Cover Page

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APPENDIX A

Stages

The analysis in chapter 4 rests on the segmentation of developmental time into stages. Sometimes, these stages coincide with the interval between two recording sessions (see section 4.2). Often, however, a stage spans multiple sessions. In this appendix, we list the dates of the recording sessions together with the stages they fall into. Note that stages are defined by a change in the inventory (see section 4.2 for a more detailed description), which means that there is no logical necessity that for the same child, the stages at the different levels of description should coincide.

	Actual	*Target*	*Faithful*
Catootje 1990-09-05	Stage 1	Stage 1	Stage 1
Catootje 1990-09-19	Stage 2	Stage 2	
Catootje 1990-10-04			
Catootje 1990-10-17	Stage 3	Stage 3	Stage 2
Catootje 1990-10-31			
Catootje 1990-11-14			
Catootje 1990-11-28			
Catootje 1991-01-09	Stage 4		Stage 3
Catootje 1991-01-23	Stage 5		Stage 4
Catootje 1991-02-20	Stage 6		Stage 5
Catootje 1991-03-06			
Catootje 1991-03-20	Stage 7		
Catootje 1991-04-03	Stage 8		Stage 6
Catootje 1991-04-17		Stage 4	
Catootje 1991-05-01	Stage 9	Stage 4	
Catootje 1991-05-29	Stage 10		Stage 7

Table A.1: Catootje's stages

	Actual	*Target*	*Faithful*
Eva 1989-10-19	Stage 1	Stage 1	Stage 1
Eva 1989-11-02		Stage 2	Stage 2
Eva 1989-11-29	Stage 2		
Eva 1989-12-08		Stage 3	Stage 3
Eva 1989-12-18			
Eva 1990-01-22			Stage 4
Eva 1990-01-29	Stage 3		
Eva 1990-02-19		Stage 4	
Eva 1990-03-15	Stage 4		
Eva 1990-03-29	Stage 5		Stage 5
Eva 1990-04-10			
Eva 1990-05-15	Stage 6	Stage 5	Stage 6

Table A.2: Eva's stages

	Actual	Target	Faithful
Jarmo 1989-09-22		Stage 1	
Jarmo 1989-10-06		Stage 2	Stage 1
Jarmo 1989-10-31	Stage 1		
Jarmo 1989-11-17			
Jarmo 1989-12-01	Stage 2	Stage 3	Stage 2
Jarmo 1989-12-19		Stage 4	
Jarmo 1990-01-02	Stage 3		
Jarmo 1990-01-16		Stage 5	Stage 3
Jarmo 1990-01-30			
Jarmo 1990-02-13	Stage 4	Stage 6	Stage 4
Jarmo 1990-02-27			
Jarmo 1990-03-13	Stage 5	Stage 7	
Jarmo 1990-03-27			
Jarmo 1990-04-10		Stage 8	Stage 5
Jarmo 1990-04-24	Stage 6	Stage 9	
Jarmo 1990-05-08	Stage 7		
Jarmo 1990-06-01		Stage 10	
Jarmo 1990-06-12			Stage 6
Jarmo 1990-06-26	Stage 8		
Jarmo 1990-07-10			Stage 7
Jarmo 1990-07-31		Stage 11	
Jarmo 1990-08-13	Stage 9	Stage 12	Stage 8
Jarmo 1990-09-05			

Table A.3: Jarmo's stages

	Actual	*Target*	*Faithful*
Noortje 1989-09-25			
Noortje 1989-11-06		Stage 1	Stage 1
Noortje 1990-02-21	Stage 1		
Noortje 1990-03-28			
Noortje 1990-04-18	Stage 2	Stage 2	
Noortje 1990-05-02			Stage 2
Noortje 1990-05-18		Stage 3	
Noortje 1990-06-01	Stage 3		
Noortje 1990-06-15		Stage 4	
Noortje 1990-08-03	Stage 4		Stage 3
Noortje 1990-08-16			
Noortje 1990-08-30	Stage 5		
Noortje 1990-09-13			
Noortje 1990-09-28		Stage 5	
Noortje 1990-10-12			Stage 4
Noortje 1990-10-26	Stage 6		
Noortje 1990-11-09			
Noortje 1990-11-13			
Noortje 1990-11-23	Stage 7		
Noortje 1990-12-07	Stage 8	Stage 6	
Noortje 1991-01-11	Stage 9		Stage 5

Table A.4: Noortje's stages

	Actual	Target	Faithful
Robin 1989-11-08	Stage 1	Stage 1	Stage 1
Robin 1989-11-22	Stage 1	Stage 1	Stage 1
Robin 1989-12-07	Stage 1	Stage 2	Stage 1
Robin 1989-12-20	Stage 2	Stage 2	Stage 1
Robin 1990-01-10	Stage 3	Stage 3	Stage 1
Robin 1990-01-24	Stage 3	Stage 4	Stage 2
Robin 1990-02-07	Stage 4	Stage 5	Stage 2
Robin 1990-02-21	Stage 4	Stage 5	Stage 2
Robin 1990-03-07	Stage 4	Stage 6	Stage 2
Robin 1990-03-21	Stage 5	Stage 6	Stage 3
Robin 1990-04-04	Stage 5	Stage 7	Stage 3
Robin 1990-04-18	Stage 5	Stage 7	Stage 3
Robin 1990-05-04	Stage 6	Stage 7	Stage 4
Robin 1990-05-18	Stage 7	Stage 7	Stage 4
Robin 1990-06-01	Stage 7	Stage 7	Stage 4
Robin 1990-06-15	Stage 7	Stage 7	Stage 4
Robin 1990-07-04	Stage 8	Stage 7	Stage 4
Robin 1990-07-23	Stage 9	Stage 7	Stage 5
Robin 1990-08-24	Stage 9	Stage 7	Stage 6
Robin 1990-09-07	Stage 9	Stage 7	Stage 7
Robin 1990-09-19	Stage 9	Stage 8	Stage 8
Robin 1990-10-05	Stage 10	Stage 8	Stage 8
Robin 1990-10-26	Stage 10	Stage 8	Stage 8

Table A.5: Robin's stages

	Actual	Target	Faithful
Tirza 1989-11-23			
Tirza 1989-12-19	Stage 1	Stage 1	Stage 1
Tirza 1990-01-09			
Tirza 1990-01-25	Stage 2	Stage 2	Stage 2
Tirza 1990-02-22		Stage 3	
Tirza 1990-03-08		Stage 4	Stage 3
Tirza 1990-03-22			
Tirza 1990-04-02		Stage 5	Stage 4
Tirza 1990-04-19			
Tirza 1990-05-02		Stage 6	Stage 5
Tirza 1990-05-16			
Tirza 1990-05-31	Stage 3		Stage 6
Tirza 1990-06-14			Stage 7
Tirza 1990-06-26			
Tirza 1990-07-09		Stage 7	
Tirza 1990-07-26			
Tirza 1990-08-10	Stage 4		Stage 8
Tirza 1990-09-19			
Tirza 1990-10-05			
Tirza 1990-10-26	Stage 5		Stage 9

Table A.6: Tirza's stages

	Actual	Target	Faithful
Tom 1989-10-30			
Tom 1989-11-13			
Tom 1989-11-27			
Tom 1989-12-20			
Tom 1990-01-02	Stage 1		
Tom 1990-01-16	Stage 2		
Tom 1990-01-30			
Tom 1990-02-20	Stage 3	Stage 1	Stage 1
Tom 1990-03-06		Stage 2	Stage 2
Tom 1990-03-20	Stage 4	Stage 3	Stage 3
Tom 1990-04-03	Stage 5	Stage 4	Stage 4
Tom 1990-04-17		Stage 5	
Tom 1990-05-01	Stage 6		Stage 5
Tom 1990-05-15			
Tom 1990-05-29	Stage 7	Stage 6	Stage 6
Tom 1990-06-12	Stage 8		
Tom 1990-06-26			Stage 7
Tom 1990-07-10			
Tom 1990-08-14		Stage 7	
Tom 1990-09-04			
Tom 1990-09-18		Stage 8	Stage 8
Tom 1990-10-02			
Tom 1990-10-23	Stage 9	Stage 9	
Tom 1990-11-20			
Tom 1991-01-08			

Table A.7: Tom's stages

APPENDIX B

Constraints

In the table below, every attested constraint is listed, with checkmarks in the columns headed by the children's names indicates whether the constraint is active in the child's grammar at some point.

	Catootje	Eva	Jarmo	Noortje	Robin	Tirza	Tom
[apprx]→[cont]	✓	✓	✓	✓	✓	✓	✓
[apprx]→[lab]			✓	✓	✓		✓
[cont]→[apprx]	✓	✓	✓				
[cont]→[lab]			✓				✓
[dist]→[cont]			✓			✓	
[lab]→[voice]					✓		
[nas]→[lab]			✓	✓			
[voice]→[lab]	✓					✓	✓
*[apprx, dist]			✓			✓	
*[apprx, dors]	✓	✓	✓	✓	✓	✓	✓
*[apprx, liq]	✓	✓	✓	✓	✓	✓	✓
*[cont, dors]	✓	✓	✓	✓	✓	✓	
*[cont, liq]	✓	✓	✓	✓	✓	✓	✓
*[dors, dist]			✓			✓	
*[dors, lab]	✓	✓	✓	✓	✓	✓	✓
*[dors, liq]	✓	✓	✓	✓	✓	✓	✓
*[dors, nas]	✓	✓	✓	✓	✓	✓	✓
*[dors, voice]	✓	✓	✓	✓	✓	✓	✓
*[lab, apprx]	✓					✓	
*[lab, cont]	✓			✓	✓	✓	
*[lab, dist]			✓			✓	
*[lab, liq]	✓	✓	✓	✓	✓	✓	✓
*[lab, nas]		✓			✓		
*[liq, apprx]	✓					✓	✓
*[liq, dist]			✓			✓	
*[nas, apprx]	✓	✓	✓	✓	✓	✓	✓
*[nas, cont]	✓	✓	✓	✓	✓	✓	✓
*[nas, dist]			✓			✓	
*[nas, liq]	✓	✓	✓	✓	✓	✓	✓
*[nas, voice]	✓	✓	✓	✓	✓	✓	✓
*[voice, apprx]	✓	✓	✓	✓	✓	✓	✓
*[voice, cont]	✓	✓	✓	✓	✓	✓	✓
*[voice, dist]			✓			✓	
*[voice, liq]	✓	✓	✓	✓	✓	✓	✓

Data

This appendix contains the data for each child included in the study described in chapter 4. It is divided into three different sections; one each for the three levels of description: actual, target, and faithful. For every child, the word onset inventories are listed per stage, followed by the features that are active at each stage, and finally, the feature co-occurrence constraints.

C.1 Catootje

C.1.1 Inventories

Stage	Inventory
1	p b t k m n l
2	p b t k m n l d j
3	p b t k m n l d j z
4	p b t k m n l d j z s
5	p b t k m n l d j z s r
6	p b t k m n l d j z s r ʊ
7	p b t k m n l d j z s r ʊ v
8	p b t k m n l d j z s r ʊ v ŋ
9	p b t k m n l d j z s r ʊ v ŋ f
10	p b t k m n l d j z s r ʊ v ŋ f x

C.1.2 Features

Stage	Features
1	[labial], [voice], [dorsal], [nasal], [liquid]
2	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
3	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
4	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
5	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
6	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
7	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
8	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
9	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
10	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]

C.1.3 Overpredictions

Stage	Overpredicted
1	
2	
3	[cont]
4	
5	
6	[lab, voice, cont] [lab, cont]
7	[lab, cont]
8	[lab, cont]
9	
10	

C.1.4 Constraints

Stage	1	2	3	4	5	6	7	8	9	10
Constraints	[voice]→[lab]	[apprx]→[cont] [cont]→[apprx]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]
[dors, apprx]		*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]
[dors, cont]		*[dors, cont]	*[dors, cont]	*[dors, cont]	*[dors, cont]	*[dors, cont]	*[dors, cont]	*[dors, cont]	*[dors, cont]	
[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]
[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]			
[lab, apprx]		*[lab, apprx]	*[lab, apprx]	*[lab, apprx]	*[lab, apprx]					
[lab, cont]		*[lab, cont]	*[lab, cont]	*[lab, cont]	*[lab, cont]					
[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]
[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]
[liq, apprx]		*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]	*[liq, apprx]
[liq, cont]		*[liq, cont]	*[liq, cont]	*[liq, cont]						
[nas, apprx]		*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]
[nas, cont]		*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]
[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]
[voice, apprx]		*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]
[voice, cont]		*[voice, cont]								
[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]
[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]
[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]

C.2   Eva

C.2.1   Inventories

Stage	Inventory
1	p b t d
2	p b t d n
3	p b t d n m ʋ j
4	p b t d n m ʋ j l s z
5	p b t d n m ʋ j l s z f
6	p b t d n m ʋ j l s z f k

C.2.2   Features

Stage	Features
1	[labial], [voice]
2	[labial], [voice], [nasal]
3	[labial], [voice], [nasal], [continuant], [approximant]
4	[labial], [voice], [nasal], [continuant], [approximant], [liquid]
5	[labial], [voice], [nasal], [continuant], [approximant], [liquid]
6	[labial], [voice], [nasal], [continuant], [approximant], [liquid], [dorsal]

C.2.3   Overpredictions

Stage	Overpredicted
1	
2	
3	
4	[lab, voice, cont] [lab, cont]
5	[lab, voice, cont]
6	[lab, voice, cont]

C.2.4 Constraints

Stage	1	2	3	4	5	6
Constraints			[apprx]→[cont] [cont]→[apprx]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]
		*[lab, nas]				*[apprx, dors]
				*[apprx, liq]	*[apprx, liq]	*[apprx, liq]
						*[cont, dors]
				*[cont, liq]	*[cont, liq]	*[cont, liq]
		*[lab, nas]				*[lab, dors]
				*[lab, liq]	*[lab, liq]	*[lab, liq]
						*[liq, dors]
			*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]
			*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]
						*[nas, dors]
				*[nas, liq]	*[nas, liq]	*[nas, liq]
			*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]
			*[voice, cont]			
						*[voice, dors]
				*[voice, liq]	*[voice, liq]	*[voice, liq]
		*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]

C.3   Jarmo

C.3.1   Inventories

Stage	*Inventory*
1	k
2	k t d
3	k t d p b
4	k t d p b m
5	k t d p b m ʋ
6	k t d p b m ʋ l
7	k t d p b m ʋ l n f
8	k t d p b m ʋ l n f s x
9	k t d p b m ʋ l n f s x r ʃ

C.3.2   Features

Stage	*Features*
1	[dorsal]
2	[dorsal], [voice]
3	[dorsal], [voice], [labial]
4	[dorsal], [voice], [labial], [nasal]
5	[dorsal], [voice], [labial], [nasal], [continuant], [approximant]
6	[dorsal], [voice], [labial], [nasal], [continuant], [approximant], [liquid]
7	[dorsal], [voice], [labial], [nasal], [continuant], [approximant], [liquid]
8	[dorsal], [voice], [labial], [nasal], [continuant], [approximant], [liquid]
9	[dorsal], [voice], [labial], [nasal], [continuant], [approximant], [liquid], [distributed]

C.3.3   Overpredictions

Stage	*Overpredicted*
1	[]
2	
3	
4	
5	
6	
7	
8	
9	

C.3.4   Constraints

Stage Constraints	1	2	3	4	5	6	7	8	9
[apprx]→[cont]					[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]
[apprx]→[lab]					[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]
[cont]→[apprx]					[cont]→[apprx]	[cont]→[apprx]			
[cont]→[lab]					[cont]→[lab]	[cont]→[lab]	[cont]→[lab]		
[dist]→[cont]									[dist]→[cont]
[nas]→[lab]				[nas]→[lab]	[nas]→[lab]	[nas]→[lab]			
*[apprx, dist]									*[apprx, dist]
*[apprx, liq]						*[apprx, liq]	*[apprx, liq]	*[apprx, liq]	*[apprx, liq]
*[cont, liq]						*[cont, liq]	*[cont, liq]	*[cont, liq]	
*[dors, apprx]					*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]	*[dors, apprx]
*[dors, cont]					*[dors, cont]	*[dors, cont]	*[dors, cont]		
*[dors, dist]									*[dors, dist]
*[dors, lab]			*[dors, lab]	*[dors, lab]	*[dors, lab]	*[dors, lab]	*[dors, lab]	*[dors, lab]	*[dors, lab]
*[dors, liq]						*[dors, liq]	*[dors, liq]	*[dors, liq]	*[dors, liq]
*[dors, nas]				*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]	*[dors, nas]
*[dors, voice]		*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]
*[lab, dist]									*[lab, dist]
*[lab, liq]						*[lab, liq]	*[lab, liq]	*[lab, liq]	*[lab, liq]
*[liq, dist]									*[liq, dist]
*[nas, apprx]					*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]
*[nas, cont]					*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]
*[nas, dist]									*[nas, dist]
*[nas, liq]						*[nas, liq]	*[nas, liq]	*[nas, liq]	*[nas, liq]
*[voice, apprx]					*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]
*[voice, cont]					*[voice, cont]	*[voice, cont]	*[voice, cont]	*[voice, cont]	*[voice, cont]
*[voice, dist]									*[voice, dist]
*[voice, liq]						*[voice, liq]	*[voice, liq]	*[voice, liq]	*[voice, liq]
*[voice, nas]				*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]

C.4   Noortje

C.4.1   Inventories

Stage	Inventory
1	m
2	m p t k
3	m p t k n
4	m p t k n b
5	m p t k n b d
6	m p t k n b d s
7	m p t k n b d s ʋ
8	m p t k n b d s ʋ f
9	m p t k n b d s ʋ f l j x

C.4.2   Features

Stage	Features
1	[nasal], [labial]
2	[nasal], [labial], [dorsal]
3	[nasal], [labial], [dorsal]
4	[nasal], [labial], [dorsal], [voice]
5	[nasal], [labial], [dorsal], [voice]
6	[nasal], [labial], [dorsal], [voice], [continuant]
7	[nasal], [labial], [dorsal], [voice], [continuant], [approximant]
8	[nasal], [labial], [dorsal], [voice], [continuant], [approximant]
9	[nasal], [labial], [dorsal], [voice], [continuant], [approximant], [liquid]

C.4.3   Overpredictions

Stage	Overpredicted
1	[]
2	
3	
4	
5	
6	
7	[lab, cont]
8	
9	

C.4.4 Constraints

Stage	1	2	3	4	5	6	7	8	9
Constraints	[lab]→[nas]	[nas]→[lab]		[voice]→[lab]			[apprx]→[cont] [apprx]→[lab]	[apprx]→[cont] [apprx]→[lab]	[apprx]→[cont]
	[nas]→[lab]								
						*[dors, cont]	*[dors, apprx]	*[dors, apprx]	*[apprx, liq]
							*[dors, cont]	*[dors, cont]	*[cont, liq]
									*[dors, apprx]
				*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, voice]	*[dors, liq]
						*[lab, cont]			*[dors, voice]
		*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]
									*[lab, liq]
							*[nas, apprx]	*[nas, apprx]	*[nas, apprx]
						*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]
		*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]
									*[nas, liq]
				*[nas, voice]	*[nas, voice]	*[nas, voice]	*[nas, voice]	*[nas, voice]	*[nas, voice]
							*[voice, apprx]	*[voice, apprx]	*[voice, apprx]
						*[voice, cont]	*[voice, cont]	*[voice, cont]	*[voice, cont]
									*[voice, liq]

C.5 Robin

C.5.1 Inventories

Stage	Inventory
1	b t d
2	b t d p n s
3	b t d p n s m
4	b t d p n s m f ʋ
5	b t d p n s m f ʋ v
6	b t d p n s m f ʋ v k z
7	b t d p n s m f ʋ v k z x
8	b t d p n s m f ʋ v k z x l
9	b t d p n s m f ʋ v k z x l j
10	b t d p n s m f ʋ v k z x l j r

C.5.2 Features

Stage	Features
1	[voice], [labial]
2	[voice], [labial], [nasal], [continuant]
3	[voice], [labial], [nasal], [continuant]
4	[voice], [labial], [nasal], [continuant], [approximant]
5	[voice], [labial], [nasal], [continuant], [approximant]
6	[voice], [labial], [nasal], [continuant], [approximant], [dorsal]
7	[voice], [labial], [nasal], [continuant], [approximant], [dorsal]
8	[voice], [labial], [nasal], [continuant], [approximant], [dorsal], [liquid]
9	[voice], [labial], [nasal], [continuant], [approximant], [dorsal], [liquid]
10	[voice], [labial], [nasal], [continuant], [approximant], [dorsal], [liquid]

C.5.3 Overpredictions

Stage	Overpredicted
1	
2	
3	
4	
5	[voice, cont]
6	
7	
8	
9	
10	

C.5.4 Constraints

Stage Constraints	1	2	3	4	5	6	7	8	9	10
[lab]→[voice]	[lab]→[voice]									
[apprx]→[cont]				[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]	[apprx]→[cont]
[apprx]→[lab]				[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]	[apprx]→[lab]		
*[apprx, dors]						*[apprx, dors]	*[apprx, dors]	*[apprx, dors]	*[apprx, dors]	*[apprx, dors]
*[apprx, liq]								*[apprx, liq]	*[apprx, liq]	*[apprx, liq]
*[cont, dors]						*[cont, dors]				
*[cont, liq]								*[cont, liq]	*[cont, liq]	
*[dors, liq]								*[dors, liq]	*[dors, liq]	*[dors, liq]
*[lab, cont]		*[lab, cont]	*[lab, cont]							
*[lab, dors]						*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]	*[lab, dors]
*[lab, liq]								*[lab, liq]	*[lab, liq]	*[lab, liq]
*[lab, nas]		*[lab, nas]								
*[nas, apprx]				*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]	*[nas, apprx]
*[nas, cont]		*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]	*[nas, cont]
*[nas, dors]						*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]	*[nas, dors]
*[nas, liq]								*[nas, liq]	*[nas, liq]	*[nas, liq]
*[voice, apprx]				*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]	*[voice, apprx]
*[voice, cont]		*[voice, cont]	*[voice, cont]	*[voice, cont]						
*[voice, dors]						*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]	*[voice, dors]
*[voice, liq]								*[voice, liq]	*[voice, liq]	*[voice, liq]
*[voice, nas]		*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]	*[voice, nas]

C.6   Tirza

C.6.1   Inventories

Stage	Inventory
1	p b t k m n s
2	p b t k m n s d l x
3	p b t k m n s d l x ʃ j
4	p b t k m n s d l x ʃ j r
5	p b t k m n s d l x ʃ j r f ʋ

C.6.2   Features

Stage	Features
1	[labial], [voice], [dorsal], [nasal], [continuant]
2	[labial], [voice], [dorsal], [nasal], [continuant], [liquid]
3	[labial], [voice], [dorsal], [nasal], [continuant], [liquid], [distributed], [approximant]
4	[labial], [voice], [dorsal], [nasal], [continuant], [liquid], [distributed], [approximant]
5	[labial], [voice], [dorsal], [nasal], [continuant], [liquid], [distributed], [approximant]

C.6.3   Overpredictions

Stage	Overpredicted
1	
2	
3	
4	
5	

C.6.4 Constraints

Stage				
Constraints				
1	2	3	4	5

1	2	3	4	5
[voice]→[lab]	*[cont, liq]	[apprx]→[cont] [dist]→[cont]	[apprx]→[cont] [dist]→[cont]	[apprx]→[cont] [dist]→[cont]
*[dors, cont]	*[dors, liq]	*[cont, liq]	*[dist, apprx]	*[dist, apprx]
*[dors, nas]	*[dors, nas]	*[dist, apprx]	*[dors, apprx]	*[dors, apprx]
*[lab, cont]	*[lab, cont]	*[dors, apprx]	*[dors, dist]	*[dors, dist]
*[lab, dors]	*[lab, dors]	*[dors, dist]	*[dors, liq]	*[dors, liq]
*[nas, cont]	*[lab, liq]	*[dors, liq]	*[dors, nas]	*[dors, nas]
*[voice, cont]	*[nas, cont]	*[dors, nas]	*[lab, apprx]	*[lab, dist]
*[voice, dors]	*[nas, liq]	*[lab, apprx]	*[lab, cont]	*[lab, dors]
*[voice, nas]	*[voice, cont]	*[lab, cont]	*[lab, dist]	*[lab, liq]
	*[voice, dors]	*[lab, dist]	*[lab, dors]	*[liq, apprx]
	*[voice, liq]	*[lab, dors]	*[lab, liq]	*[liq, dist]
	*[voice, nas]	*[lab, liq]	*[liq, apprx]	*[nas, apprx]
		*[liq, apprx]	*[liq, dist]	*[nas, cont]
		*[liq, dist]	*[nas, apprx]	*[nas, dist]
		*[nas, apprx]	*[nas, cont]	*[nas, liq]
		*[nas, cont]	*[nas, dist]	*[voice, apprx]
		*[nas, dist]	*[nas, liq]	*[voice, cont]
		*[nas, liq]	*[voice, apprx]	*[voice, dist]
		*[voice, apprx]	*[voice, cont]	*[voice, dors]
		*[voice, cont]	*[voice, dist]	*[voice, liq]
		*[voice, dist]	*[voice, dors]	*[voice, nas]
		*[voice, dors]	*[voice, liq]	
		*[voice, liq]	*[voice, nas]	
		*[voice, nas]		

C.7   Tom

C.7.1   Inventories

Stage	Inventory
1	p
2	p t
3	p t b
4	p t b k m n l f
5	p t b k m n l f ʋ x
6	p t b k m n l f ʋ x s
7	p t b k m n l f ʋ x s j
8	p t b k m n l f ʋ x s j d
9	p t b k m n l f ʋ x s j d r

C.7.2   Features

Stage	Features
1	[labial]
2	[labial]
3	[labial], [voice]
4	[labial], [voice], [dorsal], [nasal], [liquid], [continuant]
5	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
6	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
7	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
8	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]
9	[labial], [voice], [dorsal], [nasal], [liquid], [continuant], [approximant]

C.7.3   Overpredictions

Stage	Overpredicted
1	[]
2	
3	
4	
5	[cont]
6	
7	
8	
9	

C.7.4 Constraints

Constraint	1	2	3	4	5	6	7	8	9
[voice]→[lab]			✓	✓	✓	✓	✓		
[cont]→[lab]				✓					
[apprx]→[cont]					✓	✓	✓	✓	✓
[apprx]→[lab]					✓	✓			
*[dors, cont]				✓					
*[dors, apprx]					✓	✓	✓	✓	✓
*[dors, liq]				✓	✓	✓	✓	✓	✓
*[dors, nas]				✓	✓	✓	✓	✓	✓
*[lab, dors]				✓	✓	✓	✓	✓	✓
*[lab, liq]				✓	✓	✓	✓	✓	✓
*[liq, apprx]					✓	✓	✓	✓	✓
*[liq, cont]				✓	✓	✓	✓	✓	
*[nas, apprx]					✓	✓	✓	✓	✓
*[nas, cont]				✓	✓	✓	✓	✓	✓
*[nas, liq]				✓	✓	✓	✓	✓	✓
*[voice, apprx]					✓	✓	✓	✓	✓
*[voice, cont]				✓	✓	✓	✓	✓	✓
*[voice, dors]				✓	✓	✓	✓	✓	✓
*[voice, liq]				✓	✓	✓	✓	✓	✓
*[voice, nas]				✓	✓	✓	✓	✓	✓