

Universals and language specificities in canonical babbling

*Sophie Kern,
Laboratory Dynamique du Langage, Lyon, France*



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COMPARISON BETWEEN PROCESSES IN LANGUAGE ACQUISITION BY CHILDREN AND LANGUAGE EVOLUTION: FROM THE FIRST SYLLABLES TO THE LEXICAL SPURT



Participants

Barbara L. Davis, The University of Texas at Austin, Austin, TX, USA

Sophie Kern, Laboratory Dynamique du Langage, Lyon, France

Dilara Koçbas, Koç University, Istanbul, Turkey

Aylin Küntay, Koç University, Istanbul, Turkey

Peter F. MacNeilage, The University of Texas at Austin, Austin, TX, USA

Inge Zink, Lab. Exp. ORL/ENT-dept, K.U. Leuven, Belgium

Study Questions

- 1) What are common trends and individual patterns in babbling across languages?
- 2) What evidence is available about learning language specificity from ambient language input in babbling across languages?

Common Trends in Acquisition

Sound preferences

- ✓ **manner : stops, nasals and glides**
- ✓ **place: coronal and labial**
- ✓ **vowels: mid and low, front and central**

Within syllable preferences

- ✓ **labial consonants + central vowels**
- ✓ **coronal consonants + front vowels**
- ✓ **dorsal consonants + back vowels**

Utterance length

Mono-, Di-, and Poly-syllables co-occur

Across syllable preferences

- ✓ **both reduplicated and variegated babbling**
- ✓ **more high-low variegation than front-back vowel variegation**
- ✓ **more manner than place consonant variegation**

Frame-Content Theory

MacNeilage & Davis 1990, 1993

Frame:

Motor: oscillation of the mandible

Depression-mouth opening for vowels

Elevation-mouth closing for consonants

Pre-motor: Syllabic receptacle for consonant
and vowel placement

Content:

Permitted segmental elements that can
be used in serially organized speech output

Influence of ambient language on early language acquisition

- Very early influence of ambient language on perception (8-10 months)
- Influence of ambient language in the late babbling and first word periods
 - Vocalic inventory
American children: high or low front vowels vs French children: close-mid front rounded vowels (de Boysson-Bardies et al. 1989)
 - Consonantic inventory
French and English children produce less labial consonants than Japanese and Swedish children (Vihman, 1993)
 - Babbling type
More reduplicated utterances in French than in English learning infants (Levitt & Utman, 1992)

Methods

Participants

20 children

4 children per language group

Languages

French

Rumanian

Dutch

Turkish

Methods

Data Collection:

Infant Data

One hour of audio-video recording every two weeks

7.5 – 12.5 months

Spontaneous data: Home environment-normal daily routines

Language Data:

Dictionary on computer

1000 entries per language

Randomly selected

Data Analysis:

IPA transcription (Native language transcribers)

Computer analysis of data (LIPP, Oller & Delgado, 1990)

Predictions

- 1. There will be a significantly higher proportion of stops, nasals and glides than other consonants;**
- 2. There will be a significantly higher proportion of coronal and labial than dorsal consonants;**
- 3. There will be a higher proportion of mid and low front and central vowels than other types of vowels;**
- 4. There will be a significant tendency for patterns of co-occurrence between consonants and following vowels within an utterance:**
 - central vowels in the environment of labial consonants;**
 - front vowels in the environment of coronal consonants;**
 - back vowels in the environment of dorsal consonants;**
- 5. There will be a higher proportion of manner variegation (vs place) for consonants and height variegation (vs front-back) for vowels.**

Results

CONSONANTS MANNER OF ARTICULATION

	PLOSIVES	NASALS	GLIDES	FRICATIVES	LIQUIDS	OTHERS
Common trends bab	+	+	+	-	-	-
French bab	54	24	5	10	2	5
Romanian bab	51	13	17	13	1	4
Turkish bab	57,5	13,5	22	6	1	-
Dutch bab	39	7,5	9	37	5,5	1
French Lang	36	11	7	39	8	0
Romanian Lang	38	16	5	21	20	0
Turkish Lang	35	18	5	19	18,5	2
Dutch Lang	31	19	3,5	25	21,5	0

CONSONANTS PLACE OF ARTICULATION

	LABIALS	CORONALS	DORSALS	GUTTURALS
Common trends bab	+	+	-	-
French bab	45	38	17	0
Romanian bab	22	59,5	18,5	0
Turkish bab	22	62	11	5
Dutch bab	12,5	49,5	12	26
French Lang	21	52	26	0
Romanian Lang	20	71	8	1
Turkish Lang	20	63	15	2
Dutch Lang	20	62	16	2

VOWELS

	V<G	OTHERS
Common trends bab	+	-
French bab	69	31
Romanian bab	65,5	34,5
Turkish bab	74	26
Dutch bab	53	47
French Lang	51	49
Romanian Lang	58	42
Turkish Lang	65	35
Dutch Lang	64	35

VOWELS

	FRONT	CENTRAL	BACK
Common trends bab	+	+	-
French bab	50,5	31,5	18
Romanian bab	35	61,5	3,5
Turkish bab	40	50	10
Dutch bab	38	47	15
French Lang	53	19	28
Romanian Lang	40	38	22
Turkish Lang	46,5	0	53,5
Dutch Lang	52	14	34

VOWELS

	HIGH	MID	LOW
Common trends bab	-	+	+
French bab	10,5	57,5	32,5
Romanian bab	29	40	31
Turkish bab	18	46	36
Dutch bab	28	41,5	30,5
French Lang	24	47	29
Romanian Lang	31	46	23
Turkish Lang	36	31	33
Dutch Lang	33	44	23

INTRASYLLABIC COOCCURRENCES

	CORONAL+FRONT	LABIAL+CENTRAL	DORSAL+BACK
Common trends bab	+	+	+
French bab	1.09	1.16	1.60
Romanian bab	1.07	1.13	0.62
Turkish bab	0.97	1.02	3.13
Dutch bab	0.93	0.91	0.79
French Lang	1.19	1.31	1.27
Romanian Lang	1.17	1.05	1.84
Turkish Lang	1.13	1.20	2.17
Dutch Lang	1.04	0.99	1.08

UTTERANCE LENGTH

	MONO	DI	POLY
Common trends bab	*	*	*
French bab	55,5	16,5	28
Romanian bab	71	23,5	5,5
Turkish bab	28	37	35
Dutch bab	38	12	50
French Lang	20,8	38,4	40,8
Romanian Lang	12,2	35,4	52,4
Turkish Lang	9,9	53,1	37
Dutch Lang	15,3	35,5	49,2

VARIEGATED VS REDUPLICATED BABBLING

	REDUPLICATED	VARIEGATED
Common trends bab	+	+
French bab	41	59
Romanian bab	40	60
Turkish bab	52	48
Dutch bab	61,5	38,5
French Lang	1	99
Romanian Lang	1	99
Turkish Lang	1	99
Dutch Lang	0,5	99,5

TYPE OF VARIEGATION

	Manner	Place	Height	Front-Back
Common trends bab	+	-	+	-
French bab	40,5	59,5	75	25
Romanian bab	70,5	29,5	82,5	17,5
Turkish bab	52	48	85,5	14,5
Dutch bab	48	52	61,5	38,5
French Lang	50	50	85	15
Romanian Lang	72	28	75	25
Turkish Lang	68	32	97,5	2,5
Dutch Lang	66,5	33,5	63	37

Summary

Common trends

- **Vowel Height, Front-Back, Lower-left quadrant**
- **Reduplicated and variegated Babbling**
- **Vowel variegation Height/Front-Back**

Exceptions

- **More fricatives in French & Dutch**
- **More gutturals in Dutch**
- **More place than manner variegation in French and Dutch**
- **No Dorsal+back preferred association in Romanian and Dutch**
- **No Coronal+front preferred association in Turkish and Dutch**
- **No Labial+central preferred association in Dutch**

Thank you for your attention