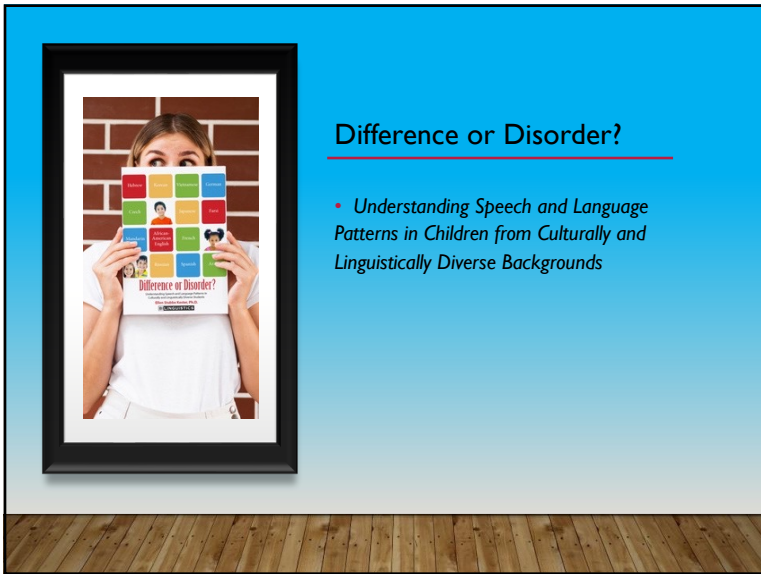




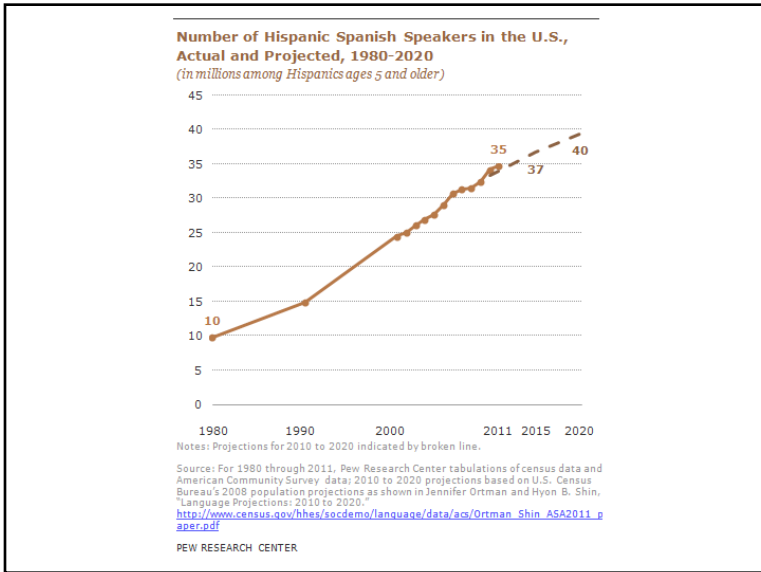
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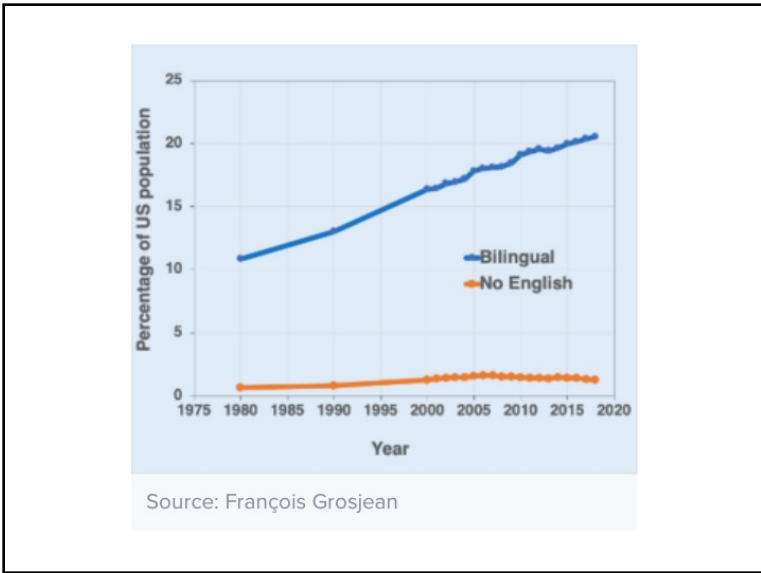
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3



4



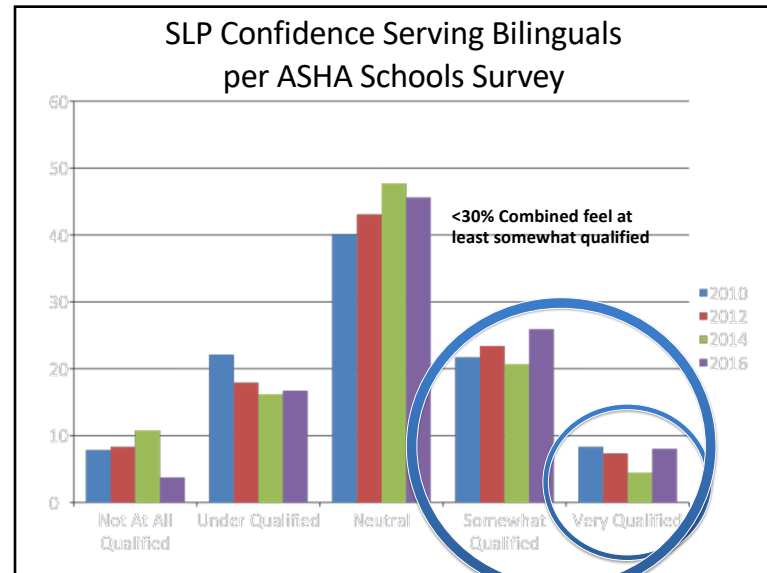
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6



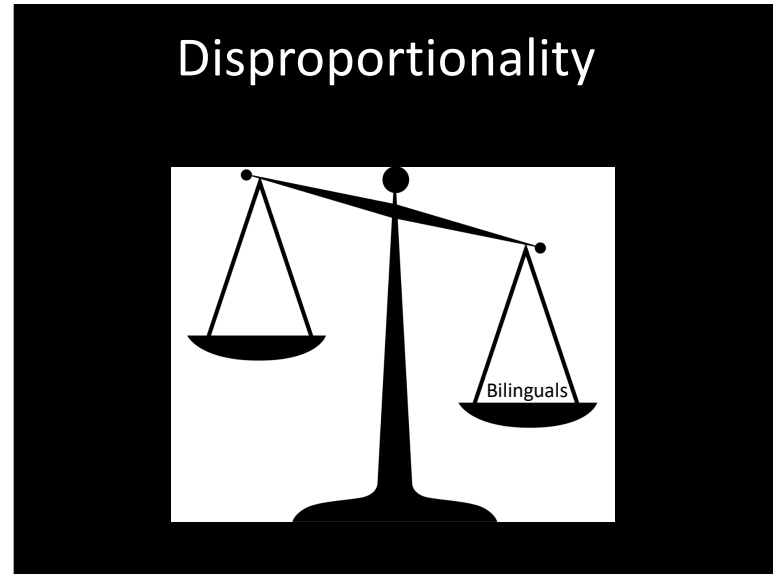
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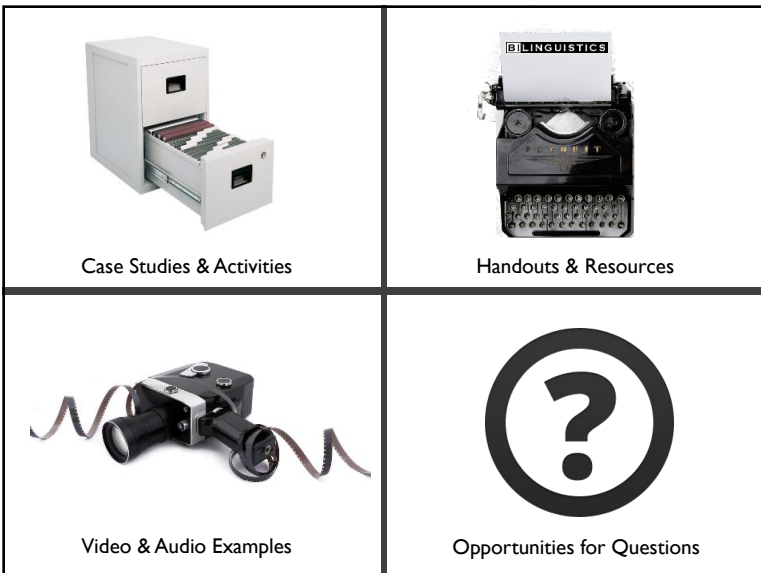
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11



12

## Language Access Laws



13

## Laws and Ethics: Language Access

- Individuals with Disabilities Act (IDEA) (2006, Part B)
  - Assess in student's native language
  - Provide interpreters
- Equal Educational Opportunities Act of 1974
  - Cannot deny equal education by failure to help students overcome language barriers
- Title VI of the 1964 Civil Rights Act
  - Any facility that receives federal funding is required to provide language access services
- ASHA's Code of Ethics (2023)
  - We are *obligated* to provide culturally and linguistically appropriate services *regardless* of our own background

14

## Bilingual Service Delivery: Requirements (ASHA, 2023a)

- Describe the process of bilingual speech and language development

15

## Bilingual Service Delivery: Requirements (ASHA, 2023a)

- Select, administer, and interpret standardized and non-standardized assessment tools to distinguish between communication differences and communication disorders

16



## Definition of a Bilingual SLP

- Independently provide comprehensive diagnostic and treatment services using the client's language and preferred mode of communication
- Native or near-native-like linguistic proficiency

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Mandarin Urdu Tagalog

Farsi

Pashto

Hello



Hola

French

Arabic

Thai

German

18

I am obligated to provide services regardless of the language but I don't speak that language.

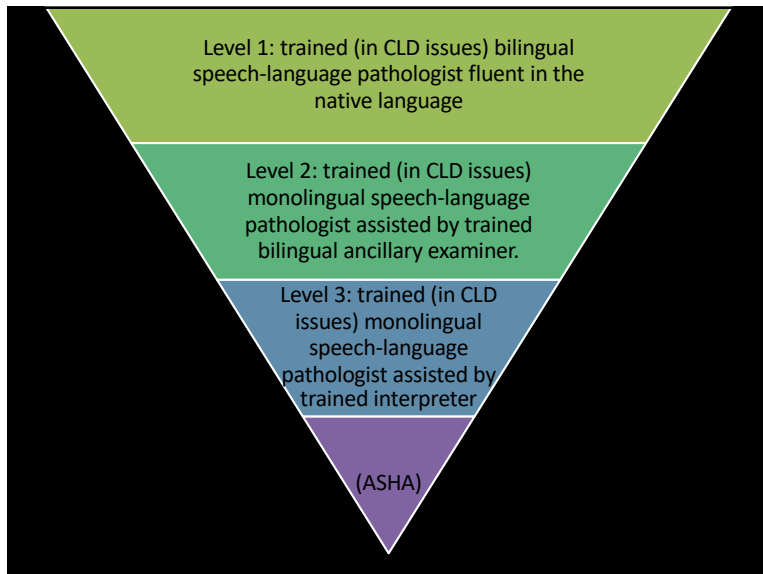
What do I do?

19

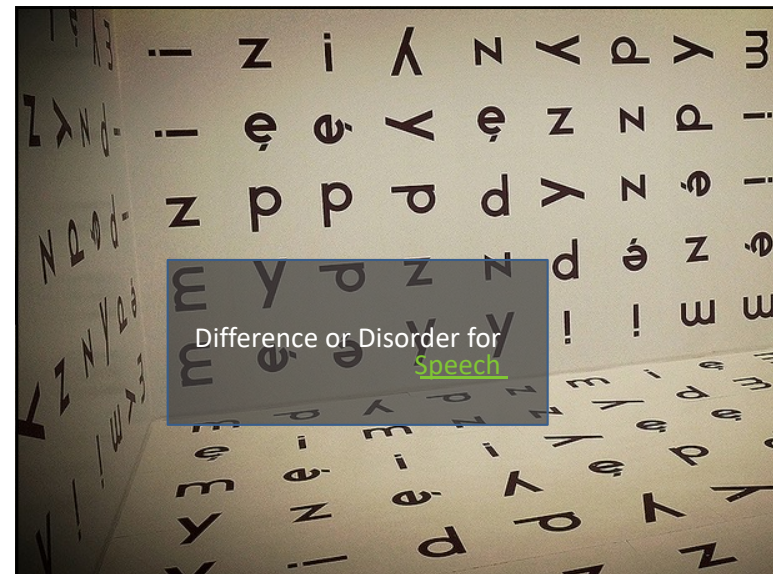
## I'm monolingual. What can I do?

- **Monolingual SLP May:**
  - test in English
  - perform oral-peripheral exam
  - complete nonverbal assessments
  - conduct family interview (w/ support personnel)
  - be an advocate for the client and family
  - TRAIN AND WORK WITH INTERPRETERS

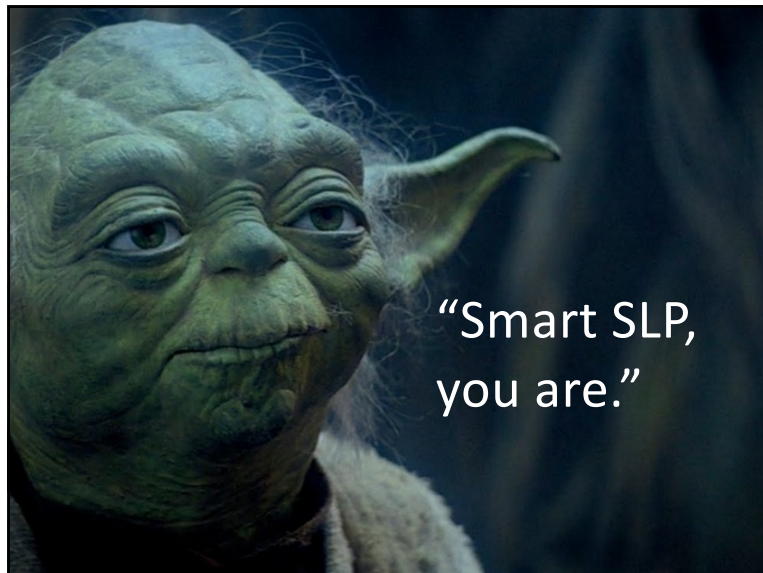
20



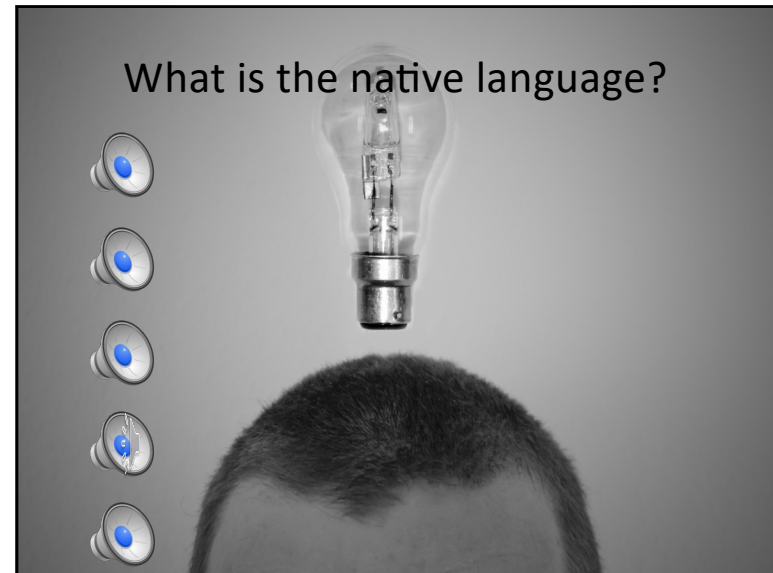
21



22



23



24



25

## Typical Development of Speech in Bilinguals

The influence of a second language on the acquisition of sounds

**BILINGUISTICS**

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## Difference vs. Disorder

NORMAL  
DEVELOPMENTAL  
ERRORS

NATIVE-  
LANGUAGE  
INFLUENCE

ATYPICAL  
ERRORS

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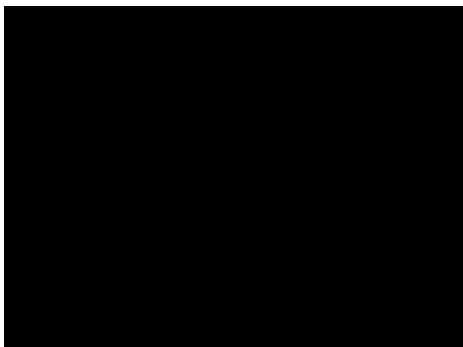
## Developmental Errors

NORMAL  
DEVELOPMENTAL  
ERRORS

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# Spanish-Influenced English

NATIVE-  
LANGUAGE  
INFLUENCE



29

# Spanish-Influenced English

NATIVE-  
LANGUAGE  
INFLUENCE

30

# SPEECH IMPAIRED

ATYPICAL  
ERRORS



31

# SPEECH IMPAIRED

ATYPICAL  
ERRORS

32



## Let's take a walk



- Speech development from:
  - 0-36 months
  - 36 months forward
- With:
  - Spanish
  - English
  - Crosslinguistic Influence

33

## Typical Development in Bilinguals



Apple + Apple = Positive transfer  
Similarities  
Apple + Orange = Negative transfer  
Differences

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## Positive Transfer - Speech

[b] exists in English, Spanish, and Vietnamese  
[n] exists and can occur in final position in English, Spanish, and Vietnamese,  
If a child can produce it in L1, that skill transfers well to English production

**bean → bean**

35

## Negative Transfer - Speech

When learning a second language children often use the closest sound/combination in their repertoire.

Voiceless [th] exists in English but not Vietnamese or Spanish

Consonant clusters cannot occur in word final position in Spanish and do not exist in Vietnamese

**think → tin**



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## Building blocks for speech



- 0-1 month – crying and vegetative sounds
- 1-6 months – cooing, laughter, squealing, growling
- 4-6 months – marginal babbling
- 6-8 months – reduplicated babbling
- 8-10 months – variegated babbling
- 8-12 months – *echolalia\**
- 9-12 months – *phonetically consistent forms*
- 9-12 months – *jargon\**



Language Influenced\*

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## Speech Intelligibility

- For parents: (Lynch, Brookshire & Fox, 1980)
  - 18 months - ~25% intelligible
  - 2 year olds - 50-75% intelligible
  - 3 year olds - 75%-100% intelligible
- For unfamiliar: (Flipsen, 2006)
  - 18 months - ~25% intelligible
  - 2 year olds - ~50% intelligible
  - 3 year olds - ~75% intelligible
  - 4 year olds - 100% intelligible



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## Red Flags For Speech Impairment in Bilinguals



- Difficulty producing sounds in both languages, even with adult assistance
- Family history of speech-language impairment
- Slower development than siblings
- Difficulty interacting with peers
- Difficulty with speech production in many routines and settings
- Speech production unlike others with similar cultural/linguistic experiences

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## www.bilinguistics.com

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# Bilingualism & Articulation

The differences and shared characteristics of two sound systems

**BILINGUISTICS**

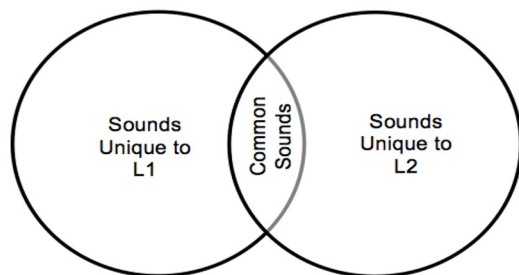
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## Bilingual Speech Evaluation: 3 important steps

- 1) Shared and unshared sounds/processes
- 2) Phonotactics of each language  
The set of permissible sequences of sounds in a given language
- 3) Developmental acquisition within each language

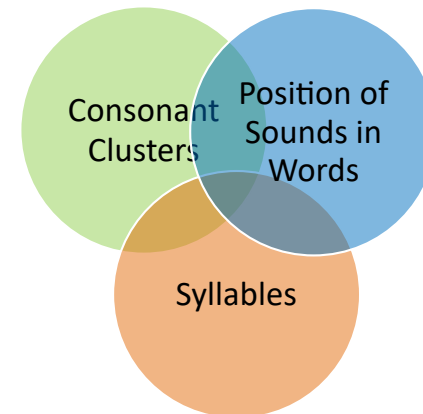
42

## 1 Shared vs. Unshared Sounds



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## 2 Phonotactic Constraints

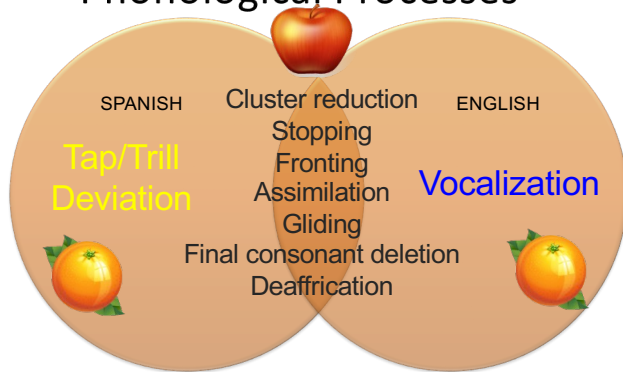


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## Phonological Processes



49

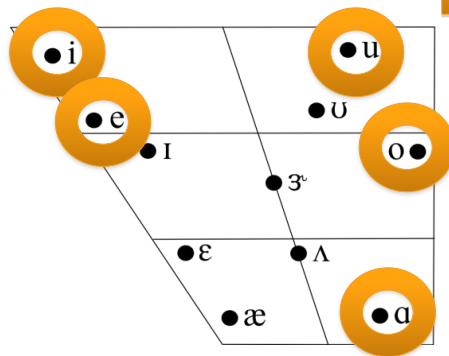
## Phonological Processes: Norms

Phonological Processes				
Suppressed by:		Pattern	English Example	Spanish Example
Spanish *	English*	Syllabic Patterns		
Age 3 (rare)	Age 3 (rare)	Initial Consonant Deletion	"at" for "cat"	"an" for "pan"
Age 3	Age 3	Final Consonant Deletion	"ca" for "cat"	"lapi" for "lapiz"
Age 3	Age 4	Medial Consonant Deletion	"ki-y" for "kitty"	"la-iz" for "lapis"
Age 5	Age 4	Cluster Reduction	"fat" for "flat"	"faco" for "faco"
Age 3	Age 4	Weak Syllable Deletion	"telephone" for "telephone"	"tefono" for "telefono"
		Substitution Patterns		
Age 5	Age 3	Stopping	"bat" for "fat"	"cape" for "café"
Age 3	Age 4	Fronting	"bat" for "kat"	"teso" for "queso"
Age 3	Age 3	Assimilation	"tato" for "taco"	"tato" for "taco"
Age 3	Age 3	Backing	"kat" for "bat"	"kos" for "dos"
NA	Age 7	Vocalization	"powah" for "power"	NA
Age 5	NA	Flap/Trill Deviation	NA	"dalon" for "raton"
Age 5	Age 7	Gliding	"wake" for "lake"	"wapiz" for "lapis"

\* Based on the work of Goldstein (Spanish) and Shriberg (English).

50

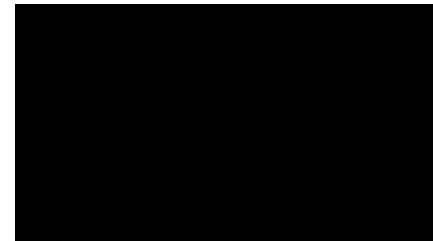
## VOWEL CHART ENGLISH AND SPANISH



Spanish

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## Case Study: Ana



### Ana Language Sample:

There was a little boy with a frog and the dog said foo, foo, foo, foo.  
 The frog jump out when he asleep and the dog was asleep.  
 He was findin' his frog.  
 And the dog said, Frog, find my frog.  
 I'm mad.  
 Hello frog, Who's there?  
 Somebody here?  
 Frog, who's there?  
 I wanna play with you. Who?  
 I just bumpedy just bump the rock.  
 He said, Hello, who's there X?  
 He knock him off and he puppy flew in the water.

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## Case Study Review: Ana

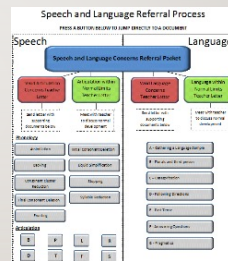
65

## Case Study Review: Tony

Phonological Processes			
Suppressed by:		Pattern	Example
Spanish (Goldstein+)	English (Shriberg)	Syllabic Patterns	
Age 3	Age 3	Final Consonant Deletion	"ca" for "cat"
Age 3	Age 4	Medial Consonant Deletion	"ta.o" for "taco"
Age 5	Age 7	Gliding	"bwaek" for "black"
Age 5	Age 4	Cluster Reduction	"fat" for "fat"
Age 3	Age 4	Weak Syllable Deletion	"telephone" for "telephone"
Age 3 (uncommon)	Age 3	Initial Consonant Deletion	"at" for "cat"
Substitution Patterns			
Age 5	Age 3	Stopping	"bat" for "fat"
Age 3	Age 4	Fronting	"bat" for "kat"
Age 5	Age 7	Liquid Simplification	"wake" for "take"
NA	Age 7	Vocalization	"powah" for "power"
Age 5	NA	Flap/Trill Deviation	"daff" for "rat"
Age 3	Age 3	Assimilation	"tato" for "taco"
Age 3	Age 3	Backing	"kat" for "bat"

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## HOW TO COLLECT SPEECH INFORMATION THROUGH THE REFERRAL PROCESS



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www.bilinguistics.com

The screenshot shows the homepage of www.bilinguistics.com. The navigation bar includes 'For Parents', 'For SLPs', 'For School', 'For EI', 'About Us', 'Contact Us', and 'Blog'. A dropdown menu for 'For SLPs' is open, showing options like 'Free SLP Resources', 'Continuing Education Units', 'Workshops & Presentations', 'Evaluation Resources', 'Gold Bank', 'Speech Therapy Referral Forms', 'Books for Speech Therapy', 'Music for Speech Therapy', 'Speech Therapy Mobile Applications (Apps)', 'Spanish Translations for IEP/504 Meetings', 'Great OLA Graduate Student Resources', and 'Communication Disorder Resources for Parents'. The 'Speech Therapy Referral Forms' link is highlighted with a red box. The main content area features a 'Welcome! First Time Here?' banner and a 'Library-Based Speech and Language Therapy Activities' section.

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# INITIAL DATA

## Part A - Everyone

- Hearing Concern
- Parent Concern
- Teacher Concern

## Part B - Which best describes your student

- I can't understand the words that my student uses.
- My student doesn't speak enough, is confusing, or can't understand me.

**Speech and Language Concerns**

Dear Teacher,  
Here are some steps to take if you feel that a student has difficulty with communication. This paperwork is your data to a referral process. The hope is that the problem can be identified and corrected in the classroom. If not, then an evaluation needs to be requested.

**1. Is student's HEARING OKAY? ( check with nurse)**  
Date tested: \_\_\_\_\_ Outcome: GOOD HEARING / HEARING LOSS

**2. Is more than one language spoken in the home?**  
YES / NO

**3. Do parents have difficulty understanding their child?**  
Date interviewed: \_\_\_\_\_ Parent Response: \_\_\_\_\_

**Which of these applies to your student?**

**1. I can't understand the words that my student uses.**  
Have the student repeat the words from the *Sound Chart* page 2 (English) or 3 (Spanish). If a child speaks both languages, complete both sound charts.

**2. My student doesn't speak enough, is confusing, or can't understand me.**

Write examples of what your student says on the *Language Information Page* page 4.

**BILINGUISTICS**

# IDENTIFY IF SOUNDS ARE AGE APPROPRIATE

- Sounds in English ordered by age.

**English Sound Chart**

1. Ask the student to repeat these words.  
2. CIRCLE correct words.  
3. CROSS OUT incorrect words and write what the student says

SOUND	AGE	WORDS
p	2+	pig, apple, cup
b	2+	bunny, baby, crib
m	2+	mad, hammer, thumb
n	2+	no, funny, fan
hw	2+	hat, wet
d	2+	doll, middle, bed
f	3+	food, coffee, off
t	3+	toys, water, bat
k	3+	king, pumpkin, rake
g	3+	goat, wagon, bag
y	3+	yellow, crayon
ng	3+	finger, ring
l	4+	lion, pillow, tall
v	4+	vote, oven, stove
s	4+	sock, pencil, kiss
z	4+	zoo, puzzle, toes
sh	4+	shoe, fishing, fish
ch	4+	chair, teacher, lunch
j	4+	jelly, pajamas, orange
zh	5+	measure
th voiced	5+	the, that, this
r	5+	rat, green, early, nurse, car
th unvoiced	6+	thumb, bathtub, tooth

# IDENTIFY IF SOUNDS ARE AGE APPROPRIATE

- Sounds in English ordered by age.

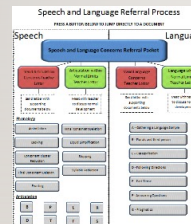
**English Sound Chart**

1. Ask the student to repeat these words.  
2. CIRCLE correct words  
3. CROSS OUT incorrect words and write what the student says

SOUND	AGE	WORDS
p	2+	pig, apple, cup
b	2+	bunny, baby, crib
m	2+	mad, hammer, thumb
n	2+	no, funny, fan
hw	2+	hat, wet
d	2+	doll, middle, bed
f	3+	food, coffee, off
t	3+	toys, water, bat
k	3+	king, pumpkin, rake
g	3+	goat, wagon, bag
y	3+	yellow, crayon
ng	3+	finger, ring
l	4+	lion, pillow, tall
v	4+	vote, oven, stove
s	4+	sock, pencil, kiss
z	4+	zoo, puzzle, toes
sh	4+	shoe, fishing, fish
ch	4+	chair, teacher, lunch
j	4+	jelly, pajamas, orange
zh	5+	measure
th voiced	5+	the, that, this
r	5+	rat, green, early, nurse, car
th unvoiced	6+	thumb, bathtub, tooth

# IDENTIFY IF SOUNDS ARE AGE APPROPRIATE

- Sounds ordered by age



**English Sound Chart**

1. Ask the student to repeat these words.  
2. CIRCLE correct words  
3. CROSS OUT incorrect words and write what the student says

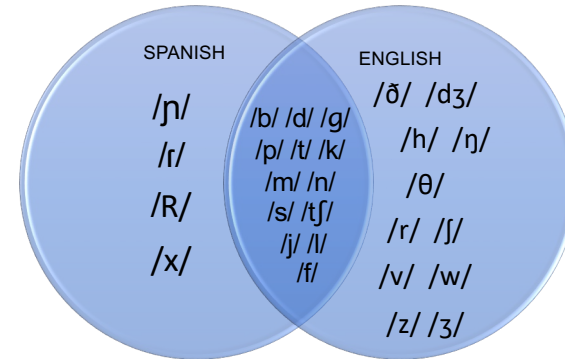
SOUND	AGE	WORDS
p	2+	pig, apple, cup
b	2+	bunny, baby, crib
m	2+	mad, hammer, thumb
n	2+	no, funny, fan
hw	2+	hat, wet
d	2+	doll, middle, bed
f	3+	food, coffee, off
t	3+	toys, water, bat
k	3+	king, pumpkin, rake
g	3+	goat, wagon, bag
y	3+	yellow, crayon
ng	3+	finger, ring
l	4+	lion, pillow, tall
v	4+	vote, oven, stove
s	4+	sock, pencil, kiss
z	4+	zoo, puzzle, toes
sh	4+	shoe, fishing, fish
ch	4+	chair, teacher, lunch
j	4+	jelly, pajamas, orange
zh	5+	measure
th voiced	5+	the, that, this
r	5+	rat, green, early, nurse, car
th unvoiced	6+	thumb, bathtub, tooth

Your child is a Spanish-speaker and produces these sound errors

/p/ /b/ /d/ /g/ /t/ /ʃ/ /θ/ /dʒ/ /r/

75

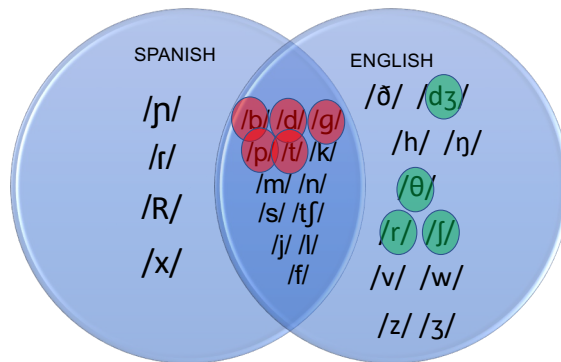
Compare to contrastive chart



/p/ /b/ /d/ /g/ /t/ /ʃ/ /θ/ /dʒ/ /r/

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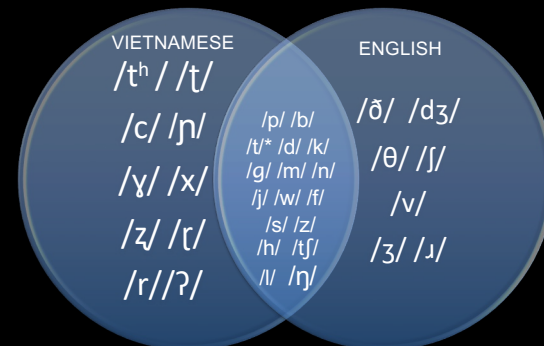
Compare to contrastive chart



/p/ /b/ /d/ /g/ /t/ /ʃ/ /θ/ /dʒ/ /r/

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Vietnamese & English Consonant Phonemes



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## Vietnamese Phonotactics

- In addition to consonant and vowel phonemes, tones are also phonemic
- Words are monosyllabic. Thus, no medial consonants.
- Final consonants can only be nasals (m, n, ŋ) or voiceless stops
- There are no consonant clusters

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A set of three cards for a Vietnamese phonotactics activity. The top row features three images: a woman in a conical hat, a large orange circle with the number '3', and an elderly man. The bottom row features three colored boxes: a blue box with 'Bà', a green box with 'Ba' and a speaker icon, and an orange box with 'Bá'.

80

## Vietnamese Consonant Difference Activity



BATH

81

## Vietnamese Consonant Difference Activity

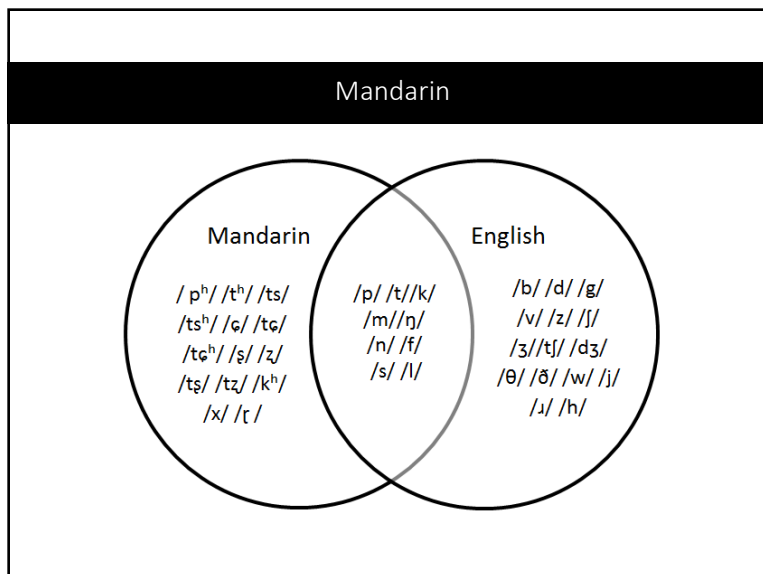


THREE

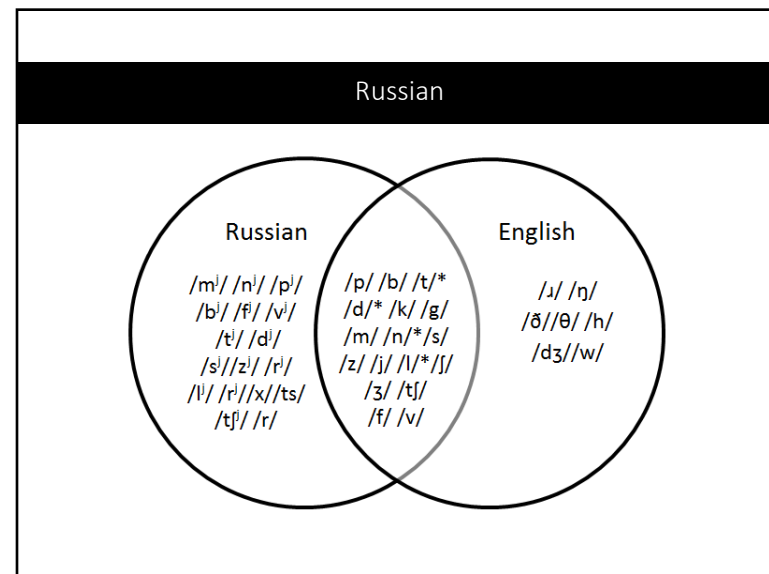


TEE

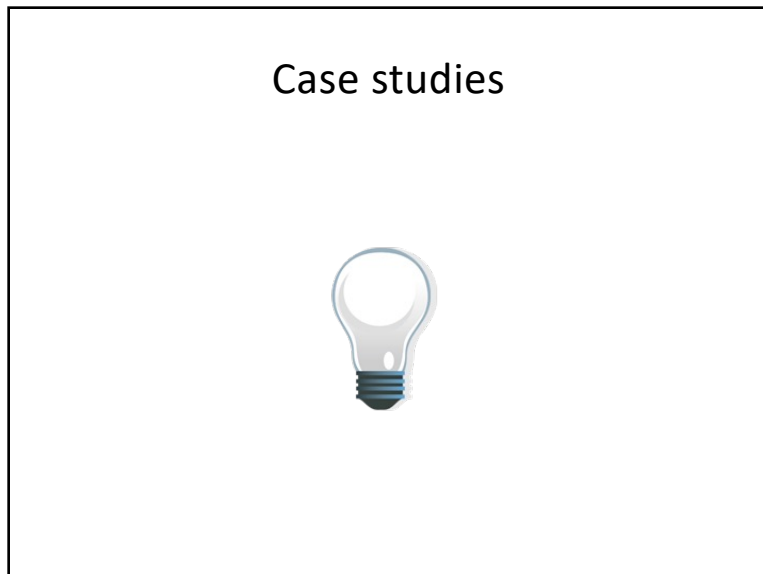
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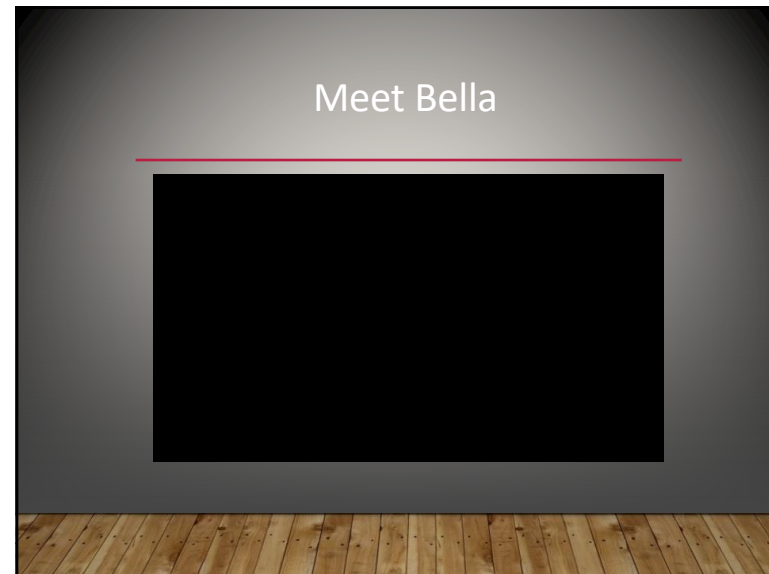
83



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92



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The chart below includes all the words administered on the BAPA.  
Phonemes marked in green identify targeted phonemes produced correctly.  
Phonemes marked in bold identify errors identified by test administrator.

Spanish Result			English Result		
Word	Transcription/ errors	Comments	Word	Transcription/ errors	Comments
pan	pan	(Substitution /r/)	bed	bɛd	
baldo	baljo		beehive	bɪhɪv	
manana	manina		apple	apɪl	
nido	nido	(Substitution /m/)	bridge	bri:dʒ	
dedo	debo		bubble	bʌbəl	
bañita	lojo		bat	bæt	
galleta	gojeta		capas	kɛdʒz	
comigo	komiso		carrot	kɪzɪt	
apuro	gyro		castle	kastəl	
bloques	blokes		chicken	tʃɪkən	(Substitution /j/)
camia	kama		coffee	kɒfi	(Substitution /w/)
camisa	kamiso		crab	kreb	(Substitution /w/)
chancia	ʃankʌ	(Substitution /w/ (Medial Cons. Deletion))	dinosaur	dɪnəsaɪ	
chila	ʃile	(Substitution /j/)	dog	dɒg	(Substitution /g/)
dragon	droyon	(Substitution /g/)	drum	dɹʌm	
duice	duke	(Substitution /w/)	elephant	ɪlɪfənt	
fantasma	fontasma	(Substitution /j/ (Substitution /w/ (Substitution /s/))	feather	fɛðə	
flor	flor		fish	fɪʃ	
fruta	frula	(Seq. Reduction /f/)	flower	flaʊə	
largo	lweyo	(Medial Cons. Deletion)	game	ɡem	
guatemala	glora	(Substitution /j/ (Substitution /h/))	giraffe	dʒaɪf	(Substitution /w/)
helo	jelo	(Substitution /j/ (Substitution /y/))	guitar	ɡɪtɑː	(Substitution /s/)
prafe	xirofo	(Substitution /j/)	hammer	hæmə	
lapiz	lopis		hugging	hʌɡɪŋ	
lucha	lufo		juice	dʒʌs	
libro	libro	(Seq. Reduction /θ/)	ketchup	kɛtʃɪp	(Substitution /j/)
lanta	janko	(Substitution /j/)	kitchen	kɪtʃən	(Substitution /g/)
lorando	lorando	(Initial Cons. Deletion) (Substitution /j/)	knob	nɒb	
luzia	ʒulia		lemon	lɪmən	
mesa	mesa		lizard	lɪzəd	
nanz	nane	(Substitution /m/ (Substitution /j/))	macaroni	mækəroni	
nube	nuje		magazine	mægəzɪn	
ocho	ofo		month	mɒnθ	(Substitution /θ/)
pañal	pañal	(Substitution /k/ (Substitution /m/))	needs	niːz	
pared	pareo		peach	pi:tʃ	(Substitution /h/)
pelota	paton	(Substitution /k/)	pig	pɪg	(Substitution /h/)
			robot	rɒbɒt	(Substitution /w/)
			roof	ruf	(Substitution /w/)

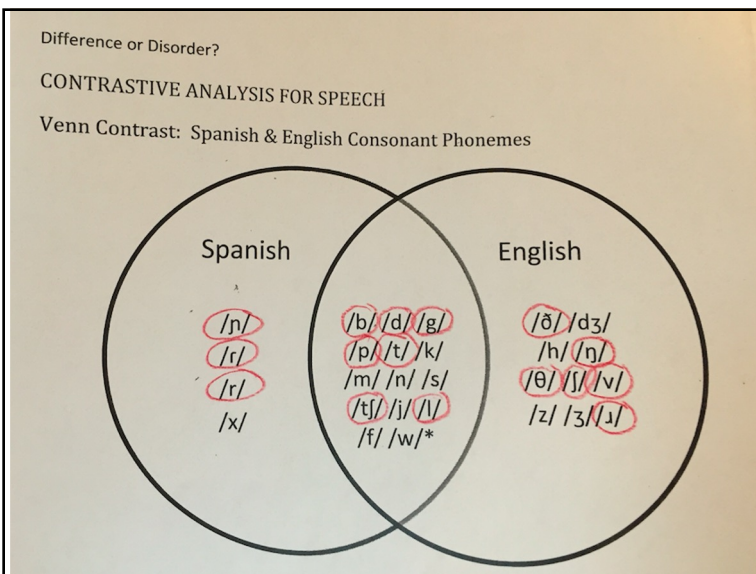


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pelota	pelota	(Substitution /k/)	roof	ruf	(Substitution /w/)
perro	pero	(Substitution /j/)	sad	sæd	
rana	rona	(Substitution /θ/)	shoes	ʒuz	
ropa	ropo	(Substitution /j/)	shovel	ʃuvel	(Substitution /b/)
sofa	sofo		sleeping	slɪpɪŋ	(Substitution /n/)
sol	sofo		soap	sop	
tambor	tambor	(Substitution /m/ (Substitution /d/))	soda	soda	
vaca	baiko	(Substitution /g/ (Substitution /p/))	spider	spæɪd	
calabaza	kalaβasa		stove	stov	
elefante	elefonta		teeth	iθ	(Substitution /s/)
mariposa	mariposo		thank you	θæŋkju	
motocicleta	motokikleta	(Syllable(s) reduced)	this	ðɪs	(Substitution /d/)
refrigerador	refrixeraɔr	(Syllable(s) reduced)	thorn	θɔːn	(Substitution /f/)
fompecabezas	rompekaβesas	(Syllable(s) reduced)	tissue	tʃu	(Substitution /d/)
			toothbrush	tuθbrʌʃ	(Substitution /f/ (Substitution /w/))
			vanilla	vænɪlə	(Substitution /b/)
			water	wæd	
			yellow	jelə	(Substitution /θ/)
			yoyo	jɔjə	
			zebra	zɪbrə	(Substitution /w/)
			zoo	zu	
			computer	kəmputə	
			telephone	teləfən	
			television	tɛlɪvɪʒən	(Syllable(s) reduced)
			refrigerator	rɪfrɪdʒəreɪtə	(Syllable(s) reduced)



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PHONOLOGY AND PHONOTACTICS

Frequent Dialectal Difference Patterns:	Example:
Replacement of voiced "th" (ð) with /d/ in the initial position	them – dem
Replacement of voiced "th" (ð) with /v/ in the medial position	brother – brover
Replacement of voiceless "th" (θ) with /f/ in medial and final positions	birthday – birfday
Omission of /f/ after a vowel and in final position	south – souf
Omission of /f/ between a consonant and a back-rounded vowel	fort – fought
Omission of /f/ in combination with cluster simplification and final consonant deletion	door – doe
Devoicing or omission of final consonants, including "g" dropping (i.e., replacing /ŋ/ ("ng") with /n/)	throw – thow
Reduction of final consonant clusters in singular nouns	told – toe
Pattern may not apply when final consonants are voiced + voiceless (e.g., 'nt' in sent).	tool – too
Reduction of final consonant clusters in plural nouns	cup – cup
Metathesis (sound reversal) within consonant clusters, with or without consonant reduplication	his – hiss
Replacement of consonant cluster "str" with "sk"	looking – lookin
Omission of unstressed syllables in multisyllabic words	man – ma
Addition of syllables	test – tes
Reduction of certain diphthongs to monophthongs, long vowels to short vowels (especially before /f/ and /t/), and high vowels to low vowels (especially before nasals). This is also a feature of many Southern U.S. dialects.	hand – han
	tests – tesses
	wasps – wasses
	ask – axe
	escape – ekscape
	street – skreet
	became – came
	forests – forestes
	boil – ball
	our – are
	feel – fill
	thing – thang
	pen – pin

(Craig, Thompson, Washington, & Potter, 2003; Craig, Kolenic, & Hensel, 2013; Packer, 2001)



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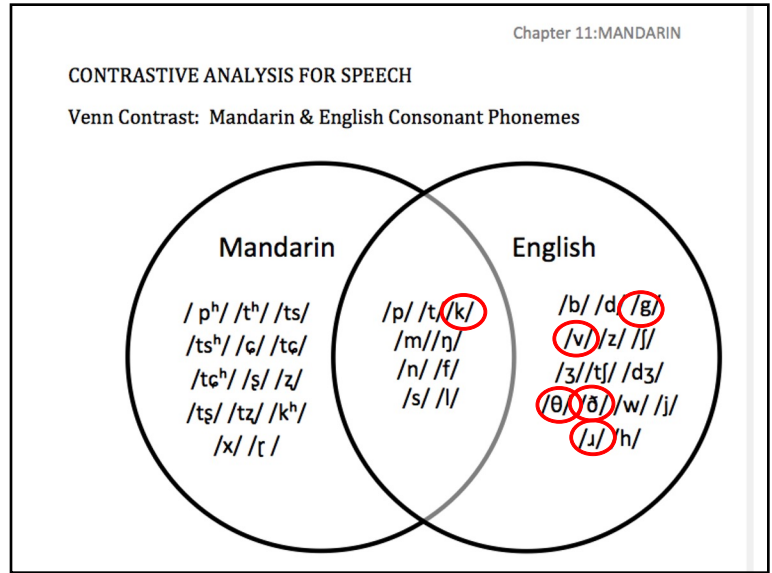




Word	Target transcription	Child's Production
beehive	bihaɪv	bihaɪf
bridge	brɪdʒ	bwɪdʒ
carrot	kæɪt	kewɪt
crab	kræb	kwæb
drum	drʌm	drʌm
feather	fɛðə	fɛdə
flower	flaʊwə	fauwə
giraffe	dʒəˌræf	dʒəˌwæf
macaroni	mækʌroni	mæɪwɒni then mækʌwɒni
magazine	mægəzɪn	mædɛzɪn
mouth	maʊθ	maʊf
robot	ˌrɒbət	wɒbət
roof	ɹuːf	wuːf
stove	stɒv	stɒm
teeth	stiːθ	stɒf
thorn	θɔːn	tɔː
toothbrush	tʊθbrʌʃ	tʊfbrʌʃ
zebra	zɪbrə	zɪbə



Test of Articulation and Phonology (iTap)



**PHONOLOGY AND PHONOTACTICS**

**Patterns of Native Language Influence:**

Pattern:	Example:	
Omission of final consonants or substitution of /m/ or /ŋ/ in final position	cup – cu ton-ton	stom for stov
Devoicing of phonemes	dog – tog	bihaif for bihaiv
Confusion between /l/ and /r/	lamp – ramp	
Confusion between /tʃ/ and /ʃ/	children – shildren	
Addition of a neutral vowel such as /ə/ between consonants in a cluster	play – puhlay	
Reduction of a consonant cluster to a single consonant	play – pay	zɪbə for zɪbrə
Omission of a consonant cluster	central – cenal	
Substitution of [θ] with [s]	thin – sin	
Lengthening of the short vowels of English (/æ/ /ɪ/ /ɒ/ /ɪ/)	give – geev	

(Hua, 2007; Hua & Dodd, 2000; Peña-Brooks & Hegde, 2007)



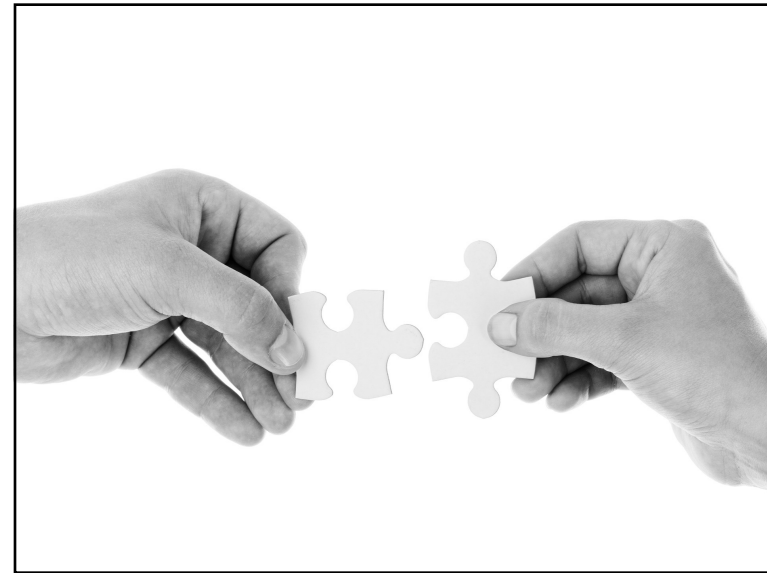
/r/ & /l/, liquid simplification  
cluster reduction  
stopping

## Bilingual Speech Evaluation: 3 important steps

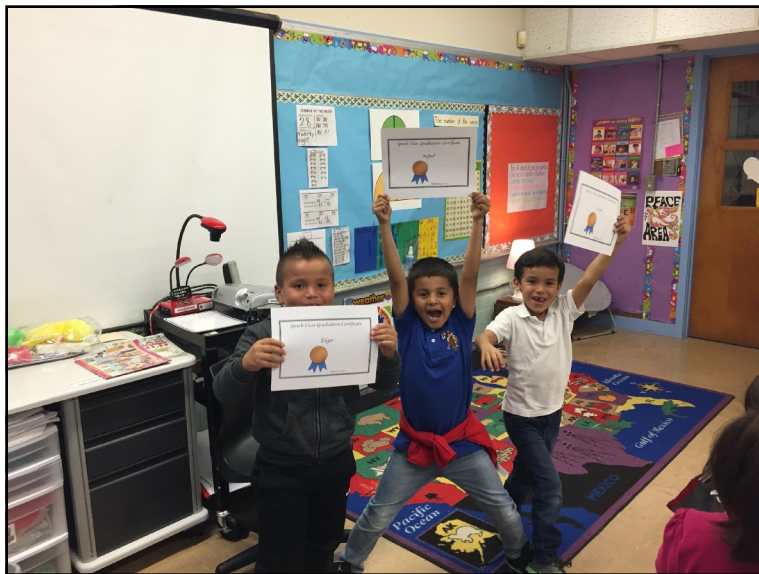
- 1) Shared and unshared sounds/processes
- 2) Phonotactics of each language  
The set of permissible sequences of sounds in a given language
- 3) Developmental acquisition within each language



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## Find Information on the Second Language

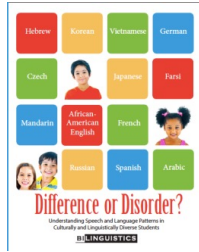
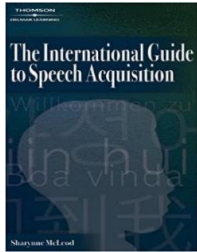
- “difference between \_\_\_\_\_ and English Language”

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<https://bilinguistics.com/evaluation-resources/>



Speech and Language  
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