Description of a Bilingual Corpus of European Portuguese and British English Fricatives

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Table 1: Fricative /f/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
1	figo	[ɐ ˈfig]	41			
2	ferir	[ɐ f ɨˈɾiɾ̥]	18			
3	febra	[ɐ ˈfebɾɐ]	61			
4	ferro	[ɐ ˈf ɛχ]	4			
5	falir	[ɐ f ɐˈliɾ̥]	47			
6	fala	[ɐ ˈfalɐ]	2			
7	Fafe	[ɐ ˈf af]	125			
8	foco	[ɐ ˈfɔk]	90			
9	fogo	[ɐ ˈfog]	101			
10	fofa	[ɐ ˈf ofɐ]	23			
11	furar	[ɐ f uˈɾaɾ̥]	44			
12	efectuar	[iˈfɛtwaɾ]	98			
13	benéfico	[bɨˈnɛfik]	89			
14	afiar	[ɐ f iˈaɾ̥]	53			
15	café	[kɐˈfɛ]	31			
16	garrafa	[gɐˈχa f ɐ]	71			
10	fofa	[ˈfo f ɐ]	23			
17	galhofa	[gɐˈʎɔfɐ]	128			
18	bufa	[ˈbufɐ]	73			
19	trefo	[ˈtɾ̥e f]	107			-
20	chefe	[ˈʃɛ f]	11			-
7	Fafe	[ˈfa f]	125			-
21	bafo	[ˈbaf]	26			-
22	mofo	[ˈmof]	55			-

Table 2: Fricative /v/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
23	vila	[ɐ ˈvilɐ]	59				Voiced
24	viver	[ɐ v iˈveɾ]	122				Devoiced
25	viva	[ɐ v ivɐ]	140				Devoiced
26	vermelho	[ɐ v ɨɾ̥ˈmeʎu]	86				Devoiced
27	ver	[ɐ v eɾ̥]	102				Devoiced
28	véu	[ɐ ˈvɛw]	104				Devoiced
29	veia	[ˈvɐjɐ]	111	-			Devoiced
30	vaca	[ɐ ˈvakɐ]	92				Devoiced
31	volta	[ɐ ˈvɔltɐ]	81				Devoiced
32	voo	[ɐ vow]	17				Devoiced
33	vogar	[ɐ v ugaɾ̥]	7				Devoiced
24	viver	[viˈv eɾ]	122				Devoiced
34	possível	[pˈsi v l]	95				Voiced
25	viva	[ˈvi v ɐ]	140				Devoiced
35	dever	[dɨˈv eɾ̥]	22				Devoiced
36	levar	[lɨˈv aɾ̥]	105				Devoiced
37	leva	[ˈlɛvɐ]	149				Partially Devoiced
38	avó	[ɐˈvɔ]	88				Devoiced
39	cava	[ˈkavɐ]	24				Voiced
40	nova	[ˈnɔvɐ]	147				Devoiced
41	ovelha	[oˈvɐʎɐ]	136				Devoiced
42	mover	[muˈv eɾ̥]	57				Devoiced
43	uva	[ˈuvɐ]	40				Devoiced
44	altivo	[alˈtiv]	124			-	Devoiced
45	teve	[ˈtev]	42			-	Devoiced
46	relevo	[χɨˈle v]	94			-	Devoiced
47	leve	[ˈlɛv]	6			-	Devoiced
48	ave	[ˈav]	45			-	Devoiced
49	bravo	[ˈbɾav]	100			-	Devoiced
50	move	[ˈmɔv]	67			-	Devoiced

Table 3: Fricative /s/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
51	sítio	[ɐ ˈsitju]	77			
52	secar	[ɐ sˈkaɾ̥]	93			-
53	sede	[ɐ ˈsed]	75			
54	seta	[ɐ ˈsɛtɐ]	34			
55	cessa	[ɐ ˈsɛsɐ]	64			
56	saber	[ɐ sɐˈbeɾ̥]	39			
57	sala	[ɐ ˈsalɐ]	13			
58	só	[ɐ sɔ]	5			
59	sopa	[ɐ ˈsopɐ]	83			
60	subir	[ɐ suˈbiɾ̥]	139			
61	iça	[ˈisɐ]	148			
62	ressaca	[χˈsakɐ]	82	-		
63	condessa	[kõˈdesɐ]	153			
64	pêssego	[ˈpesg]	87			-
65	aquecer	[ɐʰ kɛˈseɾ]	131			
55	cessa	[ˈsɛsɐ]	64			
66	passear	[pɐˈsjaɾ̥]	103			
67	assar	[ɐˈsaɾ̥]	137			
68	caça	[ˈkasɐ]	35			
69	possa	[ˈpɔsɐ]	150			
70	moça	[ˈmosɐ]	152			
71	possível	[pˈsivl]	95	-		
72	partisse	[paɾ̥ˈtis]	117			-
73	batesse	[bɐˈtes]	69			-
74	asse	[ˈas]	118			-
75	posse	[ˈpɔs]	21			-
76	doce	[ˈdos]	56			-

Table 4: Fricative /z/ in Corpus 3 (Speaker PS)

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
77	Zita	[ɐ ˈzitɐ]	68				Devoiced
78	zelar	[ɐ ˈzlaɾ]	126			-	Devoiced
79	zelo	[ɐ ˈzelu]	115				Devoiced
80	Zé	[ɐ zɛ]	85				Devoiced
81	Zézé	[ɐ ˈ z ɛzɛ]	129				Devoiced
82	zarpar	[ɐ z ɐɾˈpaɾ]	113				Devoiced
83	Zaire	[ɐ ˈz ajɾ]	99				Voiced
84	Zópiro	[ɐ ˈz opiɾu]	10				Devoiced
85	zona	[ɐ ˈzonɐ]	84				Devoiced
86	zurrar	[ɐ z uˈχaɾ]	16				Devoiced
87	exacto	[iˈzat]	43				Devoiced
88	mesinha	[mɨˈziɲɐ]	50				Partially Devoiced
89	beleza	[bɨˈlezɐ]	135				Devoiced
90	mezinha	[mɛˈziɲɐ]	27				Devoiced
81	Zézé	[ˈzɐ z ɐ]	129				Devoiced
91	Brasil	[bɾɐˈzil]	58				Devoiced
92	azar	[ɐˈzaɾ]	97				Devoiced
93	azul	[ɐˈzul]	33				Partially Devoiced
94	mazinha	[maˈziɲɐ]	37				Devoiced
95	asa	[ˈazɐ]	19				Devoiced
96	rosa	[ˈχɔ z ɐ]	14				Devoiced
97	acusar	[ɐkuˈz aɾ]	146				Devoiced
98	peso	[ˈpez]	60			-	Devoiced
99	doze	[ˈdoz]	132			-	Devoiced
100	amoroso	[ɐmuˈɾoz]	8			-	Devoiced

Table 5: Fricative /ʃ/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
101	chicote	[ɐ ʃiˈkɔt]	134			
102	chegar	[ɐ ʃɨˈgaɾ̥]	65			
103	cheta	[ɐ ˈʃetɐ]	30			
104	cheque	[ɐ ˈʃɛk]	36			
105	chefe	[ɐ ˈʃɛf]	11			
106	chamar	[ɐ ʃɐˈmaɾ̥]	28			
107	chá	[ɐ ʃa]	51			
108	choca	[ɐ ˈʃɔkɐ]	116			
109	chocha	[ɐ ˈʃoʃɐ]	80			
110	chorar	[ɐ ʃ uˈɾ̥aɾ̥]	78			
111	bicha	[ˈbiʃɐ]	142			
112	bexiga	[bˈʃigɐ]	106	-		
113	bochecha	[bˈʃeʃ ɐʰ]	154			
114	este	[ˈeʃt]	54			-
115	achar	[ɐˈʃaɾ]	114			
116	bolacha	[buˈlaʃɐ]	15			
117	tocha	[ˈtɔʃɐ]	121			
109	chocha	[ˈʃoʃ ɐ]	80			
113	bochecha	[bˈʃ eʃɐʰ]	154	-		
118	diz	[diʃ]	96			-
119	mares	[ˈmaɾ̥ʃ]	130	-		-
120	mês	[ˈmeʃ]	112			-
121	pés	[pɛʃ]	62			-
122	meche	[ˈmɛʃ]	141			-
123	perdas	[ˈpeɾdɐʃ]	29			-
124	capaz	[kɐˈpaʃ]	91			-
125	tacho	[ˈtaʃ]	133			-
126	pós	[pɔʃ]	70			-
127	pôs	[poʃ]	144			-
128	mocho	[ˈmoʃ]	109			-
129	dos	[ˈduʃ]	138			-
130	capucho	[kɐˈpuʃ]	74			-

Table 6: Fricative /ʒ/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
131	girar	[ɐ ʒ iˈɾaɾ]	48				Devoiced
132	Gigi	[ɐ ʒ iˈʒi]	145				Devoiced
133	gelado	[ɐ ʒˈlad]	127			-	Partially Devoiced
134	gelo	[ɐ ˈʒelu]	119				Devoiced
135	germe	[ɐ ˈʒɛɾm]	72				Devoiced
136	jaqueta	[ɐ ʒɐˈketɐ]	20				Devoiced
137	jacto	[ɐ ˈʒat]	123				Devoiced
138	jóia	[ɐ ˈʒɔjɐ]	143				Devoiced
139	jogo	[ɐ ˈʒogu]	3				Devoiced
140	judeu	[ʒuˈdew]	32	-			Devoiced
141	originar	[oɾi ʒ iˈnaɾ]	1				Devoiced
132	Gigi	[ʒiˈ ʒ i]	145				Devoiced
142	tijolo	[tiˈʒol]	110				Devoiced
143	arejar	[ɐɾɨʰ ʒ aɾ]	46				Partially Devoiced
144	pejo	[ˈpeʒu]	25				Devoiced
145	Beja	[ˈbɛʒɐ]	52				Devoiced
146	agir	[ɐˈ ʒ iɾ]	108				Devoiced
147	cajado	[kɐˈʒad]	63				Devoiced
148	ajudar	[ɐˈ ʒ daɾ]	66			-	Devoiced
149	haja	[ˈaʒɐ]	12				Voiced
150	aloja	[ɐˈlɔʒɐ]	151				Devoiced
151	tugir	[tuˈ ʒ iɾ]	120				Devoiced
152	age	[ˈaʰaʒ]	79			-	Devoiced
153	hoje	[ˈoʰoʒ]	38			-	Devoiced
154	tojo	[ˈtoʒ]	9			-	Devoiced

Table 7: Fricative /f/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
1	Fifi	['f ifi]	22	-		
2	fear	[ɪʰ fir]	71	-		
3	fever	['f ivɝ]	110	-		
4	finny	[ɪ 'fɪni]	4			
5	fishing	['f ɪʃiŋ]	107	-		
6	father	[ɪ 'f ɑðɝ]	25			
7	for	[ɪ fɔr]	44			
8	follow	['fɔlo͡ʊ]	38	-		
9	Flossie	[ɪ 'f lɔsi]	100			
10	floozy	[ɪ 'f luzi]	73			-
11	frothing	['f rɔθiŋ]	117	-		
1	Fifi	['fi f i]	22			
12	leafy	['lifi]	86			
13	safer	['se͡ɪ f ɝ]	63			
14	coffee	['kɔfi]	58			
15	thief	['θi f]	74			-
16	knife	[nɑɪf]	48			-
17	half	[hɑf]	67			-
18	roof	[ruf]	61			-

Table 8: Fricative /v/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
19	veal	[ɪʰ vil]	20	-			Devoiced
20	vision	[ɪʰ ˈvɪʒn]	46	-			Devoiced
21	vet	[ɪ vɛt]	94				Devoiced
22	velvet	[ɪ ˈvɛlvət]	33				Devoiced
23	vying	[ɪ ˈvɑ͡ɪjɪŋ]	50				Devoiced
24	void	[ɪʰ vɔɪd]	91	-			Devoiced
25	vulgar	[ˈvʌlgɝ]	39	-			Devoiced
26	leaving	[ˈliviŋ]	5				Devoiced
27	TV	[tiˈvi]	17				Devoiced
28	Levis	[ˈli v ɑ͡ɪz]	105				Devoiced
29	fever	[ˈfi v ɝ]	110				Voiced
30	saver	[ˈse͡ɪ v ɝ]	96				Partially Devoiced
31	ivy	[ˈɑ͡ɪvi]	65				Devoiced
32	lover	[ˈlʌvɝ]	13				Voiced
33	hover	[ˈhʌvɝ]	60				Devoiced
34	cover	[ˈkʌvɝ]	68				Voiced
22	velvet	[ˈvɛl v ət]	33	-			Partially Devoiced
35	live	[lɪv]	15			-	Devoiced
36	give	[gɪv ɐ]	27				Voiced
37	save	[se͡ɪ v]	112			-	Devoiced
38	of	[əv]	80			-	Devoiced
39	dove	[dəv]	43			-	Devoiced
40	move	[muv]	87			-	Devoiced
41	prove	[pruv]	113			-	Devoiced

Table 9: Fricative /θ/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
42	theatre	[ɪ ˈθiətʰɜ]	41			
43	thief	[ˈθif]	74	-		
44	think	[ɪ ˈθɪŋk]	8			
45	thistle	[ˈθɪsl]	82	-		
46	frothing	[ˈfrɔθɪŋ]	117			
47	wreath	[ˈriθ]	23			-
48	death	[ˈdɛθ]	70			-
49	breath	[ˈbrɛθ]	78			-
50	bath	[ˈbæθ]	115			-

Table 10: Fricative /ð/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
51	the	[ðə]	108	-			Devoiced
52	dither	['diðɝ]	97				Devoiced
53	bather	['beɪ͡ðər]	88				Partially Devoiced
54	mother	['məðɝ]	18				Voiced
55	father	['fɑ ð ɝ]	25				Voiced
56	brother	['brʌðɝ]	51				Voiced
57	clothing	['kloʊ͡ðiŋ]	1				Voiced
58	soothing	['su ð iŋ]	54				Devoiced
59	breathe	['brið]	47			-	Partially Devoiced

Table 11: Fricative /s/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
60	see	[ɪ si]	106			
61	seizure	[ˈsiʒɜˠ]	118	-		
62	sees	[ˈsiz]	9	-		
63	seizing	[ˈsiziŋ]	114	-		
64	safer	[ˈseɾfɜˠ]	63	-		
65	save	[seɪv]	112	-		
66	saver	[ˈseɪvɜˠ]	96	-		
67	saying	[ˈseɪiŋ]	103	-		
68	says	[ɪ ˈsɛz]	116			
69	sandbar	[ˈsændbar]	52	-		
70	sewing	[ˈsoʊiŋ]	92	-		
71	Suzie	[ɪ ˈsuzi]	35			
72	soothing	[ˈsuðɪŋ]	54	-		
73	splashes	[ˈsplæʃəz]	98	-		-
74	greasy	[ˈgrisi]	49			
75	missing	[ˈmɪsiŋ]	6			
76	kissing	[ˈkɪsiŋ]	64			
77	icy	[ˈɑɪsi]	109			
78	thistle	[ˈθɪsl̩]	82			-
79	precision	[prˈsɪʒn̩]	59	-		
80	desk	[dɛsk]	10			-
81	Flossie	[ˈflɔsi]	100			
82	awesome	[ˈɔsʌm]	14			
83	Lucy	[ˈlusi]	56			
84	inducing	[ɪnˈduseŋ]	3			
85	monster	[ˈmɑnstɜˠ]	16	-		-
86	across	[əˈkrɑs]	12			-
87	hiss	[hɪs]	111			-
88	mess	[mɛs]	40			-
89	pass	[pas]	26			-
90	moss	[mɔs]	95			-
91	blouse	[ˈblaʊs]	102			-
92	cups	[ˈkʌps]	69	-		-

Table 12: Fricative /z/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
93	zeal	[ɪʰ zil]	104	-			Partially Devoiced
94	zero	[ˈzɪərəʊ]	85	-			Devoiced
95	zip	[zɪp]	32	-			Partially Devoiced
96	zone	[ɪ zəʊn]	79				Devoiced
97	zoo	[zu]	90	-			Devoiced
98	seizing	[ˈsɪ z ɪŋ]	114				Devoiced
99	easy	[ˈizi]	37				Devoiced
100	Suzie	[ˈsu z i]	35				Devoiced
101	oozy	[ˈuzi]	2				Devoiced
102	floozy	[ˈflu z i]	73				Devoiced
103	sees	[ˈsi z]	9			-	Devoiced
104	is	[ɪz]	21			-	Devoiced
105	Levis	[ˈlivɑɪ z]	105			-	Devoiced
106	was	[wəz]	30			-	Devoiced
107	splashes	[ˈsplæʃə z]	98			-	Devoiced
108	says	[ˈsɛ z]	116			-	Devoiced
109	has	[hæz]	93			-	Devoiced

Table 13: Fricative /ʃ/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
110	she	[ɪ ʃɪ]	34			
111	shiny	[ɪ ˈʃa͡ɪn̩i]	28			
112	share	[ɪ ʃɛr]	11			
113	shark	[ʃark]	55	-		
114	shocking	[ɪ ˈʃɔkɪŋ]	77			
115	shoo	[ʃuː]	53	-		
116	wishy	[ˈwɪʃi]	7			
117	fishing	[ˈfɪʃɪŋ]	107			
118	machine	[məˈʃiːn]	84			
119	splashes	[ˈsplæʃəz]	98			
120	crashing	[ˈkræʃŋ]	66			-
121	washy	[ˈwɔʃi]	89			
122	washing	[ˈwɔʃɪŋ]	42			
123	ocean	[ˈo͡ʊʃn̩]	45			-
124	dish	[dɪʃ]	31			-
125	mesh	[mɛʃ]	36			-
126	rash	[ræʃ]	62			-
127	hush	[hʌʃ]	99			-
128	crush	[krʌʃ]	81			-
129	push	[pʊʃ]	72			-

Table 14: Fricative /ʒ/ in Corpus 3 (Speaker PS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
130	seizure	[ˈsiˌʒˌɜˑ]	118				Devoiced
131	Bijou	[bɪˈʒu]	19				Partially Devoiced
132	vision	[ˈvɪˌʒˌn̩]	46			-	Devoiced
133	precision	[prˈsɪˌʒˌn̩]	59			-	Devoiced
134	leisure	[ˈlɛʒɜˑ]	57				Devoiced
135	treasure	[ˈtrɛʒɜˑ]	76				Devoiced
136	pleasure	[ˈplɛʒɜˑ]	29				Devoiced
137	measure	[ˈmɛʒɜˑ]	24				Devoiced
138	azure	[ˈæʒɜˑ]	75				Devoiced
139	beige	[bɑɪʒ]	83			-	Devoiced
140	rouge	[ruʒ]	101			-	Devoiced

Table 15: Fricative /f/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
1	figo	[ɐ ˈfigu]	41			
2	ferir	[ɐ f ɨˈɾ̥ir]	18			
3	febra	[ɐ ˈfebɾɐ]	61			
4	ferro	[ɐ ˈf ɛχu]	4			
5	falir	[ɐ f ɐˈliɾ̥]	47			
6	fala	[ɐ ˈfalɐ]	2			
7	Fafe	[ɐ ˈf afɨ]	125			
8	foco	[ɐ ˈfɔk]	90			
9	fogo	[ɐ ˈfogu]	101			
10	fofa	[ɐ ˈf ofɐ]	23			
11	furar	[f uˈɾaɾ̥]	44	-		
12	efectuar	[iˈ f ɛtwaɾ̥]	98			
13	benéfico	[bɨˈnɛfik]	89			
14	afiar	[ɐ f ɨˈaɾ̥]	53			
15	café	[kɐˈfɛ]	31			
16	garrafa	[gɐˈχa f ɐ]	71			
7	Fafe	[ˈfa f ɨ]	125			
17	bafo	[ˈbafu]	26			
10	fofa	[ˈfo f ɐ]	23			
18	mofo	[ˈmofu]	55			
19	galhofa	[gɐˈʎɔfɐ]	128			
20	bufa	[ˈbufɐ]	73			
21	trefo	[ˈtɾef]	107			-
22	chefe	[ˈʃɛ f]	11			-

Table 16: Fricative /v/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
23	vila	[ɨˈvilɐ]	59				Partially Devoiced
24	viver	[ɨ v iˈveɾ]	122				Devoiced
25	viva	[ɐ ɨ̆ v ɨvɐ]	140				Devoiced
26	vermelho	[ɐ vɨɾˈmeʎu]	86				Devoiced
27	ver	[ɐ ɨ v eɾ]	102				Devoiced
28	véu	[ɨˈvɛw]	104				Devoiced
29	veia	[ɐ ˈvɐjɐ]	111				Devoiced
30	vaca	[ɐ ɨˈvakɐ]	92				Devoiced
31	volta	[ɐ ɨˈvɔltɐ]	81				Partially Devoiced
32	voo	[ɐ vow]	17				Partially Devoiced
33	vogar	[ɐ ˈ v ugaɾ]	7				Devoiced
24	viver	[viˈ v eɾ]	122				Partially Devoiced
34	possível	[puˈsi v ɛl]	95				Devoiced
25	viva	[ˈvi v ɐ]	140				Devoiced
35	altivo	[alˈtivu]	124				Devoiced
36	dever	[dɨˈ v eɾ]	22				Voiced
37	levar	[lɨ v aɾ]	105				Devoiced
38	relevo	[χɨˈle v u]	94				Devoiced
39	leva	[ˈlɛvɐ]	149				Devoiced
40	avó	[ɐˈvɔ]	88				Partially Devoiced
41	ave	[ˈavɨ]	45				Voiced
42	cava	[ˈkavɐ]	24				Devoiced
43	bravo	[ˈbɾavu]	100				Devoiced
44	nova	[ˈnɔvɐ]	147				Partially Devoiced
45	ovelha	[oˈvɐʎɐ]	136				Devoiced
46	mover	[muˈveɾ]	57				Voiced
47	uva	[ˈuvɐ]	40				Devoiced
48	teve	[ˈtev]	42			-	Devoiced
49	leve	[ˈlɛv]	6			-	Devoiced
50	move	[ˈmɔv]	67			-	Devoiced

Table 17: Fricative /s/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
51	sítio	[ˈsitju]	77	-		
52	secar	[ɐ s ɨˈkaɾ̥]	93			
53	sede	[ɐ ˈsedɨ]	75			
54	seta	[ˈsɛtɐ]	34	-		
55	cessa	[ɐ ˈ s ɛsɐ]	64			
56	saber	[s ɐˈbeɾ̥]	39	-		
57	sala	[ɐ ˈsalɐ]	13			
58	só	[sɔ]	5	-		
59	sopa	[ˈsopɐ]	83	-		
60	subir	[ɨ s uˈbiɾ̥]	139	-		
61	iça	[ˈisɐ]	148			
62	ressaca	[χˈ s akɐ]	82	-		
63	condessa	[kõˈdẽsɐ]	153			
64	pêssego	[ˈpesgu]	87			-
65	aquecer	[ɐkɛˈseɾ]	131			
55	cessa	[ˈsɛ s ɐ]	64			
66	passear	[pɐˈsjaɾ]	103			
67	assar	[ɐˈ s aɾ̥]	137			
68	asse	[ˈasɨ]	118			
69	caça	[ˈkasɐ]	35			
70	possa	[ˈpɔsɐ]	150			
71	moça	[ˈmosɐ]	152			
72	possível	[puˈ s ivɛl]	95			
73	partisse	[paɾˈtis]	117			-
74	batesse	[bɐˈtes]	69			-
75	posse	[ˈpɔs]	21			-
76	doce	[ˈdos]	56			-

Table 18: Fricative /z/ in Corpus 3 (Speaker RS)

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
77	Zita	[ɨˈzitɐ]	68	-			Partially Devoiced
78	zelar	[ɨˈzɬlaɾ]	126	-			Partially Devoiced
79	zelo	[ɨˈzelu]	115				Devoiced
80	Zé	[ɨˈzɛ]	85	-			Devoiced
81	Zézé	[ɨˈzɛzɛ]	129	-			Devoiced
82	zarpar	[ɬˈzɐɾˈpaɾ]	113	-			Devoiced
83	Zaire	[ɨˈzajɾ]	99	-			Partially Devoiced
84	Zópiro	[ɐ ˈzɔpiɾu]	10				Partially Devoiced
85	zona	[ɨˈzonɐ]	84	-			Partially Devoiced
86	zurrar	[ɐ zuˈχaɾ]	16				Devoiced
87	exacto	[iˈzatu]	43				Partially Devoiced
88	mesinha	[mɨˈziɲɐ]	50				Partially Devoiced
89	beleza	[bɨˈlezɐ]	135				Partially Devoiced
90	peso	[ˈpezu]	60				Partially Devoiced
91	mezinha	[mɛˈziɲɐ]	27				Devoiced
81	Zézé	[ˈɨzɛzɛ]	129				Devoiced
92	Brasil	[bɾɐˈzil]	58				Devoiced
93	azar	[ɐˈzaɾ]	97				Devoiced
94	azul	[ɐˈzul]	33				Partially Devoiced
95	mazinha	[maˈziɲɐ]	37				Partially Devoiced
96	asa	[ˈazɐ]	19				Devoiced
97	rosa	[ˈχɔzɐ]	14				Devoiced
98	doze	[ˈdozɨ]	132				Devoiced
99	amoroso	[ɐmuˈɾozu]	8				Voiced
100	acusar	[ɐkuˈzaɾ]	146				Devoiced

Table 19: Fricative /ʃ/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
101	chicote	[ʃiˈkɔt]	134	-		
102	chegar	[ʃɨˈgaɾ]	65	-		
103	cheta	[ɐ ˈʃetɐ]	30			
104	cheque	[ˈʃɛk]	36	-		
105	chefe	[ɐ ˈʃɛf]	11			
106	chamar	[ʃɐˈmaɾ]	28	-		
107	chá	[ʃa]	51	-		
108	choca	[ɐ ˈʃɔkɐ]	116			
109	chocha	[ˈʃoʃɐ]	80	-		
110	chorar	[ɐ ʃ uˈɾaɾ]	78			
111	bicha	[ˈbiʃɐ]	142			
112	bexiga	[bɨˈʃigɐ]	106			
113	bochecha	[buˈʃejʃɐ]	154			
114	este	[ˈeʃt]	54			-
115	achar	[ɐˈʃaɾ]	114			
116	bolacha	[buˈlaʃɐ]	15			
117	tacho	[ˈtaʃu]	133			
118	tocha	[ˈtɔʃɐ]	121			
109	chocha	[ˈʃoʃɐ]	80			
119	mocho	[ˈmoʃu]	109			
113	bochecha	[buˈʃejʃɐ]	154			
120	capucho	[kɐˈpuʃu]	74			
121	diz	[diʃ]	96			-
122	mares	[ˈmaɾʃ]	130	-		-
123	mês	[ˈmeʃ]	112			-
124	pés	[pɛʃ]	62			-
125	meche	[ˈmɛʃ]	141			-
126	perdas	[ˈpeɾdɐʃ]	29			-
127	capaz	[kɐˈpaʃ]	91			-
128	pós	[pɔʃ]	70			-
129	pôs	[poʃ]	144			-
130	dos	[ˈduʃ]	138			-

Table 20: Fricative /ʒ/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
131	girar	[ɨ ʒ iˈraɾ̥]	48	-			Devoiced
132	Gigi	[ɨ ʒ iˈʒi]	145				Voiced
133	gelado	[ɨʒɨˈladu]	127	-			Devoiced
134	gelo	[ɨˈʒelu]	119	-			Devoiced
135	germe	[ɨˈʒɛɾm]	72	-			Devoiced
136	jaqueta	[ʒɐˈketɐ]	20	-			Devoiced
137	jacto	[ɨˈʒatu]	123	-			Devoiced
138	jóia	[ɨˈʒɔjɐ]	143	-			Partially Devoiced
139	jogo	[ɐ ˈʒogu]	3				Partially Devoiced
140	judeu	[ʒuˈdew]	32	-			Devoiced
141	originar	[oɾi ʒ iˈnaɾ̥]	1				Devoiced
132	Gigi	[ɨʒiˈ ʒ i]	145				Partially Devoiced
142	tijolo	[tiˈʒol]	110				Voiced
143	arejar	[ɐɾɨʰ ʒ aɾ̥]	46				Devoiced
144	pejo	[ˈpeʒu]	25				Voiced
145	Beja	[ˈbɛʒɐ]	52				Partially Devoiced
146	agir	[ɐˈ ʒ iɾ̥]	108				Partially Devoiced
147	cajado	[kɐˈʒadu]	63				Devoiced
148	ajudar	[ɐ ʒ udaɾ̥]	66				Devoiced
149	age	[ˈaʒɨ]	79				Devoiced
150	haja	[ˈaʒɐ]	12				Devoiced
151	aloja	[ɐˈlɔʒɐ]	151				Voiced
152	tojo	[ˈtoʒu]	9				Devoiced
153	tugir	[tuˈ ʒ iɾ̥]	120				Voiced
154	hoje	[oʒ]	38			-	Devoiced

Table 21: Fricative /f/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
1	Fifi	[ɪ ˈf ifi]	22			
2	fear	[ɪ fir]	71			
3	fever	[ɪ ˈf ivɜˑ]	110			
4	finny	[ˈfɪni]	4	-		
5	fishing	[ɪ ˈf ɪʃiŋ]	107			
6	father	[ɪ ˈf ɑðɜˑ]	25			
7	for	[fɔr]	44	-		
8	follow	[ɪ ˈfɔloʊ]	38			
9	Flossie	[ˈf lɔsi]	100	-		
10	floozy	[ɪ ˈf luzi]	73			-
11	frothing	[ˈf rɔθiŋ]	117	-		
1	Fifi	[ˈfi f i]	22			
12	leafy	[ˈlifi]	86			
13	safer	[ˈseɪ f ɜˑ]	63			
14	coffee	[ˈkɔfi]	58			
15	thief	[ˈθi f]	74			-
16	knife	[nɑɪf]	48			-
17	half	[hɑf]	67			-
18	roof	[ruf]	61			-

Table 22: Fricative /v/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
19	veal	[ɪ vil]	20				Devoiced
20	vision	[ɪ ˈvɪʒn]	46				Devoiced
21	vet	[ɨvɛt]	94	-			Voiced
22	velvet	[ɨˈvɛlvət]	33	-			Devoiced
23	vying	[ɪ ˈvɑɪjɪŋ]	50				Devoiced
24	void	[ɪ vɔɪd]	91				Devoiced
25	vulgar	[ɪ ˈvʌlgɜˑ]	39				Devoiced
26	leaving	[ˈliviŋ]	5				Partially Devoiced
27	TV	[tiˈvi]	17				Devoiced
28	Levis	[ˈlivɑɪ]	105				Devoiced
29	fever	[ˈfivɜˑ]	110				Devoiced
30	saver	[ˈseɪvɜˑ]	96				Devoiced
31	ivy	[ˈɑɪvi]	65				Devoiced
32	lover	[ˈlʌvɜˑ]	13				Devoiced
33	hover	[ˈhʌvɜˑ]	60				Partially Devoiced
34	cover	[ˈkʌvɜˑ]	68				Devoiced
22	velvet	[ɨˈvɛlvət]	33	-			Devoiced
35	live	[lɪv]	15			-	Devoiced
36	give	[gɪv]	27			-	Devoiced
37	save	[seɪv]	112			-	Devoiced
38	of	[əv]	80			-	Devoiced
39	dove	[dəv]	43			-	Devoiced
40	move	[muv]	87			-	Devoiced
41	prove	[pruv]	113			-	Devoiced

Table 23: Fricative /θ/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
42	theatre	[ɪ ˈθiətʰɜ]	41			
43	thief	[ɪ ˈθif]	74			
44	think	[ɪ ˈθɪŋk]	8			
45	thistle	[ɪ ˈθɪsl]	82			
46	frothing	[ˈfrɔθɪŋ]	117			
47	wreath	[ˈriθ]	23			-
48	death	[ˈdɛθ]	70			-
49	breath	[ˈbrɛθ]	78			-
50	bath	[ˈbæθ]	115			-

Table 24: Fricative /ð/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
51	the	[ɪ ðə]	108				Devoiced
52	dither	['diðɜˠ]	97				Devoiced
53	bather	['beɪ͡ðər]	88				Devoiced
54	mother	['məðɜˠ]	18				Voiced
55	father	['fɑ ð ɜˠ]	25				Devoiced
56	brother	['brʌðɜˠ]	51				Devoiced
57	clothing	['kloʊ͡ðiŋ]	1				Devoiced
58	soothing	['su ð iŋ]	54				Devoiced
59	breathe	['brið]	47			-	Devoiced

Table 25: Fricative /s/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
60	see	[si]	106	-		
61	seizure	[ˈsiʒɜˑ]	118	-		
62	sees	[ˈsiz]	9	-		
63	seizing	[ˈsiziŋ]	114	-		
64	safer	[ɪ ˈseɪfɜˑ]	63			
65	save	[seɪv]	112	-		
66	saver	[seɪvɜˑ]	96	-		
67	saying	[ˈseɪiŋ]	103	-		
68	says	[ˈsɛz]	116	-		
69	sandbar	[ˈsændbar]	52	-		
70	sewing	[ɪ ˈsoʊiŋ]	92			
71	Suzie	[ɪ ˈsuzi]	35			
72	soothing	[ɪ ˈsuðɪŋ]	54			
73	splashes	[ɪ ˈsplæʃəz]	98			-
74	greasy	[ˈgrisi]	49			
75	missing	[ˈmɪsiŋ]	6			
76	kissing	[ˈkɪsiŋ]	64			
77	icy	[ˈɑɪsi]	109			
78	thistle	[ˈθɪsɫ]	82			-
79	precision	[preˈsɪʒn]	59			
80	desk	[dɛsk]	10			-
81	Flossie	[ˈflɔsi]	100			
82	awesome	[ˈɔsm]	14			-
83	Lucy	[ˈlusi]	56			
84	inducing	[ɪnˈduseŋ]	3			
85	monster	[ˈmɑnstɜˑ]	16	-		-
86	across	[əˈkrɑs]	12			-
87	hiss	[hɪs]	111			-
88	mess	[mɛs]	40			-
89	pass	[pas]	26			-
90	moss	[mɔs]	95			-
91	blouse	[ˈblaʊs]	102			-
92	cups	[ˈkʌps]	69	-		-

Table 26: Fricative /z/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
93	zeal	[e͡zil]	104	-			Voiced
94	zero	[ˈzɪərəʊ]	85	-			Partially Devoiced
95	zip	[ɪ zɪp]	32				Devoiced
96	zone	[ɪ zəʊn]	79				Devoiced
97	zoo	[e͡zu]	90	-			Partially Devoiced
98	seizing	[ˈsɪ z ɪŋ]	114				Devoiced
99	easy	[ˈizi]	37				Devoiced
100	Suzie	[ˈsu z i]	35				Devoiced
101	oozy	[ˈuzi]	2				Devoiced
102	floozy	[ˈflu z i]	73				Voiced
103	sees	[ˈsi z]	9			-	Devoiced
104	is	[ɪz]	21			-	Devoiced
105	was	[wəz]	30			-	Devoiced
106	splashes	[ˈsplæʃə z]	98			-	Devoiced
107	says	[ˈsɛ z]	116			-	Devoiced
108	has	[hæz]	93			-	Devoiced

Table 27: Fricative /ʃ/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)
109	she	[ɪ ʃɪ]	34			
110	shiny	[ɪ ˈʃa͡ɪni]	28			
111	share	[ɪ ʃɛr]	11			
112	shark	[ɪ ʃark]	55			
113	shocking	[ɪ ˈʃɔkɪŋ]	77			
114	shoo	[ɪ ʃu]	53			
115	wishy	[ˈwɪʃi]	7			
116	fishing	[ˈfɪʃɪŋ]	107			
117	machine	[məˈʃiːn]	84			
118	splashes	[ˈsplæʃəz]	98			
119	crashing	[ˈkræʃɪŋ]	66			
120	washy	[ˈwɔʃi]	89			
121	washing	[ˈwɔʃɪŋ]	42			
122	ocean	[ˈo͡ʊʃn]	45			-
123	dish	[dɪʃ]	31			-
124	mesh	[mɛʃ]	36			-
125	rash	[ræʃ]	62			-
126	hush	[hʌʃ]	99			-
127	crush	[krʌʃ]	81			-
128	push	[pʊʃ]	72			-

Table 28: Fricative /ʒ/ in Corpus 3 (Speaker RS).

	Example	IPA	File N.	VF (ms)	F (ms)	FV (ms)	Voicing
129	seizure	[ˈsiʒɜˠ]	118				Devoiced
130	Bijou	[bɪˈʒu]	19				Partially Devoiced
131	vision	[ˈvɪʒn̩]	46			-	Devoiced
132	precision	[preˈsɪʒn̩]	59			-	Partially Devoiced
133	leisure	[ˈlɛʒɜˠ]	57				Devoiced
134	treasure	[ˈtrɛʒɜˠ]	76				Devoiced
135	pleasure	[ˈplɛʒɜˠ]	29				Devoiced
136	measure	[ˈmɛʒɜˠ]	24				Devoiced
137	azure	[ˈæʒɜˠ]	75				Devoiced
138	beige	[bɑɪʒ]	83			-	Devoiced
139	rouge	[ruʒ]	101			-	Devoiced