Nonlinear Scan Analysis Revision: Draft © June, 2011

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Based on Bernhardt, B.H. and Stemberger, J.P. (2000)
Workbook in Nonlinear Phonology for Clinical Application.
Austin, TX: PRO-ED

Name _____**Birthdate**_____

Date of test _____**Age** _____

Hearing: _____**Dialect:**_____

General communication: Strengths, difficulties

_____

Referrals _____

Order of treatment goals and treatment strategies

	Word Structure	Positional, sequence	Features and segments
Immediate goals & numbered order			
Therapy strategies by goal #	1. Segments for structure, positional/seq goals: 2. Tx Strategies:		1. Word shapes to use: 2. Tx Strategies:

Overview – Circle or check boxes

Level	Forms	Clear Strength	Needs analysis
Prosodic structure	Word length, **presence** of consonants in word positions irrespective of segmental match	Word length ☐ Word-initial Cs Word-medial Cs ☐ Word-final Cs ☐ ☐ Clusters ☐	Word length or ☐ word length effects Word-initial Cs ☐ Word-medial Cs ☐ Word-final Cs ☐ Clusters ☐ **Pages 3**, **7**
Vowels		☐	☐ - **Page 4**
Consonants	Manner (more than stops, nasals, glides?)	Stops, nasals, glides ☐ Fricatives, affricates ☐ /l/ ☐ /r/ ☐	☐ - **Pages 5,6**
	Place of articulation	Labial ☐ Coronal ☐ Dorsal ☐	☐ - **Pages 5,6**
	Voicing	Voiceless ☐ Aspirated ☐ Voiced ☐	☐ - **Pages 5,6**
Variability	a. Same word	None ☐ Rare ☐	
and	b. Same target	None ☐ Rare ☐	☐ Page 7
sequences	Assimilation, dissimilation, coalescence, metathesis/migration	None ☐ Rare ☐	

Other Information

	Strengths	Needs	Unknown
Language production			
Language comprehension			
Preliteracy/literacy/phonological awareness			
Motor skills (gross, fine, oral mechanism)			
Social skills			
Cognitive skills			
Environmental support for treatment, referrals			

Word Structure Analysis: Scan only, no counts

A. Inventory or independent analysis = *the forms used by the child*
B. Relational analysis = *comparison with adult*   **Colour code:** <mark>Strengths</mark>, **needs,**
<mark>inconsistency.</mark> **WI=word-initial, WM=word-medial, WF=word-final**

Inventory Summary by Length:	Inventory: CV Word Shapes; Stress <mark>(parentheses = optional)</mark>
1 syllable □ <mark>Strength?</mark> □ Need? □ **Most complex CV shapes**: **Missing data**?	**Frequent word structures in CV:** **CV(V) CV(V)C Other**_____ **Single C Onsets? Single C Codas?** **Clusters:** WI WF 2/word? **CCC** WI WF
2 syllables □ <mark>Strength?</mark> □ Need? □ **Most complex CV shapes**: wS stress? **Missing data?**	**Frequent word structures in CV:** **CV(V)CV CV(V)CVC CVCCV(C)** **Other**_____ **Single Cs: WI WM WF** **CC:** 1/word 2/word CC WI WM WF **CCC** WI WM WF **Stress:** wS Sw Ss sS
3 or more syl. □ <mark>Strength</mark>? □ Need? □ **Most complex CV shapes?** wSw stress? **Missing?**	**Examples of long word shapes (CV):** **Single Cs: WI WM WF** **CC:** WI WM WF CCC WI WM WF **Stress**: Sws Ssw Sww swS wSw wwS Swsw swSw Other_____ 2-3 CCs in a word □ CCs & WF C in word □

B. Comparison with Adult Target   *Circle or check*

Pattern	1 syllable	2 syllables	Multisyllabic
Syllable deletion		Yes Often?	Yes Often?
Syllable addition (V epenthesis)	Yes Often?	Yes Often?	Yes Often?
Stress Shift		Yes Often?	Yes Often?

Pattern	WI	WM	WF	Pattern ↑ in long words
Adds Cs	Yes Often?	Yes Often?	Yes Often?	Yes Often?
Singleton C deletion	Yes Often?	Yes Often?	Yes Often?	Yes Often?
C deletion in CC(C)	Yes Often?	Yes Often?	Yes Often?	Yes Often?
Overused segment	Yes Often?	Yes Often?	Yes Often?	Yes Often?

Vowels - ONLY IF THERE IS A NEED

A. Inventory or independent analysis = *the forms used by the child*
B. Relational or comparative analysis = *comparison with the adult forms*
Colour code as: Strength, absent, inconsistent

Vowel inventory	Specific V Needs?	
	Stressed	Unstressed
i ɪ ɛ æ (a) ə ʌ ʉ/u ʊ ɔ ɑ Diphthongs: eɪ oʊ aʊ aɪ ɔɪ ɚ ɝ Other		

Colour code inconsistent or missing vowels by features below.

Feature	Vowels	Patterns of difference from adult target	
Enter mismatch pattern by relevant feature(s) affected.		Stressed	Unstressed
Dorsal [+back]	ʌ ə ɔ u/ʉ oʊ ɑ		
Coronal ([+front])	i ɪ eɪ ɛ æ (a) aɪ		
Dorsal [+high]	i ɪ u/ʉ ʊ		
Dorsal [-high] & [-low]	e(ɪ) ɛ ʌ ə o(ʊ) ɔ		
Dorsal [+low]	æ (a) ɑ		
Labial [+round]	ʉ/u ʊ oʊ ɔ		
[+tense] (long stressed)	i(:) æ(:) ʌ u(:) o(:) ɑ(:)		
[-tense]	ɪ ɛ ə ʊ ɔ		
Diphthong	aɪ aʊ ɔɪ		
Syllabic 'r'	ɚ ɝ		

Prosody, intonation, rhythm, speech rate factors?

Enter major vowel strengths and needs on Page 8

Inventory of Client's <u>Single</u> Consonants: Match, absent, (inconsistent), present but not for adult target SF= syllable-final, SI=syllable-initial.

Cs – adult language Use colour coding for client usage.	Category (Feature)	Initial	Medial		Final
			SF	**SI**	
	Stops, Nasals Labial	pʰ b m	p b m	pʰ b m	[p] b m
	Coronal (tap)	tʰ d n	t d n	[t]ʰ [d] n ɾ (son)	t d n
	Dorsal (Glottal)	kʰ [ᶢg] ([ʔ])	k g ŋ	kʰ g ŋ	k g ŋ
	Fric/aff Labial	f v	f v	f v	f v
	Cor +ant	θ ð s z	θ ð s z	θ ð s z	θ ð [s] z
	Cor -ant	ʃ tʃ dʒ	ʃ tʃ dʒ	ʃ ʒ tʃ dʒ	ʃ ʒ tʃ dʒ
	[+grooved]	s z ʃ tʃ dʒ	s z ʃ tʃ dʒ	s z ʃ ʒ tʃ dʒ	s z ʃ ʒ tʃ dʒ
	[-grooved]	θ ð	θ ð	θ ð	θ ð
	Lateral	l /ɬ	ɬ	l /ɬ	l /ɬ
	Glides Lab-Dor Cor-Dor	w [j]		[w] (j)	
	Lab-Cor	ɹ* (in CC)	ɹ	ɹ	ɹ
	Glottal	h		h	
Non-English					

SUMMARY OF INVENTORY (following from word positions above)

Mostly Match				
Inconsistent				
Present but not for adult target				
Absent from adult inventory				
Not elicited				

Consonants missing in one *established* word position
but *found elsewhere* in word (Word Position Goals)

Initial	SF Medial	SI Medial	Final

Enter all C, Feature, Strengths and Needs from this page on Page 8.

Singleton Consonants and Features: Substitution Patterns

*Describe the substitutions that concern the feature at the left of the row, i.e., mismatch of manner only in the manner rows. Focus **on substitutions here**, not deletions unless deletions are restricted to a small number of place, manner or voicing features.*

Adult feature	Adult consonant	Initial	Medial		Final
			SF	SI	
Manner Glides: [-cons] ([+son])	j w ɹ h [ʔ]				
Flap [+cons] [+son] Coronal	ɾ				
[+lateral]	l				
Nasals: [+nasal]	m n ŋ				
Stops: [-continuant] (& [-nasal])	p b t d k g ([ʔ])				
Fricatives [+continuant] (& [-sonorant)	f v θ ð s z ʃ ʒ				
Affricates [-continuant], [+continuant]	tʃ dʒ				
Place: Labial	p b m f v w (ɹ)				
Labiodental	f v				
Coronal [+anterior]	t d n ɾ θ ð s z l				
[-anterior]	ʃ ʒ tʃ dʒ ɹ j				
[+grooved]	s z ʃ ʒ tʃ dʒ				
[-grooved]	θ ð				
Dorsal [+high]	k g ŋ j w (ɹ)				
Cor-Lab (SI)	ɹ				
Laryngeal [-voiced]	p t k f θ s ʃ tʃ				
[+voiced] stops and fricatives	b d g v ð z ʒ dʒ				
[+spread glottis]	h pʰ tʰ kʰ vl. fric.				

Manner defaults? _____

Place default? _____-

Laryngeal default? _____

Sequences: Processes

If there are any of the following processes, it is important to examine the sequences that result in these processes. ***Write down examples of words with these processes.***

Assimilation: /lɪp/ > [mɪp]	Metathesis or Migration /sp/ > [ps]	Epenthesis /plɑ̃m/ > [pəlɑ̃m]	Dissimilation /puɹ/ > [pi] but /ti/ > [tu]	Coalescence /sp/ > [f]

Occurring in CVC, CVCV(C)?   *Occurring primarily in multisyllabic wds?*

Sequences: Consonants across Vowels: Examine CVC, CVC(C)V(C)
Write down words here only if there are entries in the chart above.

Adult Sequence	Adult Sequence	Adult Sequence
Labial-Labial	**Coronal-Coronal**	**Dorsal-Dorsal**
Labial-Coronal	**Coronal-Labial**	**Dorsal-Labial**
Labial-Dorsal	**Coronal-Dorsal**	**Dorsal-Coronal**
Other		

Contiguous consonant sequences: Enter P. 8
Strength, need, inconsistent, present but not for adult target.
Indicate Patterns e.g. sC > C

	WI	Medial Cross Syl	Medial, Onset	WF (sample only)
CC with /j/, /w/ or nasal	mj pj bj tj kj fj tw dw kw sn sm sw			mp nt nd ŋk n(t)s nz mz ŋz ntʃ ndʒ
CC with /l/	pl bl kl gl fl sl			lp lt lk lb ld lf ls lz lʃ ltʃ ldʒ
CC with /ɹ/	pɹ bɹ tɹ dɹ kɹ gɹ fɹ θɹ ʃɹ			ɹp ɹt ɹk ɹb ɹd ɹg ɹl ɹm ɹp ɹf ɹv ɹs ɹz ɹʃ ɹtʃ ɹdʒ
CC with fric other than /s/	fl fɹ θɹ ʃɹ			lf ɹf ɹv ɹʃ bz dz gz mz nz ŋz lz ɹåz
CC with /s/	sp st sk sw sl sm sn			ps sp ts st ks sk n(t)s rs ls
CCC	spɹ spl str skɹ skw			mps nts ndz
Other				

Objectives and Therapy Ideas/Strategies

	Word Structure (from p. 3)	Word Positions, Sequences (from p. 5, 7)	Features and segments (from pages 5, 6)
Clear Strengths	**Syllables per word:** **Stress patterns** **CV word shapes:**	**Cs by *word position* (from matches p. 5)**	**Cs by type or feature (from match row p. 5)**
		WI	**Manner:**
		WM	**Place:**
		WF	**Laryngeal:**
		Sequences (from p. 7)	**Vowels:**
Needs	**Syllables per word:** **Stress patterns:** **CV word shapes:**	**C by word position** (from bottom, p. 5) **WI**	**Cs: Individual features (from p. 5, 6)** **Manner:**
		WM (SF, coda)	**Place:**
		WM (SI, onset)	**Laryngeal:**
		WF	**Cs: Feature Combos** **Manner-Place**
		Sequences **C_C:**	**Manner-Laryngeal**
		CC:	**Place-Laryngeal**
		V_V:	**Place-Place, glides:**
		VV:	**V features or combos:**
Other factors to consider (From P. 2)			
Immediate goal & order (or use P. 1)			
Therapy strategies	1. Segments to use for structures: 2. Strategies:		1. CV shapes to use: 2. Strategies: