Centre for the Evaluation
of Development Policies
at The Institute for Fiscal Studies

# Considerations in the Adaptation of Instruments: Examples from Colombia, Peru and India

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Washington DC, 4 February 2015

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# When Choosing a Test…

1. Purpose of the assessment:
   - Intervention evaluation/design, population diagnosis, screen

2. Ability to measure domain of interest – concurrent validity
   - What is the domain of interest?

3. Ability to predict future development (or other outcomes of interest) – predictive validity

4. Age of the child (baseline, follow up, cross-section)

5. Context appropriate (language/materials/etc.) + easiness to adapt

6. Administration costs: purchase test and licenses, training times, testing times, skills of personnel

# Type and level of adaptations needed?

- Adaptation of specific words/items not common in the culture?
  - Use of local words (tortilla in Mexico, arepa in Colombia)
  - Translation of technical words?
  - Abstract concepts – "is your child a happy child?"
  - Suitability of items from a cultural perspective? "self-help"-type items

- Translation (language of assessment, of training)

- Manipulatives
  - level of familiarity/exposure of child with toys and other

- Pictures/images
  - Suitability/familiarity

# Careful!

- How can we ensure we…

  1. … do not distort meaning?

  ➢ Translation and back-translation
  ➢ Pilot translation and adaptations
  ➢ Computation of reliabilities: test-retest, internal consistency

  2. … do not modify level of difficulty of item/task in/for the culture?

  fork vs. spoon

# Adapting the Bayley-III

- **India** (in progress --- follow-up)
  - work with psychologist in Tamil Nadu, follow Jena's adaptations (+ Pakistan) ---- develop South Asia version
  - heavy translation requirements of both instructions (for mother & child) and manual (for testers)
  - personnel with adequate combination of skills: technical, language and knowledge of culture (reality)

- **Colombia** (completed --- baseline, follow-up, gold std)
  - full translation of manual and report forms
  - more similar culture → minimal modifications, mostly in wording, particularly in socio-emotional scale

- **Peru** (yet to start --- follow-up)
  - adapt/translate to Spanish, not to indigenous languages

# Adapting the ASQ-3

- **India** (completed --- baseline – 10-20 mths)
  - follow Jena's adaptations: replace pictures, replace items/words (Cheerio → puffed rice, peanuts, peas, etc.

    fork →spoon) ---- difficulty? Item ordering?
  - add 3 questions at the bottom- and top-end of test
  - increase number of items by administration
  - full translation of report forms (~ instructions)
  - personnel with adequate combination of skills
  - consider **ASQ:I** for next baseline

# Adapting the ASQ-3 --- cont.

- **Colombia** (completed – shorter test)
  - Id as above, but only add 3 questions at top-end (research q.)
  - ASQ-3 is available in Spanish:
    - Colombianise/Peruvinise words + simplify grammar
    - Suitability of some items
  - Maternal report vs. administration vs. observation
  - Maternal administration vs. tester administration

- **Peru** (completed/in progress --- baseline/follow-up)
  - In addition to above, adapt/translate to Spanish *and* indigenous languages (3 quechuas + aymara)

# Adapting Other Tests – Bogota Study

- **(ASQ-3), Denver-II, Battelle (BDI-2) Screener**
  - Available in Spanish
  - But not all instructions or manipulatives are translated (Battelle, text in picture books in English!)
  - Adapt modify images
    - replace train with bus; polar bear in zoo images
  - Modify some words and sentence construction

- **MacArthur-Bates Communicative Dev Inventories**
  - Use Mexican version – still need to Colombianise words
  - Only available (**and normed!**) in English and Spanish so far

- **Socio-emotional and Personal-social Scales**
  - Maternal reports → translate items; difficult concepts
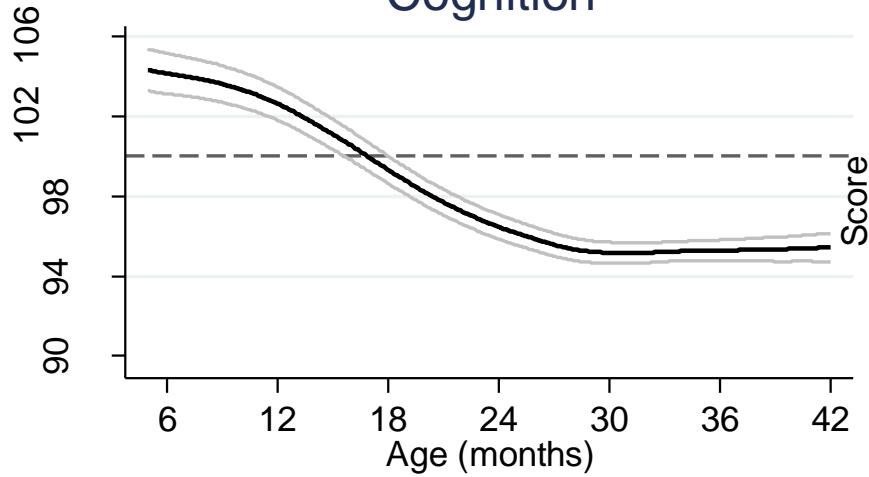
# Cost Considerations

- Purchase of Materials

- Administration requirements

  – space, materials required (not all come with test)

  - How to ensure difficulty level is maintained?

- Translation and adaptation licenses

- Training time (user friendly, complexity of items, reliability)

- Administration time

- Personnel skill/background requirements for administration
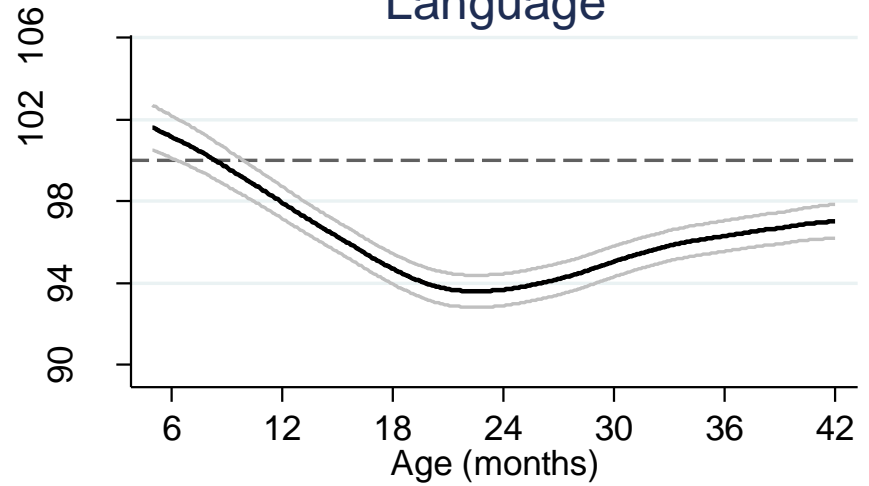
# Other Considerations

- Mother/child enjoyment? (how intimidating/demanding is it?)

- Selecting subscales vs. administering the entire scale?
  - Is it allowed by publisher?
  - More generally, are modifications allowed by publisher?

- Use of norms ….
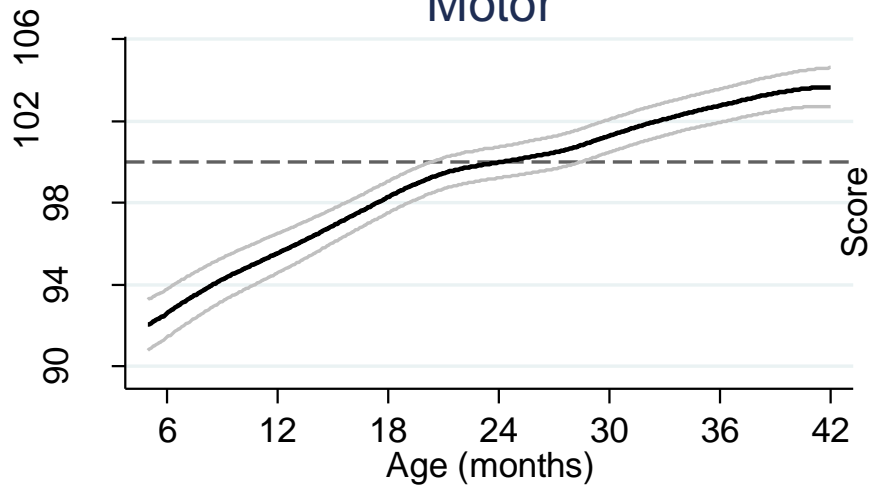
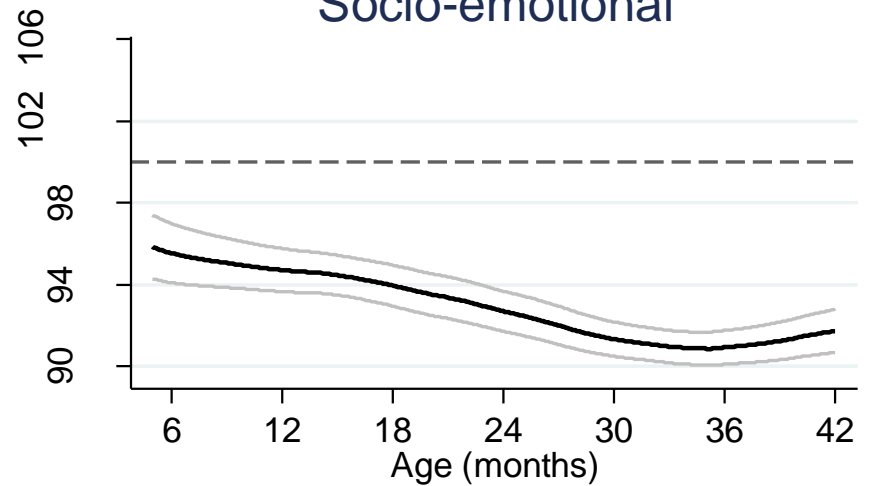# Composite Scores Bayley-III, Bogota Sample

# Composite Scores Bayley-III, Bogota Sample

|  | COGNITION | | | LANGUAGE | |
|---|---|---|---|---|---|
|  | N | Mean | SD | Mean | SD |
| 5 - 18 mths | 451 | 103.492 | 9.885 | 99.022 | 10.248 |
| 19 - 30 mths | 460 | 95.543 | 8.180 | 93.046 | 10.481 |
| 31 - 42 mths | 419 | 95.334 | 6.283 | 96.845 | 8.832 |
| All | 1330 | 98.173 | 9.119 | 96.269 | 10.213 |

|  | MOTOR | | | SOCIO-EMOTIONAL | |
|---|---|---|---|---|---|
|  | N | Mean | SD | Mean | SD |
| 5 - 18 mths | 451 | 95.244 | 12.281 | 103.311 | 8.855 |
| 19 - 30 mths | 460 | 99.288 | 10.268 | 96.676 | 8.544 |
| 31 - 42 mths | 419 | 103.513 | 9.445 | 97.520 | 6.264 |
| All | 1330 | 99.241 | 11.259 | 99.059 | 8.596 |

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# Use of Norms

– Are norms valid after modifications have been introduced?

– Are norms valid for culture more generally?

– Use raw scores adjusting for age, standardise?

– Is it allowed by publisher?

– Temptation (and pressure) to "categorise"/"classify" children – are we over simplifying or making misleading statements?

# Standarisation of Scores Z = (Y-m)/SD

- Residuals of the regression of the scores on age
  - does not account for changes in variance with age

- Standardise within age group: months-of-age specific mean, SD
  - Smallest interval possible but enough observations?

- Compute age conditional mean and SD parametrically using polynomials
  - trial and error, generates negative variances, outlier Z scores

- Compute age conditional mean and SD non parametrically
  - ✓ Fully flexible, data driven, independent of sample size

- Factor Analyse Items

# Thank you!