/pratʊ/∽[ˈpla.tʊ]
/plaka/∽[ˈpra.kɐ]

✗ Is it the [ˈpla.tʊ]?
✓ Is it the [ˈpra.kɐ]?

C[l]V is not a good enough C/r/V, even if you say so:
Asymmetrical mispronunciation detection of liquids in Brazilian Portuguese

Andressa Toni, University of São Paulo

Introduction

When investigating the CCV development path in Brazilian children, literature shows conflicting results regarding the first segment to emerge in C_2 and the substitution preferences in child speech:

Emergency	Substitutions	References
C[l]V	C/r/V→C[l]V	Ávila(2000), Baesso(2009)
C[r]V	C[l]V→C[r]V	Wertzner(2000)
C[l]V	t_1: C/r/V→C[l]V t_2: C/l/V→C[r]V	Teixeira(1988), Toni(2016)
C[l]V/C[r]V	No preferences	Ribas(2002), Staudt(2008)

Interestingly, these patterns do not apply in CVs, where /l/ always emerges first and can substitute /r/ or any other liquids (/x, ʎ/).

Research questions

Is this variation also observable in perception?

Can children who substitute liquids in their productions detect these same substitutions in perception?

Methods

Production task: To access the speech patterns of each child both in CV and CCV;

Mispronunciation detection task: To access if children are equally sensitive to mispronunciations…

In both CCV and CV contexts ∽ No!
In both liquid directions, /l/→[r] and /r/→[l] ∽ No!

C/r/V

Child	Age	MPDetection	Correct	C/r/V→C[l]V	C/r/V→CV
S3	2;10	0%	0%	0%	100%
S4	2;11	0%	3.23%	0%	93.55%
S5	3;01	100%	28.6%	57.14%	10.71%
S6	3;01	55.5%	89%	0%	0%
S8	3;8	0%	0%	0%	100%
S9	3;9	66.67%	3.13%	0%	96.87%
S10	4;6	0%	60%	15%	0%
S11	4;7	46.15%	97%	0%	0%
S14	5;2	100%	95%	0%	0%
S16	5;4	50%	10.5%	42.1%	42.1%
S17	5;7	100%	93%	0%	0%

C/l/V

Child	Age	MPDetection	Correct	C/l/V→C[r]V	C/l/V→CV
S3	2;10	0%	0%	0%	77.7%
S4	2;11	0%	8.3%	0%	91.7%
S5	3;01	66.67%	72.73%	9.09%	9.09%
S6	3;01	66.67%	92.31%	0%	0%
S8	3;8	0%	0%	0%	100%
S9	3;9	75%	0%	0%	100%
S10	4;6	0%	90%	0%	10%
S11	4;7	0%	9.09%	81.82%	9.09%
S14	5;2	100%	88.89%	0%	11.11%
S16	5;4	0%	90%	0%	0%
S17	5;7	100%	93.33%	0%	6.67%

/r/V

Child	Age	MPDetection	Correct	/r/V→[l]V	/r/V→V
S3	2;10	0%	62.5%	25%	0%
S4	2;11	0%	22.22%	44.44%	11.11%
S5	3;01	100%	30.77%	61.54%	7.69%
S6	3;01	80%	100%	0%	0%
S8	3;8	0%	0%	100%	0%
S9	3;9	83.3%	76.19%	23.81%	0%
S10	4;6	100%	77.78%	11.11%	11.11%
S11	4;7	80%	100%	0%	0%
S14	5;2	100%	100%	0%	0%
S16	5;4	100%	0%	80%	20%
S17	5;7	100%	80.77%	3.85%	0%

/l/V

Child	Age	MPDetection	Correct	/l/V→[r]V	/l/V→V
S3	2;10	0%	66.67%	0%	0%
S4	2;11	0%	71.43%	0%	0%
S5	3;01	50%	88.89%	11.11%	0%
S6	3;01	75%	100%	0%	0%
S8	3;8	0%	100%	0%	0%
S9	3;9	100%	100%	0%	0%
S10	4;6	100%	100%	0%	0%
S11	4;7	60%	100%	0%	0%
S14	5;2	100%	100%	0%	0%
S16	5;4	100%	100%	0%	0%
S17	5;7	87.5%	100%	0%	0%

» Different paths along the CCV development

Production	Mispronunciation Detection

- /l, r/ deleted in CCV; correct production of /l/ in CVs only (S4, S8) → All MPs accepted ∽ *Did they get the task?*
- /r/ unstable in CCV, CV; correct /l/s in CCV, CV (S16) → CV MPs detected; C/r/V→C[l]V detection at chance
- /l, r/ deleted in CCV; correct production of /l, r/ in CVs (S3, S9) → S9: MPs detected even in CCV
- /r/→[l] substitution both in CCV and CV (S5) → /r/→[l] detected; /l/→[r] detected at chance *Production ≠ Detection*
- /l/→[r] substitution in CCV, but not in CV (S11) → No detection in CCV; good detection in CV
- Correct /l, r/ production both in CCV and CV (S6, S14, S17) → MPs detected in CV and CCV

Discussion «

- /l, r/ mispronunciations are better detected in CV than in CCV;
- Variable production and detection are observed both in C/l/V-C/r/V and in relation to /l, r/ in CV;
- In CCV, C/r/V→C[l]V is more detected than C/l/V→C[r]V - even though C/l/V is more stable in production;
- Production and detection patterns can be different (*Fis-fish phenomenon*): some children can detect their own substitution patterns (S5, S16), but others cannot (S11, S4, S8).