

Dialect levelling across generations: A socio-phonetic study of the medial [ɨ] and vowel shift in the Jin dialect spoken in Baotou, China

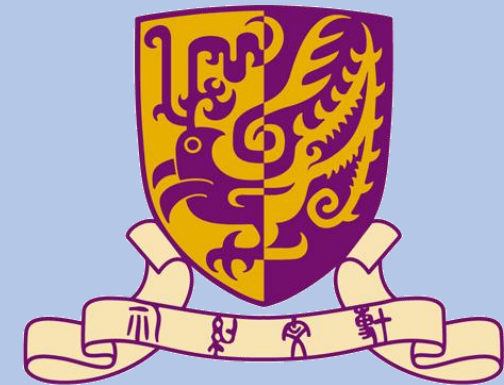
HISPhonCog

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Xinyue LIU & Peggy MOK

The Chinese University of Hong Kong

xinyueliu@cuhk.edu.hk, peggymok@cuhk.edu.hk



香港中文大學
The Chinese University of Hong Kong

Introduction

Two types of Chinese characters with the medial [ɨ] in the Jin dialect:

ORI (original) type - original and stable feature	Initial	Medial	Nucleus	Coda
	Bilabial	High front vowel	Central vowel; Low front vowel	Glottal stop
	[p], [pʰ], [m]	[ɨ]	[ə]; [a]	[ʔ]

Table 1: Syllable structure of the ORI characters in the Jin dialect [1, 2, 3]

EME (emerging) type - developing and unstable feature	Initial	Medial	Nucleus	Coda
	Velar	High front vowel	Mid front vowel; High back vowel	Glottal stop
	[k], [kʰ], [ŋ], [x]	[ɨ]	[ɛ]; [u]	[ʔ]

Table 2: Syllable structure of the EME characters in the Jin dialect [4, 5, 6]

Social background – dialect levelling and the retention of the medial [ɨ]:

- Mandarin Chinese – a standard supralocal language.
- The Jin dialect – a vernacular local language.
- Locally-born Jin native speakers’ language contact with Mandarin Chinese:

The **younger** generations have much **more contact** than the older generations do.

Hypothesis: The medial [ɨ] as a traditional variant in the Jin dialect would be levelled down under the influence of Mandarin Chinese which does not have the medial [ɨ] in the same phonetic contexts as the Jin dialect. In other words, the medial [ɨ] is possible to disappear especially in the younger generation.

Language style

- According to Labov [7], as the attention paid to the language used in the tasks increases, the language style becomes more formal.
- The medial [ɨ] is an informal and vernacular feature.

Hypothesis: The more formal the language style is, the less usage of [ɨ] will be.

The attitude – language correlation

- The language attitude may act as a good predictor for language production.

Hypothesis: More negative attitudes can predict the tendency of less usage of medial [ɨ].

The shift of the nucleus vowels

- The past studies [4, 6] suggested the raising and fronting of the nucleus vowels may facilitate the emergence of the medial [ɨ] because the articulation place of a higher and fronter nucleus vowel is closer to that of the high front vowel [ɨ].

Hypothesis: With increasing language contact with Mandarin Chinese, the nucleus vowels after the medial [ɨ] are predicted to be lowered or retracted which could accelerate the disappearance of the medial [ɨ].

Method

Participants

	Female	Male
Younger (22-43 years old)	5	5
Older (52-73 years old)	5	5

The target materials

ORI			EME		
IPA transcription	Chinese character	Gloss	IPA transcription	Chinese character	Gloss
[piəʔ]	北	“north”	[kʰiɛʔ]	看	“look”
[miəʔ]	墨	“ink”	[kiɛʔ]	幹	“dry”
[piəʔ]	白	“white”	[kʰiuʔ]	口	“mouth”
[pʰiaʔ]	拍	“pat”	[kiuʔ]	狗	“dog”
[piaʔ]	百	“hundred”	[ŋiɛʔ]	安	“safe”
[miaʔ]	麥	“wheat”	[xiɛʔ]	漢	“Chinese”

Speech data collection

Question-oriented interview (INT)	Least formal
Picture description (PIC)	Formal
Wordlist reading (WOR)	Most Formal

Attitudinal questionnaire

- Twenty attitudinal questions on a 6-point scale.
- The higher the score, the more positive the attitudes they had.

Data analysis

The retention of the medial [ɨ]

- Auditory judgement by two native Jin speakers regarding whether a medial [ɨ] was produced in each token. (The inter-rating reliability was around 92%)
- The using RATEs of the medial [ɨ] = No. of tokens with [ɨ] / No. of all tokens

The shift of the nucleus vowels after the medial [ɨ]

- In all the tokens with the medial [ɨ]
- Extraction of the formant frequencies (F1 & F2) from the midpoint of the four nucleus vowels ([ə], [a], [ɛ], [u]) after the medial [ɨ].
- Normalization: z-score (Lobanov) [8].

Results

The retention of the medial [ɨ]:

	DFn	DFd	F	p - value	p < 0.05
AGE	1	16	5.106	0.038	*
GENDER	1	16	1.331	0.266	
TYPE	1	16	28.759	< 0.001	*
STYLE	2	32	52.603	< 0.001	*

Table 3. Results of ANOVA assessing the effects of AGE, GENDER, TYPE, and STYLE

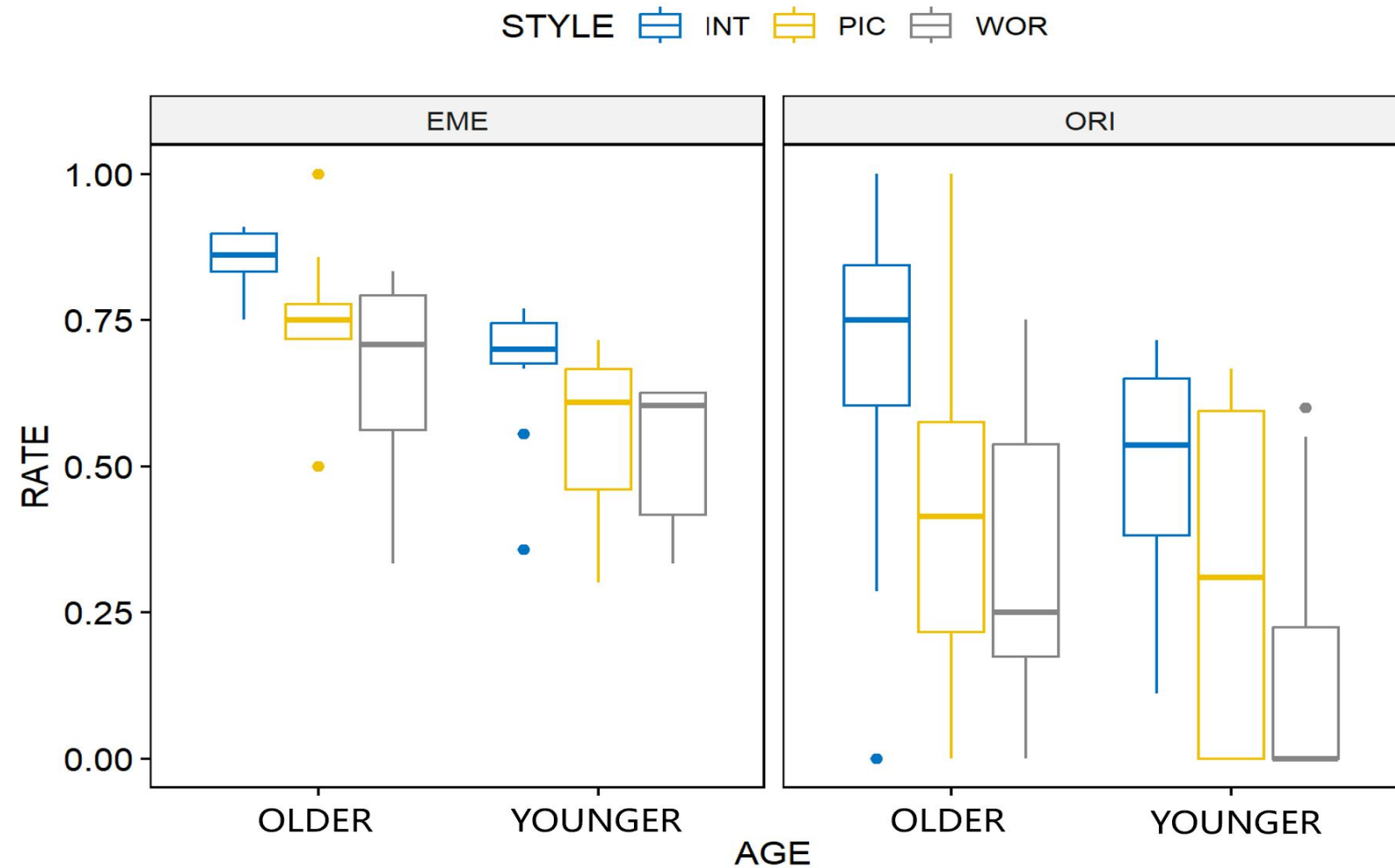


Figure 1: The boxplot graphs of RATE of the factors: TYPE, AGE, and STYLE

The attitude – language correlation

- The score of language attitude did not act as a good predictor for the production rate of the medial [ɨ] ($t = 0.919$, $p = 0.370 > 0.05$).

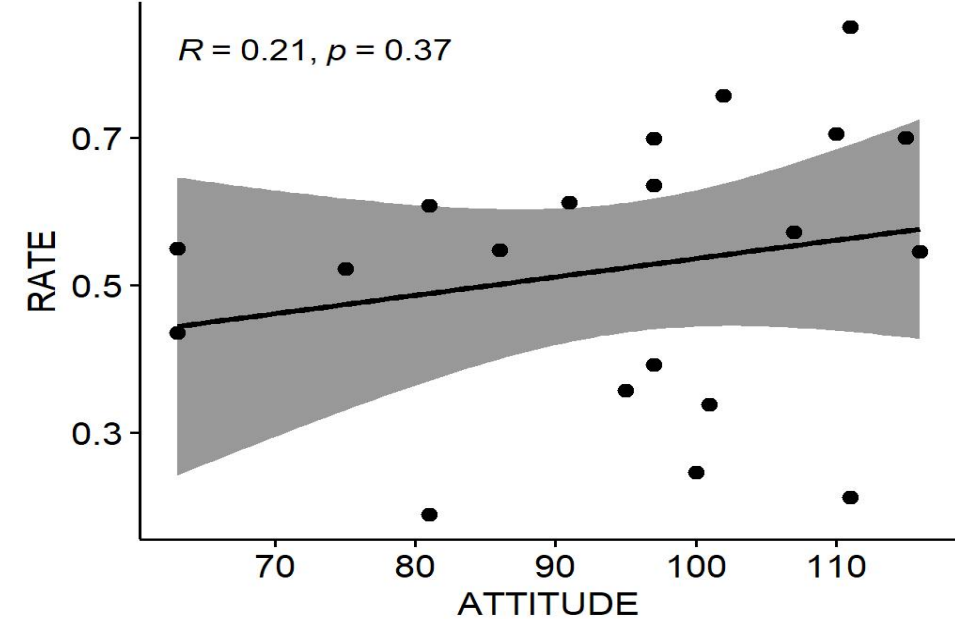


Figure 2. The change of RATE over attitudinal score

The shift of the nucleus vowels

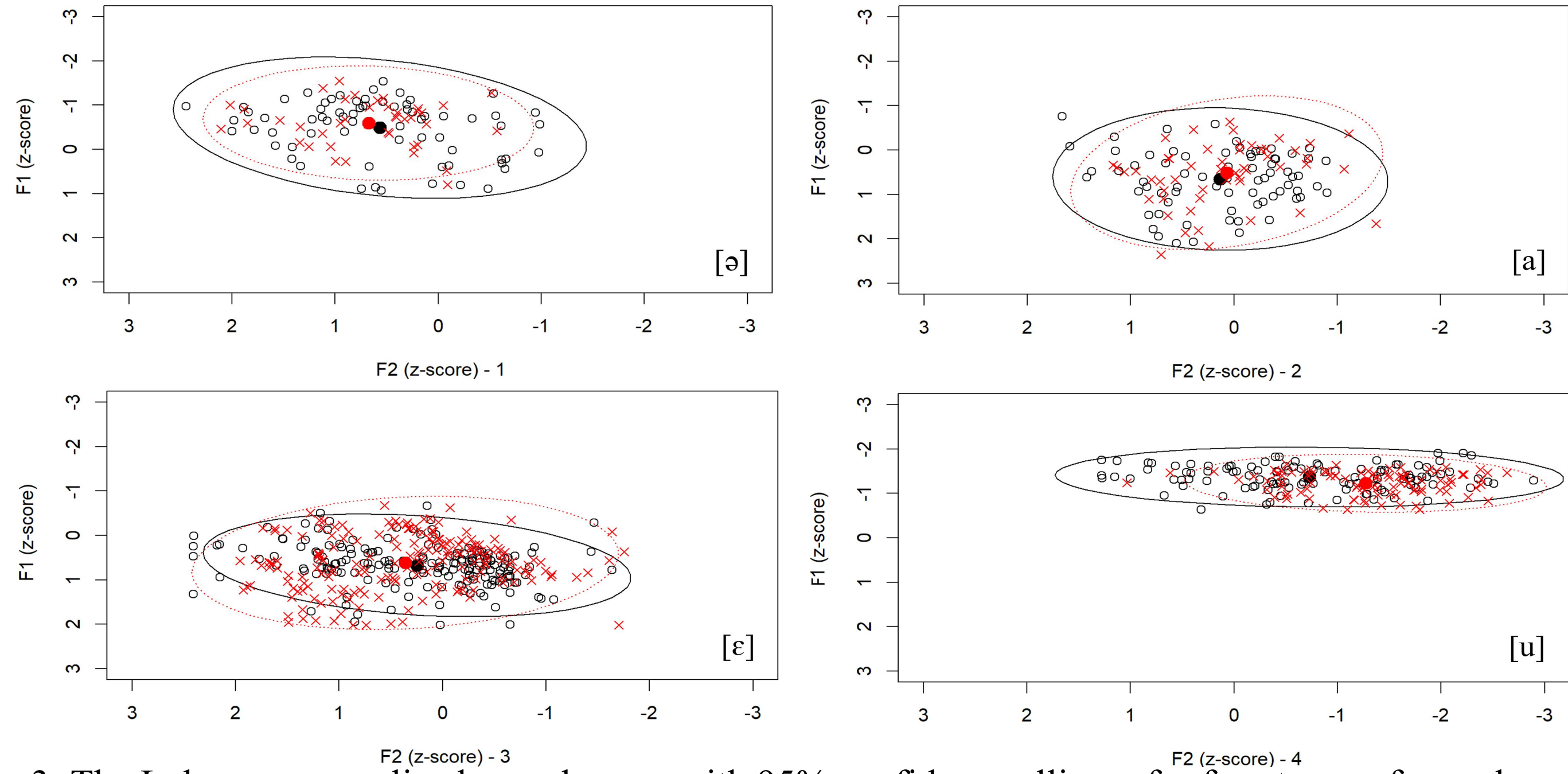


Figure 3: The Lobanov-normalized vowel space with 95% confidence ellipses for four types of vowels produced by the two age groups. (The black lines stand for the older group and red lines stand for the younger group.)

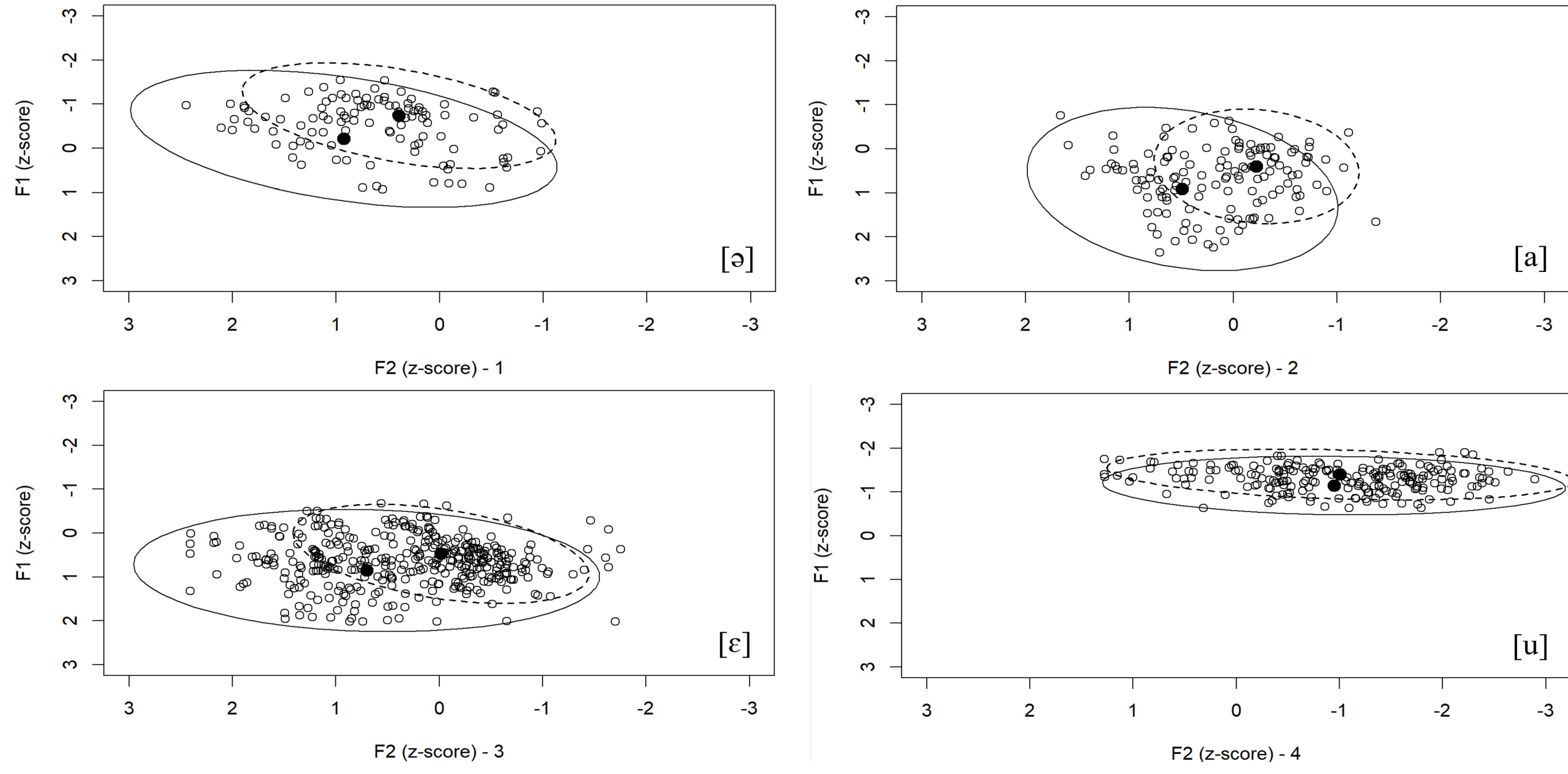


Figure 4: The Lobanov-normalized vowel space with 95% confidence ellipses for four types of vowels produced by two gender groups. (The dashed lines stand for male speakers and solid lines stand for female speakers.)

Conclusion

Factors	Results	Discussion
AGE	-RATE _[ɨ] (Y) < RATE _[ɨ] (O) -The younger: retraction of the vowel [u].	Good evidence of the dialect levelling phenomenon
GENDER	-No significant difference -The female: lowering of all the four vowels	1. [ɨ] may disappear more quickly in females’ speech. 2. Females tend to use more prestige or modernized forms (without the medial [ɨ]) than males.
STYLE	The RATE _[ɨ] decreased with the increasing formality of the style.	Sociostylistic allocation might take place.
ATTITUDE	No significant correlation	The limited number of the participants – more participants are needed in the future studies.

References: [1] Hou, J. 1999. *Study of Modern Jin Dialect*. Beijing: Commercial Press. [2] Hou, J. 2002. *Introduction to Modern Chinese Dialects*. Shanghai Education Press. [3] Qiao, Q. 2003. The Non-Synchronical Development of Jin dialect and Mandarin (II). *Dialects*, (3), 233-242. [4] Bai, J. 2009. Colloquial Readings of Level 1 of MC Xian and Shan Final Groups and Vowel Raising of Luliang Dialects in Shanxi Province. *Dialects*. (1), 34-39. [5] Shi, Y. 2013. A Survey of the Medial [ɨ] in the First Division Characters of Opening-mouth Rhyme in Chinese. *Journal of Central South University (Social Science)*, 19(3). [6] Zheng, Z. 2002. The cause of the abnormal medial in Chinese dialects and the phonetic changes of [e] > [ia], [o] > [ua], *Essays on Linguistics*, (26), Beijing Commercial Press. [7] Labov, W. 1963. The social motivation of a sound change. *Word*, 19(3), 273–309. [8] Lobanov, B. M. 1971. Classification of Russian vowels spoken by different speakers. *The Journal of the Acoustical Society of America*, 49(2B), 606-608.