

Phonological Assessment & Treatment Target Selection (Spanish)

Name: _____ Grade: _____ DOB: _____ Analysis Date: _____

Part 1. Characterization (Assessment Information)

The success of a treatment program depends entirely on the overall assessment of the sound system. An extra *hour* spent on a thorough assessment can reduce amount of *weeks* spent in treatment.

- Phonetic Inventory.** Circle the phones in the child's phonetic inventory that occurred twice or more in the probe sample. Write in any other allophones (e.g., ɲ, β, or h) or non-target phones that also occurred (e.g., ts, ʔ, or ʃ). List OUT phones to the right.

	Bilabial	Labio-dental	Dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal
Stops	p (b)		t (d)				k (g)	
Fricatives		f		s			x	
Affricates					tʃ			
Nasals	m			n		ɲ		
Rhotics				r r				
Approximants	w β		ð	l		j	ɣ	

Phones OUT

- Cluster Inventory (Organized by Sonority Distance).** Circle the clusters that occurred at least twice in the sample. Write in any other non-target (or non-probed) clusters that also occurred (e.g., tɫ- [5], θw- [4]). Examples: *brinca* [brɪŋka], *punte* [pwente], *ruido* [rwiðo]

SD=6	SD=5	SD=4	SD=3	SD=2	SD=1
pw-	bw- pr-	fw- br-	fr-	mw-	lw-
tw-	dw- tr-	fj- dr-	fl-	mj-	lj-
kw-	gw- kr-	sw- gr-		nw-	rw-
pj-	bj- pl-	sj- bl-		nj-	rj-
tj-	dj- kl-		gl-		
kj-	gj-				

Clusters OUT

SD=6

SD=5

SD=4

SD=3

SD=2

SD=1

3. **Stimulability.** Record stimulability of OUT phones from (1) above. (Use the Glaspey & Stoel-Gammon (2005) task to gain information about what sounds a child can produce with some level of support.)

Stimulable OUT phones: _____ Nonstimulable OUT phones: _____

Part 2. Reorganization (Target Selection Based on Language Universals and Treatment Efficacy Research)

Target selection occurs in a step-by-step fashion based on the results of the individual child's overall assessment (adapted from Gierut, 2004; Morrisette, Farris, & Gierut, 2006).

- Step 1. Determine if (2-element) CC clusters are appropriate targets.** Refer back to (2) in **Part 1**. Using the charts below, follow the step-by-step instructions in (a) through (d), in order. Note you will be analyzing consonant + /w, j/ and consonant + /l, r/ clusters separately.

Cluster Target Pools:

Consonant + /w, j/

SD=6	SD=5	SD=4	SD=2	SD=1
pw-	bw-	fw-	mw-	lw-
tw-	dw-	fj-	mj-	lj-
kj-	gj-	sw-	nw-	rw-
pj-	bj-	sj-	nj-	rj-
tj-	dj-			
kj-	gj-			

Consonant + /l, r/

SD=5	SD=4	SD=3
pr-	br-	fr-
tr-	dr-	fl-
kr-	gr-	
pl-	bl-	
kl-	gl-	

- Cross out all IN clusters from both charts. If your pool is now empty, go on to **Step 2**; otherwise, go on to (b).
- What is the child's minimum sonority distance for consonant + /w, j/ clusters? Cross out all OUT consonant + /w, j/ clusters that have a SD that is equal to or larger than the minimal sonority distance of the child's IN clusters. For example, if the child's smallest SD cluster was /gw-/ (SD=5), you would cross out those consonant + /w, j/ clusters with a SD of 5 or larger. Note that the child does not need all clusters with a particular sonority distance; one representative cluster is sufficient. (If the child did not produce any clusters, you won't cross out any clusters.) Go on to (c).
- Repeat the same process in (b) above for the consonant + /l, r/ clusters. If your pool is now empty, go on to **Step 2**; otherwise, go on to (d).
- From your revised Cluster Target Pool, circle those have the smallest sonority distance. If more than one cluster target is circled, select the cluster that includes OUT phones (refer to Phonetic Inventory in (1) under **Part 1**). If there are OUT clusters from both charts, we recommend selecting one of each type: consonant + /w, j/ and consonant + /l, r/. These are your treatment targets; enter them below. You can now go on to **Part 3: Monitoring**.

CC Targets: _____ and (if applicable) _____

Step 2. Select a Singleton Target. Enter all OUT phones below, as based out your Phonetic Inventory analysis in (1) under **Part 1**. Then follow the step-by-step instructions in (a) through (d), in order.

	Bilabial	Labio-dental	Dental	Alveolar	Palato-Alveolar	Palatal	Velar	Glottal
Stops								
Fricatives								
Affricates								
Nasals								
Rhotics								
Approximants								

- Cross out all stimulable sounds. (Refer to (3) under **Part 1**.)
- Cross out all early-acquired sounds. This would include [p t k m n ñ l j x] for Spanish.
- Of those remaining in your revised pool, CIRCLE those sounds that lead to greater system-wide change, based on language laws. (Refer to Implicational Laws on page 4.)
- If multiple sounds remain, select the sound or sound(s) that occur most frequently in the sound system. The following is the order of American Spanish consonant frequency (most-least): [s l n t ð r t m p β γ f z j r x ʃ ŋ]. This is your treatment target; enter it below. You can now go on to **Part 3: Monitoring**.

Singleton Target: _____

Part 3. Monitoring (Treated and Untreated Sounds)

To evaluate change following treatment, all OUT singletons and clusters (from (1) and (2) in **Part 1**) should be monitored during baseline measures and following termination of treatment on the selected target. Those singletons and clusters that remain absent following treatment should be placed into the pool for target selection for the next phase of treatment.

Selected Treatment Target: _____

Phones OUT	Clusters OUT

Determine the frequency and type of progress monitoring:

Sample Type (e.g., conversational) Frequency (e.g., weekly) Next Probe Date:

Evidence in Support of the Guidelines

1. Treatment on structure that is absent from the sound system is consistent with a goal of achieving *underlying change in linguistic knowledge*, as opposed to a *surface change in behavior* (Gierut, 2005; Johnston, 1988).
2. Treatment of 2-element obstruent + sonorant clusters that have a small sonority distance will lead to improvement on 2-element clusters with a large sonority distance, plus liquids, and affricates, as well as other singleton consonants absent from the pretreatment inventory (Anderson, 2002; Barlow, 2005; Broselow & Finer, 1991; Eckman, 1991; Eckman & Iverson, 1993; M. F. Elbert, Dinnsen, & Powell, 1984; M. F. Elbert & McReynolds, 1979; Gallagher & Shriner, 1975; Gierut, 1998, 1999; Gierut & O'Connor, 2002; Lleó & Prinz, 1997; Powell & Elbert, 1984; Williams, 1986, 1988). Because it is unclear how consonant + /w, j/ clusters pattern in Spanish (developing systems) (Anderson, 2002; Barlow, 2005), we recommend targeting these clusters and consonant + /l, r/ together.
3. Treatment on sounds that are excluded from the inventory and subject to obligatory errors leads to greater system-wide change and is consistent with a goal of achieving *underlying change in linguistic knowledge*, as opposed to a *surface change in behavior* (Brière, 1966; Gierut, 1990, 1991, 1992, 2005; Gierut, Elbert, & Dinnsen, 1987; Gierut & Neumann, 1992; Hammerly, 1982; Hardy, 1993; Johnston, 1988; Williams, 1991).
4. Stimulable sounds are likely to emerge on their own without direct treatment; thus, treatment should focus on those aspects of the sound system that are least likely to emerge without direct treatment (Dinnsen & Elbert, 1984; M. Elbert & McReynolds, 1978; Goldstein, 1996; Miccio, Elbert, & Forrest, 1999; Powell, 1993; Powell, Elbert, & Dinnsen, 1991; Sommers et al., 1967).
5. Greater system-wide change occurs following treatment on later-acquired as opposed to early-acquired sounds (Dyer, Santarcangelo, & Luce, 1987; Gierut, Morrisette, Hughes, & Rowland, 1996; Powell, 1991; Powell, Elbert, Miccio, Strike Roussos, & Brasseur, 1998).
6. Implicational laws of language require that certain hierarchical relationships be maintained in a system. Presence of a higher-order structure necessarily requires presence of implied lower-order structure (Greenberg, 1978; Ladefoged & Maddieson, 1996; Lindblom & Maddieson, 1988; Maddieson, 1984). Refer to examples below.
7. Improving sounds that are frequently occurring in the sound system will have a greater impact on intelligibility (Edwards, 1983).

Implicational Laws

Structures on the left are considered to be more marked (more complex) relative to the structure on the right. Teaching these marked structures results in changes in the implied structures. For example, teaching clusters improves affricates.

Clusters with a Small Sonority Distance → Clusters with a Large Sonority Distance (Anderson, 2002; Barlow, 2005; Gierut, 1999)

Clusters → Singletons (Barlow, 2005; Gallagher & Shriner, 1975)

Clusters → Affricates (Gierut, 2008; Gierut & O'Connor, 2002)

Stridency contrast (e.g., [θ s] or [ð z]) → Liquid (Cataño, Barlow, & Moyna, 2009; Dinnsen, Chin, & Elbert, 1992; Dinnsen, Chin, Elbert, & Powell, 1990)

Trill r → tap r → approximant r → lateral (Cataño et al., 2009; Orton, 2009)

Liquids → Nasals (Dinnsen et al., 1990; Gierut, Simmerman, & Neumann, 1994; Tyler & Figurski, 1994)

Affricates → Fricatives (Gierut et al., 1994; Ingram, Christensen, Veatch, & Webster, 1980; Schmidt & Meyers, 1995)

Fricatives → Stops (Cataño et al., 2009; Dinnsen & Elbert, 1984; M. F. Elbert et al., 1984)

Voiced Obstruents → Voiceless Obstruents (Cataño et al., 2009; Dinnsen & Elbert, 1984; McReynolds & Jetzke, 1986)

Velars → Coronals (Stoel-Gammon, 1996)

Fricatives in Initial Position → Fricatives in Final Position (Smith, 1973)

Consonants → Vowels (Robb, Bleile, & Yee, 1999)

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