

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

- What are the acoustic characteristics of ADS and IDS in Tagalog?
- Is there a difference between ADS and IDS in Tagalog at the 1, 3, 5, and 9 month age of the infant?
- 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:
 - her infant
 - 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.

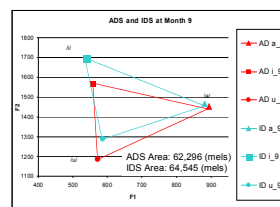
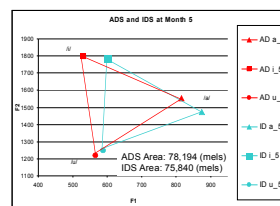
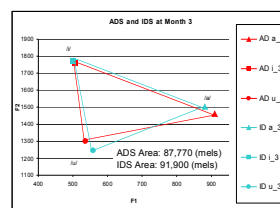
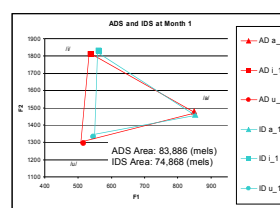
Analysis Procedure:

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

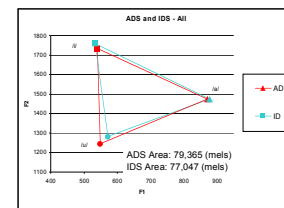
6 Results

Vowel Triangle Area by Month



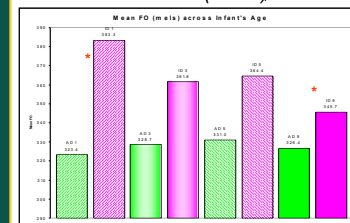
6 Results (cont.)

1, 3, 5, and 9 Month Triangle Areas

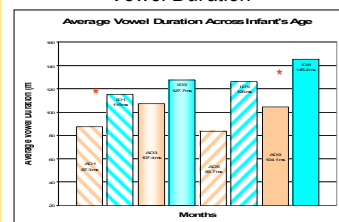


When averaged across all months, ADS triangle size was larger than IDS triangle size.

Mean F0 (mels)



Vowel Duration



Significance is represented by "*".

Statistics

Month	Register	F0 (mels)	St. Dev.	F-Values	p-values	Vowel Duration (ms)	St. Dev.	F-Values	p-values
1	ADS	317.8	68.2	12.9	p<0.05	91.4	65.9	11.4	p<0.05
3	ADS	303.2	69.0	10.3	p<0.05	115.3	70.4	9.4	p<0.05
5	ADS	305.4	78.0			202.2	58.8		

* 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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