

Solving the Puzzle of Mandarin Verb versus Adjective Reduplication

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Reduplication commonly seen in the literature creates new words by affixing to all or part of the base word. In most cases, it is prefixation or suffixation. Mandarin Chinese presents a rare case of reduplication that does not fit into this category. For an adjective base like /gaoxing/ (“happy”), the reduplicated form is [gaogaoxingxing] in which [gaogao] and [xingxing] are not independent morphemes. It is difficult to identify which part of the word is the base or the reduplicant due to the discontinuity of the morphemes. The “circumfixing” nature of this AABB pattern looks more intriguing when the reduplication of verb is considered. The reduplicated form of a verb base like /dasao/ (“tidy up”) is [dasaodasao] which is structured like the standard full reduplication. This paper gives a unified account of the two patterns in the framework of Optimality Theory (Prince and Smolensky, 1993), claiming both patterns are phonologically possible and the rare case of circumfixing reduplication is driven by the high prioritization of LINEARITY in the morphology of adjective.

It has been observed that Chinese has a disyllabification requirement on lexical words (Zhou, 1964; Chen 2000) and a minimal word effect. (Lu, 1963 and Yip, 1991). Chen (2000) claims that the Minimal Rhythmic Unit (MRU) is not only minimally disyllabic, but exactly disyllabic as well. Combining constraints Binariness (the MRU is minimally disyllabic) and Boundedness (the MRU is maximally disyllabic), I argue that the high-ranking of MRU=2 (MRU are disyllabic) determines the way that MRUs are organized. This shows a prosodic binarity in Chinese that parallels foot binarity in metrical system. For the reduplication, this requirement of disyllabification requires the output to be of four syllables. Following Struijke (2000), I assume that the reduplication is driven by multiple correspondence with the input. Take the reduplicated form [ABAB] for example, both [A]’s are considered the correspondents of the /A/ in the input. This is a violation of INTEGRITY-IO (No element of the input has multiple correspondents in the output). MRU=2 outranking INTEGRITY-IO drives the fact that there could be only two phonologically possible outputs for an input of / $\sigma_1\sigma_2$ /(AB), [$\sigma_1\sigma_2\sigma_1\sigma_2$](ABAB), [$\sigma_1\sigma_1\sigma_2\sigma_2$](AABB).

Tableau 1. MRU=2 >> INTEGRITY-IO

/AB/	MRU=2	INTEGRITY-IO
☞ (AB)(AB)		**
☞ (AA)(BB)		**
(ABB)	*!	*
(AAB)	*!	*

With the syllabification explained, we are still faced with the puzzle as to why the reduplicated [ABAB] is a verb while [AABB] is an adjective. I claim that this is related to the difference of morphological behavior between verb and adjective. The different ways tone sandhi is realized between [ABAB] and [AABB] show that the morphosyntactic units in [ABAB] are arranged the same way as its MRU: (AB)(AB). But there is a mismatch for [AABB] whose MRU organization is (AA)(BB) while its

morphosyntactic units are organized as [A[AB]B]. The difference between verb and adjective can be captured by the ranking of LINEARITY with two ALIGNMENT constraints: ALIGN(Verb, MRU) and ALIGN(Adjective, MRU): Align the edges of the verb/adjective morpheme with the edges of MRU. LINEARITY requires the linear order of the input be kept in the correspondents of the output. Since both [A]’s in the [ABAB] pattern are correspondents of the input /A/ and both [B]’s are correspondents of /B/ in the input, the output [ABAB] violates LINEARITY by having [B] preceding [A]. But the [AABB] pattern obeys LINEARITY with [A] preceding [B]. ALIGN(Verb, MRU) outranking LINEARITY makes [AABB] a less optimal output for verb reduplication than [ABAB]. However, LINEARITY outranks ALIGN(Adj., MRU), resulting in the [AABB] rather than [ABAB] being the pattern for adjective reduplication. The pivotal ranking of LINEARITY with respect to the two alignment constraints creates the two different reduplication patterns for verb and adjective. In the [AABB] pattern, LINEARITY is strongly obeyed which is rare in reduplication. This explains the rarity of circumfixating reduplication. In the meantime, this is exactly the prediction of OT that some constraint (LINEARITY here) would be differentiated in different patterns of reduplication. The prioritization of LINEARITY in adjective produces a phenomenon of “emergent circumflexion”.

Tableau 2: ALIGN(Verb, MRU)>> LINEARITY>> ALIGN(Adj., MRU)
(Parentheses refer to boundaries for MRU’s, square brackets are for morpheme boundaries)

/AB/-Verb	ALIGN(Verb, MRU)	LINEARITY	ALIGN(Adj., MRU)
☞ [(AB)][(AB)]-V.		*	
(A[A](B)B)-V.	*!		
/AB/-Adj	ALIGN(Verb, MRU)	LINEARITY	ALIGN(Adj., MRU)
[(AB)][(AB)]-Adj.		*!	
☞ (A[A](B)B)-Adj			*

In sum, a seemingly elusive reduplication variance between verb and adjective is accounted for as the result of interaction between morphology and phonology. Because of phonological requirements, the reduplicated form for verb and adjective are both of four syllables. The different prioritization of LINEARITY with respect to the alignment constraints in the morphology of verb and adjective produces the different patterns for verb and adjective reduplication. The higher priority given to LINEARITY in adjective reduplication produces the rarely seen pattern of circumfixing reduplication [AABB]. Without requiring any special circumfixing constraints, the emergence of the circumflexion bears on the general prediction of OT that some constraint would be enforced in some pattern of reduplication.

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