

PROPH Profile

Filename: AG  
 02-15-2004  
 Word List: C:\CP\CP10\HAPP-3.WDL Hodson Assessment of Phonological Patterns-T

Diacritics

`	aspirated	<	fronted	(	rounded
>	backed	+	junction	=	unaspirated
\$	denasalized	-	lateralized	!	uncertain
^	dentalized	:	lengthened		unreleased
-	derhotacized	*	nasal emission	)	unrounded
.	devoiced	~	nasalized	/	voiced
#	frictionalized	'	palatalized	&	weakened
°	word-final sound produced only when next word has initial vowel				

	Gloss	Target	Transcription	Code
1	basket	bæskIt	baIgå	
2	boats	boUts	boUt	
3	candle	kændəl	aIgå	
4	chair	tʃɛr	[ɛα	
5	clouds	klaUdz	aU	
6	cowboy hat	kaUboIhæt	aUohæt	
8	feather	fɛðər	faIjə	
9	fish	fIʃ	fIʃ	
10	flower	flaUwər	faUwä	
11	fork	fɔrk	fok	
12	glasses	glæsIz	daIjə	
13	glove	glɒv	dɒf	
14	gum	gʌm	dä	
15	hanger	hæˈɑr	hegä	
16	horse	hɔrs	hos	
17	ice cubes	aIskjʌbz	aIsu	
18	jumping	dʒʌmpIːŋ	[a	
19	leaf	lif	i	
20	mask	mæsk	mäs	
21	music box	mju:zIk bɒks	mIjəbä	
23	page	peIdʒ	beI:	
24	plane	pleIn	beI	
25	queen	kwIn	i	
26	rock	rɒk	wäk	
27	screwdriver	skru:draIvɔr	udaIgə	
29	shoe	ʃu	[u	
30	slide	slaId	sä	
31	smoke	smoUk	oU	
32	snake	sneIk	eI	
33	soap	soUp	soUp	
34	spoon	spun	u	
35	square	skwɛr	ɛα	
36	star	stär	ö	
37	string	strIːŋ	[I	
38	swimming	swImIːŋ	ImI	
39	television	tɛlɒvIzən	äjəvija	
42	toothbrush	tuθbrʌʃ	ubä	
43	truck	trʌk	[ɒk	
44	vase	veIs	feIs	

45	watch	wätʃ	wö
46	yoyo	joUjoU	joUjoU
47	zip	zIp	sIp
48	crayons	kreonz	ä
49	black	blæk	bäk
50	green	grIn	di
51	yellow	jeləU	äjä
52	three	θri	i
53	thumb	θʌm	fö
54	nose	noUz	noU
55	mouth	maUθ	maU

Total Word Types 50  
 Total Word Tokens 50  
 Type-Token Ratio 1.00

Variability Analysis

Number of repeated words, showing same error	0
Number of repeated words, all produced correctly	0
Number of repeated words, showing different errors	0
Number of repeated words, one or more produced correctly	0
Number of repeated words	0
Variability index	-----

Homonymy Analysis

Number of homonymous forms	1
Number of phonetic forms	48
Ratio of homonymous forms	47.0
Proportion of homonymous forms	0.02

Number of homonymous types	3
Number of lexical types	50
Ratio of homonymous types	15.7
Proportion of homonymous types	0.06

Independent Analyses

Inventory of Word Shapes

C	0	0.0%	
V	10	20.0%	Syllable Structure Level
CV	12	24.0%	(Paul & Jennings, 1992)
VC	0	0.0%	Level 1 = 11
CVC	13	26.0%	Level 2 = 18
CnV	0	0.0%	Level 3 = 21
CnVC	0	0.0%	SSL = 2.20
VCn	0	0.0%	
C(n)VCn	0	0.0%	
2-syllable	11	22.0%	
3-syllable	3	6.0%	
4-syllable	1	2.0%	
5-syllable	0	0.0%	
6+-syllable	0	0.0%	

Inventory of Stress Patterns		
S	35	70.0%
Ss	9	18.0%
Sss	1	2.0%
Ssw	1	2.0%
Sw	2	4.0%
Sws	1	2.0%
Ssws	1	2.0%
Stress Pattern Types 7		Stress Pattern Tokens 50

Inventory of Vowel Phones										
Back Series	u	5	o	3	ô	3	ä	17		
Front Series	i	5	I	6	e	1				
Central Series	a	1	α	5	ŋ	2				
Diphthongs	aI	6	aU	4	eI	3	eI:	1	εα	2
	oU	6								
Rhotic Series										
Vowel Types 16		Vowel Tokens 70								

Inventory of Consonant Phones									
Initial									
Singletons (listed by place of articulation)									
Stops	b	6	d	5	g	1			
Vibrants									
Nasals	m	4	n	1					
Fricatives	f	6	s	3	ʃ	5	h	2	
Affricates									
Glides	w	2	j	3					
Liquids									
Clusters									
Medial									
Singletons (listed by place of articulation)									
Stops	b	1	g	3					
Vibrants									
Nasals									
Fricatives	v	1	s	1	h	1			
Affricates									
Glides	w	1	j	5					
Liquids									
Clusters									
Final									
Singletons (listed by place of articulation)									
Stops	p	2	t	2	k	4			
Vibrants									

Nasals						
Fricatives	f	1	s	3	ʃ	1
Affricates						
Glides						
Liquids						
Clusters						
	Consonant Types	Consonant Tokens				
Initial						
singletons	8	31				
clusters	3	7				
Medial						
singletons	4	6				
clusters	3	7				
Final						
singletons	6	13				
clusters	0	0				
All Positions						
singletons	15	50				
clusters	0	14				
all phones	15	64				

## Relational Analyses

Word Shape Target Analysis					
Matches	46.0%	23			
Monosyllabic	16.0%	8	23.5% of all monosyllabic shapes		
CV		1			
CVC		7			
Multisyllabic	30.0%	15	93.8% of all multisyllabic shapes		
2-syllable		11			
3-syllable		3			
4-syllable		1			
Mismatches	54.0%	27			
Monosyllabic	52.0%	26	76.5% of all monosyllabic shapes		
CVC-->CV		7			
CVC-->V		1			
CnV-->V		1			
CnVC-->CV		4			
CnVC-->CVC		3			
CnVC-->V		6			
C(n)VCn-->CVC		2			
C(n)VCn-->V		2			
Multisyllabic	2.0%	1	6.3% of all multisyllabic shapes		
2-syllable-->CVC		1			

Stress Pattern Target Analysis					
Matches	88.0%	44	62.5% of all multisyllabic words		
S		34			
Ss		4			
Sss		1			
Ssw		1			
Sw		2			
Sws		1			

Sws		1	
Mismatches	12.0%	6	37.5% of all multisyllabic words
Sw-->S		1	
Sw-->Ss		5	

Vowel Target Analysis

Back Series			
u (+)	5		
u->I	1		
U	-		
o	-		
ô	-		
@	-		
ä (+)	2		
ä->ô	2		
Front Series			
i (+)	4		
I (+)	5		
I->ø	1		
I->i	1		
I->ä	2		
I->α	1		
e	-		
ε->aI	1		
ε->ä	2		
ε->εα	2		
æ->aI	3		
æ->e	1		
æ->ä	3		
Central Series			
a	-		
}	-		
α (+)	4		
α->ä	3		
∅ (+)	2		
∅->a	1		
∅->ä	2		
∅->ô	1		
Diphthongs			
aI (+)	2		
aI->ä	1		
oI->o	1		
aU (+)	4		
eI (+)	3		
eI->eI:	1		
eα->ä	1		
oU (+)	6		
oU->ä	1		
Rhotic Series			
3	-		
σ	-		
ôr->o	2		

Percentage of Vowels Correct: 37/71 = 52.1%  
 Percentage of Vowels Correct Ignoring Diacritics: 38/71 = 53.5%

Consonant Target Analysis

	C-	-C-	-C		C-	-C-	-C
Stops				Affricates			
p (+)	0	0	2	tf->f	1	0	0
p->b	1	0	0	tf->ø	0	0	1
b (+)	2	0	0	dʒ->f	1	0	0
b->ø	0	1	0	dʒ->ø	0	0	1
t (+)	0	0	1	Glides			
t->ø	2	0	1	w (+)	1	1	0
d->ø	0	0	1	j (+)	1	1	0
k (+)	0	0	4	j->ø	1	0	0
k->ø	2	0	2	Liquids			
g->d	1	0	0	l->ø	1	0	1
Vibrants				l->j	0	2	0
ʀ	-	-	-	r->ø	0	0	7
ʀ	-	-	-	r->w	1	0	0
R	-	-	-	Clusters			
Nasals				tr->f	1	0	0
m (+)	2	1	0	dr->d	0	1	0
m->ø	0	0	2	kr->ø	1	0	0
n (+)	1	0	0	gr->d	1	0	0
n->ø	0	0	5	θr->ø	1	0	0
ñ	-	-	-	pl->b	1	0	0
n->g	0	1	0	bl->b	1	0	0
n->ø	0	0	3	kl->ø	1	0	0
Fricatives				gl->d	2	0	0
φ	-	-	-	fl->f	1	0	0
β	-	-	-	sp->ø	1	0	0
f (+)	3	0	0	st->ø	1	0	0
f->ø	0	0	1	sk->g	0	1	0
v (+)	0	1	0	sk->s	0	0	1
v->f	1	0	1	sm->ø	1	0	0
v->g	0	1	0	sn->ø	1	0	0
θ->f	1	0	0	sw->ø	1	0	0
θ->ø	0	0	1	sl->s	1	0	0
ð->j	0	1	0	kw->ø	1	0	0
s (+)	1	0	2	mj->m	1	0	0
s->j	0	1	0	str->f	1	0	0
z->ø	0	0	2	skr->ø	1	0	0
z->j	0	1	0	skw->ø	1	0	0
z->s	1	0	0	ts->t	0	0	1
[ (+)	1	0	1	ks->ø	0	0	1
[->ø	0	0	1	dz->ø	0	0	1
Z->j	0	1	0	bz->ø	0	0	1
x	-	-	-	mp->ø	0	1	0
t	-	-	-	nd->g	0	1	0
h (+)	2	1	0	nz->ø	0	0	1
				skj->s	0	1	0
				kb->b	0	1	0
				θbr->b	0	1	0

Percentage Consonants Correct

	Correct	Total	% Occurrence	% Correct
Stops	9	20	17.2%	45.0%
Vibrants	0	0	0.0%	----
Nasals	4	15	12.9%	26.7%
Fricatives	12	26	22.4%	46.2%
Affricates	0	4	3.4%	0.0%
Glides	4	5	4.3%	80.0%

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Liquids	0	12	10.3%	0.0%
[Clusters	0	34	29.3%	0.0%
Cluster Elements	10	73	----	13.7%
PCC	39	155		25.2%
Early 8	20	46		43.5%
Middle 8	11	48		22.9%
Late 8	8	61		13.1%
PCC-Revised	39	155		25.2%
PCC-Adjusted	39	155		25.2%
Severity Adjective (Shriberg & Kwiatkowski, 1982)				Severe
Articulation Competence Index (Shriberg, 1993)				12.6
Phonological Mean Length of Utterance (Ingram & Ingram, 2001)				3.80
Maximum possible PMLU				7.62
Proportion of Whole Word Proximity (Ingram & Ingram, 2001)				49.87

Error Breakdown		
Substitutions	17	19.5%
Omissions		
singletons	36	41.4%
entire cluster	16	18.4%
cluster element	18	20.7%
Distortions	0	0.0%
Additions	0	0.0%
Total Errors	87	

## Phonological Process Analysis

Process Description	Gloss	Transcription
≡ Reduplication		
Stage I	common 0;9-2;1	variable 2;2-2;6
(A multi-syllable production different from the target where the syllables are phonetically identical, e.g., [baba] for «bottle», [nʌnʌ] for «tummy». The target form must be multisyllabic.)		
—Total—		
Occ	0	Opp 21 0% Process Usage 86% Other Errors 14% Correct
≡ Velar Assimilation		
Stages I-II	common 0;9-2;4	variable 2;5-3;0
(The substitution of a velar consonant in a word containing a velar target sound, e.g., [gʌk] for «duck», [gæŋ] for «wagon», [gæjʌm] for «vacuum».		
nd→g	3 candle	aIgå
—Total—		
Occ	1	Opp 25 4% Process Usage 92% Other Errors 4% Correct
≡ Nasal Assimilation		
Stages I-II	common 0;9-2;4	variable 2;5-3;0
(The substitution of a nasal consonant in a word containing another nasal, whether correctly produced or substituted for another phone, e.g., [nʌn] for «sun», [mæmiz] for «matches», [neʌ] for «snake».		
—Total—		
Occ	0	Opp 19 0% Process Usage 100% Other Errors 0% Correct
≡ Velar Fronting		
Stages I-III	common 0;9-2;6	variable 2;7-3;3

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The substitution of an alveolar stop for a velar stop in either singleton or cluster context, e.g., k→t, g→d, n→n, k→d, g→t, n→d, kr→tr, kr→tw.

—Initial—						
gl→d	12 glasses	daIjä				
	13 glove	dʌf				
gr→d	50 green	di				
g→d	14 gum	dä				
Occ	4	Opp 11	36% Process Usage	64% Other Errors	0% Correct	
—Medial—						
Occ	0	Opp 2	0% Process Usage	100% Other Errors	0% Correct	
—Final—						
Occ	0	Opp 11	0% Process Usage	64% Other Errors	36% Correct	
—Total—						
Occ	4	Opp 24	17% Process Usage	67% Other Errors	17% Correct	

## ≡ Early Stopping (f, s, ʃ)

Stages I-III common 0;9-2;5 variable 2;6-3;0

The substitution of a homorganic or near-homorganic stop for the fricatives /f, θ, s, ʃ/ in either singleton or cluster context, e.g., f→p, f→b, θ→t, θ→p, s→d, s→t, ʃ→t, ʃ→d, fr→pr, fr→pw, ʃr→tr.

—Initial—					
Occ	0	Opp 5	0% Process Usage	0% Other Errors	100% Correct
—Medial—					
Occ	0	Opp 1	0% Process Usage	100% Other Errors	0% Correct
—Final—					
Occ	0	Opp 5	0% Process Usage	40% Other Errors	60% Correct
—Total—					
Occ	0	Opp 11	0% Process Usage	27% Other Errors	73% Correct

## ≡ Final Consonant Deletion

Stages I-IV common 0;9-2;9 variable 2;10-3;3

The omission of a final consonant singleton or cluster except for nasal and liquid singletons.

t→∅	1 basket	baIgå
d→∅	30 slide	sä
k→∅	31 smoke	oU
	32 snake	eI
f→∅	19 leaf	i
θ→∅	55 mouth	maU
z→∅	12 glasses	daIjä
	54 nose	noU
ʃ→∅	42 toothbrush	ubä
tf→∅	45 watch	wö
dʃ→∅	23 page	beI:
ks→∅	21 music box	mIjəbä
dz→∅	5 clouds	aU
bz→∅	17 ice cubes	aIsu
nz→∅	48 crayons	ä
—Total—		
Occ	15	Opp 28 54% Process Usage 11% Other Errors 36% Correct

## ≡ Context-Sensitive Voicing (singletons)

Stages I-IV common 0;9-2;3 variable 2;4-3;0

The substitution of a consonant singleton by its voiced or voiceless cognate, e.g., p→b, b→p, t→d, d→t, f→v, z→s.

—Initial—					
v→f	44 vase	feIs			
z→s	47 zip	sIp			
p→b	23 page	beI:			
Occ	3	Opp 18	17% Process Usage	44% Other Errors	39% Correct
—Medial—					

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Final	Occ 0	Opp 7	0% Process Usage	86% Other Errors	14% Correct
	v→f		13 glove	dŋf	
Total	Occ 1	Opp 22	5% Process Usage	50% Other Errors	45% Correct
	Occ 4	Opp 47	9% Process Usage	53% Other Errors	38% Correct
≡ Cluster Reduction Stages I-IV common 0;9-3;3 variable 3;4-3;9 The replacement of a consonant cluster by a consonant singleton or by a cluster containing fewer consonants, e.g., bl→»b, sw→»s, spl→»pw.					
Initial	kl→»ø		5 clouds	aU	
	fl→»f		10 flower	faUwä	
	gl→»d		12 glasses	daIjä	
			13 glove	dŋf	
	mj→»m		21 music box	mIjobä	
	pl→»b		24 plane	beI	
	kw→»ø		25 queen	i	
	skr→»ø		27 screwdriver	udaIɣø	
	sl→»s		30 slide	sä	
	sm→»ø		31 smoke	oU	
	sn→»ø		32 snake	eI	
	sp→»ø		34 spoon	u	
	skw→»ø		35 square	εα	
	st→»ø		36 star	ø	
	str→»[		37 string	[I	
	sw→»ø		38 swimming	ImI	
	tr→»[		43 truck	[ŋk	
	kr→»ø		48 crayons	ä	
	bl→»b		49 black	bäk	
	gr→»d		50 green	di	
	θr→»ø		52 three	i	
Medial	Occ 21	Opp 21	100% Process Usage	0% Other Errors	0% Correct
	sk→»g		1 basket	baIɣä	
	nd→»g		3 candle	aIɣä	
	skj→»s		17 ice cubes	aIsu	
	mp→»ø		18 jumping	[a	
	kb→»b		21 music box	mIjobä	
	dr→»d		27 screwdriver	udaIɣø	
	θbr→»b		42 toothbrush	ubä	
Final	Occ 7	Opp 7	100% Process Usage	0% Other Errors	0% Correct
	ts→»t		2 boats	boUt	
	dz→»ø		5 clouds	aU	
	bz→»ø		17 ice cubes	aIsu	
	sk→»s		20 mask	mäs	
	ks→»ø		21 music box	mIjobä	
	nz→»ø		48 crayons	ä	
Total	Occ 6	Opp 6	100% Process Usage	0% Other Errors	0% Correct
	Occ 34	Opp 34	100% Process Usage	0% Other Errors	0% Correct
≡ Gliding Stages I-VII common 0;9-2;11 variable 3;0-5;0+ The substitution of a glide for a liquid singleton, i.e., r→»w, l→»j, r→»j, l→»j.					
Initial	r→»w		26 rock	wäk	
Medial	Occ 1	Opp 2	50% Process Usage	50% Other Errors	0% Correct

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Final	l→»j		39 television	äjovijə	
			51 yellow	äjä	
Total	Occ 2	Opp 2	100% Process Usage	0% Other Errors	0% Correct
	Occ 0	Opp 8	0% Process Usage	100% Other Errors	0% Correct
	Occ 3	Opp 12	25% Process Usage	75% Other Errors	0% Correct
≡ Palatal Fronting ([,Z,tf,d]) Stages IV-V common 2;9-3;5 variable 3;6-4;3 The substitution of an alveolar fricative for a palatal fricative or affricate, e.g., [→»s, tf→»z, Z→»s, dɟ→»z. Note that the substitution of an alveolar stop for a palatal phoneme is analyzed as Stopping.					
Initial	Occ 0	Opp 3	0% Process Usage	67% Other Errors	33% Correct
Medial	Occ 0	Opp 1	0% Process Usage	100% Other Errors	0% Correct
Final	Occ 0	Opp 4	0% Process Usage	75% Other Errors	25% Correct
Total	Occ 0	Opp 8	0% Process Usage	75% Other Errors	25% Correct
≡ Later Stopping (v,z,Z,tf,dɟ,θ,ð) Stages IV-VII common 0;9-4;8 variable 2;6-5;0+ The substitution of a homorganic stop for the fricatives /v, θ, ð, z, Z/ or the substitution of a stop for an affricate, e.g., v→»b, v→»p, z→»t, z→»d, Z→»d, Z→»t, tf→»d, tf→»t, dɟ→»d, dɟ→»t, θ→»t, θ→»d, ð→»d.					
Initial	Occ 0	Opp 5	0% Process Usage	100% Other Errors	0% Correct
Medial	Occ 0	Opp 5	0% Process Usage	80% Other Errors	20% Correct
Final	Occ 0	Opp 6	0% Process Usage	100% Other Errors	0% Correct
Total	Occ 0	Opp 16	0% Process Usage	94% Other Errors	6% Correct
≡ Fricative Simplification (θ,ð) Stages IV-VII common 2;6-3;6 variable 3;7-4;6 The substitution of a labiodental or alveolar fricative for an interdental fricative with no change in voicing, i.e., θ→»f, θ→»s, ð→»v, ð→»z.					
Initial	θ→»f		53 thumb	fô	
Medial	Occ 1	Opp 1	100% Process Usage	0% Other Errors	0% Correct
Final	Occ 0	Opp 1	0% Process Usage	100% Other Errors	0% Correct
Total	Occ 1	Opp 3	33% Process Usage	67% Other Errors	0% Correct
≡ Cluster Simplification (C/l/,C/r/) Stages V-VI variable 3;6-4;0 The substitution of a glide for a liquid in C[r], C[l], CC[r], and CC[l] clusters, e.g., bl→»bw, br→»bj, tr→»tw, spl→»spw.					
Initial	Occ 0	Opp 12	0% Process Usage	100% Other Errors	0% Correct
Medial	Occ 0	Opp 1	0% Process Usage	100% Other Errors	0% Correct
Final	Occ 0	Opp 0	---- Process Usage	---- Other Errors	---- Correct
Total	Occ 0	Opp 13	0% Process Usage	100% Other Errors	0% Correct

≡ Deaffrication						
Stages V-VI variable 3;2-4;8						
The substitution of a palatal fricative for an affricate, e.g., tf→[, dʒ→ʒ.						
Initial						
tf→[	4 chair			{εα		
dʒ→ʒ	18 jumping			a		
Occ 2	Opp 2	100%	Process Usage	0%	Other Errors	0% Correct
Medial						
Occ 0	Opp 0	----	Process Usage	----	Other Errors	----
Final						
Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0% Correct
Total						
Occ 2	Opp 4	50%	Process Usage	50%	Other Errors	0% Correct
≡ Liquid Deletion						
Atypical in initial and medial position, variable 2;0-5;0+ in final position						
Liquids /l/ and /r/ are deleted or replaced by a back vowel, e.g.,						
ræbIt→æbIt, kɛrɔt→kɛɔt, däl→däɔ. In final position, this process may						
also be referred to as Vocalization or Vowelization.						
Initial						
l→ɔ	19 leaf			i		
Occ 1	Opp 2	50%	Process Usage	50%	Other Errors	0% Correct
Medial						
Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0% Correct
Final						
r→ɔ	4 chair			{εα		
	8 feather			faijɔ		
	10 flower			faUwä		
	15 hanger			hegä		
	27 screwdriver			udaIɔ		
	35 square			εα		
	36 star			ô		
	3 candle			aIɔ		
l→ɔ	Occ 8	Opp 8	100%	Process Usage	0%	Other Errors
						0% Correct
Total						
Occ 9	Opp 12	75%	Process Usage	25%	Other Errors	0% Correct
≡ Backing of Alveolars						
Atypical process						
The substitution of velar consonants for alveolar consonants, e.g., t→k,						
d→g, n→ŋ, s→k, z→g. Velar Assimilation may be operative in certain						
instances.						
Initial						
Occ 0	Opp 4	0%	Process Usage	75%	Other Errors	25% Correct
Medial						
Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0% Correct
Final						
Occ 0	Opp 7	0%	Process Usage	57%	Other Errors	43% Correct
Total						
Occ 0	Opp 13	0%	Process Usage	69%	Other Errors	31% Correct
≡ Glottal Substitution						
Atypical process						
The substitution of a glottal stop /ʔ/ or a glottal fricative /h/ for another						
consonant singleton or cluster, e.g., d→h, s→ʔ, sp→h, sk→ʔ.						
Initial						
Occ 0	Opp 47	0%	Process Usage	74%	Other Errors	26% Correct
Medial						
Occ 0	Opp 17	0%	Process Usage	76%	Other Errors	24% Correct
Final						

Occ 0	Opp 46	0%	Process Usage	78%	Other Errors	22% Correct
Total						
Occ 0	Opp 110	0%	Process Usage	76%	Other Errors	24% Correct
≡ Sound Additions						
Atypical process						
A word normally initiated with a vowel is instead initiated with a consonant,						
e.g., apɔl→bapɔl, or a word terminating with a vowel is terminated with a						
consonant, e.g., pilo-pilos. The process cannot occur in medial position.						
Initial						
Occ 0	Opp 0	----	Process Usage	----	Other Errors	----
Medial						
Occ 0	Opp 0	----	Process Usage	----	Other Errors	----
Final						
Occ 0	Opp 0	----	Process Usage	----	Other Errors	----
Total						
Occ 0	Opp 0	----	Process Usage	----	Other Errors	----
≡ Gliding of Fricatives						
Typical process but less common than Stopping						
The substitution of glides /w, j/ or the liquid /l/ for fricative singletons,						
e.g., f→w, s→l, s→j.						
Initial						
Occ 0	Opp 10	0%	Process Usage	30%	Other Errors	70% Correct
Medial						
Z→j	39 television			äjɔvijɔ		
s→j	12 glasses			daijä		
z→j	21 music box			mIjɔbä		
ð→j	8 feather			faijɔ		
Occ 4	Opp 7	57%	Process Usage	14%	Other Errors	29% Correct
Final						
Occ 0	Opp 9	0%	Process Usage	67%	Other Errors	33% Correct
Total						
Occ 4	Opp 26	15%	Process Usage	38%	Other Errors	46% Correct
≡ Stopping of Liquids						
Typical process but less common than Gliding						
The substitution of /d/ for the liquid singletons /l, r/.						
Initial						
Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0% Correct
Medial						
Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0% Correct
Final						
Occ 0	Opp 8	0%	Process Usage	100%	Other Errors	0% Correct
Total						
Occ 0	Opp 12	0%	Process Usage	100%	Other Errors	0% Correct
≡ Glottal Substitution for Stops						
The substitution of a glottal stop /ʔ/ or a glottal fricative /h/ for a						
singleton stop consonant.						
Initial						
Occ 0	Opp 8	0%	Process Usage	75%	Other Errors	25% Correct
Medial						
Occ 0	Opp 1	0%	Process Usage	100%	Other Errors	0% Correct
Final						
Occ 0	Opp 11	0%	Process Usage	36%	Other Errors	64% Correct
Total						
Occ 0	Opp 20	0%	Process Usage	55%	Other Errors	45% Correct
≡ Glottal Substitution for Fricatives/Affricates						
The substitution of a glottal stop /ʔ/ or a glottal fricative /h/ for a						
singleton fricative or affricate consonant.						

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Initial	Occ 0	Opp 10	0%	Process Usage	50%	Other Errors	50%	Correct
Medial	Occ 0	Opp 6	0%	Process Usage	83%	Other Errors	17%	Correct
Final	Occ 0	Opp 11	0%	Process Usage	73%	Other Errors	27%	Correct
Total	Occ 0	Opp 27	0%	Process Usage	67%	Other Errors	33%	Correct
≡ Glottal Substitution for Liquids/Glides/Nasals The substitution of a glottal stop /ʔ/ or a glottal fricative /h/ for a singleton liquid, glide, or nasal consonant.								
Initial	Occ 0	Opp 8	0%	Process Usage	38%	Other Errors	63%	Correct
Medial	Occ 0	Opp 6	0%	Process Usage	50%	Other Errors	50%	Correct
Final	Occ 0	Opp 18	0%	Process Usage	100%	Other Errors	0%	Correct
Total	Occ 0	Opp 32	0%	Process Usage	75%	Other Errors	25%	Correct
≡ Deletion of Stops The deletion of a singleton stop consonant.								
Initial	t→∅	39 television		äjaviɣə				
		42 toothbrush		ubä				
	k→∅	3 candle		aIɣä				
		6 cowboy hat		aUohät				
Occ 4	Opp 8	50%	Process Usage	25%	Other Errors	25%	Correct	
Medial	b→∅	6 cowboy hat		aUohät				
Occ 1	Opp 1	100%	Process Usage	0%	Other Errors	0%	Correct	
Final	t→∅	1 basket		baIɣä				
	d→∅	30 slide		sä				
	k→∅	31 smoke		oU				
		32 snake		eI				
Occ 4	Opp 11	36%	Process Usage	0%	Other Errors	64%	Correct	
Total	Occ 9	Opp 20	45%	Process Usage	10%	Other Errors	45%	Correct
≡ Deletion of Fricatives The deletion of a singleton fricative consonant.								
Initial	Occ 0	Opp 8	0%	Process Usage	38%	Other Errors	63%	Correct
Medial	Occ 0	Opp 6	0%	Process Usage	83%	Other Errors	17%	Correct
Final	θ→∅	55 mouth		maU				
	f→∅	19 leaf		i				
	z→∅	12 glasses		daIɣä				
		54 nose		noU				
	ʃ→∅	42 toothbrush		ubä				
Occ 5	Opp 9	56%	Process Usage	11%	Other Errors	33%	Correct	
Total	Occ 5	Opp 23	22%	Process Usage	39%	Other Errors	39%	Correct
≡ Deletion of Affricates The deletion of a singleton affricate consonant.								
Initial	Occ 0	Opp 2	0%	Process Usage	100%	Other Errors	0%	Correct
Medial								

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Occ 0	Opp 0	----	Process Usage	----	Other Errors	----	Correct	
Final	tf→∅	45 watch		wô				
	dʃ→∅	23 page		beI:				
Occ 2	Opp 2	100%	Process Usage	0%	Other Errors	0%	Correct	
Total	Occ 2	Opp 4	50%	Process Usage	50%	Other Errors	0%	Correct
≡ Deletion of Glides The deletion of a singleton glide consonant.								
Initial	j→∅	51 yellow		äjä				
Occ 1	Opp 3	33%	Process Usage	0%	Other Errors	67%	Correct	
Medial	Occ 0	Opp 2	0%	Process Usage	0%	Other Errors	100%	Correct
Final	Occ 0	Opp 0	----	Process Usage	----	Other Errors	----	Correct
Total	Occ 1	Opp 5	20%	Process Usage	0%	Other Errors	80%	Correct
≡ Deletion of Nasals The deletion of a singleton nasal consonant.								
Initial	Occ 0	Opp 3	0%	Process Usage	0%	Other Errors	100%	Correct
Medial	Occ 0	Opp 2	0%	Process Usage	50%	Other Errors	50%	Correct
Final	m→∅	14 gum		dä				
		53 thumb		fô				
	n→∅	24 plane		beI				
		25 queen		i				
		34 spoon		u				
		39 television		äjaviɣə				
		50 green		di				
		18 jumping		ʃa				
		37 string		ʃI				
		38 swimming		ImI				
Occ 10	Opp 10	100%	Process Usage	0%	Other Errors	0%	Correct	
Total	Occ 10	Opp 15	67%	Process Usage	7%	Other Errors	27%	Correct
≡ Deletion of /s/ clusters The deletion of all segments in a cluster containing /s/.								
Initial	sp→∅	34 spoon		u				
	st→∅	36 star		ô				
	sm→∅	31 smoke		oU				
	sn→∅	32 snake		eI				
	sw→∅	38 swimming		ImI				
	skr→∅	27 screwdriver		udaIɣə				
Occ 6	Opp 7	86%	Process Usage	14%	Other Errors	0%	Correct	
Medial	Occ 0	Opp 1	0%	Process Usage	100%	Other Errors	0%	Correct
Final	ks→∅	21 music box		mIjobä				
Occ 1	Opp 3	33%	Process Usage	67%	Other Errors	0%	Correct	
Total	Occ 7	Opp 11	64%	Process Usage	36%	Other Errors	0%	Correct
≡ Deletion of /r/ clusters The deletion of all segments in a cluster containing /r/.								
Initial								

kr→ø								48 crayons	ä
Ør→ø								52 three	i
Occ	2	Opp	4	50%	Process Usage	50%	Other Errors	0% Correct	
---Medial---									
Occ	0	Opp	1	0%	Process Usage	100%	Other Errors	0% Correct	
---Final---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	
---Total---									
Occ	2	Opp	5	40%	Process Usage	60%	Other Errors	0% Correct	
≡ Deletion of /l/ clusters The deletion of all segments in a cluster containing /l/.									
---Initial---									
kl→ø								5 clouds	aU
Occ	1	Opp	7	14%	Process Usage	86%	Other Errors	0% Correct	
---Medial---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	
---Final---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	
---Total---									
Occ	1	Opp	7	14%	Process Usage	86%	Other Errors	0% Correct	
≡ Deletion of nasal clusters The deletion of all segments in a cluster containing /m, n, ñ/.									
---Initial---									
sm→ø								31 smoke	oU
Occ	1	Opp	1	100%	Process Usage	0%	Other Errors	0% Correct	
---Medial---									
mp→ø								18 jumping	ǰa
Occ	1	Opp	2	50%	Process Usage	50%	Other Errors	0% Correct	
---Final---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	
---Total---									
Occ	2	Opp	3	67%	Process Usage	33%	Other Errors	0% Correct	
≡ Lateralization of sibilants Lateral emission in the production of sibilants /s, z, ts, dz, ʃ, ʒ, tʃ, dʒ/ in either singleton or cluster context, indicated by a diacritic for lateralization, e.g., z_u «zoo», s_pun «spoon».									
---Initial---									
Occ	0	Opp	11	0%	Process Usage	82%	Other Errors	18% Correct	
---Medial---									
Occ	0	Opp	4	0%	Process Usage	100%	Other Errors	0% Correct	
---Final---									
Occ	0	Opp	13	0%	Process Usage	77%	Other Errors	23% Correct	
---Total---									
Occ	0	Opp	28	0%	Process Usage	82%	Other Errors	18% Correct	
≡ Epenthesis (I) (M) Insertion of a schwa vowel between segments in an initial or medial cluster, indicated by a diacritic for lengthening, e.g., s_pun «spoon».									
---Initial---									
Occ	0	Opp	19	0%	Process Usage	100%	Other Errors	0% Correct	
---Medial---									
Occ	0	Opp	2	0%	Process Usage	100%	Other Errors	0% Correct	
---Total---									
Occ	0	Opp	21	0%	Process Usage	100%	Other Errors	0% Correct	
≡ Flapping (M) Substitution of a flap for an alveolar stop in medial position.									
---Medial---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	

---Total---									
Occ	0	Opp	0	----	Process Usage	----	Other Errors	---- Correct	
# Other Substitutions & Distortions									
---Initial---									
---Medial---									
n→g								15 hanger	hegä
v→g								27 screwdriver	udaIgo
---Final---									
---Total---									
Occ	2	Opp	--	----	Process Usage	0%	Other Errors	---- Correct	
# Other Deletions									
---Initial---									
---Medial---									
---Final---									
---Total---									
Occ	0	Opp	--	----	Process Usage	----	Other Errors	---- Correct	
• Syllable Structure Changes - Deletions									
Sw-->S								17 jumping	ǰaøV
Occ	1	Multisyllabic Opp	16	Monosyllabic Opp	34	6%	Usage		
# Syllable Structure Changes - Additions									
Occ	0	Multisyllabic Opp	16	Monosyllabic Opp	34	0%	Usage		