WAYNE STATE UNIVERSITY
COLLEGE OF LIBERAL ARTS AND SCIENCES

Infant-Directed Speech in Tagalog during the First Nine Months

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1 Introduction

- Infant-directed speech (IDS) known as baby talk, or motherese speech is a syntactically simplified register with an exaggerated prosody, compared to adult directed speech (ADS).
- Some researchers (e.g., Fernald,1989,1992)(1,2) claim IDS occurs in many unrelated languages.
- The unique prosodic characteristics of IDS include slower speech, higher pitch, smooth and exaggerated intonation.
- Its unique linguistic characteristics include repetition of words and phrases, short utterances, and simpler syntax.

2 Tagalog Language

•Tagalog is a language spoken by 2.4 million people in the United States (3) and 87,854,473 people in the Philippines (4).

•Tagalog is a non-tonal language and considered part of the Austronesian language family (5).

3 Why study IDS in Tagalog ?

- Little acoustic documentation is available on the acoustic features of Tagalog.
- No acoustic comparisons of speech registers have been conducted in Tagalog.
- Garza-Prisby, first author, informally observed that Tagalog-speaking mothers do not appear to use features typically found in American mothers' speech to young infants.

4 Research Questions

1. What are the acoustic characteristics of ADS and IDS in Tagalog?
2. Is there a difference between ADS and IDS in Tagalog at the 1, 3, 5, and 9 month age of the infant?
3. Is there a difference in F0 and vowel duration for IDS across the first nine months of infancy?

5 Methods

Speaker:

A Filipino female, age 25, residing in Detroit, Michigan emigrated from the Philippines six months prior to giving birth. She was recruited through a local event while 8 months pregnant.

Recording Procedure:

- Home visits occurred at the 1st month, 3rd month, 5th month, and 9th month of the infant's life.
- The mother was audio recorded as she conversed with:
  a) her infant
  b) a second adult Tagalog speaker.
- Filipino mother was given toys and instructed to use the following words in conversations at least three times:
- All words include point vowels of Tagalog: /i/ /a/ /u/

"sheep"*	/i/
"pot"*	/a/
"boot"*	/u/
"spoon"*	/u/
"manika" (doll)	/a/, /i/
"aso" (dog)	/a/
"bunso" (youngest child)	/u/

- English words indicated with "*" have been imported into the Tagalog language and are used in conversations.

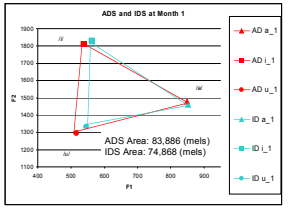
Analysis Procedure:

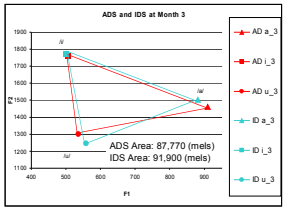
The software Praat was used to analyze the vowels and rate of speech. Acoustic features that were measured:

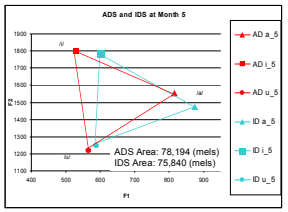
- Vowel formant frequencies
- (F1 & F2; vowel triangle area)
- Mean F0
- Vowel duration
- Rate of speech

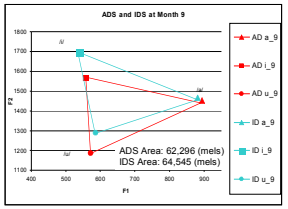
6 Results

Vowel Triangle Area by Month



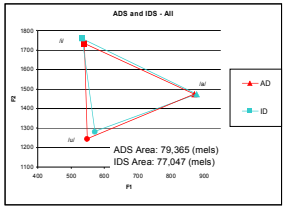






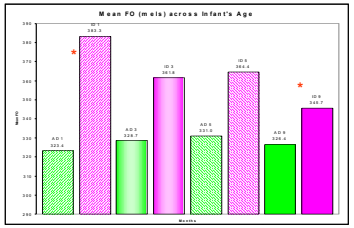
6 Results (cont.)

1, 3, 5, and 9 Month Triangle Areas

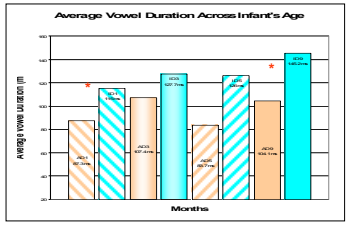


When averaged across all months, ADS triangle size was larger than IDS triangle size.

Mean F0 (mels)



Vowel Duration



Significance is represented by "*".

Statistics

Month	Register	F0 (mels)	St. Dev.	F Values		Vowel Duration (ms)	St.Dev.	F Values	
1	ADS	317.8	69.2	12.9	p<0.05	91.4	60.9	11.4	p<0.05
	IDS	392.2	89.2			115.3	70.4		
9	ADS	332.2	69.6	10.3	p<0.05	115.1	75.1	9.4	p<0.05
	IDS	325.4	78.0			201.2	226.8		

* Months 3 and 5 were not included in the ANOVA due to smaller sample sizes that violated assumptions of the test.

Rate (words per minute):
90 (ADS)
68 (IDS)

7 Conclusion

•This Tagalog mother showed typical aspects of IDS:

•Prosodic aspects: Longer vowel duration, higher pitch and slower rate of speech.

•Expanded vowel space which was typically seen with American, Swedish, Russian, and Japanese mothers (6,7) was not consistently seen with this mother across the nine months.

•IDS triangle area was slightly larger in months 3 and 9, possibly due to the mother using clear speech.

•Grand mean F0 (mels) was greater in IDS across 9 months.

•Vowel duration (ms) was longer in IDS than ADS especially in month 1 and 9.

8 Future Research

- Record more Tagalog mothers to validate results relating to acoustic features and vowel triangle.
- Gather more acoustical research data in Filipinos who speak Tagalog to gain a better understanding of this population's acoustical features.

9 References

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