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APPENDIX A (CONTINUED):

EXAMINATION OF THE CHILD'S ABILITY TO PLAN AND EXECUTE ISOLATED, TWO-SEQUENCE, AND THREE-SEQUENCE VOLUNTARY NON-SPEECH ORAL MOVEMENTS (NSOM)

Instructions: Use the Rating scale and rate all target movement/s by assigning *all* applicable alphabet numbers (behavior descriptions) in each category.

NAME OF CHILD: _____
DATE TESTED: _____ DATE OF BIRTH: _____
CHRONOLOGICAL AGE: _____

RATING SHEET FOR SUB-AIM ONE

TARGET MOVEMENT/S	CATEGORY		
	<i>I</i> Associated Movements	<i>II</i> Accuracy of Individual Movements	<i>III</i> Sequencing
Target Isolated Oral Movements (1-OM)			
1.1. Blow candle			
1.2. Puff cheeks			
1.3. Lick ice cream			
Target Two-sequence Oral Movements (2S-OM)			
2.1. Kiss, cough			
2.2. Lips, tongue			
2.3. Cheeks, tongue			
Target Three-sequence oral movements (3S-OM)			
3.1. Lips, cheeks, tongue			
3.2. Kiss, nose candle			

APPENDIX A: TEST/RECORDING AND RATING SHEETS FOR SUB-AIM ONE

EXAMINATION OF THE CHILD'S ABILITY TO PLAN AND EXECUTE ISOLATED, TWO-SEQUENCE, AND THREE-SEQUENCE VOLUNTARY NON-SPEECH ORAL MOVEMENTS (NSOM)

INSTRUCTIONS: *For (IOM):* Ask the child to execute each of the tasks by saying: "I want you to do this...(followed by the tasks in the table). *For (2S-OM & 3S-OM):* First instruct the child verbally to execute each task and then demonstrate it e.g. "I'm going to ask you to do different things with your mouth, cheeks, lips and tongue. First I will tell you what to do and then I will show you how to do it". Practice an example first until you are sure that the child understands what is expected e.g. "Bite your lip and stick out your tongue. Like this...(demonstrate). Now you try and do it". Provide key words during testing, if the child give any indication of forgetting the instructions (in order to assist auditory memory). Note the child's responses in the open spaces provided in the table.

NAME OF CHILD: _____
 DATE TESTED: _____ DATE OF BIRTH: _____
 CHRONOLOGICAL AGE: _____

TEST/RECORDING SHEET FOR SUB-AIM ONE

Target Isolated Oral Movements (I-OM)	Target Two-sequence Oral Movements (2S-OM)	Target Three-sequence Oral Movements (3S-OM)
1.1. "Show me how to blow out a candle".	2.1. "Blow a kiss and cough". <i>Key Words: "Kiss, cough"</i>	3.1. "Pout (pucker) your lips, puff out your cheeks and stick out your tongue". <i>Key Words: "Lips, cheeks, tongue"</i>
1.2. "Puff out your cheeks".	2.2. "Pout (pucker) your lips & then touch your left and right lip corners fast with you tongue" (lateralize tongue outside mouth). <i>Key Words: "Lips, tongue"</i>	
1.2. "Show me how you lick an ice cream".	2.3. "Puff out your cheeks and then touch your left and right lip corners fast with your tongue (lateralize tongue outside mouth). <i>Key Words: "Cheeks, tongue"</i>	3.2. "Blow a kiss, try to touch your nose with your tongue and show me how to blow out a candle". <i>Key Words: "Kiss, nose, candle"</i>

APPENDIX C: TEST/RECORDING/RATING SHEET FOR SUB-AIM THREE

EVALUATION OF SPEECH DIADOCHOKINESIS

INSTRUCTIONS: In order to maintain interest and to elicit a good measurable sample, a game-like procedure can be used with plastic animal figurines running a pretend race on a toy racing track. The child can be allowed to choose a contestant (animal) from a toy box (different animal for each target utterance). Explain to the child that the animal can only run in the race while he/she maintained the production of the target utterance. Ask the child to start producing the target utterance when you say "Go" ! A miniature stop sign can be put at the end of the toy racing track and it has to be explained to the child that he/she should continue production until the animal (manipulated by the examiner) reaches the stop sign. The examiner can time the productions with a wristwatch (using the second hand). Elicit eight seconds of productions in order to ensure that 5 full seconds of productions are available for analysis. Practice the procedure thoroughly with examples until you are convinced that the child comprehended the procedure. The following instructions can be used: "You are going to help each animal to complete the race. Each animal can only run while you say the word I tell you to say. Let's practice with the dog. Let's pretend I ask you to say 'mie-mie-mie-mie'. What do you have to say ? (allow time for the child to answer). That's right. When I say "begin" you have to start saying "mie-mie-mie" until I say stop. The dog will only run as long as you say mie-mie-mie. If you stop speaking, the dog will also stop running. Let's practice it now. Say 'mie' until I say stop. Begin !". Elicit the target syllables randomly (from the list provided) . If the child has trouble producing the target sequence, the examiner can model it twice. Note any problems or additional information of the child's production on the recording form. Make an audio-recording of the test for later analysis (to count the number of productions and to rate productions using the *Rating Scale for the Evaluation of Speech Diadochokinesis*).

NAME OF CHILD: _____ DATE TESTED: _____ DATE OF BIRTH: _____ CHRONOLOGICAL AGE: _____

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 5 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Velar Diadochokinesis					
[dɒnɔ]	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				

DDR: _____

APPENDIX B: TEST/RECORDING/RATING SHEET FOR SUB-AIM TWO

EVALUATION OF NON-SPEECH ORAL DIADOCHOKINESIS (NSO-DDK) OF THE TONGUE, LIPS AND JAW

INSTRUCTIONS: Ask the child to execute each movement in the table after demonstrating it first by saying: "I'm going to ask you to do different things with your tongue, lips and jaw. First I will tell you what to do and then I will show you how to do it". Practice an example first e.g. "Bite your lip over and over again. Like this....(demonstrate). Now you do it until I say stop". Try to elicit a continuous production of the target movement for a period of at least 5 seconds. Proceed to the test items when it is apparent that the child understands the procedure completely. If necessary, the examiner can provide initial verbal keywords in order to facilitate production (see table). However, continue this for a limited time-period only, (about 3 repetitions), until it is clear that the child executed the command correctly (as this assistance may interfere with normal rhythm). Note the child's responses in the open spaces provided in the table and rate all applicable descriptions according to the *Rating Scale for the Evaluation of Non-speech Oral Diadochokinesis*.

NAME OF CHILD: _____
 DATE TESTED: _____ DATE OF BIRTH: _____
 CHRONOLOGICAL AGE: _____

TEST/RECORDING/RATING SHEET FOR SUB-AIM TWO

TARGET MOVEMENT	DESCRIPTION OF BEHAVIOR	RATINGS FOR I (ASSOCIATED MOVEMENTS)	RATINGS FOR II (ACCURACY OF INDIVIDUAL MOVEMENTS)	RATINGS FOR III (SEQUENCING)	RATINGS FOR IV (CONTINUITY)
<p>1. <u>Tongue lateralization outside the mouth:</u> Ask the child to move his/her tongue repeatedly and as fast as possible from one lip corner to another outside mouth. <i>Key Words: "left-right"</i></p>					
<p>2. <u>Tongue in and out of mouth:</u> Ask the child to move his/her tongue repeatedly and as fast as possible in and out of the mouth. <i>Key Words: "in-out"</i></p>					
<p>3. <u>Lips pout-stretch:</u> Ask the child to pout and stretch the lips repeatedly and as fast as possible. <i>Key Words: "round-flat"</i></p>					
<p>4. <u>Jaw open-close:</u> Ask the child to open and close the mouth repeatedly and as fast as possible. <i>Key Words: "open-close"</i></p>					

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 5 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Tongue Diadochokinesis (-continued)					
[tə] DDR: _____	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
[kə] DDR: _____	25.				
	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 5 SECONDS	RATINGS FOR I. ASSOCIATED MOVEMENTS	RATINGS FOR II. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Glottal Diadochokinesis					
[pəbə] DDR: ____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
Tongue Diadochokinesis					
[tə]	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 4 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Combined diadochokinesis in Two-place CV-CV syllable strings					
[pəkə] DDR: ____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
[təkə]	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 6 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Lip Diadochokinesis					
[pə]	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
	16.				
	17.				
	18.				
	19.				
	20.				
	21.				
	22.				
	23.				
	24.				
	25.				
DDR: _____					

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 6 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Combined diadochokinesis in Three-place CV-CV-CV Syllable strings					
[pətəkə] DDR: _____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
[kətəpə] DDR: _____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
[təpəkə] DDR: _____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				

APPENDIX C (-CONTINUED):

TARGET	TRANSCRIPTIONS OF ALL TRIALS PRODUCED IN 5 SECONDS	RATINGS FOR II. ASSOCIATED MOVEMENTS	RATINGS FOR III. ACCURACY	RATINGS FOR IV. SOUND STRUCTURE	OVERALL RATING FOR I. CONTINUITY
Combined diadochokinesis in Two-place CV-CV syllable strings (-continued)					
[təkə] (continued) DDR: _____	11.				
	12.				
	13.				
	14.				
	15.				
[kəpə] DDR: _____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				
	11.				
	12.				
	13.				
	14.				
	15.				
[kətə] DDR: _____	1.				
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				
	8.				
	9.				
	10.				

APPENDIX D (-CONTINUED):

AFRIKAANS -CCC- CC-CLUSTERS IN FINAL WORD POSITION

TARGET UNIT	TRANSCRIBED PRODUCTION	DESCRIPTION
[m]		
[f]		
[x]		
[p]		
[t]		
[mp]		
[nt]		
[ŋk]		
[s]		
[ts]		
[ks]		
[ns]		
[ps]		
[xs]		
[rs]		
[rk]		
[rx]		
[rf]		
[rp]		
[rm]		
[rt]		
[rts]		
[ŋks]		

RESULTS:

TOTAL FOR INITIAL CLUSTERS: $\frac{\quad}{29} = \quad\%$

TOTAL FOR FINAL CLUSTERS: $\frac{\quad}{24} = \quad\%$



APPENDIX D: RECORDING/ANALYSIS SHEET FOR SUB-AIM FOUR

NAME OF CHILD: _____ DATE TESTED: _____
DATE OF BIRTH: _____ CHRONOLOGICAL AGE: _____

AFRIKAANS CC-/CCC-CLUSTERS IN INITIAL WORD POSITION

TARGET UNIT	TRANSCRIBED PRODUCTION	DESCRIPTION
[p]		
[k]		
[x]		
[f]		
[b]		
[fn]		
[kn]		
[kw]		
[tw]		
[dw]		
[s]		
[sw]		
[sn]		
[st]		
[sk]		
[sm]		
[sp]		
[spl]		
[kr]		
[xr]		
[vr]		
[fr]		
[pr]		
[tr]		
[br]		
[dr]		
[skr]		
[spr]		
[str]		

APPENDIX F: RECORDING/ANALYSIS SHEET FOR SUB-AIM EIGHT

**ACOUSTICAL MEASUREMENT OF FIRST-SYLLABLE DURATION IN WORDS OF
INCREASING LENGTH**

NAME OF CHILD: _____ DATE TESTED: _____
DATE OF BIRTH: _____ CHRONOLOGICAL AGE: _____

Word Group (Wg) Number	Transcribed Word	Duration of first CV/CCV-syllable in seconds
1	[tæɪ]	
	[tæɪŋ]	
	[tæɪfɔ:n]	
2	[bæk]	
	[bækɪ]	
	[bækəɪ]	
3	[dʊk]	
	[dʊkə]	
	[dʊksəkə]	
4	[pæn]	
	[pænə]	
	[pænəkʊk]	
5	[blɒm]	
	[blɒmə]	
	[blɒmbəkə]	
6	[kɒp]	
	[kɒpɪs]	
	[kɒpɪçɪ]	
7	[knɒp]	
	[knɒpə]	
	[knɒpɪçɪ]	
8	[ləp]	
	[ləpə]	
	[ləpstəfɪ]	
9	[mæn]	
	[mænə]	
	[mænɪçɪ]	
10	[fæn]	
	[fænə]	
	[fænɪx]	

NOTES:

APPENDIX E: RECORDING/ANALYSIS SHEET FOR SUB-AIMS SIX AND SEVEN

ACOUSTIC MEASUREMENT OF FIRST-VOWEL DURATION AND VOICE ONSET TIME

NAME OF CHILD: _____ DATE TESTED: _____ DATE OF BIRTH: _____ CHRONOLOGICAL AGE: _____

MATERIAL		FIRST-VOWEL DURATION IN SECONDS					VOT-VALUE OF INITIAL STOP IN SECONDS				
Transcription	Afrikaans	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
[paki]	pakkie										
[baki]	bakkie										
[tasə]	tasse										
[dasə]	dasse										
[tɔpi]	toppie										
[dɔpi]	doppie										
[tək]	tik										
[dək]	dik										
[katə]	katte										
[fənəx]	vinnig										
[knəbəl]	knibbel										
[klɔki]	klokkie										
[blɔki]	blokkie										

NOTES:

APPENDIX G (-CONTINUED):

SETTING FOR SUB-AIMS 6, 7 AND 8:

(#58, 1sec)

KAY ELEMETRICS CORP. MODEL 5500 SIGNAL ANALYSIS WORKSTATION		
Date: 3F 19FF	Rec. Off Time: 12:00:00 AM	
Analysis by:		
INPUT SETTINGS	Channel 1	Channel 2
Source	LEFT CONNECTORS	ALL MEMORY FOR CH1
Frequency Range	DC - 8 KHz.	DC - 8 KHz.
Input Shaping	HI-SHAPE	HI-SHAPE
Buffer Size	14.0 SECONDS	14.0 SECONDS
ANALYSIS SETTINGS	Lower Screen	Upper Screen
Signal Analyzed	CHANNEL 1	CHANNEL 1
Analysis Format	SPECTROGRAPHIC	WAVEFORM
Transform Size	100 pts. (300 Hz)	100 pts. (300 Hz)
Time Axis	50ms (1sec)	50ms (1sec)
Frequency Axis	FULL SCALE	FULL SCALE
Analysis Window	HAMMING	HAMMING
Averaging Set Up	NO AVERAGING	NO AVERAGING
DISPLAY SETTINGS	Lower Screen	Upper Screen
Freq. Divisions	1000. Hz.	0.000 Hz.
Dynamic Range	42 dB	42 dB
Analysis Atten.	25 dB	20 dB
Set Up Options Set to:	# 58	
CURSOR READINGS:		
FC1:	FC2:	^F:
FC1: dB, FC2: dB, ^F: dB		
^R1:	^R2:	
^T:		
PITCH TC1: Hz. TC2: Hz.		
AMPLITUDE TC1: dB TC2: dB		
SUBJECT MATTER		

APPENDIX G: SPECTROGRAPH SETTINGS

SETTING FOR SUB-AIM 3:

(#57, 8sec)

KAY ELEMETRICS CORP. MODEL 5500 SIGNAL ANALYSIS WORKSTATION		
Date: N 3F 19FF	Rec. Off Time: 12:00:00 AM	
Analysis by:		
INPUT SETTINGS	Channel 1	Channel 2
Source	LEFT CONNECTORS	ALL MEMORY FOR CH1
Frequency Range	DC - 8 KHz.	DC - 8 KHz.
Input Shaping	FLAT	HI-SHAPE
Buffer Size	14.0 SECONDS	14.0 SECONDS
ANALYSIS SETTINGS	Lower Screen	Upper Screen
Signal Analyzed	CHANNEL 1	CHANNEL 1
Analysis Format	SPECTROGRAPHIC	WAVEFORM
Transform Size	50 pts. (600 Hz)	100 pts. (300 Hz)
Time Axis	400ms (8sec)	400ms (8sec)
Frequency Axis	FULL SCALE	FULL SCALE
Analysis Window	HAMMING	HAMMING
Averaging Set Up	NO AVERAGING	NO AVERAGING
DISPLAY SETTINGS	Lower Screen	Upper Screen
Freq. Divisions	1000. Hz.	0.000 Hz.
Dynamic Range	42 dB	72 dB
Analysis Atten.	20 dB	20 dB
Set Up Options Set to:	# 57	
CURSOR READINGS:		
FC1:	FC2:	^F:
FC1: dB, FC2: dB, ^F: dB		
^R1:	^R2:	
^T:		
PITCH TC1: Hz. TC2: Hz.		
AMPLITUDE TC1: dB TC2: dB		
SUBJECT MATTER		

APPENDIX H: EXAMPLES OF ANALYSIS

GUIDELINES COMPILED FOR SUB-AIM ONE

* **Target:** *Lick ice cream (1.3. on Recording Form):*

Execution: Lift head up while licking. Rating on I: c. (-associated movement of the body)

Execution: Executed occasional in-out tongue-like movements as well as licking movements (in spite of the fact that the examiner demonstrated only licking movements outside the mouth) Rating on I:a; II:d (since licking was distorted by some in-out tongue movements).

Execution: Performed occasional circular licking movements in addition to upwards licking movements. Rating on I:a; II:d.

* **Target:** *Pout lips and lateralize tongue outside mouth (2.2. on Recording Form)*

Execution: Moved head (Rating on I:c. -due to associated movement of the body). Lateralized tongue *inside* mouth instead of on the *outside* (Rate on II:f -as it is incorrect placement); lateralized the tongue but touched the lip corners only occasionally (Rating on II:d -as it is correct placement but inaccurate execution). Simultaneously sucked cheeks in and pout lips instead of pouting only (Rating on II:d -since the pouting was only partly correct and distorted by sucking movement of cheeks, -can also be rated as an associated movement of cheeks, thus I:c. In a case like this where two of the same ratings occur, (the II:d -and I:c ratings), the ratings d. and c. are only *once respectively* on the recording/analysis sheet, in order to simplify the rating procedure. Rate III:a, since target movements were attempted in the correct sequence.

Execution: Moved mandible (Rate I:b). Pout lips correctly. Left-right tongue movements were sometimes accurate but sometimes distorted by inaccurate touching of lip corners and occasional touching of bottom-lip (Rate:II:d). Correct sequencing was obtained but only when key-words were provided before execution of a target movement (Rate III:c.).

* **Target:** *Puff cheeks and lateralize tongue (2.3. on Recording Form):*

Execution: Puffed cheeks but performed in-out tongue movements instead of left-right ones. Rating on I:a; II:a; III:f (-since some of the movements in the target sequence were incorrect); IV:f. Since one part of the sequence was performed incorrectly, no rating is possible in category III. It thus follows that if an f. or g. is assigned in Category II., no rating is possible in Category III. This rule was maintained throughout the rating procedure for non-speech oral movements.

* **Target:** *Pout lips, puff cheeks, stick out tongue (3.1. on Recording Form):*

Execution: Puffed cheeks correctly, pout lips correctly. Lateralized tongue sometimes although in-out movement was maintained. Rating on I:a; II:d. Could execute in correct sequence but was dependant on key words (Rating on III:c.).

* **Target:** *Blow a kiss, touch nose with tongue, blow out candle (3.2 on Recording Form):*

Child's execution: Kiss correctly, blew candle correctly, sequencing was correct, but tongue rested on lowerlip and chin was lifted up in order to try and touch nose. Key words were needed for correct sequencing. Rating on I:c; II:a; III:c.

APPENDIX I: EXAMPLES OF ANALYSIS

GUIDELINES COMPILED FOR

SUB-AIM THREE

***TARGET:** [dɒnə]

Production: [dɒdɒn] -first trial utterance

Rating: I:c (slow initiation due to first incorrect production); II:a; III:a (all sounds were accurately produced); IV: k (since it's not obvious how the sound structure was changed; multiple changes may have been possible).

Production: [dɒn-dɒn]

Rating I: a; II:a; III:a; IV: g (since [ə] was deleted); & IV:h (since part of the target utterance i.e. [dɒn] was repeated).

*** TARGET:** [pəbə]

Production: [bəbə]

Rating: I:a; II:a; III:d (voicing error); IV:c (as this can also be regarded as a substitution)

RULE: If voicing error (d) is rated in Category III and the target sound is substituted with a phonetically different sound, Category IV:c can also be rated (substitution) in order to cover all possibilities.

Production: [pəpə]

Rating: I:a; II:a; III:d (voicing error); IV:c (as this can also be regarded as a substitution)

RULE: If voicing error (d) is rated in Category III and the target sound is substituted with a phonetically different sound, Category IV:c or IV:d can also be rated in order to cover all possibilities.

Production: [bəpə]

Rating: I:a; II:a; III:d (two voicing errors); IV:c (two substitutions) as well as IV. j (transpositioning of syllables can also be applicable).

Production: [pə--pəpə] (first trial of the series, an initial restart)

Rating: I:c (continuity affected due to the subjects' interruption of own production, tried to self-correct); II:a; III:d (voicing error as target [b] was substituted with [p]); IV:c ([b] substituted with [p]) as well as IV:h., (since the first part of the target word i.e. [pə], was repeated on the restart).

Production: [bə--pəbə] (self correction on second trial of series)

Rating: I:d (mild arhythmic as occurred only once in sequence); II:a; III:a (all sounds correct); IV:b (successful self-correction, -as deducted from contextual information e.g.intonation and break in production).

*** TARGET:** [tə]

Production: [də]

Rating: I:a; II:a; III:d (-since [t] was substituted for voiced counterpart [d] which is a voicing error); IV: d (as the [t] was clearly substituted for a phonetically different sound [d] and can thus also be rated as a substitution with a non-target sound)

*** TARGET:** [kə]

Production: [k + distorted production of ə]

Rating: I:a; II:a; III:f (as it is only a mild inaccurate production of one vowel); IV:a (sound structure accurate in spite of mild distortion; none of sound structure error ratings applicable)

*** TARGET:** [pəkə]

Production: [pəkə--kə]

Rating: I:a; II:a; III:a; IV:e (addition of syllable)

*** TARGET:** [kəpə]

Production: [kəpkə]

Rating: I:a; II:a; III:a; IV:f (sound insertion)

APPENDIX I (-CONTINUED):

*** TARGET:** [təkə]

Production: [tətə]

Rating: I:a; II:a; III:a; IV:c

Production: [təxxə]

Rating: I:a; II:a; III:a; IV:f (sound insertion)

*** TARGET:** [kətə]

Production: [təkə-tə] (first two syllables grouped together by intonation and stress)

Rating: I:a (good rhythm throughout productions); II:a; III:a (all sounds were produced accurately); IV:j (can regard first CVCV-part as transposition of syllables on basis of intonation/phrasing); can also rate IV:e (since a CV-syllable was also added).

Production: [təkə--tə]

Rating: I:d (mild, happened only once in 9 productions); II:a; III:a; IV:a

*** TARGET:** [pətəkə]

Production: [pəkətə]

Rating: I:a; II:a; III:a; IV:j (transpositioning)

Production: [pə-pətəkə] (self-correction on 6th trial)

Rating: I:d (mildly arhythmic due to self-correction); II:a; III:a; IV:b (successful self-correction)

Production: [patəkə]

Rating: I:a; II:a; III:a (all sounds were produced accurately); IV:d (substitution of [ə] with [a])

Production: [pəktəkə] (first trial, slower than following trials)

Rating: I:c (due to slow initiation); II:a; III:a; IV:f (insertion)

Production: [pəkətək]

Rating: I:d (since self-correction interfered with rhythm later in sequence); II:a; III:a; IV:j (transpositioning of [t] & [k]) as well as IV:e (addition of [k])

Production: [tə-pətəkəp] (self-correction -although unsuccessful- on 5th utterance)

Rating: I:d; II:a; III:a; IV:e & e (two e-ratings due to addition of syllable [tə] as well as consonant [p])

*** TARGET:** [kətəpə]

Production: [təpə-təkətə-pə] (first trial in sequence)

Rating: I:c (slow initiation); II:a; III:a; IV:k (since multiple changes in phoneme structure occurred)

Production: [kəptə]

Rating: I:d (mild arhythmic production occurred in following trials); II:a; III:a; IV:j (transpositioning of [p] & [t]) as well as IV:g (deletion of [ə])

Production: [kətəkəbə]

Rating: I:d (since rhythm was mildly intermittent throughout production of sequence); II:a; III:d (voicing error: [p] substituted with [b]); IV:d (substitution of [p] with [b]-a sound not in target utterance) as well as IV:f (insertion of [k]).

Production: [kəp-kətəpə]

Rating: I:d; II:a; III:a; IV:b (rated as successful self correction and not syllable addition based on suprasegmental information and since rest of utterance was correct with regards to sound structure).

*** TARGET:** [təpəkə]

Production: [təpətəkətəp]

Rating: I:d (general rhythm was intermittent); II:a; III:a; IV:k (multiple changes in phoneme structure)

Production: [təkə]

Rating: I:a; II:a; III:a; IV:g (second syllable of target utterance was deleted)

Production: [pəkəkə]

Rating: I:d (general intermittent execution); II:a; III:a; IV:c & IV:c. (rated twice, since two possible substitutions occurred); can also rate IV.k. (multiple changes in phoneme structure), in order to cover all possibilities

APPENDIX I (-CONTINUED):

Production: [pəkətə]

Rating: I:d (general intermittent execution); II:a; III:a; IV: j (since syllable order was transpositioned)