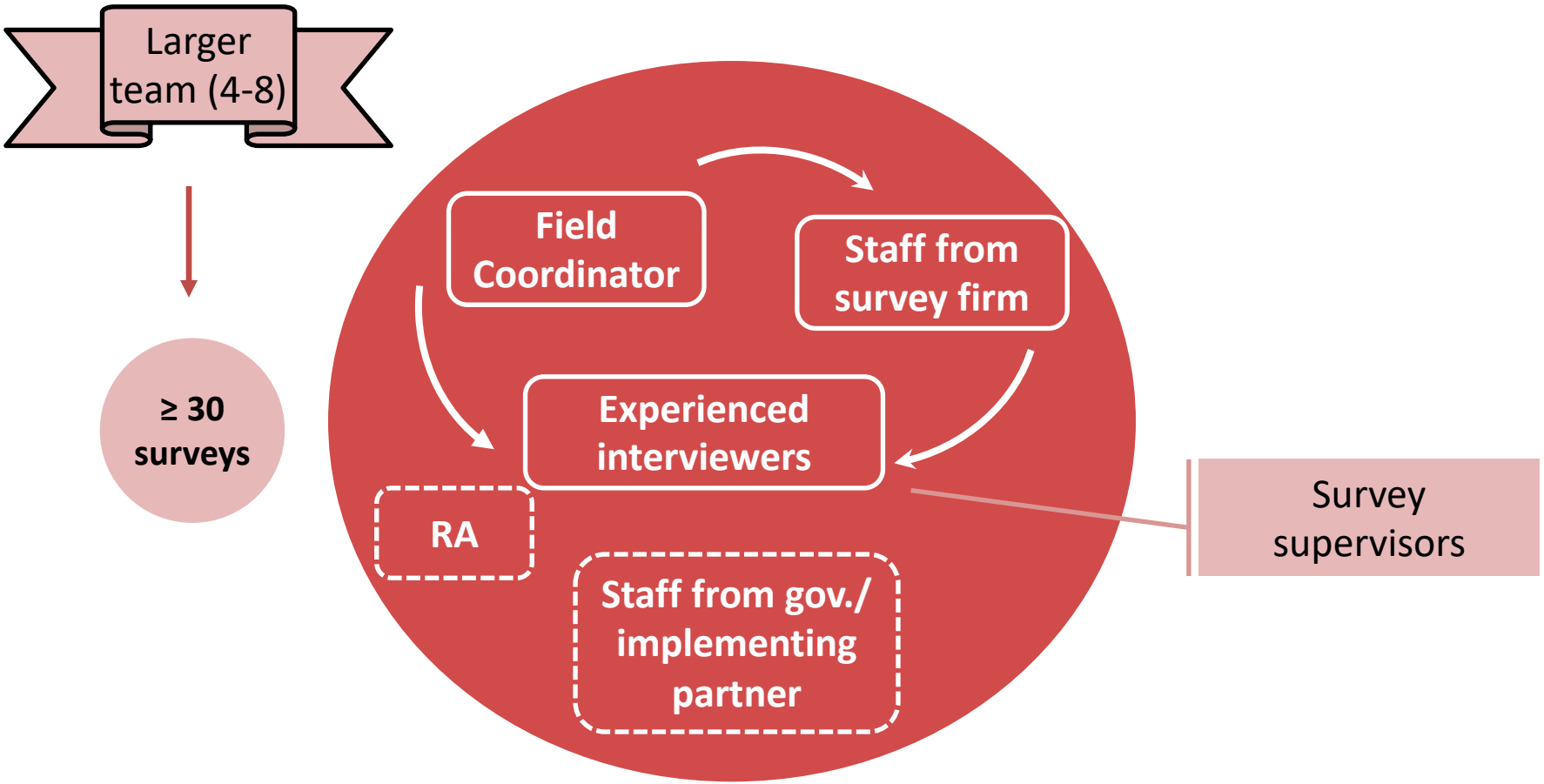
data pilot - timeline

- After all content-pilot revisions made
- After programming complete and de-buggged
- After contract with survey firm signed
  - Ideally involve supervisors as data-pilot enumerators
  - Data-focused pilot has to be included in TORs
    - Must specify it is different than field testing during enumerator training
- To be finished at least 1 week before training
  - Allow for final revisions and debugging

who is involved?



what to test?

Survey Design & Interview flow and timing

- Pay close attention to any survey design issues that came up in content pilot (and revisions made)

Programming

- Are all **skip patterns** working as expected?
- Are questions **displaying** properly on the screen?
- Are there any questions that should be **grouped / ungrouped**?
- Did all **modules appear**?
- Are **built-in data checks** working correctly (for outliers or inconsistent responses)?

what to test?

Data

- **Download pilot data from server and import to Stata:**
  - Use Stata template provided by Survey CTO
- **Check that:**
  - All variables appear and are correctly labeled (and not too long)
  - Value labels in research team language (and not too long)
  - All 'pre-loaded' data appears as expected
- **Test all skip patterns**, check for (unexpected) **missing data**
- **Check variance**: both high and low
  - Low → If all respondents give same answer, data point may not be informative
  - High → Q. may need to be more precise or checks built in to alert enumerator of extreme values in real time

what to test?

High frequency checks

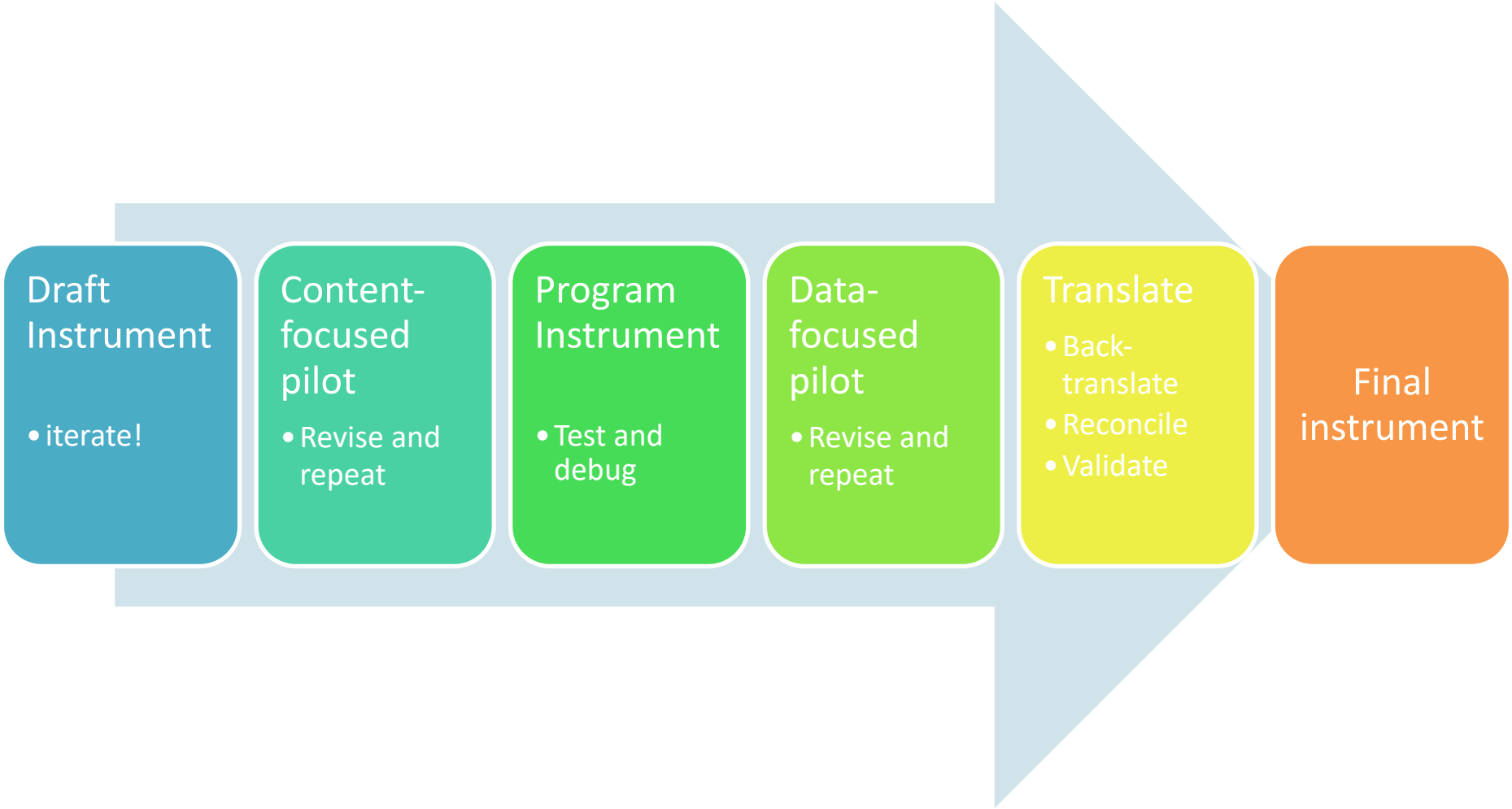
- Use the dataset to program a **do-file for high-frequency checks**
  - More on this in later session
- **Test the do-file** on pilot data and de-bug as needed
- Export **results of checks**
  - Use as example to discuss and agree with the survey firm on a final format for communicating and resolving issues

data-focused pilot using SurveyCTO

- Pilot SurveyCTO form should be uploaded to project server (not development server)

- Indicate *pilot* in questionnaire name and id
  - keep pilot in name until finished collecting pilot data
  - reduces risk that someone uses pilot form to collect final data and ensures data is saved separately

process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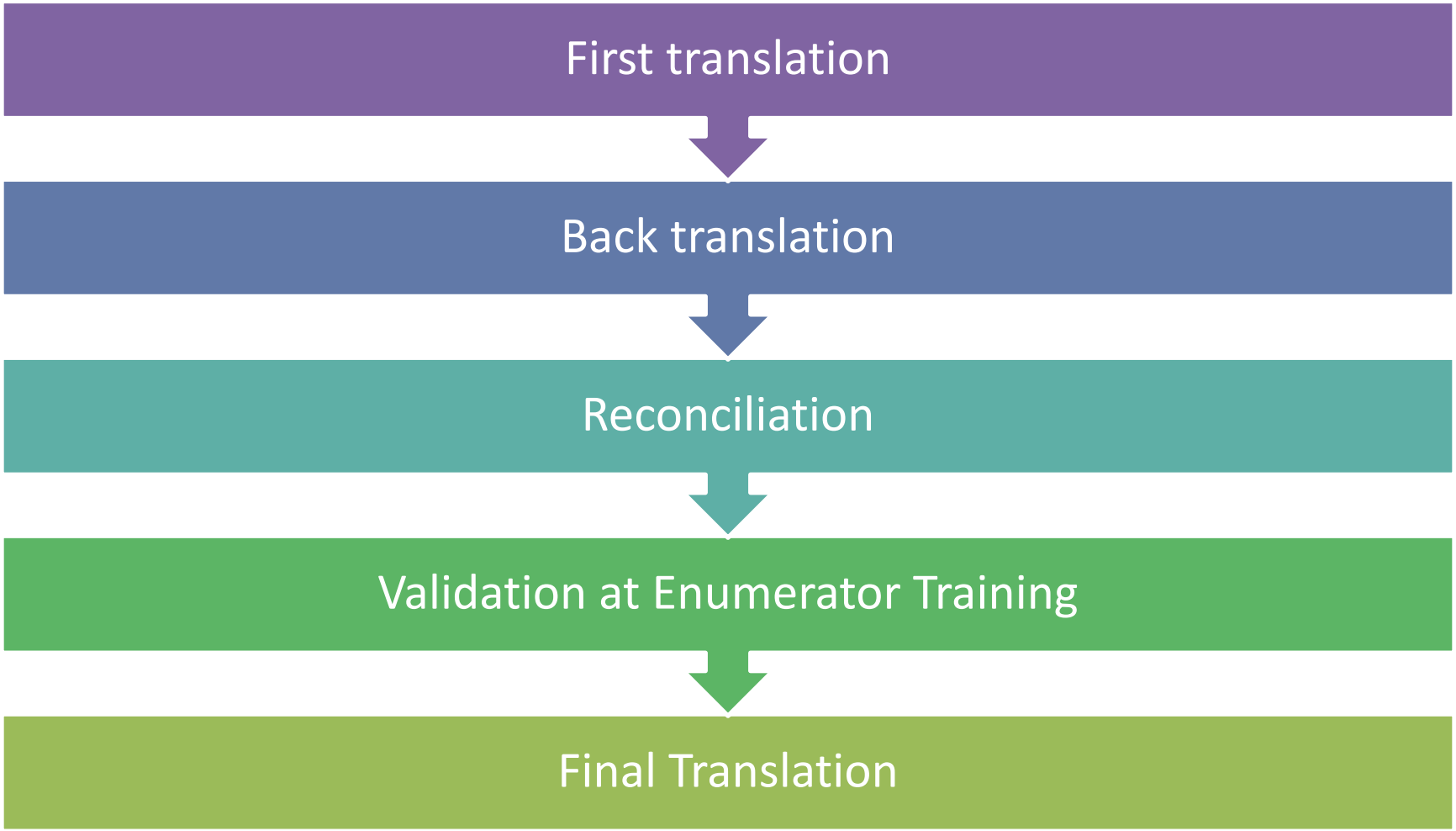
translation

- Enumerators should NEVER translate on the fly.
- All enumerators and respondents need to have exact same understanding of each question
- Translate to each language of population of interest
  - translations into different languages can be done concurrently
  - Always start first translation with version written in research team language
- Be very careful of version control!!

translation process



translation process

- Beware!!
  - Bad translation → field errors, confusion, bad data, etc
- WHO does the first translation matters
  - GOOD: professional translator; sector-specific knowledge; survey experience
  - BAD: survey firm management, government counterparts with other tasks
- Translation takes significant time and skill
  - People who do not have translation experience often underestimate time.
  - Fluency in both languages is necessary but not sufficient.

translation process

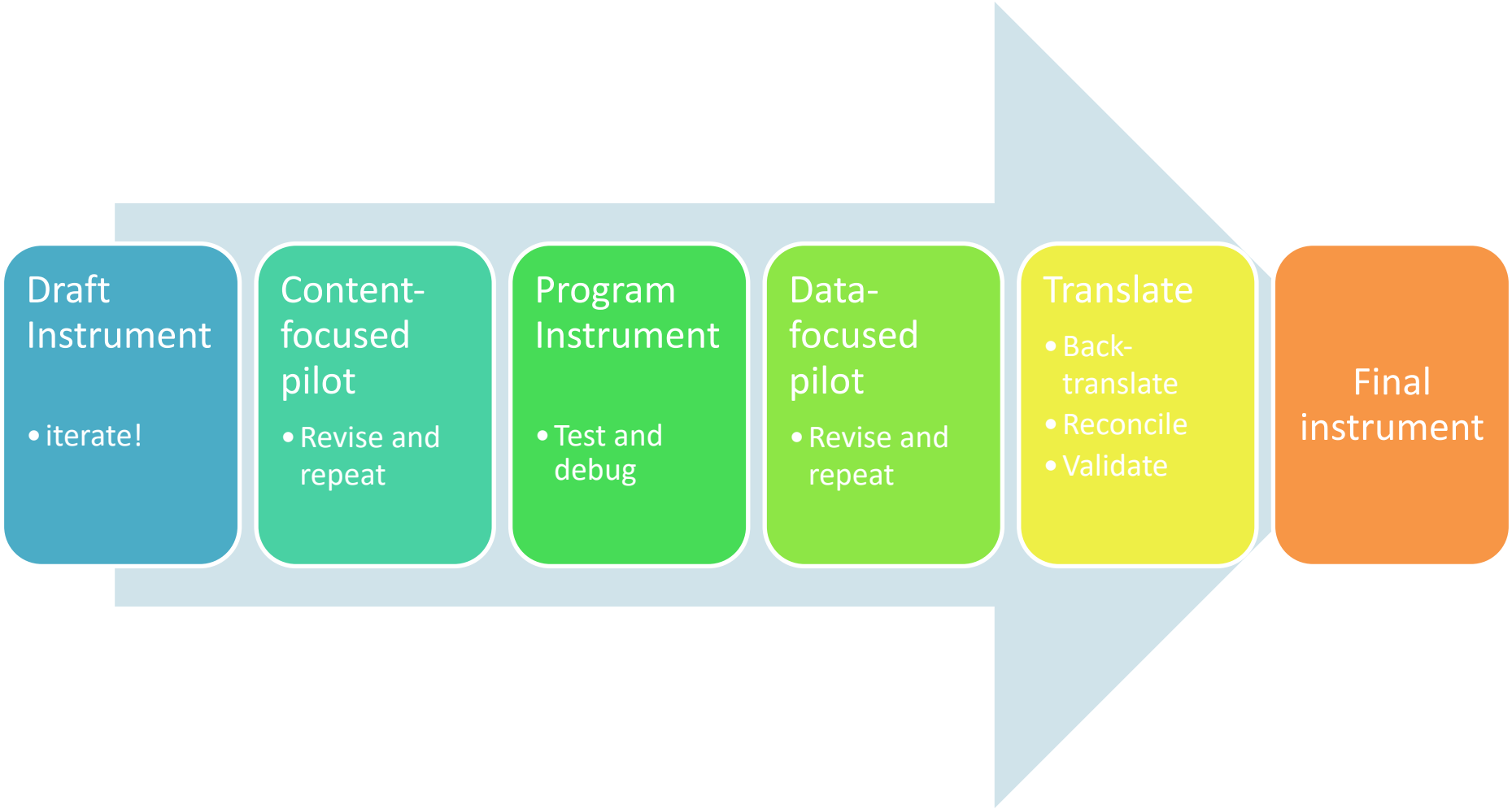
- Back translation
  - Translate local language → English without seeing original English version.
  - Done by skilled translator with no connection to first translator

- Reconciliation
  - FC or experienced local consultant compares & reconciles discrepancies

- Validation
  - Expect to make lots of corrections and refinements in pilot and training
  - Discuss each translation during training as a triple-check
    - Insure you have bilingual staff dedicated to correcting translation
  - Be VERY careful of version control!!

- Survey form should include all relevant languages
  - In SurveyCTO use multiple language columns
  - this helps with version control as changes can be made in both languages

process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Final instrument

- Need to have a readable, printable version of final instrument
  - This is NOT the programmed instrument!

- Important for
  - Enumerator training
  - Sharing with government counterparts
  - {Possibly} IRB or local ethics approvals
  - Submission to donors
  - Archival in micro-data catalogue

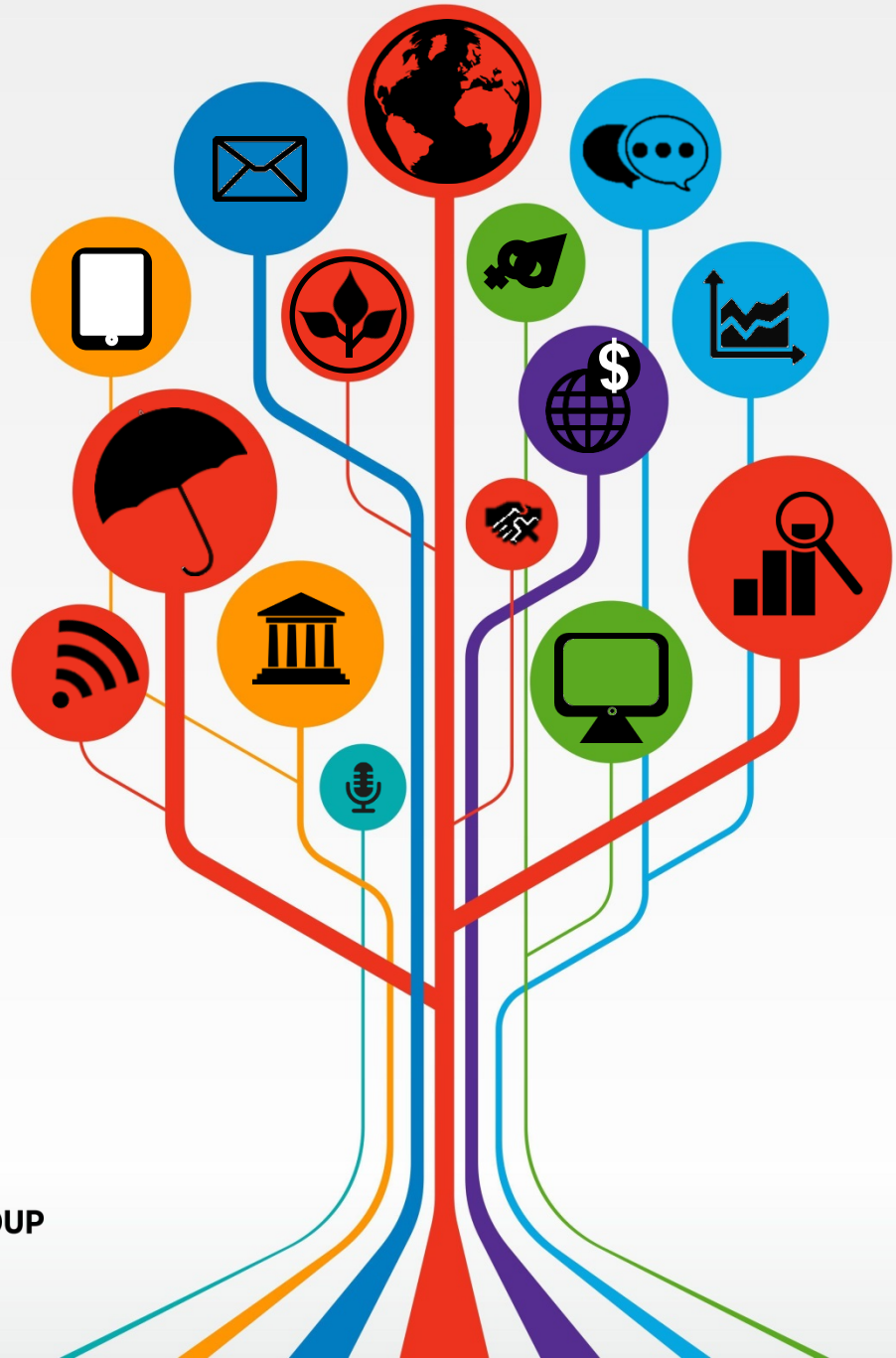
Final instrument

- No perfect technical solution
- **Best practice** → excel workbook with multiple tabs and linked content
  - One tab per module (formatted), one tab for all programming
  - Cells with question text linked to programming tab
- **Other options**
  - Export printable version from SurveyCTO server
    - Export can be messy, especially if long list of response choices
    - Example: an irrigation survey, initially 900+ pages. In a couple hours cleaned up to <200 pages. But still unwieldy
  - Import 'survey' tab into stata and clean up with a do-file
    - Drop unnecessary rows and columns
    - Will need to add formatting to help distinguish repeat groups etc

Thank you!
Questions?

Maria Jones & Laura Costica

18 June 2018



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Appendix slides

List experiments

- Randomly divide sample into two groups
  - *Direct response:* report how many of N items are true, where items are neutral and non-sensitive
  - *Veiled response:* report how many of N+1 items are true
    - N items are identical to control group's items
    - the N+1st item is a sensitive item

- Estimate the population mean for the sensitive item (N+1st) by differencing out mean of sum of N items from the control

List experiments

- Example from Coffman et al, 2013

Panel A: Comparison of Direct Report and Veiled Report Treatments

Direct Report	Veiled Report
• I remember where I was the day of the Challenger space shuttle disaster. • I spent a lot of time playing video games as a kid. • I would vote to legalize marijuana if there was a ballot question in my state. • I have voted for a political candidate who is pro-life. **Please fill in the bubble that corresponds to the total number of statements above that apply to you.** **0 1 2 3 4**	• I remember where I was the day of the Challenger space shuttle disaster. • I spent a lot of time playing video games as a kid. • I would vote to legalize marijuana if there was a ballot question in my state. • I have voted for a political candidate who is pro-life. • I consider myself to be heterosexual. **Please fill in the bubble that corresponds to the total number of statements above that apply to you.** **0 1 2 3 4 5**

Coffman, Katherine B., Lucas C. Coffman, and Keith M. Marzilli Ericson. "The size of the LGBT population and the magnitude of antigay sentiment are substantially underestimated." *Management Science* (2016).

Potential issues with list experiments

- require people to count/add, possibly introducing noise to the data
  - especially if the list is long.
- unless the "innocent" questions are completely unrelated and have a known distribution, then there is a chance that the treatment in your RCT might have an effect on its distribution.
  - But designing your common questions that way makes your sensitive ones stand out even more.

Printable version from surveycto

- On the Design tab, choose *Download*, then *Printable version* from within the *Your forms* list
- The printable version is in HTML (web) format. To edit before printing, open the .html file in Microsoft Word, and *Save As* .docx
- May include notes, to explain when groups or fields will appear (when *relevant*), what restrictions there are on entries (*constraints*), etc
  - In the *survey* sheet, simply enter explanations into the *note* column
  - All notes will be included in the printable version (and will not appear anywhere else)
- May also enter text to appear in the response area to the right of questions, by including that text in the *response_note* column of your *survey* sheet
  - Put|___|___| if you are looking for two letters or numbers
  - For a checkbox, put a hollow square like □ (a special HTML character: enter "□", without quotes, into *response_note* column)
  - For a radio button, simply enter a capital O.

Further Resources

- WB microdata catalogue:
  http://microdata.worldbank.org/index.php/catalog/impact_evaluation
- JPAL microdata catalogue: https://dataverse.harvard.edu/dataverse/jpal
- DHS microdata catalogue: http://microdata.worldbank.org/index.php/catalog/dhs
- IFPRI microdata catalogue: https://dataverse.harvard.edu/dataverse/IFPRI
- International Household Survey Network - survey catalogue:
  http://catalog.ihsn.org/index.php/catalog