Measuring early development of language skills: The European Portuguese MacArthur-Bates Communicative Development Inventories short forms

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**Participations & Procedure**

- **Parental reports**: a way of gaining knowledge on early language development in a feasible way covering the range of variation in large samples.
- **Development of SHORT FORM versions of the CDI**: as effective, reliable and valid, and more applicable in a variety of contexts.
- **Reliability**: Cronbach’s coefficient alpha: .99
- **Content and concurrent validity**: also assessed (Frota et al. 2006)

**Results**

- **Developmental trends - Toddlers**: Vocabulary and complex words
- **Developmental trends - Infants**: receptive vocabulary >> expressive vocabulary

**Discussion**

- New approach to the development of CDI short forms that produces reliable and valid CDI data
- Similar to findings for other languages: comprehension precedes production, steady increase of receptive vocabulary, acceleration in vocabulary growth in the 2nd year
- Word complexity: half of the children produce complex words by 27 mos
- Vocabulary: Ceiling effects only after 27 mos (for top half); No ceiling effects for floor half
- Gender differences: Robust finding, already at the infant stage and increasing with age
- Very limited effect of SES
- Across languages: Robust gender differences, regardless of language; developmental trends more similar in infants, strong differences in toddlers; differences across languages due to language-specific sound features

**The first published instruments for the assessment of language development in EP-learning infants and toddlers**

- **Language differences**: Main effects of age group*** and gender**
- **Cross-language comparison**: AE, Galician, Spanish, EP (Vocabulary)
- **Developmental trends - Toddlers**: Main effects of age group*** and gender***
- **Word combinations**: Main effects of age group*** and gender***

**Background & Goals**

- The MacArthur Bates Communicative Development Inventories (CDI): one of the best-known and widely used parental reports (Fenson et al., 1993; 2007)
- The long forms of the CDI showed limitations, restricted applicability and effectiveness in several research, educational and clinical settings (Fenson et al., 2000; Jackson-Maldonado, 2013)
- Development of SHORT FORM versions of the CDI: as effective, reliable and valid, and more applicable in a variety of contexts (e.g., part of a long protocol, repeated administration, longitudinal studies, bilingual settings, quick assessment for clinical purposes, less dependent on educational background of caregivers)

**Participants & Procedure**

- **Population**: 511,054 children between 0 and 4 years of age (INE, 2012); 7 regions x gender
- **Sample**: G*Power 3 medium effect size .25, significance .05 confidence interval .95
- **Normative sample**: Monolingual EP children, no hearing loss, Down Syndrome or known cognitive deficits
- **Data analysis**: Effects of age, gender and SES on language outcomes; percentile scores and fitted scores calculated through growth-curve modeling using the logistic function (Fenson et al. 2000; Fenson et al. 2007)

**Development of the EP-CDI SFs**

- **Sample**: G*Power 3 medium effect size .25, significance .05 confidence interval .95
- **Developmental trends - Toddlers**: Vocabulary and complex words
- **Developmental trends - Infants**: receptive vocabulary >> expressive vocabulary
- **Reproducibility**: Cronbach’s coefficient alpha: .99
- **Content and concurrent validity**: also assessed (Frota et al. 2006)

**Results**

- **Word combinations**: Main effects of age group*** and gender***
- **Cross-language comparison**: AE, Galician, Spanish, EP (Vocabulary)
- **Developmental trends - Toddlers**: Main effects of age group*** and gender***