Answer key to exercises on sharp and round sounds

Development of initials from Old Mandarin to Modern Standard Mandarin

In the phonological system of Old Mandarin, there were no such initials as j, q, x in Modern Mandarin Chinese. These palatal sounds were later developments in the Ming and Qing dynasties. Study the following two sets of data[[1]](#footnote-1).

Data set 1: “round sounds”

Traditionally, sounds like j/q/x are called “round sounds” because of their auditory perception of smoothness. The following characters are all “round sounds” in Beijing, but not necessarily so in other dialects. Please answer the following questions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Character** | **Beijing** | **Chengdu** | **Suzhou** | **Xiamen** |
| 京capital | tɕiŋ | tɕin | tɕin | kiŋ |
| 劍sword | tɕiɛn | tɕiɛn | tɕiɪ | kiam |
| 羣crowd | tɕhyn | tɕhyn | dʑyn | kun |
| 今today | tɕin | tɕin | tɕin | kim |

Questions:

1. List all the correspondences (focus on the initial first)

Beijing-Chengdu-Suzhou-Xiamen

Correspondence 1: tɕ-tɕ-tɕ-k (for 京劍今)

Correspondence 2: tɕh-tɕh-dʑ-k (for 羣)

1. What are the reconstruction possibilities?

Correspondence 1: tɕ or k

(it is also possible that it is neither, but a third sound that’s related)

Correspondence 2: tɕh or dʑ or k

(it is also possible that it is a fourth sound that’s related)

1. Choose one according to naturalness.

Correspondence 1: k because the palatals such as tɕ could have been an instance of palatalization of k.

Correspondence 2: g, i.e. a fourth sound that’s related.

If we also choose k here, it would be difficult to explain the palatalization of k to a voiced palatal dʑ. Thus a more convincing theory would be that it is originally g. In Suzhou, the voiced g directly palatalized into dʑ, while in the other places cited above, the g first became devoiced as k or kh, and then kh further palatalized into tɕh

1. What is the condition of this sound change?

This is a typical process of palatalization. The phonological condition for palatalization is that the consonants are usually followed by a high-front vowel, such as [i] or [y]. This condition is also evident in the data.

Data set 2: “sharp sounds”

The following characters are pronounced with j/q/x in Beijing. But they are actually different from data set 1. Please answer the following questions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Character** | **Beijing** | **Chengdu** | **Suzhou** | **Xiamen** |
| 尖sharp | tɕiɛn | tɕiɛn | tsiɪ | tsiam |
| 箭arrow | tɕiɛn | tɕiɛn | tɕiɪ | tsiɛn |
| 酒alcohol | tɕiou | tɕiou | tsY | tsiu |
| 俊handsome | tɕyn | tɕyn | tsin | tsun |

Questions:

1. List all the correspondences (focus on the initial first)

Correspondence 1: tɕ-tɕ-ts-ts

Correspondence 2: tɕ-tɕ-tɕ-ts

1. What are the reconstruction possibilities?

For both correspondences: it could have been either tɕ or ts or a third related sound.

1. Choose one according to naturalness.

In these cases, ts should be the original sound, because from ts to tɕ would also be a typical palatalization process.

1. What is the condition of this sound change?

As mentioned above, palatalization is usually triggered by a high-front vowel such as [i] or [y].

1. Why are these characters traditionally called “sharp sounds”?

The round sounds actually developed first in Mandarin Chinese. At that time, the sharp sound contrasted with the round sounds, due to their auditory harshness. It is only later that the sharp sounds became round sounds as well in Mandarin. Therefore, in terms of their pronunciation in Mandarin, the sharp sounds cannot be distinguished from the round sounds unless we know the historical development of each character.

It is also interesting to see that although the character for arrow 箭 is a sharp sound, it has become a round sound in Suzhou although the other characters listed here have not changed. Thus it suggests that sound change can be uneven, affecting certain words first and then spreading to more words. This pattern of sound change is also called lexical diffusion.

Questions on Data set 1 and Data set 2

1. What are the sources of j/q/x in Beijing?

There are two sources for Beijing j/q/x: some came from velars such as k, while others came from alveolar affricates such as ts.

1. What is the condition for these sound changes?

From a velar or an alveolar to a palatal sound, normally the vowel that follows it is a high-front vowel.

1. Based on the distinction between the round sounds and the sharp sounds, can you determine which one of the two sound change processes took place first?

As we can see that there was a contrast between the round sounds and the sharp sounds at one point of time, it is evident that the palatalization of velars such as k happened first because they were round sounds, while the palatalization of alveolar affricates happened later.

1. Actually there is an alternative pronunciation of 俊tɕyn in Beijing, and it is [tsuən]. What does this show?

The alternative pronunciation still retains the sharp initial [ts], which can be a clue as to whether it is originally a sharp sound or a round sound.

1. All pronunciations are taken from the Department of Chinese Language and Literature, Peking University (北京大学中国语言文学系语言学教研室编) eds. 1962. 《汉语方音字汇》, 北京: 文字改革出版社. [↑](#footnote-ref-1)