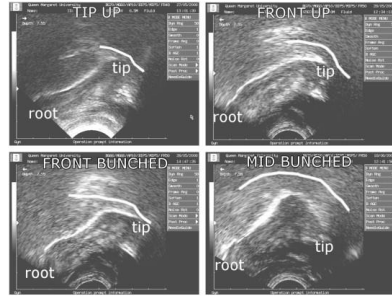


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### The Nature of Error Productions of /r/

Why do some children have trouble producing /r/?

For final /ə/:

- Not raising back of tongue on each side to approximate the gum ridge near molars
- Raising back of tongue in the middle, resulting in /ŋ/

For initial /r/:

- Liprounding, resulting in /w/
- Derhotacized, production is neither /r/ or /w/, but is a distorted form where quality is lost



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### Specific Challenges of /r/

- Typically described as being produced with only two tongue shapes: bunched and retroflex

- Descriptions of correct /r/ production based more on acoustic feedback than tactile feedback

\*\*\*Tongue shape and feedback are challenges that must be addressed by our therapeutic strategies.

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### Common /r/ Errors Involving Articulatory Posture

Lip Rounding

Flat/Depressed Tongue



We have to change the motor plan that the child uses to posture the tongue to attempt /r/ production.



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### Contextual Facilitation

What is Contextual Facilitation?

Paying attention to phonetic context – position of articulators in speech sounds that might influence correct articulatory posture for the target sound.

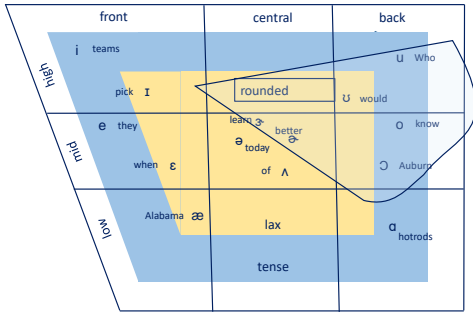
How do we do Contextual Facilitation?

Pay close attention to the articulatory posture that you need to change. What is the child doing that is contributing to the error production?



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To decrease lip rounding:

- Utilize a context that facilitates lip spreading
- Add "reed", "ree", or "ray" to words

/ɜ/	/er/	/tr/	/aɪ/	/ɔr/	/ar/
fur	bear	dear	dire	core	star
her	care	leer	hire	door	tar
blur	fair	tear	mire	four	are
per	share	cheer	tire	lore	far
sir	pair	ear	sire	more	car
**whir/were	mare	clear	spire	store	mar
	hair	fear	**wire	bore	bar
	stair	sheer		sore	
	air	peer		tore	
	dare	steer		snore	
	chair	piece		score	
**challenge words	**wear	spear		**wore	

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To decrease lip rounding:

- Utilize a context that facilitates lip spreading
- "errr" plus "ree" to decrease lip rounding

/ɜ/	/er/	/tr/	/ar/	/ɔr/	/ar/
furry	berry	dearie	fiery	Cori	starry
hurry	carry	leery	diary	Dory	tarry
blurry	Gary	teary	**wiry	Jory	Arie
jury	fairy	cheery		Laurie	
curry	Larry	eerie		Morey	
flurry	marry	**weary		story	
**worry	hair			glory	
	very				
	airy				
	dairy				
	cherry				
	**wary				

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To improve tongue posture

- "errr" to /n/ for tongue tip elevation for retroflex:

earn	learn	fern	turn	burn
------	-------	------	------	------

- /l/ to /r/ for retroflex:

learn	Laura	lark
lair	leery	Lori

- /r/ to /l/ for retroflex:

Carla	Orla	forlorn
Carl	early	curly
four-leaf	core-love	garlic
marlin	barley	gnarley
Marley		

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To improve tongue posture

- /dr-/ for tongue tip up for retroflex and facilitating vowels:

/l/	/e/	/a/	/æ/	/at/
dream	drake	drop	draft	dry
	drape	drama	drat	drive
	drain		dram	

- /tr-/ for tongue tip up for retroflex and facilitating vowels:

/l/	/a/	/a/	/æ/	/at/
tree	tray	tropical	track	try
treat	trace	drama	trap	tribe
trees	trait		tram	trike
	train			
	trays			

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To improve tongue posture

- /dæ-/ for tongue tip up for retroflex:

bidder	badder	ladder	madder	**wider
feeder	leader	seeder	colder	folder
**wader	fader	heeder	**weeder	

- /tæ-/ for tongue tip up for retroflex:

fatter	batter	latter	matter	**whiter
seater	meter	neater	Peter	butter
**water	cutter	heater	putter	fighter
**waiter	better	butter	hatter	hotter

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- To improve tongue posture
- /kr-/ for tongue retraction and facilitating vowels:

/i/	/e/	/a/	/æ/	/ax/
creed	cray	crop	crab	cry
creep	crepe	crook	cram	crime
creek	crate		craft	cries
crease	crane		crack	cried
cream	trays			
	graze			

- /gr-/ for tongue retraction and facilitating vowels:

/i/	/e/	/a/	/æ/	/ax/
greed	graw	grock	grab	grime
greet	grape	crock	graph	grind
greek	grate		grad	grimy
grease	grain		grand	
grief	grail		gram	
green	grade		grass	
	graze			
	grace			

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- To improve tongue posture
- /gæ/ for tongue retraction and elevation:

bigger	bagger	lagger	blogger	logger
fogger	hugger	slugger		

- /kæ/ for tongue retraction and elevation:

biker	baker	laker	maker	**waker
taker	cooker	looker	peeker	booker
poker	soaker	talker	taker	soaker
leaker	seeker	sneaker	weaker	sleeper

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/r/ to vowels

/ri-/	/re-/	/ra-/	/ræ-/	/rax/
read	ray	rock	rabbit	rye
ream	rage	rocket	rack	ride
reek	radio	rod	rad	rhyme
reef	rake	rotten	rat	rile
reel	rail	rob	racquet	rice
reap	rain	robber	wrap	rise
	raise	rocker	ram	right/write
	rate		ramble	Rhine
			rant	ripe

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## The Use of Physical Prompts

- Final /ə/ is a continuant, so tongue position needs to be maintained – this should be corrected first
- Using your hand – demonstrate to the child how the shape of the tongue should be like a boat
- Using a tongue blade, stimulate both sides of the back of the tongue, then stimulate the upper gum ridge near the molars. Tell the child to put these parts together
  - Some children have a hard time pulling tongue back without bringing lips forward, have them bring lips back at the same time in a wide smile
- Assist child with posterior tongue elevation but pushing up under the chin with the middle finger while squeezing the cheeks with the thumb and forefinger
  - Raising the entire back of the tongue results in /ŋ/. Close the child's nose. This will make /ŋ/ impossible to produce.

Kummer, A.

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## Tactile Feedback

- Also incorporates the use of rich descriptions and metaphors
- Upper molars are the tracks
- Lateral margins of the tongue are the trains
- Curl the sides of the tongue toward the upper molars
- Instruct child to get the train on the tracks and let the train drive back to the molars
- Contact of the tongue with the molars will provide tactile feedback of tongue position



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## QUESTIONS?

- Correct /r/ production is difficult.
- Most production challenges are related to lip rounding, tongue shape, posture, and position.
- Remember to provide as much information as possible:
  - Rich description
  - Phonetic placement cues
  - Facilitating context
  - Physical prompts
  - Auditory model



Feel free to contact me anytime!  
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## References

- Adler-Bock, M., Bernhardt, B.M., Gick, B., & Bacsfalvi, P. (2007). The use of ultrasound in remediation of North American English /r/ in 2 adolescents. *American Journal of Speech-Language Pathology*, 16, 128-139.
- Byun, T.M., Hitchcock, E.R., & Swartz, M.T. (2014). Retroflex versus bunched in treatment for rhotic misarticulation: Evidence from ultrasound biofeedback intervention. *Journal of Speech, Language, Hearing Research*, 57, 2116-2130.
- Flipsen Jr., P. & Sacks, S. (2015). Remediation of residual /r/ errors: A case study using the SATPAC approach. *Perspectives of the ASHA Special Interest Groups*, 16, 64-78.
- Lee, S.A.S., Wrench, A., Sanibrian, S. (2015). How to get started with ultrasound technology for treatment of speech sound errors. *Perspectives on Speech Science and Orofacial Disorders*, 25, 66-80.
- Preston, J.L., McCabe, P., Rivera-Campos, A., Whittle, J.L., Landry, E., and Maas, E. (2014). Ultrasound visual feedback treatment and practice variability for residual speech sound errors. *Journal of Speech, Language, and Hearing Research*, 57, 2102-2115.

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