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**A tale of two sons: Morphophonemic variation resulting from  
suffixation with *zi* and *er* in Mandarin Chinese**

This is the story of two commonly used words for ‘son’ in Mandarin Chinese, *zi* and *er*. In Modern Standard Mandarin, the two forms combine to form the word *er zi* ‘son’. In addition to their lexical signification as full words, both forms gained currency in nominal suffixation processes. *Zi* is no longer productive, but *er* is, and the latter form is involved with considerable morphophonemic variation as well.

The use of *zi* as a suffix marking the diminutive “began early” (Norman 1988:114). Norman points out, “in the classical period (Old Chinese) *zi* can almost always be interpreted either as ‘child’ or as some semantic extension of ‘child’” (1988:114). He offers as examples *nan zi* ‘male child’, *hu zi* ‘baby tiger (lit., tiger child)’ *zhou zi* ‘boat buoy’ (ibid.). Pre-Tang Dynasty examples include *mou zi* ‘pupil of eyes’, *yi zi* ‘ant’ *dao zi* ‘small knife’ (ibid.). By the time of the Tang Dynasty, Norman notes, *zi* is found in suffixation with “virtually any class of noun” (ibid.), e.g., *che zi* ‘carriage’ (‘car’ or ‘small bus’ in modern Mandarin), *ting zi* ‘pavilion’, *qie zi* ‘eggplant’ (ibid.). These words are often encountered today. The form is seemingly ubiquitous in contemporary Northern Chinese, although words in which it is used still must be listed (and learned individually by learners of the dialect), e.g., *ya zi* ‘duck’, but *ya* ‘tooth.’ The suffixed form has long since lost any lexical signification, as Kratochvil points out, and word formative suffixes such as *zi* “have more or less only a grammatical meaning,” showing the “extreme ... distinction between root morphemes and word-formative affixes” (1968:68).

The *er* suffix, according to Norman, was already widespread before the Tang Dynasty, e.g., *yan er* ‘wild goose’, *yu er* ‘fish’, *ping er* ‘bottle, jug’. Norman further reports that in texts written during the Tang Dynasty, the form was “mainly limited to animate nouns except for a few cases” (1988:114). By the Song Dynasty *er* was suffixed to nouns of all categories, and in later sources its use is “even more extensive” (ibid.).

*Er* saw a semantic development parallel to *zi*, and like *zi*, it was initially used as a diminutive marker (see Norman 1988:113). Indeed, even today a retired gentleman in my acquaintance who grew up in Beijing (but who has lived since the late forties in Taiwan and the United States) asserts that the form signifies diminution. He gave as an example *mer* ‘small/interior door’. Two young men who were born and raised in Beijing but now study in the United States reject the idea of the diminutive, except in some forms, such as *xiao cher* ‘small car, cart’ (a form in use since before the Song Dynasty—see Norman 1988:114). Likewise, Forrest reports as early as 1948 that “all diminutive sense has been lost” (1948:71).

Other forms, such *shi* ‘a task, piece of business’, may alternate with *er*, *shir* with no change in meaning, only of flavor. On the other hand, informant Chen Chunsheng points out that in some cases words without *er* “make no sense at all,” such as *ya genr* ‘never, not at all’, such that the *er* is “a meaningless but necessary component in some words,” i.e., that while the *er* itself does not contribute meaning analogous to, for example, ‘-let (as in piglet)’ in English, *\*ya gen*, without *er*, does not make sense.<sup>1</sup>

The modern standard monolingual dictionary, *Xiandai Hanyu Cidian*, lists the following senses of *-er*:

1. indicating a) diminutiveness, *penr* ‘vessel’, *gunr* ‘stick’, *xiao cher* ‘car or cart’
- b) change in part of speech *xiao chir* (literally small + to eat) ‘snacks’
- c) concrete things *menr* ‘door’, *genr* ‘root’

- d) differentiating things *lao jia* ‘hometown’ vs. *lao jiar* ‘parents or other senior elders’
2. suffix to some verbs *wanr* ‘to play, or visit’.

(I will point out that the example given under sense 1 is a form seemingly fixed since the Song dynasty. It is often the case in Chinese dictionaries that core meanings appear first, followed by extended meanings.)

In many dialects, the use of *er* also carries a “more familiar tone” (Norman 1988:114), perhaps an extension of the original diminutive signification. In that regard, *lao tou* ‘old man’ is a familiarism among friends and villagers, and it is in that context that my younger informants accept the diminutive signification of *er*. In contrast, another active form, *lao tou zi*, feels either hypercorrect or somewhat pejorative to the two young informants. A native of a rural village in Hebei, three hundred kilometers from the capital, concurs in this impression. He also points out that in forms such as *guan shang menr* ‘close the door’, the *er* makes little difference in meaning, but that the form without *er* sounds “more formal—probably because it sounds more like Mandarin” (p. c.) Forrest seems to concur in this, as he remarks that the suffix “may also distinguish the popular speech from that of the more educated people, who prefer *zi*” (1948:197). Thus it seems that the form with *er* is the colloquial, and the *er*-less form (or with *zi*) is the marked, “correct,” form, and in that sense the variation is morphemic to the extent that it marks style distinction.

### Phonological description

Kratochvil describes the sound thus: a “mid-central retroflex *er* [ʐ], produced in about the same position as the mid-central [ə] with the tip of the tongue pointing upwards” (1968:32). Norman describes it as a “retroflexed central vowel,” similar to the *-er-* in ‘berth’ (1988:143). But cf. Pulleyblank 1984:45 for “‘r’ as a possible final” consonant.

Norman notes further that as a suffix, *er* is always atonic (1988:114; see also Kratochvil 1968: 84). Furthermore, the suffixed form “always clusters with a preceding syllable” (Kratochvil 1968:32; see also 86), and it is “undetachably welded” to the word to which it is suffixed (Forrest 1948:115). Thus the form appears in “rhotacized finals, which consist of a primary final followed by the subsyllabic suffix *-r*” (Norman 1988:144). The sound is variously written by linguists as *-er*, *-r*, ɹ, ɹ̥, ʒ. Since I also interpret this suffix to be a retroflex vowel, I will hereafter use ʒ.

This comment about “finals” requires a brief discussion of the constitution of Mandarin monosyllables. These forms are described in descriptive and instructional texts as consisting of an “initial” sound and a “final.” For example, *men* 'door' has initial *m*- and final *-en*. Syllables end in vowels including diphthongs (or triphthongs, depending on the analysis—some analyses interpret one of the components as a ‘medial vowel’) or a vowel plus a nasal, *n* or *ŋ*. Thus the fusion of [ʒ] to the string adds features to, and sometimes causes variation in, but does not alter the syllabicity of the whole, [*mʒ*].

The observation that the sound is atonic is also consequential in the phonological system. The lexical word *er* is pronounced with a rising tone, but as a suffix, it fuses to a syllable whose tonicity occurs on its main vowel, and extends the tone, or, we could say, occurs on the pitch at which the vocalic tone of the word arrives. In Chao’s (Zhao in Modern pinyin notation, and in some library systems) standard discussion of unstressed syllables (the so-called neutral tone) in Mandarin, a description of the intricate tone sandhi system in which unstressed syllables participate is given, generalized as follows:

half-low after first (high level) tone  
 middle after second (mid rising) tone  
 half-high after third (mid falling and rising) tone  
 low after fourth (high falling) tone (1964:27).

Thus in words like *tā-de*, the high level tone of *tā* is followed by the half-low *de*. Thus the concept of a “toneless syllable” seems to be a contradiction in terms. In contrast, when ㄝ is suffixed to a lexical word, it does not participate in the “unstressed syllable” tone sandhi paradigm, it loses its syllabicity, and its tonicity is subsumed in the tone contour of that word. As a derivational and phonetic suffix, then, the syllable is atonic, nonsyllabic, and by definition, unstressed. In addition, phonetic modifications occur in the finals of the words to which it is suffixed, producing morphophonemic variation. These often complex variations will be discussed in detail in this paper.

### **Morphophonemic processes**

Phonetic changes produced by the addition of *er* are “not purely phonemic [sic], since the conditions are morphological” (Kratochvil 1968:32-3). As Kratochvil also points out, “different phonetic realizations constitute allomorphs of morphemes” (1968:56-7). In the following section we will consider some representative forms with ㄝ and analyze the morphophonemic alterations produced in the roots, as pronounced by informants.<sup>2</sup> Subsequently I will cite some published descriptions of the processes and comment on them. For the following data, I present the forms first in *pinyin* romanization, standard in the People’s Republic of China, followed by IPA representation [square brackets] showing the morphophonemic variation produced by suffixation with *er* (in some cases tone markings follow the IPA version of the syllable).

- (1) nà [nà ~ nḁ ~ nḁ̀] ‘that’; [nà lǐ ~ nàㄝ] ‘there (lit. that in)’

Three pronunciations of the root are possible in free variation; perhaps the distinction is regional. With ㄝ the vowel is of the [a] variety.

- (2) nǎ [nǎ] ‘which?’; [nǎ lǐ ~ nǎㄝ] ‘where?’

In this form the low falling and rising tone marks interrogative. The occurrence of ʒ plus the low falling tone imparts a definite backing influence on the vowel.

- (3) zhèi [tʃèi ~ tʃə̃] 'this'; [tʃə̃ lí ~ tʃàʒ] 'here (lit., this in)'

Two realizations occur in the plain form, cf. *nà*, above. Lowering of the front or central vowel occurs with ʒ.

The above three forms are pronounced with *er* in Beijing and in other northern dialects, but not in northern Hebei, 300 kilometers from the capital.

- (4) shì [ʃì → ʃiʒ ~ ʃàʒ] 'chore, task'

Earlier students used the Right-Tail Turned Iota (ι) to signify the retroflex final (see Pullum and Ladusaw 1996:90). The ì is likewise centralized. In the alternate pronunciation with *er*, the vowel is fronted. It is difficult to say whether these *a* alternations result from the influence of ʒ (phonological) or a general spread of the sound (analogical), cf. *zhèr*, and *nàr* above.

- (5) lǐ [li → liʒ̃] 'lining'

The high front vowel is centralized.

- (6) qiú [tʃ'íó → tʃ'íʒ] 'a ball'

Here one can analyze the *i* either as the first element of a diphthong, or as an offglide essentially occurring with the palatal affricate. (I lean toward the offglide analysis.) The final *o* is centralized and lowered by ʒ.

- (7) hái (zi) [xái → xáʒ] 'child'

Monophthongization (deletion of palatal offglide) occurs with  $\text{ɜ̄}$ , and the final is lowered and centralized. Note here many dialects retain *hái-zi* ‘child’; however, in the northern dialects where *er* is productive, the older *zi* form is replaced.

Pulleyblank mentions evidence that the final  $-\text{a}\text{ɜ̄}$  is heard among immigrants (i.e., Chinese from other regions) in Beijing (1984:53); thus  $*\text{xá}\text{ɜ̄}$ . This phenomenon suggests that, analogical though the process may be in terms of the association of  $\text{ɜ̄}$  with suitable forms, the morphophonemic process is rule-based, as described above. These immigrants may imitate the supply of the  $\text{ɜ̄}$  form itself, but they have not acquired the morphophonemic processes that produce it in its morphophonemic context (for a description of process acquisition in second language (dialect) acquisition, see Pienemann 1998:1-7).

- (8) *yī kuài*      [ji- k'uài → ji k'uàɜ̄] ‘together’

The first syllable is initiated with a high front palato-velar onset glide (which serves to mark hiatus between a preceding word final in a connected utterance). Here the final vowel is likewise monophthongized by  $\text{ɜ̄}$ , centralized, and lowered. Again one has a choice of analyzing the *u* as a labial offglide of the consonant, a medial vowel, or a constituent of a triphthong.

- (9) *yī-huì*      [ji- xuè → xuèɜ̄] ‘a while’

The high-back-to-mid-front diphthong is in effect neutralized, with the high back onglide lowered and centralized.

- (10) *yi-diàn*      [ji- tièn → tiàɜ̄] ‘a little bit’

The *n* is deleted in the presence of  $\text{ɜ̄}$ .

A rule can be set up:  $n \rightarrow \emptyset / \_ \text{ɤ}$ . The final vowel is lowered and centralized.

- (11) gùn [gùn̄ → gùɤ̄] 'a little stick'

The high back vowel is lowered and centralized, with *n*-deletion.

These examples suggest a sequence of rules:

1.  $n \rightarrow \emptyset / \_ \text{ɤ}$
2.  $V \rightarrow V^{\text{central}} / \_ \text{ɤ}$

- (12) juǎn [tɕyɛn̄ → tɕyǎɤ̄] 'to roll (up); a roll'

The *y* presents the same choice of analyses as discussed above for *i* and *u*. With  $\text{ɤ}$  the offglide of the diphthong is centralized and lowered, with *n*-deletion.

- (13) yǎn-jìng [jɛn̄ tɕiŋ̄ → jɛn̄ tɕiŋ̄ɤ̄] 'glasses'

Some linguists report *ŋ*-deletion and compensatory nasalization of the vowel (cf.

Norman, Pulleyblank, below). In the speech of my informants, however, the velar stop is definitely formed, albeit fleetingly, and the quality of the front vowel in the final is

maintained (not centralized). (I will point out also that  $jɛn̄ tɕiŋ̄$  'eye(s)' does not accept

the suffix.) Below I will discuss other examples where the presence of  $\text{ɤ}$  marks

morphemic distinction.

- (14) kòng [k'ùŋ̄ → k'ùŋ̄ɤ̄] 'empty (spare) [time]'

The vowel in the final is lowered and centralized.

In the following examples, the use of the suffix is clearly morphemic.

- (15) bái-miàn [bái mièn] 'wheat flour'

but with  $\text{ɤ}$ : [bái miàɤ̄] 'heroin'



In this example ㄝ differentiates meaning. One can go to jail as a consequence of attempting to purchase the latter commodity.

(16) *sòng xìn* [sòŋ ɕìn] 'send a letter', i.e., through the post;

but with *-er*: [sòŋ ɕɪɜ̃] 'send a message' (i.e., send a note, or tell someone to relay information).

As noted above, vowel centralization follows *n*-deletion. Here, the presence of ㄝ distinguishes a message from a letter sent through the post. This seems to be an extension of the diminutive signification associated with the suffix.

Norman describes three processes that occur when one of the “primary finals” is followed by the ㄝ suffix:

1. syllabic endings *i* and *n* are dropped
2. front vowels become centralized
3. final *ng* [ŋ] fuses with *r* to form a nasalized retroflexed vowel. (Norman 1988:144)

Pulleyblank offers a detailed enumeration of the outcomes for each final, from which essentially the same generalities as presented in Norman may be deduced (1984:53 f.; note that P puts it that *i* and *y* are “laxed to glides” 54).

My analysis of the pronunciation of representative forms in the speech of Beijing native informants concurs with these generalizations with two exceptions.

1. Both writers cited above report  $\eta$ -deletion, with compensatory nasalization of the vowel. My Beijing informants do realize  $\eta$  before the suffix (e.g., 13, 14 above). Our session produced an interesting exchange: I learned my Chinese primarily among speakers of dialects that do not distinguish *n* and  $\eta$ , so in my first

attempts to pronounce the -ʒ forms in words with the velar nasal in final position, I did not pronounce *ŋ*, and my informants quickly corrected me.

2. Both writers note a centralizing process with respect to front vowels. In the speech of my informants, I find a general lowering and centralizing process among back vowels as well (e.g., 11, 14).

The following example illustrate the results of *er* suffixation combined with an ellipsis process.

(17) ming-er jian [mɪʒ̣ jɪɛ̃n] 'see you tomorrow' (cf. \*miŋ' tsɿ̣ ʒ̣' jɪɛ̃n')

In this complex example found in Beijing dialect, the ellipsis occurs in a sequence of steps. (The barred I represented in transcription is in fact a resonance of the dental fricative—see Pulleyblank 1984:10.)

1. tsɿ̣ → Ø The fricative and its resonance undergo a deletion process (as the reduced mɪ(ng) binds with ʒ̣).
2. Deletion of ŋ and fusion of ʒ̣ with the root.
3. Centralization of /i/ , yielding final -ɪɛ̃ʒ̣ (*m-* remains palatal)

The ellipsis step seems to be analogical; cf. another set of forms in the Beijing dialect:

Nǐ gæ̃n shen mo ne? 'what do you do (as a job)?'

but: Nǐ gā' ma de? 'what are you up to?'

The reduced form demonstrates ellipsis of a complete syllable coupled with the deletion of the final nasal and backing of the vowel compensated by a slight postvelar catch.

## Conclusion

Our two sons have traveled far, and participated in many developments, phonological, morphological, morphophonemic, and social. The use of the ʒ̣ final serves to distinguish

socially the familiar and colloquial from the more universal and more “formal” sounding plain or *zi* forms. The suffix in some cases marks morphemic distinction, and it exerts very powerful effects in generating morphophonemic variation. In the galaxy of northern Mandarin phonological space, the  $\text{ʒ}$  suffix is a black hole that draws all other articulations inexorably toward it.



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 Notes

<sup>1</sup> Chen Chun Sheng, personal communication (p. c.). Chen is an English teacher trained in Applied Linguistics who has taught at the middle school level in his province, and at the university level in Beijing and in Shanghai.

<sup>2</sup> Informants for this study include Chen; a late-middle-age couple, Beijing natives who recently immigrated to the United States and who have minimal English; two men in their twenties, Beijing natives studying in the United States; and a retired gentleman who has lived away from Beijing for many years.