Development of Prosodic Structure and Intonation (DEPE):
An overview
Introduction

- DEPE: Development of prosodic structure and intonation

FCT, 125.000€. PI Marina Vigário

Team

Sónia Frota  Research grants  Post-doc
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Marisa Cruz  Nuno Matos
Aoju Chen  Simão Cortês
Pilar Prieto

2nd DEPE Workshop, June 27, 2013
General goals

- Examine the pattern of emergence and development of different aspects of prosodic knowledge
- Contribution of prosody for the emergence and development of other aspects of grammar, such as development of the lexicon, emergence of multiword sentences
- Relative weight of biological/universal factors and the ambient language
DEPE

- Four research areas
  - Emergence and development of prosodic structure at the word and phrase levels
  - Development of the intonational system
  - Pace of temporal patterns in early child speech
  - Processing of prosody in early and adult grammar

- Cross-linguistic approach
  Although largely focused on European Portuguese (EP), compared research on Catalan, Spanish, Dutch, EP.

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Specific questions

- Cross-linguistic variation in prosodic phrasing, intonation, cues for prosodic domains, correlates of prominence, raises the question to what extent results from different studies are language-specific >> enlarge the languages database, methodological comparable studies

- EP as an ‘atypical’ language (it clusters prosodic properties not usually found together, e.g. mixed rhythmic properties but arguably a syllable-timed language, strong cues for the prosodic word, but resyllabification across words, sparse pitch accent distribution but overall resistance to deaccenting) >> it may bring insight to the understanding of how adult grammar is acquired
Main innovative features

- Several topics were investigated for the first time in the language(s) under observation, such as the relevance of prosodic structure for different aspects of phonological and syntactic development.
- Studies of perception of prosody by infants and children acquiring EP were conducted for the first time.
- Attempt to integrate various aspects relevant to the understanding of language development (perception and production; prosodic structure, prominence, intonation, rhythm and temporal patterns) and study the development of different linguistic domains (prosody, lexicon, morphology, word combinations) in the same set of data.
DEPE : Milestones

- Lisbon BabyLab (October, 2010)
- Resources for child language research
  - **CS**: Database LumaLiDaAudy with prosodic annotation; João and Inês (from Correia et al. 2010/2013), with prosodic annotation; Production lexicon (data from 5 children) PLEX5 (Frota et al. 2012)
  - **CDS**: CDS_EP lexicon (Frota et al. 2013), IPs (Vigário et al.)
  - EP_CDI Short Froms
- Description of typical prosodic development in EP (ProsoQuest, perception and production studies)
- Early intonational development across Ls
Illustration of the child speech annotated corpus

Structure of annotation tiers
1. Intonation
2. Syllable
3. Prosodic words
4. Intonation phrase
5. Orthography
6. Context (Before, After)
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CDS: Lexicon, Prosodic phrases

Characterizing Child Directed Speech in European Portuguese: prosodic words intonational phrases
Marina Vigário, Sónia Frota, Fernando Martins, Joseph Butler
Laboratório de Fonética & Lisbon Baby Lab – CLUL, FLUL

1. Introduction

With the goal of providing a description of key word and phrase-level properties of spontaneous speech directed to infants and toddlers, this project is an investigation of 3 research questions on the basis of a multi-subject corpus of child directed speech:

1. How is child directed speech divided into intonational phrases and what are the properties of these phrases (namely, length in prosodic words)?

2. How are prosodic words and clitics distributed relative to the beginnings and end of intonational phrases?

3. How does speech directed to children evolve with children's age?

The answers to these questions will provide information relevant to studies on language development, namely in the domains of early perception abilities, and word segmentation and categorization.
DEPE : Highlights 1

- Perception
  - Infant discrimination of intonational contrasts (Declarative vs. Interrogative; Broad focus/Narrow focus)
  - Interpretation of phonetic variation in early word learning: Segmental and prosodic information in a word learning task (Stress contrast-Penult vs. Final; Pitch contrast-Decl vs. Int; Vowel contrast)
  - Perception of word stress in adult grammar (PaPI, InterSpeech – Correia et al. 2013)
  - Processing of ambiguity and prosody (Adults) [Frota et al. 2010, Severino 2011]
Production

- Early intonation in EP (Spontaneous longitudinal data of 2 children) > Early intonation development across Ls
- Development of prosodic structure (intonation and tempo) (Spontaneous longitudinal data of 3 children) [Vigário et al. 2011, Matos 2010, in progress, Frota et al in progress]
- Development of the lexicon and morphology (Vigário & Garcia 2012)
- Adult grammar: Prosodic units in phonological encoding (Vigário et al. 2012)

- Word/Lexicon
- Word size >1.5
- 1st jump Lex size
- 2nd jump Lex size
- Intonation
- Variety nuclear contours
- Adult-like inventory
- Prosodic structure
- 6≈w≈phrase
- 6≠w≠phrase
- Emerge IP-final
- Coda development
- Variety word classes
- Complex words
- Word size ≥ 3
- Morphology
- Word combinations
- MLU > 1.5

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DEPE : Highlights 3

- Parental reports (relate ≠ aspects of language development beyond the few cases analysed in production studies)
  - ProsoQuest: Parental report of infant prosodic skills (use of prosody to convey sentence type/pragmatic meaning, for phrasing), comprehension and production
  - EP_CDII Short Forms (Infant and toddler): Parental report of infant receptive and expressive vocabulary (CDI-I) and toddler expressive vocabulary + emergence of word combinations (CDI-II)
Thank you!

Project web site:
- Description
- Reports
- Outputs
- Workshops

2nd Workshop on the Development of Prosody and Intonation

Organized by the DEPE Project (PTDC/CLE-LIN/108722/2008)
Laboratório de Fonética & Lisbon Baby Lab
Centro de Linguística da Universidade de Lisboa

June 27, 2013
Faculdade de Letras da Universidade de Lisboa
Amphitheatre II

Program

15.00: Marina Vigário & Sónia Frota
The DEPE Project: An overview

15.20: Joseph Butler, Marina Vigário & Sónia Frota
Infants’ perception of intonation and its use in early word learning

15.50: Marina Vigário, Susana Correia & Joseph Butler
Early prosodic development in European Portuguese: Proso-Quest, a parental report of infant prosodic skills

16.20: Sónia Frota, Cátia Severino, Joseph Butler & Nuno Matos
Development of CDI Short Forms for European Portuguese

16.50: Coffee Break

17.10: Núria Esteve-Gibert, Pilar Prieto & Ulf Liszkowski
Infants’ early pragmatic understanding of pointing gestures: the role of prosody and gesture shape

17.40: Aoju Chen & Sónia Frota
Cross-linguistic research on early intonational development: current findings and future directions

18.10-18.30: Final discussion