

**Supplemental Material S5.** Characteristics of studies included in quantitative synthesis.

No	First author Year	Source	TL (L1)	Participant				Training			Test		
				Proficiency	Sample size	Mean age	Target phones	Conditions (talker number)	Talker presentation format	Training exposure (tokens)	Test task	Talker type	Stimuli type
1	Barriuso 2018a	D	English	Beginner	17:7	31-45	/ɪ-ε/, /ε-æ/, /ɑ-ʌ/	0:30	Intermixed	0:1800	D	U	B
2	Barriuso 2018b	D	English	Intermediate	10:10	22.8	/ɪ-ε/, /ε-æ/, /ɑ-ʌ/	0:30	Intermixed	0:3600	D	U	B
3	Bradlow 1999	J	English	Intermediate	12:11	19-22	/r/-/l/	0:5	Blocked	0:3060	I	U	U
4	Brekelmans 2022	J	English	Intermediate	80:86	20.4	/r/-/l/	1:5	Blocked	4080:4080	I	U	U
5	Deng 2018	J	Mandarin	Beginner	16:16	25.63	T1, T2, T4	1:4	Intermixed	864:864	I	U	U
6	Dong 2019	J	Mandarin	Beginner	20:20:20	24.62	T1, T2, T3, T4	1:4:4	Blocked	1728:1728:1728	D	U	B
7	Fouz-González 2021	J	English	Intermediate	22:25	21.4	/i: ɪ æ ʌ ɜ: e ɒ ɔ:/	0:4	Intermixed	0:1536	I	U	B
8	Giannakopoulou 2017a	J	English	Advanced	10:11	24.3	/i:/-/l/	1:4	Intermixed	3200:3200	D	B	B
9	Giannakopoulou 2017b	J	English	Advanced	9:11	24.3	/i:/-/l/	1:4	Intermixed	3200:3200	D	B	B
10	Lambacher 2005	J	English	Intermediate	20:34	20.4	/æ/, /ɑ/, /ʌ/, /ɔ/, /ɜ:/	0:5	Intermixed	0:450	I	T	B
11	Lengeris 2010	J	English	Advanced	10:18	24.07	/i:/, /ɪ/, /aɪ/, /eɪ/, /u:/, /aʊ/, /ɒ/, /ɜ:/, /əʊ/, /ɔ:/, /e/, /ɑ:/, /æ/, /ʌ/	0:5	Blocked	0:1125	I	B	B
12	Lengeris 2014	C	English	Intermediate	9:13	20	/p/, /b/, /t/, /d/, /k/, /s/, /ʃ/	0:5	Blocked	0:980	I	N/A	B
13	Lerdpaisalwong 2015a	D	English	Intermediate	9:10	18-24	/i, ɪ, u, ʊ, ε, ɑ, ʌ, æ, ɔ/	2:2	Blocked	1512:504	I	B	B
14	Lerdpaisalwong	D	English	Intermediate	10:10	18-	/ð, d, θ, t, v, w, r, l, z, s, tʃ, ʃ, b,	2:2	Blocked	1792:448	I	B	B

	2015b					24	p, g, k/						
15	Lerdpaisalwong	D	English	Intermediate	9:10	18-24	/ð, d, θ, t, v, f, r, l, z, s, tʃ, ʃ, b, p, g, k/	2:2	Blocked	1792:672	I	B	B
16	Lively 1993	J	English	Intermediate	6:6	N/A	/r/-/l/	1:5	Blocked	4080:3780	I	U	U
17	Lively 1994	J	English	Intermediate	23:19	18-34	/r/-/l/	0:5	Blocked	0:4080	I	U	U
18	Mokari 2018	J	English	Intermediate	10:28	25.43	/i:/, /ɪ/, /aɪ/, /eɪ/, /u:/, /aʊ/, /ɒ/, /ɜ:/, /əʊ/, /ɔ:/, /e/, /ɑ:/, /æ/, /ʌ/	0:5	Blocked	0:1125	D	U	N/A
19	Nishi 2007	J	English	N/A	5:6	27	/i:, ɪ, ɛ, æ, ɑ:, ɔ:, ʊ, ʌ, u:/	0:2	Blocked	0:972	I	B	B
20	Poulsen 2023	C	English	Advanced	9:16	23.4	/s, z/	0:2	Intermixed	0:1200	I	T	B
21	Sadakata 2014	J	Mandarin	Beginner	15:15	21	T21, T31	3:5	Blocked	800:800	I	T	B
22	Shum 2021	J	English	Intermediate	18:18	18-22	/p, t, k, b, d, g/	0:4	Intermixed	0:1440	I	U	B
23	Silpachai 2020	J	Mandarin	Beginner	13:14	21.7	T1, T2, T3, T4	1:4	Blocked	2880:2880	I	U	U
24	Wang 1999	J	Mandarin	Beginner	8:8	N/A	T1, T2, T3, T4	0:4	Blocked	0:720	I	U	U
25	Wang 2013	J	Mandarin	Beginner	10:10	22.4	T1, T2, T3, T4	0:4	Blocked	0:640	I	T	N/A
26	Wong 2013a	D	English	Intermediate	10:7:9	16.3	/i/-/I/	0:1:6	Intermixed	0:2400:2400	I	T	T
27	Wong 2013b	D	English	Intermediate	10:7:9	16.3	/e/-/æ/	0:1:6	Intermixed	0:2400:2400	I	T	T
28	Wong 2013c	D	English	Intermediate	10:7:9	16.3	/ʊ/-/u:/	0:1:6	Intermixed	0:2400:2400	I	T	T
29	Wong 2013d	D	English	Intermediate	8:8	16.3	/i/-/I/	1:6	Intermixed	2400:2400	I	T	T
30	Wong 2013e	D	English	Intermediate	8:8	16.3	/e/-/æ/	1:6	Intermixed	2400:2400	I	T	T
31	Wong 2013f	D	English	Intermediate	8:8	16.3	/ʊ/-/u:/	1:6	Intermixed	2400:2400	I	T	T
32	Zhang 2021	J	English	Intermediate	20:20	21	/i/-/I/	1:4	Intermixed	840:840	I	B	B

*Note.* (1) Abbreviations: J = journal; D = dissertation; C = conference; T1 = Mandarin tone 1; T2 = Mandarin tone 2; T3 = Mandarin tone 3; T4 = Mandarin tone 4; I = identification; D = discrimination; T = trained; U = untrained; B = both; N/A = not available. (2) Information involves only the task included in the quantitative synthesis.