Cross-linguistic Influence on Intonation Acquisition: A Study on the Production of L2 Mandarin and L3 English Intonations by Uyghur Speakers

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A. Uyghur, Mandarin and English

Basic introduction of Uyghur

- the native language of Uyghur speakers
- a member of the Turkic branch of the Altaic language family
- a non-tonal language with predictable lexical stress

Comparison of prosodic systems

Language	Prominence				Prosodic structures					Source
	Lexical		Postlexical		Lexical		Postlexical			
	tone	stress	head	edge	syll	foot	AP	ip	IP	
Uyghur		✓		✓	✓		✓	✓	✓	Major & Mayer (2019)
Mandarin	✓	✓	(✓)		✓	✓		✓	✓	Jun (2005)
English		✓	✓		✓	✓		✓	✓	Jun (2005)

Note. There is a lack of consensus regarding the postlexical pitch accent in Mandarin, although certain studies have suggested a stress-driven pitch accent (Jun, 2005).

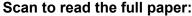## B. Theoretical framework

L2 Intonation Learning theory (LILt)

- Four dimensions for cross-linguistic comparison of intonation: (1) systemic: the inventory of pitch events such as pitch accent and boundary tones; (2) frequency: the frequency of phonological intonation pattern; (3) realizational: the phonetic implementation such as F0 range and mean F0; and (4) semantic: how the distribution of elements is associated with intonational meaning.
- The influence from L1 takes the form of assimilation or polarization in L2 production, and the cross-linguistic influence may occur in any dimension (Mennen, 2015, 2022).

In the current study

- LILt is applicable in L3 intonation.

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Supplementary Materials

C. More details of research design

Language background of Uyghur participants

Language	Age of learning	Years of study	Percentage of use (with families)	Percentage of use (on campus)
Uyghur	0	22 (20-24)	68.50%	32.25%
Chinese	7 (4-10)	14 (12-18)	27.50%	57.05%
English	16 (15-18)	5 (3-6)	5.00%	10.70%

Materials

Language	Sentence No.		Sentence		
Uyghur	S1	نادام naːdɛm Nadam	ئاخشام aχʃam last night	كىنو kino movie	كۆردى kør-di watch-PST
		'Nadam watched movie last night'			
	S2	ئايگۈل ɑjgyl Aygul	ئەمدى emdi just	لەغمەن lɛrmɛn meal	ئەتتى ɛt-ti cook-PST
		'Aygul just made ramen'			
	S3	ئالىم alim Alim	بۈگۈن bygyn today	ئاياغ ajaq shoes	يۇيدى ju-di wash-PST
		'Alim washed shoes today'			
	S4	پولات polat Polat	بۇلتۇر bultur last year	لۇغەت lurɛt dictionary	ئالدى al-di buy-PST
		'Polat bought a dictionary last year'			

Language	Sentence No.	Tones	Sentence		
Mandarin	S1	T1	张斌 Zhang1Bin1 Zhang Bin	今天 jin1tian1 today	参观 can1guan1 visit	公司 gong1si1 company
			'Zhang Bin visited the company today'			
	S2	T2	吴梅 Wu2Mei2 Wu Mei	明年 ming2nian2 next year	研习 yan2xi2 learn	哲学 zhe2xue2 philosophy
			'Wu Mei will learn philosophy next year'			
	S3	T3	李敏 Li3Min3 Li Min	五点 wu3dian3 5 o'clock	整理 zheng3li3 prepare	讲稿 jiang3gao3 speech draft
			'Li Min prepared speech draft at 5 o'clock'			
	S4	T4	赵丽 Zhao4Li4 Zhao Li	半夜 ban4ye4 midnight	制作 zhi4zuo4 make	道具 dao4ju4 props
			'Zhao Li made props at midnight'			

Language	Sentence No.	Stress	Sentence			
English	S1	Initial	Lara	finished	papers	yesterday
	S2	Initial	Mary	cancelled	orders	lately
	S3	Final	Lamar	received	awards	tonight
	S4	Final	Celine	repaired	guitar	today