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BULLETIN OF CHINESE LINGUISTICS 8 (2015) 5-26

BULLETIN
of CHINESE
LINGUISTICS
brill.com/bcl

More on the Morphological Typology of Sinitic

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Abstract

Chinese is often defined as a 'textbook example' of an isolating language, with comparatively few affixes that are usually etymologically transparent (Sagart 2004). After 'deconstructing' the notion of the isolating morphological type, I shall discuss data from a number of Chinese dialects spread over the Shanxi, Shaanxi, Henan, Hebei, and Shandong provinces. I will show that there seem to be some areal clusters with productive morphological phenomena not expected to occur in isolating languages, which can be explained both by the cross-linguistically widespread tendency towards the reduction of certain items in speech production and, arguably, by processes of convergence among dialects. (This article is in English.)

Keywords

Mandarin dialects – Jin dialects – morphological typology – grammaticalisation – phonetic erosion

1 Introduction

Few linguists, if any, would object to the classification of Chinese as an isolating language, at least as is usually defined in the general literature. For instance, according to Packard (2006:358), "Chinese scores rather high on the isolating language scale," since it lacks obligatory morphology, the boundaries between morphemes are clearly defined, there is no cumulative exponence, and morphemes have a single phonological form (no allomorpy/suppletion); he stresses particularly the point that in this

* Traditional Chinese characters have been used as a default throughout the article. However, in order to be consistent with the sources quoted, simplified characters will also be employed. I did not add characters when the sources do not provide them. The *Pinyin* and *Yale* systems are used, respectively, for the transliteration of Standard Mandarin and (Hong Kong) Cantonese. For all other varieties, I used (italicised) IPA transcriptions as provided by the sources, with tones indicated as superscript numbers; when no transcription is provided, I used SMALLCAPS (toneless) Pinyin transcriptions following the Standard Mandarin reading of the characters. The glosses follow the general guidelines of the Leipzig Glossing Rules when applicable; additional glosses include CONT 'continuous,' COS 'change of state,' GOAL 'goal marker,' and SFP 'sentence-final particle.' I would like to thank, first and foremost, Prof. Christine Lamarre (柯理思) for encouraging me to research this topic. Also, I would like to thank the participants of the 2013 LFK Society Young Scholars Symposium and the two anonymous reviewers for their insightful comments. Needless to say, the mistakes which may be found are the sole responsibility of the author.

 | DOI 10.1163/2405478X-00801001

language "morpheme boundaries are nothing if not clearly defined," and even affixes are clearly distinct from the stem(s) they attach to (Packard 2006:357). Similar statements may be found e.g. in Sagart (2004:123), who presents Chinese as a "textbook example of an isolating language with little morphology," in which there are only a few suffixes, which however are usually "etymologically transparent and do not appear to be very ancient"; this is said to be largely true not only for Standard Chinese, but also "for most modern Sinitic languages."

If we restrict our analysis to the national standard language of China, i.e. Standard Mandarin Chinese (henceforth: SMC), we would have little doubt as to the accuracy of statements like those discussed above. However, there is a considerable (and growing) number of studies discussing phenomena of fusional(-like) morphology in Sinitic varieties other than SMC, most of which belong to the Mandarin and Jin groups, a fact which urges a reconsideration of our understanding of the morphological typology of modern Sinitic varieties. For instance, in the Jizhou dialect of Hebei (冀州 *Jìzhōu*, Ji-Lu Mandarin; Ke 2009), the goal marker –嘮 *–laɔ* causes tone change in the verb it attaches to, as e.g. 拿 'to hold' NA^{53} > NA^{55}; –嘮 *–laɔ* may be left out, and tone change becomes the only marker of goal. Compare (1a-d):

(1) a. 拿唠屋里去
NA^{55}-*laɔ* WU-LI QU
take-GOAL house-inside go 'take [it] inside the house'

b. 拿唠屋里去
NA^{55}-ɔ WU-LI QU
take-GOAL house-inside go

c. 拿屋里去
NA^{55} WU-LI QU
take.GOAL house-inside go

d. *拿屋里去
NA^{53} WU-LI QU
take house-inside go (Ke 2009:154; my glosses and translation)

Exx. (1a-c) show different degrees of reduction of the marker –嘮 *–laɔ*; the ungrammaticality of (1d) can be understood as further proof of the fact that tone change is required to mark goal, and replaces the analytical marker –嘮 *–laɔ*. This is but one among many examples of morphological phenomena with fusional characteristics; here, specifically nonlinear exponence. In other cases, morphemes completely fuse with the verb root, giving rise to patterns of alternation within the root comparable to Germanic *Ablaut*, or they retain their identity, but surface as several different allomorphs, conditioned by the shape of the lexical root they are associated with, as we shall see.

Despite some hints in English-language publications (e.g. Yue 2003, Ho 2003), almost all works mentioning these phenomena are written in Chinese, which may explain the fact that they have gone almost unnoticed outside a comparatively small circle of specialists, and, it seems, they have not really been taken into account for the characterization of Sinitic varieties.[1] This is most obvious in grammaticalization studies, especially the work of Bisang (1996, 2004, 2008), who argues that grammaticalization 'without

1 For instance, in the *World Atlas of Language Structures* only ten Sinitic languages have been considered, five of which belong to the Min subgroup. Moreover, most importantly, only five of them, one of which is SMC, are included in maps concerning grammatical topics, whereas the rest have been considered only for phonological (or lexical) features.

coevolution of form and meaning' is the norm in Chinese and in the other language families of the East and Southeast Asian *Sprachbund.* This is also connected with the very idea of isolating morphology: put very simply, if a language in its present stage is (prevalently) isolating, this means also that grammaticalization did not lead to (tight) bonding, reduction, and fusion of grammatical morphs (see Bybee, Perkins & Pagliuca 1994).[2] Thus, despite the fact that the present paper discusses data which has already been published elsewhere, their relevance for our understanding of Chinese languages, and, more generally, of the limits of language change, has apparently been overlooked both by the researchers who recorded the phenomena at issue (with the notable exception of Lamarre; see Ke 2009) and, generally speaking, by scholars in the fields of historical and typological linguistics.

In this paper, I will first 'deconstruct' the notion of isolating morphology, also taking into consideration the diachronic side of the issue, to provide a sound theoretical background for our discussion. I will then present data on a sample of morphological phenomena in Northern Chinese dialects, discussing their relevance for the characterisation of the family, also taking into consideration Northwestern and Southern dialects. Lastly, I shall summarise the main conclusions of the paper and provide some hints for further research.

2 Morphological Typology: Synchrony and Diachrony

Morphology was the main concern of early typologists; between the 19th century and the second quarter of the 20th century, the structure of the word was generally taken to be the basis on which languages as a whole could be classified into types (Greenberg 1974, Velupillai 2012). Even today, undergraduate students of linguistics are usually taught that languages can be classified as fusional, agglutinating, isolating, and polysynthetic, and/or as analytic *vs.* synthetic, depending on the dominant morphological patterns of a given language. These labels are also still used by professional linguists to convey a rough picture of what to expect from a language, as far as morphosyntax is concerned. However, the idea of holistic typologies of word structure has been challenged time and again in the typological literature, at least since Sapir (1921), and, more recently, Plank (1999), Haspelmath (2009), and Bickel & Nichols (2007, 2011). Needless to say, a thorough discussion of such a complex and thorny issue is well beyond the scope of the present paper; I shall only propose some basic reflections in order to provide a background for the analysis of Sinitic language data.

2.1 *Deconstructing Morphological Typology*

The first fundamental objection to the classification of languages as isolating or fusional is that each of the traditional types is defined on the basis of different parameters which are logically independent of each other; according to Bickel & Nichols (2007), the three essential parameters involved are 'fusion,' 'flexivity,' and 'exponence.' We may classify formatives as 'isolating,' 'concatenative,' and 'nonlinear' according to their degree of phonological fusion with the host: isolating formatives are "full-fledged free phonological words of their own" (Bickel & Nichols 2007:180); concatenative formatives, such as affixes and clitics, are phonologically bound and may trigger phonological or morphophonological adjustments in the word they help to build; nonlinear formatives include

2 See also Ansaldo & Lim (2004:345; my italics): "In Sinitic languages, where *syllable boundaries are discrete and phonotactic constraints rule out reduced syllables of the kind observed elsewhere*, the material available for reduction is not easily found at the morphological level."

segmental and suprasegmental modifications of the root, and thus "are not segmentable into linear strings" (2007:182). Flexivity, or 'variance,' concerns the realization of morphemes: flexive formatives may be realised by different allomorphs, selected on item-based principles, whereas nonflexive formatives are invariant, or vary only because of general phonological or morphophonological 'rules' of the language. As for exponence, formatives may be cumulative, i.e. grouping different categories, or separative i.e. encoding as just one category.

As for 'traditional' morphological types, flexivity and cumulative exponence are associated with the fusional and introflexive language types, whereas nonflexivity and separative exponence are associated with the isolating and agglutinating types; these are further differentiated according to the prevalent degree of fusion in their markers (concatenative for the fusional and agglutinating type, isolating for the isolating type, and nonlinear for the introflexive type). However, although some combinations of these parameters are more common, they are all possible: formatives (or morphological processes) may be flexive and isolating, as well as nonflexive and nonlinear; isolating formatives may be cumulative, and nonlinear formatives may be separative (Velupillai 2012). Moreover, in principle one language could use (exclusively or predominantly) agglutinating noun morphology and introflexive verb morphology, just as a property such as alignment may be split according to the aspectual properties of the predicate (Haspelmath 2009). For instance, Modern Standard Arabic, the usual example of the introflexive morphological type, makes extensive use of internal root modification (in Bickel & Nichols's terms, 'ablaut'[3]) to build verb stems, but most inflectional categories and many derivational ones are expressed by means of concatenative affixes (see Watson 2002, 2006).

A preliminary study on a sample of 30 languages by Haspelmath (2009) showed that languages tend to behave similarly as to affix suppletion and stem alternation both in the nominal and in the verbal domain, but there seems to be no correlation of this kind for cumulation, traditionally considered to be an essential distinguishing feature between the fusional and the agglutinating type. Plank (1999) suggests that there is some tendency to associate cumulative exponence and flexivity, on the one hand, and separative exponence and invariance, on the other; however, all kinds of splits are attested, even within individual paradigms. Also, he suggests a correlation between increased morphological bonding and cumulative exponence/flexivity—in that bonding 'licenses' cumulation and variance, whereas morphological looseness is associated with separative exponence and invariance, a sort of "typological curb on diachrony" (Plank 1999:330). Further support for this comes from Bickel & Nichols's observation that flexive and isolating formatives are "by far the rarest combination" (Bickel & Nichols 2007:186).

Packard's analysis of SMC sketched out above (§1) is in line with the traditional notion of the isolating language type; in Bickel & Nichols's terms, this corresponds to the prevalance of isolating formatives which are also invariant and separative. Also, I may add, the near absence of obligatory morphology makes SMC look even more like an 'isolating prototype.' There are a number of concatenative grammatical formatives in SMC, as the plural/collective marker –們 *–men* and the well-known aspect markers –了 *–le*, –著 *–zhe* and –過 *–guo*, but these are hardly ever obligatory (see Wu 2005), except for number marking in pronouns. That is, the lack of an overt marker, e.g. perfective –了 *–le*, does not entail that the predicate is imperfective, whereas with fully grammaticalised categories, the absence of a marker is, so to say, as meaningful as its presence. This is part of an alleged tendency towards 'indeterminatedness' of Chinese, i.e. towards a lack of obligatory expression of grammatical categories (Bisang 2004; see also Enfield 2005 on Mainland Southeast Asia).

3 Before we used the term *Ablaut* as it is defined in Indoeuropean studies; in this sense, it is italicised and capitalised, in order to distinguish it from Bickel & Nichols's usage.

2.2 *Typology and Diachrony*

The combination of invariant and separative is said to be somehow typical, as mentioned before, and Bickel & Nichols (2007:187) point out that "the most common type of isolating formatives is nonflexive." In this respect, the type to which SMC belongs (as well as, generally speaking, the languages of the 'Mainland Southeast Asian type'; Bisang 2004, Enfield 2005) appears as quite well-behaved. A diachronic account for the present typological configuration of SMC is rather straightforward: in a 'today's morphology is yesterday's syntax' scenario, a full verb such as –了 *–liao* 'to finish'[4] is recruited as a perfective aspect particle (through a completive stage; see Sun C. 1996); an invariant and separative lexical exponent naturally becomes an invariant and separative grammatical exponent (Plank 1999). In 'our' dialects, however, we see that this pathway of evolution goes much further, with concatenative affixes being substituted by nonlinear markers, thus leading to cumulative exponence and, as we shall see, flexivity.

Such an evolution is not in itself surprising; reduction of grammatical markers and fusion with their host can in principle go as far as it may. A commonly cited example of internal root/stem mutation with a morphological function is that of English nonconcatenative plurals as *feet*, which originated from the loss of an earlier plural suffix causing *Umlaut* (Old English *fōt* vs. plural *fēt* < **fēti* < **fōti*). A similar evolution may be seen in Anywa, a Nilo-Saharian language of Sudan and Ethiopia—the so-called 'patient-deleting' (i.e. antipassive) derivation involves modifications in the (only) vowel of the root and/or tone change (Reh 1996: 222 and 226[5]):

(2)		Bivalent (transitive)	Monovalent
	a.	*càm–* 'eat'	*cʌ̀m–*
	b.	*góor–* 'write'	*gòoD–*

Here detransitivisation is achieved by adding the breathy voicing feature to the root vowel (2a) and by tone change (high to low, 2b). Reh (1996: 227–229) proposes that the different nonlinear patterns involved in patient-deleting derivation correspond to allomorphs of an earlier suffix that merged with the verb root, which may be reconstructed as having a breathy voice vowel, as this is found in all the detransitivised stems, as well as to an alveolar stop, which would explain the plosivisation of the final consonant in (2b). Reh posits two former suffixes (see the source for details); support for her proposal comes from possible cognate forms in the related language Kalenjin.

What is surprising, however, is the fact that we see evolutionary patterns of the kind exemplified above within the Sinitic languages, given our understanding of this family as typically isolating. Although it is now commonly accepted that Old Chinese had subsyllabic morphology in the form of prefixes, suffixes, and infixes, and some vestiges of these affixes are attested in modern dialects (see the survey in Sagart 2004), the phenomena at issue here are relatively recent, as can be concluded by the fact that they involve concatenative formatives which were generally not in use in Old Chinese (cf. Liu 2006). Moreover, as we shall see, these phenomena have a skewed areal distribution, i.e. similar phenomena tend to concentrate

4 Late Middle Chinese *liawˊ*, Early Mandarin *ljɛwˇ* (Pulleyblank, 1991).

5 In the transcription of Anywa, the grave accent indicates a low tone, the acute accent indicates a high tone and the caron (ˇ) indicates a rising tone; '*D*' stands for an alveolar plosive consonant which has different realisations, conditioned by its position within the word (Reh 1996: 28–30).

in some areas; it appears as unlikely that such 'anomalous' morphology mostly occurs in specific areal clusters just by chance. The main research questions I will try to answer in what follows are:

i. What kind of fusional morphology do we actually find in Chinese dialects?
ii. What are the diachronic mechanisms involved in the emergence of these morphological phenomena?
iii. What is their significance for the typological characterisation of Sinitic?

This will be the topic of the remainder of this paper.

3 Reduction of Morphological Markers in Northern China

The morphological phenomena at issue here, despite sporadic attestations in Southern China (as we shall see in §4), apparently have a significant presence only in Northern China; more precisely, they are found quite often in Henan, Shandong, Shanxi and, perhaps less frequently, in Shaanxi and Hebei. In Arcodia (2013) it is proposed that there are three major clusters of fusional morphology in Northern China:

a. The northern part of Henan province, at the border with Shanxi, Hebei, and Shandong provinces (e.g. Linzhou, Huojia, Xunxian), which may be broadened to include the area around Zhengzhou and Kaifeng (Changge, Xingyang, Wuyang), and Southern Hebei (Nanhe)
b. Shaanxi (Fengxiang, Xi'an, Shangxian).
c. Shandong, specifically, the central-eastern part (e.g. Boshan, Qixia, Juxian)

However, the above mentioned study takes into consideration (almost) only the exponents of the perfective aspect; fusional(-like) morphology is used also to mark attainment of a goal, as seen above (1), as well as progressive/continuous aspect, and for derivation, including evaluative derivation and others. Since our main concern here is exponence, i.e. form, rather than function, let us begin with an overview of the attested marking patterns for grammatical and derivational categories in the dialects at issue here.

3.1 *Formal Exponence of Grammatical and Derivational Categories: An Overview*

In SMC, suffixed grammatical morphs, such as the above mentioned plural/collective and aspect markers, are often toneless, whereas a preverbal progressive aspect marker like 在 *zài* retains its tone (although it is claimed that it bears 'weakened stress'; Ansaldo & Lim 2004:346). Segmental reduction in this domain is almost nonexistent, the main exceptions being perfective –了 *–le* and the well-known (weakly diminutive) nominal suffix –兒 *–r* (cf. 兒 *ér* 'child'): compare 熊 *xióng* [ɕjoŋ] 'bear' and 熊兒 *xióngr* [ɕjə̃r] 'bear' (adapted from Sun C. 2006:38), in which the fusion of the affix and the root result in opacisation of morpheme boundaries. However, SMC is a standardised language, and the descriptions one finds are typically focussed on the prescriptive norm, rather than on natural language use; generally speaking, as Laitinen (2004:248) put it, "when studying languages that have gone through standardization we analyze languages that are at least partly artificial." Even in spoken Pekingese, according to Chao's (1968:333) description, 在 *zài* may fuse with the following preposition in the '在 *zài* + 那儿 *nàr* + V' progressive construction, surfacing as *zār*.[6]

6 I would like to thank an anonymous reviewer for pointing out this phenomenon to me.

In many other dialects, the reduction of concatenative formatives causes the loss of initial consonants, sometimes with reduction of the syllable nuclei. In the Jizhou examples seen above, the goal marker –嘮 *–laɔ* is sometimes reduced to *–ɔ*; this is accompanied by tone change in the verb, an indicator of greater integration between root and affix (see Bybee, Perkins & Pagliuca 1994). In Tangyin (湯陰 *Tāngyīn*, Henan; Xin 2006c:85), the allomorphs of the perfective aspect markers (cognate to SMC –了 *–le*) are *–lɛʔ*, *–ɛ*, *–nɛ*, *–lɐn*, and *–ɐn*, showing different degrees of reduction; given that here the choice of the allomorph is said to be generally conditioned by the verb they combine with, I understand this as flexivity/variance, a feature most commonly associated with bound morphology, as said before (§2.1).

Rhotacisation—the addition of a 'rhotic' consonant to the nucleus of a syllable, known in Chinese linguistics as 兒化 *érhuà*—is the phenomenon described above for the SMC suffix –兒 *–r*. The use of 兒化 *érhuà* as a word formation device is fairly common among Chinese dialects; in some varieties, especially in Shandong province (cluster c.), it is used also to convey aspectual meaning. For instance, in Qixia (棲霞 *Qīxiá*, Zhang & Li 2007), as well as in several other varieties of the Yantai area, rhotacisation may be used to convey the perfective aspect or attainment of a goal:

(3) a. 我问了老师
WO *uən^{41}-lə* LAOSHI
1SG ask-PFV teacher 'I asked the teacher'
b. 我问老师
WO *uər^{41}* LAOSHI
1SG ask.PFV teacher (Zhang & Li 2007:98; my glosses and translation)

Needless to say, here there is no connection with the morpheme 兒 ER 'child.' In these varieties, tone change, and lengthening of the nucleus are often used to mark, among other things, the progressive/continuous aspect (4) and, again, the goal as well as possession relations (5), as exemplified by Laiyang (萊陽 *Láiyáng*):

(4) 老师点头说: "好"
LAOSHI *tiɛ̂^{551}* TOU SHUO HAO (*tiɛ̂^{44}* > *tiɛ̂^{551}*)
teacher nod.PROG head say good 'the teacher said 'good', nodding her/his head'
(5) 我东西 (*wo^{44}* > *wo^{551}*)
wo^{551} DONGXI 'my stuff'
1SG.POSS thing (Zhang & Li 2007:96–97; my glosses and translation)

In all of the examples we saw above, there is a choice between a 'heavier' and a 'lighter' exponent, in terms of number of segments (compare e.g. 1a-c, 3a-b). In many dialects of Chinese, possession and modification involve one and the same marker, which in SMC is 的 *de*; in Laiyang, the (cognate?) particle 賴 *lɛ* has the same functions, but only as a marker of possession can it be substituted by tone change, showing a formal split between the two functions of the affix (Zhang & Li 2007). Thus, the greater integration of the root and concatenative formative appears to be construction-specific, rather than item-specific, as is generally true in processes of grammaticalisation (compare e.g. English *I'm going to give up* > *I'm gonna give up*, but *I'm going to Paris* > **I'm gonna Paris*).

Many varieties of Northern Henan (cluster a.), belonging both to the (Central Plains) Mandarin and Jin groups, make use of 'rhyme change' (變韻 *biànyùn*), i.e. ablaut morphology. For instance, in Xunxian,

there are two patterns of rhyme change, one for nominal derivation, and one mainly for verbal grammatical morphology; they are usually referred to as 'Z' and 'D,' respectively, in Chinese works on the topic. 'Z' (≈ derivational) rhyme change is generally understood as the fusion of a morph cognate to –子 *–zi* with a lexical root; in Xunxian it has no function other than building nouns, whereas in other dialects it can convey evaluative meaning (Xin 2006c:47–48). Depending on the rhyme of the base lexeme, 'Z' change can take different shapes (Xin 2006c:51):

(6) a. 铁丝 *t'iɛ^{24}sɿ^{24} > t'iɛ^{24}sɿau^{24}* 'iron wire'
b. 篮 *lan^{42} > læ^{42}* 'basket'
c. 茄 *tɕ'iɛ^{24} > tɕ'i:au^{24}* 'aubergine'

Based on the comparison of patterns of 'Z' rhyme changes and of morphs cognate to –子 *–zi* in a number of dialects of Henan and Shanxi, Xin (2006c:51–54) proposes that the 'Z' change originates from the fusion of lexical morphemes with a morph having [u] (or something close to it) as the main vowel.[7] The effects on the base range from addition of segments (6a), replacement of root segments with complete fusion (6b), and a combination of replacement and addition of segments, accompanied by lengthening (6c; compare Wang Futang 1999).[8]

The other kind of stem modification, 'D' rhyme change, has a broad range of meanings, including perfective aspect, progressive/continuous aspect, and goal (Xin 2006a-b; exx. from Xin 2006a:47, my glosses and translation):

(7) 给他点儿钱
kɛ^{55} t'a^{55} tior^{213} tɕ'ian^{42} (*kei^{55} > kɛ^{55}*)
give.PFV 3SG a.bit money '(I, she, etc.) gave him a little money'

(8) 俩人睡一个床
lia^{55} zən^{42} ʂɛ^{213} i^{42} kə^{213} tʂ'uaŋ^{42} (*ʂei^{213} > ʂɛ^{213}*)
two person sleep.CONT one CLF bed 'two people are sleeping in one bed'

(9) 书放桌上了
ʂɥ^{24} fœŋ^{213} tʂuau^{24} ʂaŋ lə (*faŋ^{213} > fœŋ^{213}*)
book put.GOAL table on COS 'the book is [≈ has been put] on the table'

Segmental ablaut is also a common device for number marking in the pronominal system of several varieties of Shanxi, as e.g. Hongdong (洪洞 *Hóngdòng* / *Hóngtóng*; Hou & Wen 1993:117–118):

(10) 我家
ŋo^{33}tia > ŋua^{42}
1SG-PLUR 1SG.PLUR 'we'

7 Note that in the related Zhengzhou (鄭州 *Zhèngzhōu*) dialect the same phenomenon is termed 'U' rhyme change, as all the changed rhymes end in *u* (Zhou 1987; see also Lu 1992), thus providing support for this 'reconstruction'. However while Xin (2006c) compares several credible cognates of -子 *-zi*, like *təʔ* (see Hou 1987), some other forms which she uses as evidence for her hypothesis, as *tɔu* and *tou*, might be cognates to -頭 *-tou*, in our opinion. We believe that this is plausible, considering that -頭 *-tou* has an analogous function in word formation in many Chinese dialects; also, given that these word formation elements tend to get reduced in shape even in SMC, the fact that a morph with the same etymon as -子 *-zi* might develop a diphthong seems unlikely.

8 Actually (6a) probably should not be regarded as ablaut; we listed it here both for the sake of completeness and because the three patterns in (6a-c) are part of a system.

In the same area, ablaut is also used to distinguish between open class and closed class items. For instance, in Pingyao (平遙 *Píngyáo*, Hou 2010; tones omitted), 上 has the reading *suə* when used as a verb, 'to ascend,' but *xɔ* when used as a directional/place word ('on'; cf. SMC *shàng* vs. *shang*). This use of ablaut with a derivational function is attested also outside of Shanxi (and Jin), in Zhengzhou (Lu & Guo 1998:110, qtd. in Hou 2010), a Mandarin dialect of Henan, in which the verb 比 *pi*^{53} 'to compare' is formally distinguished from the derived marker of comparison 庀 *p'i*^{53} by the feature of aspiration of the onset.

Derivational and grammatical meaning may be expressed also by means of suprasegmental modifications in the root, tone, and/or length of the stem rhyme, as exemplified earlier with Jizhou data (1c). An interesting case is that of Xi'an (西安 *Xī'ān*, Shaanxi, cluster b.; Sun Lixin 2007), in which tone change and/or lengthening are used to express the same meanings as 'D' rhyme change in Xunxian, but each function is associated with a distinct pattern (Sun Lixin 2007:190–193):

(11) 喝

xuɤ^{31}	>	*xuɤ*^{42}
'drink'		'drink.PFV'

(12) 开

k'œ^{31}	>	*k'œ:*^{313}
'open'		'open.CONT'

(13) 拉 >

la^{31}	*la*^{24} / *la:*^{31}
'to pull'	'pull.GOAL'

In Xi'an, rhyme change is also attested, but it is limited to eight rhymes (out of 38) and marks only the perfective aspect. Tonal morphology with a derivational function is found in some dialects of Shanxi, where it can be used in the same function of 'Z' rhyme change; also, in the same area, tone change is used to build the plural forms of pronouns, e.g. in Wanrong (萬榮 *Wànróng*; Hou & Wen 1993). In Fengxiang (鳳翔 *Fèngxiáng*, Shaanxi; Wang Junhu 2012), most of the typical functions both of 'Z' and of 'D' rhyme change are marked by the same pattern of tone change and lengthening (only lengthening for 陽平 *yángpíng* tone rhymes).

Note that, even though up to now I have presented these devices as if they were mutually exclusive, they can combine in several ways in individual varieties; also, more often than not, speakers can choose between using a concatenative (or anyway a less reduced) marker or a fusional marker, as seen above for goal marking in Jizhou. In many descriptions it is stated, perhaps unsurprisingly, that the 'shorter' variant is more frequent and, also, the preferred one in casual speech. Also, the existence of different degrees of reduction can offer a view into the diachrony of a formative. A case in point is Boshan (博山 *Bóshān*, Shandong province), for which we may compare two descriptions, one by Qian (1993) and one by Chen Ning (2006). According to Qian (1993:14–15), many of the suffixes and particles of Boshan may be substituted by the *–ə* suffix, as the marker of perfective aspect –了 *–liɔ*, progressive/continuous –着 *–ʈʂuə*, or the marker of modification 的 DE, among others (Qian 1993:78; my glosses and translation):

(14) 说 *ə*一遍，又说 *ə*一遍
ʂuə^{21}*-ə* *i*^{24} *piã*^{31} *iəu*^{31} *ʂuə*^{21}*-ə* *i*^{24} *piã*^{31}
say-PFV one-CLF again say-PFV one-CLF
'(I, she,etc.) said it once, and then said it once more'

Even though Qian chooses the IPA symbol for a 'schwa' to represent it, the formative at issue actually comes in several different shapes, depending on the rhyme of the lexeme it attaches to; thus, for instance, it is [ɘ] after [i], [ʌ] after [a], [ia], and [ua], or [ɐ̃] after [aŋ], [iaŋ], and [uaŋ] (1993:24–25). In the more recent description, i.e. Chen Ning (2006), it is claimed that *–ə* may be replaced by lengthening of the nucleus vowel and tone change, as in the following examples (2006:320–321; my glosses and translation):

(15) 换一双鞋
xuɐ̃:²¹⁴ YI SHUANG XIE (*xuɐ̃³¹ > xuɐ̃:²¹⁴*)
change.PFV one pair shoe '(I, she, etc.) changed a pair of shoes'

(16) 跑山上
pɔ:²¹⁴ SHAN SHANG (*pɔ³⁵ > pɔ:²¹⁴*)
run.GOAL mountain on '(I, she, etc.) ran to the top of the mountain'

To sum up, the three areal clusters introduced above seem to be characterised, respectively, by ablaut (cluster a.), tonal/ablaut (b.), and rhotacisation/tonal morphology (c.). Shanxi dialects, which were not included in any of those clusters, are mostly characterised by derivational nonlinear morphology, in the form of ablaut and tone (sometimes accompanied by lengthening); these are also sometimes used to mark number, e.g. in pronouns. Due to reasons of space, I could give but a few examples; the full list of the dialects considered can be found at the end of the paper (Appendix 1). Needless to say, such a short survey cannot do justice to the richness and variety of fusional(-like) morphology in Northern Chinese dialects; nevertheless, it can be used as a basis for further discussion.

3.2 *Formal Exponence of Grammatical and Derivational Categories: Analysis of the Data*

The formatives presented here all follow a rather familiar evolutionary pattern, starting with the grammaticalisation of a lexeme (a verb or a noun) as a concatenative marker, usually an affix, with greater integration with the item it combines with. This generally starts with reduction to a neutral tone, which is followed by loss of segments (often, loss of the syllable onset), and sometimes also centralisation of the nucleus vowel(s) (Li Rulong 2002, Zhang & Li 2007); further integration may bring about substitution and/or loss of segments in the root, as well as suprasegmental modifications. We may distinguish between cases involving 'pure' fusion of roots and formatives, and cases akin to English *Umlaut* plurals, as Jizhou goal marking (1a-c), in which the modification in the stem was triggered by a once present concatenative marker. Also, the distinction between open class and closed class items based on ablaut or tonal changes does not appear to be related to fusion, but rather to the phonological and prosodic contexts of the constructions in which these items are found. Note that while such a distinction makes sense in historical perspective, it is virtually irrelevant for the synchronic characterisation of the phenomenon.

Applying the parameters of morphological typology introduced in §2.1, we may say that the formatives at issue here mostly follow a path of evolution from isolating to concatenative, and then from concatenative to nonlinear, whereas the corresponding SMC formatives stopped at the concatenative stage. Nonlinearity seems a rather predictable outcome when lexemes are made of single syllables with a simple structure; in the evolution from concatenative to nonlinear, involving greater phonological (and prosodic) integration, formatives often show flexivity, i.e. they come in different allomorphs depending on the shape of the lexeme they attach to.[9] This is best exemplified by the Boshan *–ə* suffix discussed above. Thus, at least for some cases we can reconstruct the evolution leading from isolating to nonlinear as such:

9 To be understood either as phonological or morphological conditioning of allomorphy (Bybee, Perkins & Pagliuca 1994:111).

isolating nonflexive	>	concatenative nonflexive	>	concatenative / flexive	>	nonlinear flexive (/nonflexive)

The square brackets around the concatenative/flexive stage indicate that there is no direct evidence that in *all* of the cases illustrated in §3.1 there is necessarily a stage in which the concatenative marker develops allomorphs. For Boshan, as seen above, we have clear evidence for a concatenative/flexive (i.e. allomorphy) stage. Another case in point is Nanhe (南和 *Nánhé*; Zhang Li 2011), a Jin dialect of Hebei. In Nanhe, the progressive/continuous aspect marker –着 *–tə* has three allomorphs, namely *–tə*, *–də* (after nasal endings), and *–ᵗə*, with a weakened onset (after *a*, *ɔ*, *ə* and entering tone rhymes); the perfective marker –了 may surface as *–la*, *–a*, or *–a:*, often also causing tone change/lengthening in the verb root, and *–a* as a further subject to coarticulation with the root (17), depending on the shape of the verb rhyme, and sometimes it may be dropped altogether (18; Zhang Li 2011:20; my glosses and translation):

(17) 她挑了双黑皮鞋
TA *t'iau*^{34} ^{u}*a* SHUANG HEI PIXIE (*t'iau*^{44} > *t'iau*^{34})
3SG.F choose-PFV pair black shoes 'she chose a pair of leather shoes'

(18) 她编个篮子
TA *pia:*^{443} GE LANZI (*pia*^{43} > *pia:*^{443})
3SG.F weave.PFV CLF basket 'she weaved a basket'

The superscript *u* in (17) indicates a 'transitional' sound added between the verb and the affix. Here one clearly sees the transition from concatenative to nonlinear marking involving allomorphy, caused by coarticulation of the root and the formative.

The picture, however, is not always so straightforward. For Xunxian, we have indirect evidence, gathered from comparison with neighbouring dialects; Xin (2006c:85) provides data on, among others, the marking of the perfective aspect in nine dialects spoken around the Xunxian area, showing that in dialects as the above mentioned Tangyin (and three more) one finds allmorphs for the perfective suffix. For yet other phenomena, as with nonlinear marking of number in pronouns (10), it is far less clear whether at some point allomorphy was involved at all.

As to the last stage in the example above, I put 'nonflexive' as an option between brackets because I have doubts on how to understand rhotacisation. Rhotacisation with a grammatical function is often described only from a functional point of view—without enough information on how it is actually realised (see e.g. Huang 1996:177 on Haiyang [海陽 *Hǎiyáng*] and Muping [牟平 *Mùpíng*]). From what we can gather, sometimes rhotacisation is just the addition of *ər* to a lexeme, but for some rhymes, deletion of segments is also involved, as Laiyang 卖 *mai*^{41} 'sell' > *maər*^{41} 'sell.PFV' (Li & Zhang 2007:98); compare also (3a-b) above. I actually believe that flexivity may be invoked here, albeit it is not as clear as in the case of Xunxian rhyme change.

Lastly, note that the arrows are not to be taken as discrete stages: as exemplified by Nanhe, a variety may make use of concatenative and nonlinear morphology in the same domain (e.g. aspect marking) in one and the same synchronic stage. And, of course, we know nothing about the future. Things may evolve in the direction of the cline or else; one must also remember that Chinese dialects are normally, to a lesser or greater extent, under the influence of SMC, which lacks productive nonlinear morphology.

There is one more parameter of morphological typology to consider, which is the "semantic density" (Bickel & Nichols 2007:188) of formatives, i.e. separative *vs.* cumulative exponence. At first sight there seems to be some cumulation for ablaut and tonal morphology, as a single morph apparently conveys both lexical and grammatical meaning. However, if we take for instance the opposition between, say,

Xi'an 喝 *xuɤ*^{31} 'drink' and *xuɤ*^{42} 'drink.PFV' (11), we see that the change in the tone marks perfective aspect only, and is thus separative, despite the fact that we cannot separate it from the root (cf. Velupillai 2012:105).

However, whereas in Xi'an we have a separate pattern of tone change (lengthening) for each grammatical function, in many dialects, fusional markers are polyfunctional. In Xunxian, as seen above (7–9), the same pattern of rhyme change is used to mark perfective, progressive/continuous, and goal. Lamarre (Ke 2009:147) believes that this is not the product of chance, and rather suggests that the function of such markers may be subsumed under the category of 'boundedness' (有界化 *yǒujièhuà*); given that rhyme change with a progressive meaning is also used with activity verbs (8), and the same happens for rhyme change in dialects as Xingyang (滎陽 *Xíngyáng*; Wang Sen 1998) and Huojia (獲嘉 *Huòjiā*; He Wei 1989), as well as in Boshan (*-ə* suffix), I believe that the boundedness hypothesis should be ruled out. Note, also, that both Boshan and Fengxiang use the same pattern for verb and noun morphology, with an astonishingly broad range of functions. Xin (2006c:89) claims that the various functions of rhyme change in Xunxian and other surrounding dialects are kept distinct by different contexts of occurrence and combinatory restrictions; it is however reported that in Xingyang there may actually be ambiguous contexts, as for the following sentence (Wang Sen 1998:277; my glosses and translation):

(19) 他背袋兒麵

TA	*pɛ*^{13}	DAIR	MIAN	(*pei*^{13} > *pɛ*^{13})
3SG.M	carry.on.the.back.PFV/CONT	bag	flour	

'he shouldered a bag of flour on his back' / 'he is carrying a bag of flour on his back'

However, it seems that formal merger has not been followed by functional merger. Even though such contexts might bring about a blurring of grammatical categories in the long run, in several other contexts the distinction seems to be pretty evident, and in many varieties, including Xingyang and Huojia, nonlinear markers may be substituted by the corresponding concatenative suffixes (here -了 -LE and -着 -ZHE), arguably hindering functional mergers. All of this, however, has no bearing on the issue of cumulative *vs.* separative exponence, given that each nonlinear marker conveys only one category at a time.

It thus appears that much of the reduced morphology we find in Northern Sinitic varieties possesses two unexpected characteristics for the isolating morphological types of flexive nonlinear exponence, or very reduced/fused concatenative exponence. Cumulative exponence, another typical fusional feature, does not seem to be involved; this is not surprising, given that here reduction and fusion affect single items which convey only one category. Here I would like to remark that, in accordance with the current view of morphological types sketched above, I do not expect that the varieties at issue conform to an 'ideal' fusional or introflexive type; my concern here is how these dialects differ from the rest of the family, and how the parameters sketched above interact, both in a diachronic and in a synchronic perspective. Hence, at the very least, having one-to-many correspondences both between function/meaning and form, i.e. flexivity, and between form and function, i.e. homonymy of morphs, together with opacisation of morpheme boundaries, warrants our attention.

Moreover, there is another characteristic which should be taken into account: namely, the paradigm of these morphological phenomena, which involves both their 'pervasiveness' and obligatoriness. In some dialects, ablaut morphology has developed into a system of paradigmatic oppositions, as in the above mentioned Xunxian, in which 29 rhymes out of 42 may undergo 'D' rhyme change in

those contexts in which rhyme change is expected, while the rhyme of the verb cannot change, the bare verb in its basic rhyme is found (e.g. 打 *ta*^{55} 'to hit, beat'), and no further marker is added (Xin 2006a:47). Thus, for instance, all verbs with the rhymes *au*, *ou*, and *əŋ* change into *o*, while *i*, *iɛ*, and *in* change into *iɛ*, and hence for *iɛ* rhyme verbs the 'marked' form is homonymous with the 'base' form. The existence of regular correspondence between the shape of the verb rhyme in the base and in the marked form is reminiscent of inflectional classes, which sometimes are identified on the basis of phonological characteristics of a given form of a verb; for instance, Italian has three inflectional classes for verbs, each identified by the vowel in the infinitive (*a* for the first conjugation, *e* for the second conjugation, *i* for the third).[10] Admittedly, to some the notion of lexical conditioning of allomorphy may perhaps sound like 'conceptual imposition' here; I believe it is safe to say that we are dealing with morphophonological features,[11] and not with a pure phonological phenomena, since these are not general sandhi rules in the dialects considered.

Note that some sort of 'paradigm' is often characteristic also of 'Z' rhyme change, as, again, in Xunxian (Xin 2006b), in that the shape of marked forms can also be predicted from the rhyme of the base form. This is because the diachronic (morpho-)phonological processes leading to the present configuration appear to be of a similar nature both for 'Z' and for 'D' rhyme change. Needless to say, however, when we mention flexive exponency we usually think of 'true' (i.e. inflectional) grammatical categories, rather than nominal derivation; hence, I do not know whether it makes sense to treat them similarly, in a synchronic perspective.

A case which deserves a separate mention, in my opinion, is that of Xi'an, where we find something which looks like a nonlinear paradigm of aspect/goal marking, differentiating both 'verb classes' (i.e. tone categories) and functions, as summarised in the schema below (data from Sun Lixin 2007:190–193):

Here, from the formal point of view, one sees a clear paradigmatic organisation of the patterns for marking the three main aspectual (broadly speaking) categories of Xi'an, with different exponents for each 'verb class,' or tone category.

However, again, morphological paradigms are normally associated with obligatory morphology, and for Xi'an I find no clear indication of that. Some (reportedly) obligatory contexts for ablaut morphology may actually be found in the above mentioned Xunxian and Huojia, both spoken in Northern Henan. In these varieties rhyme change is always required in perfective contexts even when an unquantified object is present, differently from Mandarin –了 *–le* (Xin 2006a, He W. 1989). Systems of paradigmatic oppositions which show some characteristics of 'true' (Indo-European-style) paradigms but allow for widespread multifunctionality of forms, and in which there are few (if any) obligatory contexts for the grammatical category at issue, are termed "East Asian paradigms" by Bisang (2014: 53).

To sum up, we have seen that in several varieties of Northern China, scattered over an area from Western Shaanxi to the Jiaodong Peninsula, we have productive grammatical (mostly, aspectual) and derivational morphology showing fusional characteristics, which are highly atypical for Sinitic languages and, also, very distant from SMC. In the next section I will discuss the significance of this data.

10 As Plank (1999:323) puts it, "(…) invariant exponents may get variant in two rather different ways: by additional equivalent forms being grammaticalized and by phonological diversification. (…) diversification may also involve the reanalysis of parts of radical elements as parts of the exponents, and these parts may differ with different radicals and may eventually gain morphological significance, distinguishing inflection classes."

11 Corbett and Baerman (2006:241) define a morphophonological feature as "one which identifies a morphological relationship, such as one dependent on umlaut or palatalization, which states that two elements stand in some (morphologically) paradigmatic relationship to each other, without specifying what conditions the alternation".

TABLE 1 *Tonal grammatical morphology in Xi'an* (*L = vowel lengthening*)

Tone category	Progressive/continuous	Perfective	Goal/degree
31	313 and L	42	24 or L
35	242 and L	242	242 or L
51	L	31	L
55	51	553	53

4 Sinitic Morphology: The Broader Picture

Since Hashimoto's work on the areal typology of Sinitic languages (1976, 1986), we know that languages of Northern China tend to resemble their North Asian neighbours; on the other hand, languages to the South tend to resemble their Southeast Asian neighbours, with a stronger isolating profile (more monosyllabic words; see also Comrie 2008). In Bickel & Nichols's (2011) survey of the exponence of case and tense-aspect-mood in a sample of 165 languages, languages making use of isolating formatives only (just 16) are concentrated in Southeast Asia, the Pacific region, and the Sahel Belt of West Africa. The only Sinitic language in their sample, SMC, is classified as a mixed isolating/concatenative type; on the other hand, nonlinear (ablaut and tonal) morphology is confined to Africa, and nonexistent in the languages of Asia they considered, except for a tonal outlier in Indonesia, Iau.[12]

The morphological phenomena we discussed in the preceding sections, thus, are 'anomalous' from an areal point of view. If Northern Sinitic languages, in principle, may have more in common with North (and Central) Asia, we would rather expect 'agglutinative' morphology such as concatenative, invariant, and separative; this is what we actually find in varieties of the Qinghai-Gansu *Sprachbund* (Slater 2003), such as Linxia (臨夏 *Línxià*, Gansu province; Dwyer 1992), a Northwestern Mandarin dialect which developed suffixed case markers following prolonged contact with Mongolic and Turkic languages (as well as Amdo Tibetan). Interestingly, in another Mandarin dialect of the area, namely Gangou (乾溝 *Gāngōu*, Qinghai; Zhu *et al.* 1997) the perfective marker is *–liao*, a much less reduced form than SMC –了 *–le*. Some characteristics of SMC itself also favoured the development of concatenative morphology which shows some signs of reduction, as with aspect suffixes: these are the lack of contrastive tone registers and the neutral tone option. According to Ansaldo & Lim (2004), in Southern varieties such as Cantonese and Hokkien (as spoken in Singapore), which have three tonal registers, namely high, mid, and low, a reduction in pitch height is anyway meaningful, as, for instance, a mid level tone may be misinterpreted as a low tone, rather than as a sign of erosion. Thus, reduction of grammaticalised signs is expected to occur at the suprasegmental level (see above, fn. 2). This is not the case for SMC and Northern Chinese dialects in general, which all have neutral tone syllables (weakly stressed; see Norman 1988:148–149, 195).

12 Needless to say, a sample of 165 languages may be too limited to support strong generalisations on the distribution of different types of exponents. For instance, within Europe, ablaut plurals are attested in Italian dialects, as e.g. Lancianese (Central-Southern group) [lu 'pjattə] 'the dish' *vs.* [li 'pjɛttə] 'the dishes'; moreover, as pointed out by an anonymous reviewer, even within Tibeto-Burman one finds languages with ablaut morphology, as e.g. (written) Tibetan (see Denwood 1999:106–107) or Khaling (Jacques *et al.* 2012).

Moreover, whereas Southern dialects are syllable-timed, Northern dialects are typically stress-timed, with a trochaic stress patterns that favor the cliticisation of post-head elements (we will get back to this below).[13]

Note that, as hinted at earlier (§3), nonlinear morphology is not only found in Northern China. For instance, in Hong Kong Cantonese the perfective aspect marker –咗 *–jó* may disapper in rapid specch, and is compensated for by a tone change in the verb (Matthews & Yip 2011:31):

(19) a. 食咗飯未呀?
sihk-jó-faahn meih a
eat-PFV-rice not-have SFP 'have you eaten?'

b. 食飯未呀?
sík-faahn meih a
eat.PFV-rice not-have SFP

Yu (2007:202–3) reports many examples of derivational tone change in Cantonese which are generally understood as the outcome of the "elision of certain morphemes that are no longer productive," also meaning 'child' or 'son' as SMC 兒 *ér* (a possible cognate); the "tonal morpheme" is "a relic of an earlier syllable-contraction phenomenon." Tone change is reportedly used as a marker of perfective aspect also in another Yue dialect, i.e. Zengcheng (增城 *Zēngchéng*, Guangdong province; He Weitang 1987), which makes also use of tone change as a plural marker on personal pronouns (Yue 2003). Nevertheless, it appears that nowhere outside the area of Northern China discussed above is there such a concentration of varieties making use of 'reduced' morphology.

Thus, despite the claims to the contrary in the literature (see §1), reduction of grammatical and derivational exponents, with blurring and erosion of morpheme boundaries, allomorphy, and loss of concatenative exponents, may occur also within Sinitic languages. In Bybee (2003), it is claimed that when a word and a morpheme often occur together, they "come to be stored and processed in one chunk"; following Boyland (1996), Bybee also points out that as sequences of units, due to their high frequency of co-occurrence, come to be processed as a single unit, their "gestural representation" changes, and the multiple gestures involved in their articulation are reorganized into single gestures, which causes reduction and an "increased overlap of gestures" (2003:617), and hence, coarticulation.[14] Such a development is in line with the evolution presented above, as coarticulation may lead both to allomorphy (through the interaction of different sounds; compare Plank's 'licensing' of variance by bonding), erosion and fusion, and even nonlinear exponence. Note that many of the processes of reduction at issue here occur in specific syntactic and prosodic environments. They are typically found within a syntactically or semantically tight phrasal unit, often in a weak prosodic position, such as next to or between stressed content morphemes (cf. Ansaldo & Lim 2004:357–358). For instance, in SMC the 'verb –了 *–le*' sequence forms a trochaic (strong-weak) foot, and thus the gram is in a weaker prosodic position with respect to the root, becoming tightly associated with it (see Jiang 1999, Li 2002). This is the environment in which –了 *–le*, –著 *–zhe*,

13 I would like to thank an anonymous reviewer for pointing this out to me.

14 We pointed out before (§3.1) that when in a dialect a less reduced and a more reduced (usually concatenative) exponent for a given category is available, the former is often said to be the normal choice in informal speech. Bybee (2003) cites, among others, two studies by Browman & Goldstein (1990, 1992), in which it is suggested that 'casual speech processes' are connected with a reduction in the magnitude of a gesture or with increased overlap of gestures.

etc. got reduced in SMC; note also that in some dialects, ablaut and/or tonal morphology is restricted to single syllable verbs (e.g. in Xi'an; see Liu 2006 for more examples).

This kind of evolution has led to further reduction and fusion of roots and formatives only in a limited number of dialects. Given that I could single out no phonological characteristics to account for the different behavior of the dialects considered here, and given that reduced morphology crosscuts the boundaries of dialect groups, a likely explanation for the skewed distribution of this phenomenon appears to be convergence, brought about by internal migrations in the first place, as is typical in the Chinese context (LaPolla 2001). Mass eastward migration from (present-day) Shanxi started as early as the end of the third century CE, when about two-thirds of the local population relocated to Hebei (LaPolla 2001:228). Wang Futang (1999:151) discusses migrations from Southeastern Shanxi into Northern Henan at the time of the Ming dynasty, which predictably led to strong influence of Shanxi dialects on Henan dialects; he argues that 'Z' (derivational) rhyme change originated in Shanxi dialects, and then spread eastwards in this migratory context. If we look at descriptions of dialects having 'Z' or 'D' (grammatical) rhyme change or tone change, we sometimes find similar indications. For instance, Zhang Li (2011) remarks that the Nanhe area also received a huge influx of immigrants from Shanxi during the Yongle period (1403–1425). Xunxian, a territory which lost a significant share of its population due to conflicts and natural disasters in the 14th century, also received a considerable number of settlers from Shanxi between 1375 and 1405; Xin (2006c) explicitly claims that 'Z' rhyme change is a legacy from the Shanxi dialects spoken by those immigrants, in line with Wang Futang (1999). These waves of immigrations started mostly from the area around present-day Hongdong, and went as far as Shandong (Qiao 1983); the influence of Shanxi shows up in the phonology of some modern dialects of Hebei, Henan, and Shandong (see Qiao 2008 for some examples).

In many cases, patterns of 'Z' rhyme change actually look very similar across dialects and areas; on the other hand, whereas quite a few languages of Henan, Shaanxi, Hebei, and Shandong make use of nonlinear grammatical morphology to a lesser or greater extent, this appears to be rare (or even unattested) in Shanxi and, hence, the former probably developed it independently. Also, several dialects of the Jiaodong peninsula are characterized by rhotacisation, which is never used with an aspectual meaning in Shanxi, to the best of my knowledge. My hypothesis is that the tendency towards reduction of derivational morphs in fast speech, if already existing at the times of early contact between Shanxi varieties and their eastern neighbors, may have provided a 'model' on which other grammatical morphs could be reduced and fused. Given the available data, it is very hard to provide evidence either in favor or against this hypothesis: phenomena of reduction which occur in spontaneous dialectal speech are extremely unlikely to be recorded in written sources (especially in the Chinese context). However, all in all, the distribution of nonlinear morphology in Northern China strongly points toward a common origin in Shanxi, at least for some phenomena. Also, what seems likely to me is that the concentration of similar morphological processes in specific areas may have been the product of more limited (i.e. areally circumscribed) patterns of convergence, which may explain the relative homogeneity of certain areas (i.e. the clusters discussed above; §§3, 3.1).

5 Summary and Hints for Further Research

In this paper, we discussed data on reduced morphological markers in a number of dialects of Northern China, showing that these seemingly anomalous patterns, despite being attested in Yue dialects, are

however mostly concentrated in specific areas. The reduction of morphological markers is made possible by cross-linguistically widespread mechanisms of coarticulation between lexical and grammatical morphs which frequently co-occur together; also, considering the distribution of such phenomena, convergence between neighbouring varieties probably played a role too.

Given the complexity of the phenomena at issue, here we had to ignore several interesting aspects, including the kind of phonological processes involved in the coarticulation of grammatical morphs and lexical roots; such an analysis could help to shed light both on the origins of the polyfunctionality of nonlinear markers and on the role of convergence between dialects. Also, I suggest that analogy may have been an important factor in the development of reduced/nonlinear morphology, a fact which would explain the widespread homonymy between what seem to be semantically unrelated markers. Lastly, the sociolinguistic correlates of the phenomena might tell us more on the skewed distribution we see in modern dialects. I leave this for further research.

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APPENDIX *List of the dialects considered in the present study*

Dialect	Province	Group	Source
Anyang	Henan	Jin	Xin 2006c
Boshan	Shandong	Ji-Lu Mandarin	Qian 1993, Chen N. 2006
Changge	Henan	Central Plains Mandarin	Zhao 1998
Changli	Hebei	Ji-Lu Mandarin	Committee 1984
Fengqiu	Henan	Central Plains Mandarin	Zhang Na 2010
Fengxiang	Shaanxi	Central Plains Mandarin	Wang Junhu 2012
Gangou	Qinghai	Central Plains Mandarin	Zhu *et al.* 1997
Haiyang	Shandong	Jiaoliao Mandarin	Huang 1996
Hebi	Henan	Jin	Xin 2006c
HK Cantonese	Hong Kong SAR	Yue	Matthews & Yip 2011
Hongdong	Shanxi	Jin	Hou & Wen 1993
Huaxian	Henan	Central Plains Mandarin	Xin 2006c
Huojia	Henan	Jin	He Wei 1989
Jiyuan	Henan	Jin	Liu 2006
Jizhou	Hebei	Ji-Lu Mandarin	Lamarre 2009
Juxian	Shandong	Jiaoliao Mandarin	Li & Ai 2008
Laiyang	Shandong	Jiaoliao Mandarin	Zhang & Li 2007
Linxia	Gansu	Lanyin Mandarin?	Dwyer 1992
Linzhou	Henan	Jin	Chen Pengfei 2005, 2007
Muping	Shandong	Jiaoliao Mandarin	Huang 1996
Nanhe	Hebei	Jin	Zhang Li 2011
Neihuang	Henan	Central Plains Mandarin	Xin 2006c
Pingyao	Shanxi	Jin	Hou 2010
Puyang	Henan	Central Plains Mandarin	Xin 2006c
Qixia	Shandong	Jiaoliao Mandarin	Liu & Shi 2004, Zhang & Li 2007
Qixian	Henan	Jin	Xin 2006c
Shangxian	Shaanxi	Central Plains Mandarin	Huang 1996
Tangyin	Henan	Jin	Xin 2006c
Wanrong	Shanxi	Jin	Hou & Wen 1993
Weihui	Henan	Jin	Xin 2006c
Wuyang	Henan	Central Plains Mandarin	Liu 2006
Xi'an	Shaanxi	Central Plains Mandarin	Sun L. 2007
Xingyang	Henan	Central Plains Mandarin	Wang Sen 1998
Xinxiang	Henan	Jin	Liu 2006
Xunxian	Henan	Central Plains Mandarin	Xin 2006a,b,c
Yanjin	Henan	Jin	Xin 2006c
Zengcheng	Guangdong	Yue	He Weitang 1987
Zibo	Shandong	Ji-Lu Mandarin	Xiao 2007
Zhengzhou	Henan	Central Plains Mandarin	Zhou 1987, Lu 1992, Lu & Guo 1998

再論漢語方言的形態類型

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提要

學者們通常認為漢語是典型的孤立語，詞綴較少，由來知根知底 (Sagart 2004)。本文首先對孤立語的概念進行“解構”。接著，基於山西、陝西、河南、河北以及山東方言的語料，說明漢語方言中似乎存在著地域上成片的具有能產性的形態現象，而這種現象似乎不該出現在孤立語中。本文認為，產生這類形態現象的動因包括語法化標記語音侵蝕的普遍傾向以及方言之間的互相影響。

關鍵詞

官話方言、晉方言、形態類型學、語法化、語音侵蝕