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## **Disharmony in harmony with diachronic stability: The case of Chinese\***

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### *Abstract*

*Chinese is an intriguing case of syntactic stability. Since the earliest available documents (13th c. BC) up to today, it has displayed SVO order in combination with a head final NP as well as - in subsequent stages - other phenomena said to be typical of SOV languages, such as postpositions (since 1st c. BC) and a head-final CP (since 5th c. BC). This contradicts the received wisdom in the literature that highly ‘disharmonic’ stages are unstable and liable to change towards a (more) ‘harmonic’ one. Taking Chinese as a starting point, the assumption that the concept of stability itself - although inaccessible to the child acquirer and only observable with hindsight by the linguist - is an inbuilt part of human language and hence of universal grammar, is shown to be wrong.*

## **1. Introduction**

### *1.1 Preliminaries on evolutionary terminology*

The literature on language change as e.g. illustrated in the titles of the contributions to this volume abounds with terms borrowed from evolutionary theory: (in)stability, stable variation; change, rate of change; competition, population, etc. However, *contingency*, i.e. pure chance, mere accident, is never mentioned, despite its major role in evolution recognized since Stephen Jay Gould (1989: 288): “The modern order was not guaranteed by basic laws (natural selection, mechanical superiority in anatomical design), or even by lower-level generalities of ecology or evolutionary theory. The modern order is largely a product of contingency.” (p. 288). Accordingly, “the decimation of species, and the survival of winners, is more like a lottery than a tree of progress.” (Back flap of book cover). This is also the view adopted in Berwick & Chomsky (2016: chapter 1). In other words, the concept of *contingency* challenges the teleological view of change as *progress*, where *progress* is always progress towards an ‘ideal’ end state (on the irrelevance of *progress* in simulation studies of language change, cf. Kauhanen 2017).

This is where language change comes in, which still is often tacitly assumed to likewise involve ‘progress’ towards a ‘(more) stable’, ‘(more) harmonic’ end state (cf. section 1.2 immediately below). This view is doubly faulty: it randomly selects some aspects of evolutionary theory while ignoring important factors such as *contingency*, and it wrongly assumes a parallel between the evolution of organisms and ‘evolution’ of language. While an organism incorporates anterior states via gene mutation, this is simply not the case for language, where the child acquirer has no access at all to anterior states of the language, or to other languages, for that matter (unless when in a multi-lingual environment and acquiring several languages simultaneously). Historical and typological knowledge is reserved to the linguist, and it is thus only the linguist who can make statements about a language being (un)stable or (dis) harmonic etc. (cf. Hale 2007 for a critical appraisal of this panchronic view of language change).

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\* This is an extended and revised version of our talk presented at the workshop *The determinants of diachronic stability* held at the University of Ghent on June 28, 2016. We are very grateful to the two anonymous reviewers for their insightful comments. We would also like to thank the editors for their careful attention and patience.

Consequently, using evolutionary terms when describing language change should simply be avoided, and it should be kept in mind that whether a language changes or not is very much a matter of contingency. This does not mean that there are no internal, i.e. structural constraints on change when it happens, such as Whitman's (2000) *Conservancy of structure constraint*. However, these constraints crucially involve the input available to the child acquirer, no language-external factors. The latter, i.e. language-external factors such as the sociological status of the innovating speaker only influence the *diffusion* of a change, not the change itself and are therefore a matter of sociology rather than linguistics. (Again cf. Hale 1998, 2007: chapter 3 for the fundamental distinction between *change* and its *diffusion*.)

Accordingly, the very existence of a given combination of phenomena in a convergent grammar at a certain synchronic stage shows this stage to be in compliance with universal grammar; we do not need any 'proof' to show that 'stable' and 'unstable' languages as well as 'harmonic' and 'disharmonic' ones are equally plausible.

## 1.2. The concept of *cross-categorial harmony* in formal syntax: The *head parameter* and its subsequent versions

The concept - though not the term - of *cross-categorial harmony* underlying the notion of (in)stability goes back to Greenberg's (1963) word order typology.<sup>1</sup> Among his forty-five universals there are fifteen that state cross-categorial correlations, with the relative order between verb and object as basis and the observation that this relative order may be replicated by other, non-verbal categories. Accordingly, a VO language was expected to have prepositions rather than postpositions and modifiers following rather than preceding the (head) noun.

As discussed *in extenso* in Newmeyer (2005), the *head parameter* (cf. Stowell 1981) constituted the attempt by generative syntax to incorporate cross-categorial harmony into the grammar itself. The head parameter postulates that in a given language complements are consistently to the right or to the left of the head. English and Japanese are presented as examples *par excellence*; whereas in English, complements systematically follow the relevant heads, in Japanese, complements systematically precede the relevant heads, giving rise to the observed clustering: verb – object order, adjective – complement order, prepositions etc. for English and object – verb order, postpositions etc. for Japanese.

Importantly, the head parameter - like the other parameters (null subject parameter, parameter for the directionality of case assignment etc.) proposed to account for cross-linguistic variation - was thought to be visible to the child learner. Accordingly, an English learning child would set the head parameter to the value 'head-initial', while a Japanese learning child would choose the value 'head-final'. Typological consistency in terms of a uniform head directionality was assumed to hold at the level of D(eep) structure, whereas the often observed mixed head directionality on the surface (structure) was the result of optional rules relating D-structure to surface structure (cf. Newmeyer 2005: 59). Evidently, this mode of explanation became unavailable in the subsequent model of generative grammar that dispensed with the D-structure vs. S-structure distinction, i.e. the *Minimalist program* (cf. Chomsky 1995). In addition, it had become clear in the meantime that even with the D-structure vs. S-structure dichotomy the non-uniform head directionality observed for numerous languages could not be explained. The well-known two types of genitive in English, postnominal *of* and prenominal *'s*, illustrate such a case, for at no point in the derivation of

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<sup>1</sup> Hawkins (1980, 1982) was the first to explicitly use the term *cross-category harmony* (CCH), which as *cross-categorial harmony* has become the current usage. Note, though, that unlike Greenberg (1963) and Dryer (1992, 2009), Hawkins (1982: 4) introduces a quantitative component in his definition of CCH, i.e. languages can conform to CCH in different degrees (cf. Paul 2015: 302-303 for further discussion).

*John's book* will the genitive 's ever follow the noun and show the order noun – genitive as expected for a VO language (and exemplified by the *of* genitive: *the book of my favourite author*). The reverse case exists as well, i.e. languages that on the surface look more consistent than in their underlying D-structure. According to Newmeyer (2005: 110), German and Dutch are good examples here, because due to the requirement that the finite verb occupies the second position in main clauses, we obtain quite a lot of surface SVO sequences, consistent with the 'head complement' order observed for e.g. nouns and prepositions. This contrasts with the underlying verb-final word order, visible in subordinate clauses and in turn consistent with e.g. postpositions. Many more examples of the German type could be mentioned, i.e. languages where the mixed head directionality cannot be derived, irrespective of the level chosen to represent the relevant word order type (cf. Newmeyer 2005, section 3.3). Suffice it to point out that the problems for the head parameter just outlined were augmented by the observation that uniform or non-uniform head directionality was found to have no influence whatsoever on acquisition. Quite on the contrary, the acquisition of basic word order is quite early for 'head-consistent' and 'head non-consistent' languages alike, as reported in Newmeyer (2005: 100).

Notwithstanding the fact that most generative linguists will subscribe to the role of acquisition as the cornerstone of linguistic theorizing (insofar as any theory must be compatible with the constraints observed for language acquisition), they nevertheless differ in the role they assign to typology. Only a few endorse the radical position defended by Newmeyer (2005), Whitman (2008), Whitman & Ono (2017), Boeckx (2014), which is the one adopted here, *viz.* that cross-categorial harmony and with it the head parameter are not principles of grammar and should therefore not be built into a syntactic theory. On the contrary, there exist many attempts to integrate results from typological surveys such as cross-categorial correlations into syntactic theory itself.<sup>2</sup>

Cinque (2013, 2017), for example, has elaborated several such proposals. One idea is to have cross-categorial harmony operate on a more abstract level. This is necessary, because Dryer's (1992, 2009) correlation pairs are invalidated by an increasing number of languages. Cinque (2013: 49) therefore proposes to establish idealized harmonic word order types and to observe "to what extent each language departs from them". In other words, these harmonic orders are "abstract and exceptionless, and independent of actual languages, though no less real" (Cinque 2013: 49). Here Cinque basically adopts Hawkins's (1980, 1982) approach where an increase in deviation from the "ideal" harmonic ordering is said to correlate with a decrease in the number of languages exemplifying this type. Cinque (2017) suggests that the head parameter is a microparameter, not a macroparameter, as assumed earlier. This is captured by constraints on the features triggering movement of constituents from a unique structure of Merge: these features may be present on a single lexical item or on items belonging to a subclass of a certain category (microparameter) or across categories (macroparameter).

Biberauer & Roberts (2015) pursue a similar approach to word order and add a diachronic component. They subdivide parameters into macro-, meso- and microparameters. Crucially, macroparameters, i.e. parameters holding for all functional heads across categories, are said to be "strongly conserved", while meso- and microparameters, which are confined to subclasses, are expected to change. Japanese is an example for head-final order as macroparameter (via an edge or EPP feature on all functional categories). In disharmonic languages such as Chinese, however, the head parameter is not a macro-, but rather a mesoparameter: it is set as head-*final* for N (as well as for C and postpositions), but as head-

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<sup>2</sup> Addressing the tension between (mostly functional) typological studies and formal syntactic theories, Baker & McCloskey (2007) express their belief in the importance of the head parameter and their hope that other parameters of that kind will emerge.

*initial* for V (and many other categories). Following Biberauer & Roberts' (2015) reasoning, this mesoparameter should have changed in the more than 3000 years of the attested history of Chinese, contrary to facts.

To summarize, crosscategorical harmony in the form of the head parameter and its different updated versions is still very influential. It determines synchronic analyses, where often the scenario without the 'disharmonic' category is preferred over the alternative with the disharmonic category,<sup>3</sup> and shapes current ideas about language change as a goal-oriented change towards (more) harmony.

### *1.3 Chinese as a stable disharmonic language par excellence*

Given the tenacity and widespread acceptance of the assumption that 'disharmonic' languages are less 'stable' than 'harmonic' ones and that the concept of (in)stability itself - although only observable with hindsight by the linguist - is an inbuilt part of human language and hence of universal grammar, it might be useful to be confronted with the detailed analysis, based on first-hand data, of a stable disharmonic language such as Chinese.

Chinese offers the advantage of having an attested history of more than 3000 years, the earliest documents dating back to the 13th c. BC. It has shown the same word order SVO over this entire period up today. This 'stability' needs to be emphasized because the completely unfounded idea of Chinese as displaying major word changes, due to Li & Thompson (1974), still surfaces occasionally in the literature. This is all the more incomprehensible as their article itself only offers two examples (one of which is incomplete and misparsed) for its far reaching claim (cf. Paul 2015: 15-16 for more details). In addition, a wealth of observations in Chen Mengjia (1956), Djamouri (1988) and Shen Pei (1992), among others, all clearly establish SVO order from the 13th c. BC on (cf. Djamouri & Paul 2009, Djamouri, Paul & Whitman 2013a for further discussion and references).

Importantly, this stable SVO order has co-existed with properties that are in general considered to be typical of SOV languages such as a head-final NP (since the 13th c. BC), a head-final CP (since the 5th c. BC) and postpositions (since 1st c. BC). This presents the - under current assumptions - completely unexpected situation that a highly 'disharmonic' situation has 'survived' for more than three thousand years and not changed towards an allegedly more 'natural' harmonic state on which we can only speculate, but which would probably have involved either the change of SVO to SOV or a change in the headedness of the NP. Concerning the latter and adopting for sake of the argument the same linear view as Greenberg (1963), Hawkins (1980, 1982) and WALS, all kinds of modifiers including relative clauses precede the noun, not only adjectives. This is important because the combination 'VO' and 'Rel N' is extremely rare and observed for only five out of 705 VO languages in Dryer & Haspelmath (2013) (cf. Whitman & Ono 2017 for further discussion).

Naturally, this is not to say that there have not been any syntactic changes in the history of Chinese. However, these changes have not 'reduced' the 'disharmony' observed, and crucially, they have not affected the main order SVO (cf. section 4 below).

Considering the many cases of 'grammaticalization' for which Chinese is so often cited (cf. the overview in Peyraube 1996), one may ask to what extent they fit into the situation just described.<sup>4</sup> As far as we can see, grammaticalization phenomena, i.e. the reanalysis of a given

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<sup>3</sup> It is clearly considerations of crosscategorical harmony that motivate Cinque (2010) to avoid an analysis positing postpositions in the VO-language Gungbe: "If the phrase final complex prepositions 'under', 'beside', and so on of Gungbe and other such languages are not P heads but phrasal modifiers of a silent head PLACE, then their exceptionality with regard to Greenberg's observation that postpositional languages are not verb initial disappears [...]." Cinque (2010: 15, footnote 9).

<sup>4</sup> Thanks to Elly van Gelderen for drawing our attention to this point.

open-class lexical item (e.g. verb-to-preposition reanalysis, noun-to-postposition reanalysis) do not alter the picture presented here. As emphasized by Hale (1998), in the reanalysis of an item A as an item B, the source item A does *not* disappear, but A continues to exist alongside with the new, reanalyzed item B. (That subsequently A itself may undergo a change or simply disappear is orthogonal to the reanalysis of A as B.) In other words, a verb does not ‘become’ a preposition, nor does a noun ‘become’ a postposition, but a new item is *added* to the language. While B must by definition be different from A (otherwise B would not be detectable as a new item) and may for example differ from A in its subcategorization frame, such an enrichment of the lexicon does not involve change in the strict sense of regular syntactic change (cf. Hale 1998), the latter defined as affecting formal features of functional heads (also cf. von Stechow 1995). Grammaticalization can be likened to lexical innovation (much like the origin of ‘bead’ from ‘prayer’): the acquirer notices that a lexical item is used in more than one context and accordingly postulates two different items, one for each context, unlike her/his sources that had only one item.<sup>5</sup>

This is very clear in Modern Chinese which shows quite a number of verb - preposition pairs such as the verb *dào* ‘arrive’ and the preposition *dào* ‘until, to’; *duì* ‘be opposite’ and *duì* ‘toward’; *gěi* ‘give’ and *gěi* ‘to, for’ etc. (cf. among others Djamouri & Paul 1997, 2009; Whitman & Paul 2005 for concrete case studies and references). Though historically related, these items are to be treated as separate homophonous entries in the synchronic grammar of Chinese. Naturally, there are also prepositions historically derived from verbs without any verbal ‘counterpart’ in present day Chinese, as is the case for the prepositions *cóng* ‘from, by way of’ and *wèile* ‘because of, for (the sake of)’ etc.<sup>6</sup> This is due to the simple fact that the verbs they have been reanalyzed from disappeared in the course of the history. In other words, whether the input item for reanalysis continues to exist or not is a matter of contingency (*contra* Longobardi 2001 who postulates the disappearance of the input item as a necessary condition for reanalysis to apply).<sup>7</sup>

#### 1.4. Organization of the article

Section 2 highlights the constant character of *non-uniform* head-directionality across categories, observed from 13th c. BC up to today. Section 3 examines syntactic phenomena which have emerged in the course of the attested history of Chinese, such as sentence-final particles and postpositions, which increase rather than reduce the ‘disharmonic’ nature of Chinese. Section 4 concentrates on a change in the distribution of adjunct phrases which had far-reaching consequences for the overall syntactic structure of Chinese and again cannot be explained in terms of (dis)harmony. Section 5 analyses cases of surface ‘OV’ order, i.e. focus clefts in pre-Archaic Chinese and the *bǎ* construction in Modern Mandarin; importantly, both can be shown to involve head-complement order in compliance with VO. The observed cases of argument PPs in preverbal position in Modern Mandarin are likewise discussed here. Section 6 turns to a subvariety of Northwestern Mandarin, the Tangwang language. Its alleged

<sup>5</sup> English *bead* comes from Middle English *bede* ‘prayer, prayer bead’, which in Old English was *bed*, *beode* ‘prayer’. The semantic shift from ‘prayer’ to ‘bead’ came about through the metaphoric extension from the prayer, which was kept track of by the rosary bead, to the rosary bead itself, and then eventually to any ‘bead’, even including ‘beads’ of water.

<sup>6</sup> To avoid any misunderstanding, evidently prepositions ‘born’ as such likewise exist, i.e. prepositions attested in the earliest documents available and for which no further derivation from an (unattested) verbal source can be maintained. This is the case for the prepositions *zì* ‘from’ and *yú* ‘in, at’ in pre-Archaic Chinese (13th c. BC), discussed in Djamouri & Paul (1997, 2009).

<sup>7</sup> The lists established for Modern Mandarin in Paul (2015: 55-57) feature eleven prepositions without a verbal counterpart, and twenty prepositions co-existing with a homophonous verb, on a conservative count excluding e.g. the written register.

OV characteristics can only be fully understood when assuming VO as main word order, notwithstanding its contact with Altaic OV-languages. Section 7 concludes the article.

## 2. What did not change in Chinese during the last 3000 years

In this section we demonstrate the constant character of *non-uniform* head-directionality across categories, observed throughout the history of Chinese. For reasons of space, we provide first-hand data for the pre-Archaic Chinese period (PAC), i.e. the Shang inscriptions (13th c. - 11th c. BC) only, with the understanding that the same situation likewise holds for all the periods including Modern Mandarin. (For a thorough discussion of non-uniform head-directionality in Modern Mandarin, cf. Paul 2015: chapter 8).

### 2.1. Head-initial extended verbal projection up to TP: 'S > Neg > Aux > V > O'

From PAC (13th c. - 11th c. BC) on, TP and its subprojections have always been head-initial. Of the 26,000 complete sentences in the Shang corpus, 94% have SVO order, and only 6% SOV (cf. Chen Mengjia 1956, Djamouri 1988, Shen Pei 1992 among others.). More precisely, both argument NPs (cf. (1)) and argument PPs (cf. (2), (3)) occur in postverbal position. In double-object constructions (cf. (4), (5)), the theme and goal likewise follow the verb:

- (1) 王阱麋...  
wáng jǐng mí (Heji 10361)  
king trap elk  
'The king will trap elks.'
- (2) 王往于田 (Heji 00635 r.)  
wáng wǎng [PP yú tián]  
king go to field  
'The king will go to the fields.'
- (3) 我乎往于西 (Heji 10050)  
wǒ hū wǎng [PP yú xī]  
1PR order go to West  
'We will order (somebody) to go West.'
- (4) 帝受我年  
dì shòu [IO wǒ] [DO nián]. (Heji 09731 recto)  
Di give 1PR harvest  
'[The ancestor] Di will give us a harvest.'
- (5) 侑于祖乙一牛 (Heji 06945)  
yòu [PP yú zǔyǐ][QP yī niú]  
present to Zuyi one ox  
'One will present to Zuyi an ox (as sacrifice).'

Furthermore, negation and auxiliaries always precede the (lexical) verb

(6) 子商亡斷在禍 (Heji 02940)  
 zǐ shāng wáng duàn [PP zài huò ]  
 prince Shang NEG end in misfortune  
 ‘The prince Shang will not end in misfortune.’

(7) 方允其來于汴 (Heji 6728)  
 fāng yǔn qí lái [PP yú zhǐ]  
 Fang effectively FUT come to Zhi  
 ‘Fang will effectively come to Zhi.’

In (6), the existential negation *wáng* precedes the *vP* consisting of the verb *duàn* ‘to end’ and the argument PP *zài huò* ‘in misfortune’. Example (7) not only shows that the future auxiliary *qí* selects the *vP* to its right, but also illustrates the canonical position of non-phrasal adverbs, here *yǔn* ‘effectively’, below the subject and preceding the verbal projection.

## 2.2. Opposite head-directionality within the extended nominal projection: Head-final NP in a head-initial DP

While in addition to *Determiner* (D), other functional projections such as small *n*, *Number Phrase* etc. have been postulated for the extended nominal projection, we simplify our presentation here and concentrate on the difference between the lexical projection NP, on the one hand, and the functional projection(s) above NP, on the other, represented for our purposes by DP. (For the architecture of the extended nominal projection in Modern Mandarin, cf. among others Huang, Li & Li 2009: chapter 8; Zhang 1999, 2015; Paul 2012, 2017).

### 2.2.1 Head-final NP

The NP has been head-final since PAC, as evidenced by the order ‘adjectival modifier - head noun’ in (8a) and (8b).<sup>8</sup>

(8) a. 新黍… (Heji 24432 r.)  
 [NP xīn shǔ]  
 new millet

b. 大邑 (Heji 40352)  
 [NP dà yì]  
 great settlement

<sup>8</sup> An anonymous reviewer inquires why ‘adjective N’ is analyzed as an NP and not as an extended nominal projection with the adjective in a dedicated specifier position *above* NP (cf. Cinque 2005). Our reasoning for ‘adjective N’ as NP is based on later stages from Late Archaic Chinese on (i.e. after the 5<sup>th</sup> c. BC), which unlike PAC had an explicit head subordinating modifiers, including adjectives, to the noun: ‘adj *zhi* N’ and subsequently ‘adj *de* N’. While ‘adj SUB NP’ is clearly a DP, there is semantic and syntactic evidence to show that in ‘A N’, A is merged with N (cf. Djamouri 1999 for *zhi*, and Paul 2017 for *de*); given Bare Phrase Structure, this results in an NP.



### 2.2.2. Head-initial DP

Demonstrative pronouns precede the NP, as in (9a) and (9b).

- (9) a. 今夕其雨//之夕允雨。(D00630)  
jīn xī qí yǔ // [DP Zhī xī ] yǔn yǔ  
present night FUT rain // that night really rain  
'Tonight it will rain.' // 'That night it rained indeed.'<sup>9</sup>
- b. 及茲月有雨 (Heji 41867)  
jí [DP zī yuè ] yǒu yǔ  
reach this month have rain  
'Reaching this (coming) month, there will be rain.'

It is difficult to decide on the basis of this fact alone whether a demonstrative pronoun occupies the head position of DP or rather its specifier position; importantly, both options result in a head-initial DP. It seems more plausible to have the demonstrative pronoun hosted by the D-head: [DP [ D° Dem] NP].

The head-initiality of DP is confirmed by the order 'proper name - common noun', analyzed as [DP [proper name] [D' [D' [D° e] NP]]], i.e. with the proper name occupying SpecDP:

- (10) a. 召方  
shào fāng  
Shao tribe
- b. 唐土 (Heji 40352)  
táng tǔ  
Táng territory

Relative clauses precede the NP and are analysed here as hosted by SpecDP:<sup>10</sup>

- (11) a. 在北史有獲羌 (Heji 00914 recto)  
[DP [Rel.cl. zài běi ] shǐ ] yǒu [DP [Rel.cl. huò ] qiāng]  
be:at north emissary have capture Qiang  
'The emissary who is in the north will get hold of the captured Qiang tribesmen (i.e. of the Qiang tribesmen who have been captured).'
- b. 朕劇羌不死 (Heji 0525)  
[DP [Rel.cl. zhèn jù ] qiāng] bù sǐ  
1SG hurt Qiang NEG die  
'The Qiang that I hurt will not die.'

<sup>9</sup> This example illustrates the general structure of the material found in the Shang inscriptions: first a prognosis is made, and then the result concerning the prediction is registered.

<sup>10</sup> It is evident that the relative clause must occupy a position on the D-spine *above* the NP in PAC; given that we have no data with both a demonstrative pronoun and a relative clause, we locate the relative clause in SpecDP. Note that in Modern Mandarin, demonstrative pronouns do co-occur with relative clauses, thus requiring a more articulated DP structure (cf. Paul 2017 and references therein).

- c. 有疾羌其死 (*Heji* 0526)  
 [DP [Rel.cl. yǒu jī ] qiāng] qí sǐ  
 have illness Qiang FUT die  
 ‘The Qiang who are ill will die.’

The non-uniform head directionality within the extended nominal projection is not only observed for Chinese, but likewise holds for Japanese, where the functional category *no* heads the head-*initial* DP and selects a head-*final* complement NP (cf. Whitman 2001).

### 2.3. Prepositional Phrases

The PPs attested in PAC are headed by *zì* ‘from’ (cf. (12a-b) below), *zài* ‘in, at’ (cf. (6) above) and *yú* ‘in, to’ (cf. (2), (3), (5), (7) above). For evidence in favour of their prepositional status, cf. Djamouri & Paul (1997, 2009).

- (12) a. 王自余入 (H 3458)  
 Wáng [<sub>VP</sub> [<sub>PP</sub> zì yú] rù ]  
 king from Yu enter  
 ‘The king will enter from Yu.’
- b. 其有來艱自方 (*Heji* 24150)  
 qí yǒu lái jiàn [<sub>PP</sub> zì fāng]  
 FUT have come disaster from Fang  
 ‘There will be a disaster coming from the Fang region.’

To summarize, it is the head-finality of NP that is the big ‘trouble maker’ with respect to the other consistently head-initial categories, especially with respect to its own functional superstructure DP, which is head-initial as well. As we will see below, in the course of the history additional head-final structures emerged, thus even further increasing rather than diminishing the degree of ‘disharmony’ in Chinese.

## 3. ‘Innovations’: Phenomena emerging in the course of the attested history

### 3.1. Sentence-final particles (since 5th c. BC)

Sentence-final particles (SFPs) are first attested in Late Archaic Chinese (LAC) (5th c. - 3rd c. BC). In parallel to SFPs in Modern Mandarin, they are analysed as complementizers in a head-*final* CP. Like the head-final NP, this head-final CP is in disharmony with the otherwise observed head-initiality, including that of DP, which in general is presented as the ‘equivalent’ of CP in the nominal domain. Again on a par with Modern Chinese, the SFPs realize the different heads in a three-layered split CP (cf. Paul 2009, 2014; Djamouri, Meisterernst & Paul 2009; Pan & Paul 2016):

- (13) ‘Attitude > Force > Clow’ (cf. Paul 2005, 2009, 2014)

Importantly, this *complete* split CP is observed immediately upon the first emergence of SFPs in LAC:

(14) 我王者也乎哉! (*Guoyu* 國語, *Jinyu* 6 晉語六; 5th c. – 3rd c. BC)

[AttitudeP [ForceP [lowCP[TP Wǒ wáng-zhě ] yě ] hū ] zāi!  
1PL king -NOM Clow FORCE ATT

‘How come (that you wrongly assume) we might retain the kingship!’

The first C-layer above TP (C<sub>low</sub>P) is instantiated here by *yě*. *Yě* is obligatory in equational sentences with a nominal predicate such as (14); elsewhere it strengthens the assertion made in the TP. SFPs in the next higher projection indicate the sentence type (ForceP) e.g. interrogative (*hū*<sub>1</sub>), exclamative (*hū*<sub>2</sub>) or imperative. The highest C head finally expresses the attitude of the speaker/hearer, e.g. astonishment (*zāi*), doubt, admonition etc.

As illustrated below, the interrogative force head *hū*<sub>1</sub> can occur both in matrix (cf. (15)) and in embedded questions (cf. (16)):

(15) 魯可取乎? 對曰不可。(*Zuozhuan* 左傳, Min 1 閔公元年; 4th c. BC)

[CP [TP Lǔ kě qǔ ] hū ]? Dui-yuē bù kě  
Lu can take FORCE answer NEG can

‘Can Lu be annexed? He answered: No, it cannot.’

(16) 有朋自遠方來, 不亦樂乎? (*Lunyu* 論語, Xue Er 學而, 4th-3rd c. BC)

Yǒu péng zì yuǎn fāng lái [CP[TP bù yì lè ] hū]  
have friend from distant region come NEG also enjoyable FORCE

‘To have a friend come from a distant region isn’t that enjoyable?’

(17) 不知天棄魯乎 (*Shiji* 史記, Lu Zhou Gong shijia 魯周公世家; 1st c. BC)

Bù zhī [ForceP [TP tiān qì Lǔ] hū ]  
NEG know heaven abandon Lu FORCE

‘I do not know whether Heaven has abandoned Lu.’

### 3.2. Postpositions (since 1st c. BC)

Djamouri, Paul & Whitman (2013b) date the first appearance of postpositions around the first century BC (cf. example (18)):<sup>11</sup>

(18) 女子為自殺於房中者二人。

Nǚzǐ wéi zìshā [PreP yú [PostP fáng zhōng]] zhě èr rén.  
woman commit suicide at room in NOM two person

‘[After the death of their husband] There were two women who committed suicide in their room.’ (*Shiji* 史記, Píng Yuán jūn Yú Qīng lièzhuàn 平原君虞卿列傳; 1st c. BC)

<sup>11</sup> Traditional grammars as well as the majority of recent syntactic studies of Chinese (among them Huang, Li and Li 2009) do not recognize the category *postposition*. Instead, the term *localizer* is indistinctly used for both location nouns (e.g. *páng-biān* ‘the side’) and postpositions (e.g. as *páng* ‘next to, by’) (cf. Paul 2015: chapter 4 for further discussion). As a result, there are no previous diachronic studies available that make the necessary distinction between the originally completely homophonous location nouns such as *zhōng* ‘the middle’, *hòu* ‘the back’ etc. and the postpositions reanalyzed from these nouns such as *zhōng* ‘in’, *hòu* ‘after’ (illustrated in (18) and (20)).

- (19) 二年後伐越，敗越於夫湫。(Shiji 史記, Wu Zixu liezhuan 伍子胥列傳, 1<sup>st</sup> c. BC)  
 [PostP Èr nián hòu] fá yuè, bài yuè yú fūqiū.  
 two year after fight Yue defeat Yue at Fuqiu  
 ‘Two years later, he attacked the Yue and defeated them at Fuqiu.’
- (20) 既覺洗浣於房前曬。(Mishasaibu 彌沙塞部, Wu Fen Lü 五分律; 5th c. AD)  
 Jì jué xǐhuàn [PreP yú [PostP fáng qián ]] shài.  
 after rise wash at house in.front.of sun  
 ‘After he had woken up and washed himself, he sunned himself in front of the house.’
- (21) 閏當在十一月後 (Hanshu 漢書, Lü li zhi 律曆志, 2<sup>nd</sup> c. AD)  
 Rùn dāng zài [PostP shíyī yuè hòu].  
 leap:month must be:at eleven month after  
 ‘The leap month must occur after the eleventh month.’
- (22) a. 始皇帝幸梁山宮，從山上見丞相車騎眾，弗善也。  
 Shǐ huángdì xìng liáng shān gōng , [PreP cóng [PostP shān shàng]]  
 First Emperor enjoy Liang mountain palace from mountain on  
 jiàn chéngxiàng chē jì zhòng , fú shàn yě  
 see minister chariot horseman attendant NEG appreciate SFP  
 ‘The First Emperor, when visiting the Mount Liang palace, from (on) the mountain saw the carriages, outriders, and attendants of the chancellor, and he did not appreciate it.’ (Shiji 史記, Qin Shi Huang benji 秦始皇本紀, 1<sup>st</sup> c. BC)
- b. 自生民以來，未有盛於孔子也。  
 [PostP [PreP Zì [shēng mín ]] yǐlái ], wèi yǒu shèng yú Kǒngzǐ yě  
 from exist people onwards NEG have surpass at Confucius SFP  
 ‘Since the existence of humans, there hasn’t been anyone surpassing Confucius.’  
 (Mengzi 孟子, Gong Sun Chou I 公孫丑上, 4<sup>th</sup> c. BC)

In fact, many of the examples of postpositions involve Circumpositional Phrases (CircP) where the preposition selects the PostP as complement, as in (18), (20), (22) and (23)) (Note that in (21) the PostP is the argument selected by the verb *zài*). Importantly, these CircPs obey the same ‘Path over Place’ principle as observed for other languages such as German and Dutch that show ‘disharmonic’ CircPs, i.e. CircPs composed of prepositions and postpositions (cf. Svenonius 2006 and many papers in Cinque & Rizzi 2010). In contrast to German and Dutch, however, in Chinese CircPs indicating spatial location must be distinguished from CircPs indicating temporal location. In the former, the PostP corresponds to PlaceP, and hence is the complement of the preposition indicating Path (cf. (22a)). In temporal CircPs, however, it is the postposition that selects the PP (PlaceP), as in (22b). In addition, the hierarchy where the preposition selects the PostP likewise holds for cases of ‘static’ location (‘place where’), as illustrated in (18) to (20). Note, finally, that these disharmonic CircPs are attested for all of the subsequent stages of Chinese, up to and including Modern Mandarin (cf. Djamouri, Paul & Whitman 2013b for further discussion).

The existence of Circumpositional Phrases ‘prep XP postp’ in Chinese strengthens the claim that one cannot dispense with the category of adpositions in Chinese (*contra* Huang, Li & Li 2009, Cheng & Sybesma 2015, among others).

#### 4. What did change: the distribution of adjunct XPs

In this section now we turn to an important change in the distribution of adjunct phrases. This change is to be taken as representative of syntactic changes in the history of Chinese in general, to which the issue of (dis)harmony is completely orthogonal.

Against the backdrop of constant SVO order, from the Shang inscriptions (13<sup>th</sup> c. - 11<sup>th</sup> c. BC) to Modern Mandarin, the change in the distribution of adjunct phrases, from both pre- and postverbal position in PAC to *exclusively* preverbal position in Modern Mandarin, reflects changes in the format of the vP (cf. Djamouri & Paul 1997, 2009; Djamouri, Paul & Whitman 2013a). More precisely, adjunct XPs (PPs and NPs) could appear in three positions in PAC: preceding the subject, between the subject and the verb, or postverbally (after the object when present). This contrasted with argument XPs in PAC which had to follow the verb (unless when clefted). The resulting distribution of argument XPs, adjunct XPs and non-phrasal adverbs is illustrated in (23)-(26).

In (23), the argument PP *yú shāng* ‘in(to) Shang’ subcategorized for by the verb *rù* ‘enter’ must occupy the postverbal position, whereas the adjunct PP *yú qī yuè* ‘in the seventh month’ can precede the verb.

- (23) 王于七月入于商 (Heji 7780 r.)  
wáng [PP yú qī- yuè ] [vP rù [PP yú shāng]]  
king in seven-month enter in Shang  
‘The king in the seventh month will enter the Shang city.’

Non-phrasal adverbs such as *yì* ‘also’ (cf. (24-25)) and *yǐn* ‘indeed’ (cf. (26)) have always been confined to the preverbal position *below* the subject and excluded from postverbal position, from PAC on up to Modern Mandarin:

- (24) 五月癸巳雨乙巳亦雨 (Heji 20943)  
[Wǔ-yuè guīsì ] yǔ , yǐsì yì [vP yǔ]  
five-month *guisi*.day rain *yisi*.day also rain  
‘On the day *Guisi* of the fifth month, it rained; on the day *yisi*, it also rained.’

- (25) 侑伐于黄尹亦侑于蔑 (Heji 00970)  
yòu fá yú Huángyǐn yì [vP yòu yú Miè]  
offer victim to Huangyin also offer to Mie  
‘We will offer victims (as sacrifice) to Huanyin, and also to Mie.’

- (26) 壬辰允不雨風 (Heji 12921 v.)  
rénchén yǐn [NegP bù [vP yǔ ]] [vP fēng]  
*Renchen*.day indeed NEG rain blow  
‘On the *Renchen* day, indeed it did not rain, but the wind blew.’

The obligatory post-subject preverbal position of non-phrasal adverbs is consistent with VO languages, and equally holds for English. It applies to all subsequent stages of Chinese up to Modern Mandarin.

#### 4.1. The distribution of adjunct phrases in pre-Archaic Chinese

Below we provide an array of representative data illustrating the different positions available for adjunct XPs in PAC (expanding on the discussion in Djamouri & Paul 1997, 2009). These data invalidate the incorrect statement in the literature that *yú*-PPs are only attested postverbally in Archaic Chinese (*contra* Aldridge 2012: 156 and the many precursors of this view cited there).

##### 4.1.1. ‘SV(O) [adjunct XP]’

Adjunct phrases in postverbal position present a feature in which PAC patterns more strongly with typical head-initial languages than with modern Mandarin, given that in Modern Mandarin adjunct phrases must *precede* the verb. Accordingly, the equivalents of (27) - (32) in Modern Mandarin would be unacceptable.

(27) 乎多犬网鹿于櫛 (*Heji 10976 r.*)

hū duō quǎn [vp wǎng lù [pp yú nóng ]]  
order numerous dog.officer net deer at Nong  
‘Call upon the many dog-officers to net deer at Nong.’

(28) 乞令吳以多馬亞省在南 (*Heji 564 r.*)

qì lìng wú yǐ duō mǎyǎ [vp xǐng [pp zài nán ]]  
Qi order Wu lead numerous military.officer inspect at south  
‘Officer Qi will order Wu to lead the numerous military officers to carry out an inspection in the south.’

(29) 其品祠于王出 (*Heji 23713*)

qí [vp pǐn cí [pp yú [TP wáng chū ]]]  
FUT pin.sacrifice ci.sacrifice at king go.out  
‘One will perform a *pin* and a *ci* sacrifice when the king goes out.’

(30) 王入今月 (*Heji 20038*)

wáng [vp rù [NP jīn yuè ]]  
king enter present month  
‘The king will enter [the city] this month.’

(31) a. 其雨丁

qí [vp yǔ [NP dīng]]  
FUT rain ding.day  
‘It will rain on the day Ding.’

b. 允雨丁 (*Heji 33943*)

yǔn [vp yǔ [NP dīng]]  
indeed rain ding.day  
‘Indeed, it rained on the day Ding.’

(32) 侑于河來辛酉 (*Tun 1119*)

yòu yú hé [lái xīn-yǒu ]  
present to He next xinyou.day  
‘[We will] present a sacrifice to the divinity He on the next *xinyou* day.’

#### 4.1.2. 'S [adjunct XP] V (O)'

In contrast to the postverbal position where only one adjunct is permitted, multiple adjuncts are attested in the preverbal position to the right of the subject:

- (33) 王在十二月在襄卜 (Heji 24237)  
wáng [vP [PP zài shí'èr yuè ] [vP [PP zài xiāng] [vP bǔ ]]]  
king at 12 month at Xiang divine  
'The king in the twelfth month at the place Xiang made the divination.'
- (34) 王今丁巳出 (Heji 07942)  
wáng [NP jīn dīngsì] chū  
king actual dingsi go.out  
'The king on this Dingsi day goes out.'
- (35) 王自余入 (Heji 3458)  
wáng [PP zì yú] rù  
king from Yu enter  
'The king will enter from Yu.'

#### 4.1.3. '[Adjunct XP] S V (O)'

Finally, adjunct phrases can also occupy the sentence-initial position to the left of the subject:

- (36) 于辛巳王圍召方 (Heji 33023)  
[PP yú xīnsì ] wáng wéi shào fāng.  
at xinsi.day king surround Shao tribe  
'On the Xinsi day, the king will surround the Shao tribe.'
- (37) 今六月王入于商 (Heji 7775)  
[NP jīn liù-yuè ] wáng rù yú shāng  
present six-month king enter in Shang  
'This sixth month, the king will enter the Shang city.'
- (38) 在女王其先邁捍 (Ying 593)  
[PP zài nǚ ] wáng qí xiān gòu hàn  
at Nü king FUT advance meet opposition  
'At Nü, the king will advance and meet an armed opposition.'

#### 4.2. The distribution of adjunct phrases in Late Archaic Chinese (LAC) 5th c. - 3rd c. BC

About 1000 years later than PAC, i.e. in Late Archaic Chinese (LAC), adjunct XPs are still attested in both pre- and postverbal position:

- (39) ... 故以羊易之 (Mengzi 孟子, Liang hui wang I 梁惠王上, 7/8, 4<sup>th</sup> c. - 3<sup>rd</sup> c. BC)  
... gù [PP yǐ yáng ] yì zhī  
therefore with sheep replace 3SG  
'... therefore [I] replace it [i.e. the ox] with a sheep.'

(40) 我非愛其財而易之以羊也。 (*ibid.*)

Wǒ fēi ài qí cái ér yì zhī [PP yǐ yáng ] yě  
1SG NEG cherish 3SG value CONJ replace 3SG with sheep SFP  
'It is not that I attach a great importance to its value [i.e. the value of the ox] and therefore replaced it with a sheep.'

As illustrated in sentences (39) and (40) cited from the same text, the PP headed by *yǐ* can either precede or follow the verb plus object pronoun *yì zhī* 'replace it'. There seems to exist no consensus about possible semantico-pragmatic differences between the preverbal and the postverbal positions for adjunct PPs in LAC. (Cf. Lu Guoyao (1982) and Liu Jingnong (1998) for conflicting views; cf. Djamouri, Paul & Whitman 2013a for further discussion.)

#### 4.3. The distribution of adjunct phrases in subsequent stages

In the stages subsequent to LAC (5th c. - 3rd c. BC), adjunct XPs are no longer acceptable in postverbal position and must occur preverbally, preceding or following the subject. The postverbal position remains the default position for argument XPs. This is the situation as still observed for today's Mandarin Chinese where adjunct phrases can occur in all preverbal positions, but are totally excluded from the postverbal position (cf. Paul 2016a):

(41) (明天)他(明天)會(明天)來

{[<sub>NP</sub> Míngtiān]} tā {míngtiān} huì {míngtiān} lái (\*míngtiān)  
tomorrow 3SG tomorrow will tomorrow come tomorrow  
'He will come tomorrow.'

(42) (在圖書館)你(在圖書館)能(在圖書館)複印

{[<sub>PreP</sub> Zài túshūguǎn]} nǐ {zài túshūguǎn} néng {zài túshūguǎn} fù yìn (\*zài túshūguǎn)  
in library 2SG in library can in library xerox in library  
'You can make photocopies in the library.'

(43) (除夕以前)我(除夕以前)要(除夕以前)回家

{[<sub>PostP</sub> chùxī yǐqián]} wǒ {chùxī yǐqián} yào {chùxī yǐqián}  
New Year's eve before 1SG NYE before need NYE before  
huí jiā (\*chùxī yǐqián)  
return home NYE before  
'I need to go home before New Year's Eve.'

In English as well, adjunct NPs, PPs and PostPs (*that way, with care, on Tuesday; ten years ago*) behave alike and contrast in their distribution with adverbs (*carefully, subsequently*) (cf. Emonds 1987, Ng Siew Ai 1987, McCawley 1988; *contra* Larson 1985).

#### 4.4. Wrap-up

In the period from PAC up to LAC, adjunct phrases can appear in three positions, to the left or the right of the subject and postverbally (i.e. after the object when present). While the semantic constraints governing the distribution of adjuncts remain to be elucidated, it is evident that the preverbal adjunct position cannot be likened to focus, since focalization of adjuncts in PAC requires a cleft structure with an overt matrix copular predicate (cf. section 5.1 below). Given the asymmetry between multiple adjunct phrases in preverbal position vs



only one adjunct phrase postverbally, Djamouri, Paul & Whitman (2013a) propose to account for the PAC and LAC facts by allowing the verb to select exactly one VP shell (cf. Larson 1988):

(44) [AdvP [<sub>VP</sub> V [<sub>VP</sub> O [<sub>V'</sub> tv adjunct XP]]]]

The postverbal adjunct is a complement of the verb and thus within the VP. The possibility of exactly one adjunct XP to the right of the verb indicates that selection of just one such shell was allowed. The change observed in the stages subsequent to Late Archaic Chinese and resulting in the disappearance of postverbal adjunct XPs can then be formulated as loss of the VP shell structure.

## 5. The different cases of surface ‘OV’ order

In this section we now turn to the analysis of ‘SOV’ sequences and demonstrate that they do not challenge our observation that SVO has been the main word order from PAC on.

### 5.1. Surface ‘OV’ order in PAC: Focus clefts

Examined carefully, all of the observed SOV cases in PAC turn out to either involve focalization of the object or object pronouns in the context of negation. For reasons of space, we concentrate on focalization here. Note, though, that under an analysis of ‘Neg pronoun V’ where the object pronoun occupies the specifier of a functional projection, the sentences illustrating an at first sight preverbal object position also show a head-complement structure (for detailed discussion, see Djamouri 2000, 2014).

Importantly, the focus pattern in PAC was restricted to a type of cleft construction, where the focused constituent follows an item that functions as a matrix copular predicate. It is complete sets of predictions in the Shang inscriptions that permit us to identify superficial OV structures as clear cases of focalisation. (45a) presents a prediction in the form of a simple assertion displaying VO order. Against this background, two alternatives, (45b) and (45c), are proposed. In these alternatives, *gào* ‘make a ritual announcement’ presents the presupposition, whereas the goal PP presents the focus.<sup>12</sup>

- (45) a. 勿告于中丁  
 [<sub>TP</sub> *pro* wù            [<sub>VP</sub> gào            [<sub>PP</sub> yú Zhōngdīng]]]            (*Heji 13646 recto*)  
 must.not.be    announce    to Zhongding  
 ‘We must not make a ritual announcement to [the ancestor] Zhongding.’
- b. 勿于大甲告  
 [<sub>TP</sub> *pro* wù            [<sub>complement cl.</sub> [<sub>PP</sub> yú Dàjiǎ] [<sub>VP</sub> gào t<sub>PP</sub> ]]]            (*ibid.*)  
 must.not.be                            to Dajia    announce  
 ‘It must not be to [the ancestor] Dajia that we shall make a ritual announcement.’
- c. 勿于大戊告  
 [<sub>TP</sub> *pro* wù            [<sub>complement cl.</sub> [<sub>PP</sub> yú Dàwù] [<sub>VP</sub> gào t<sub>PP</sub> ]]]            (*ibid.*)  
 must.not.be                            to Dawu    announce  
 ‘It must not be to [the ancestor] Dawu that we shall make a ritual announcement.’

<sup>12</sup> Note that Li & Thompson (1974) completely neglect the rich corpus of PAC.

In surface order terms, a clefted constituent is postverbal: it follows the matrix verb, i.e. the copula and occupies the highest specifier position in the copula's clausal complement. This complement can never contain an explicit subject, except when the subject itself is clefted, as in (46):

(46) 唯南庚害王

[TP Wéi [complement cl. Nángēng [vP hài wáng ]]] (*Heji 01823 r.*)  
 be Nangeng harm king  
 'It is [the ancestor] Nangeng that harms the king.'

The structure for the focalization of adjuncts is the same, i.e. it involves a cleft structure with a matrix copular predicate selecting a clausal complement, whose specifier hosts the focalized adjunct.

(47) 王勿唯今日往 (*Heji 07351*)

[TP Wáng wù [vP wéi [complement cl. [NP jīn rì ] [vP wǎng ]]]]  
 king NEG be present day go  
 'It must not be today that the king will go.'

(48) 唯于辛巳其雨 (*Heji 20912*)

[TP Wéi [complement cl. [PP yú xīnsì ] [vP qí yǔ ]]  
 be at *xinsi.day* FUT rain  
 'It is on the day *Xinsi* that it will rain.'

In surface order terms, a focalized adjunct again is postverbal, i.e. it follows the copula by virtue of its being part of the copula's clausal complement. It cannot be confused with an 'ordinary' preverbal adjunct XP preceding the matrix predicate (as illustrated in (33) - (35), section 4.1.2 above); the obligatory presence of the copula when clefting an adjunct XP indicates that the adjunct is precisely not part of the matrix clause.

To conclude, all of the attested examples where an argument NP or PP occupies a (surface) preverbal position involve focalization (cf. Djamouri 1988, 2001). Importantly, the relevant focus pattern in pre-Archaic Chinese is restricted to a type of cleft construction, akin to modern Mandarin *shi...de* clefts (cf. Paul & Whitman 2008). On the cleft analysis, the focused constituent is postverbal, because to the right of the matrix copula: it occupies the specifier position of the projection selected as complement by the copula. Accordingly, this construction illustrates 'head-complement' order precisely in accordance with 'VO', not 'complement-head' order. Against this backdrop, there is no basis whatsoever for the claim that Chinese was predominantly SOV before the 11<sup>th</sup> c. BC.

## 5.2. The *bǎ* construction in Modern Mandarin

If we now turn to Modern Mandarin and to *the* standard example (since Li & Thompson 1974) for its alleged SOV order, i.e. the *bǎ* construction 'S *bǎ* O V', we see again that this view simply does not bear further scrutiny.

As discussed extensively in Whitman (2000), Whitman & Paul (2005), *bǎ* is not a preposition heading a preverbal PP, but a higher verbal head, a point of view by now largely agreed upon by the specialists in Chinese syntax. Accordingly, 'S *bǎ* O V' involves 'head-complement' order, as does the entire extended verbal projection, given that *bǎ* selects as complement a verbal projection to its right; this verbal projection can be very complex and contain AspP and ApplicativeP (cf. Paul 2015: chapter 2 for further discussion):

(49) Tā [<sub>VP</sub> bǎ [<sub>BaP</sub> Lǐsì [<sub>Ba'</sub> tba [<sub>AspP</sub> hěnxīnde [<sub>Asp'</sub> pāoqi -le [<sub>VP</sub> t<sub>paoqi</sub> [<sub>VP</sub> t<sub>paoqi</sub> t<sub>Lisi</sub> ]]]]]]]]]  
 3SG BA Lisi cruelly abandon-PERF  
 ‘She cruelly abandoned Lisi.’

(50) Wǒ [<sub>VP</sub> bǎ [<sub>BaP</sub> shū [<sub>Ba'</sub> tba [<sub>AspP</sub> [<sub>Asp'</sub> [sòng-gěi]-le [<sub>AppIP</sub> tā [<sub>AppI°</sub> tsòng-gěi] [<sub>VP</sub> t<sub>tā</sub> [ tsòng tshū]]]]]]]]]]  
 1SG BA book give-APPL-PERF 3SG  
 ‘I gave him a book (as a present).’

This analysis also invalidates Cao & Yu’s (2000) assumption that the *bǎ* construction - (incorrectly) analysed as ‘S [[<sub>PP</sub> *bǎ* NP] V]’ - emerged due to intense contact with Sanskrit via the translation into Chinese of Buddhist sutras after the 3<sup>rd</sup> c. AD. In fact, be it the contact with Sanskrit or with the surrounding OV languages such as Tibetan, Mongolian, Manchu, contact has *not* led to any major word order change in Chinese (cf. section 6 below).

### 5.3. Argument PPs in preverbal position in Mandarin

While there is nowadays a consensus that *bǎ* and the following DP do not form a constituent and hence cannot be analysed as a PP (cf. Paul 2015, chap. 2 for an overview), some argument PPs do occur in preverbal position in Modern Mandarin. These cases, which deviate from the generalization that the postverbal position is the default position for argument XPs in Mandarin, can be divided into three groups.

(i) For a limited subset of donatory verbs (e.g. *jì* 寄 ‘send’ and *xiě xìn* 寫(信) ‘write (a letter)’) and for transitive verbs optionally involving the meaning of transfer, the recipient *gěi* PP ‘to XP’ can either follow or precede the verb (cf. Paul & Whitman 2010, Paul 2016b for further discussion):

- (51) a. Wǒ {[<sub>PP</sub> gěi Měili]} jì -le sān ge bāoguǒ {[<sub>PP</sub> gěi Měili]}  
 1SG to Mary send-PERF 3 CL parcel to Mary  
 ‘I sent three parcels to Mary.’
- b. Nǐ kuài {[<sub>PP</sub> gěi Měili]} dǎ diànhuà {[<sub>PP</sub> gěi Měili]}  
 2SG fast to Mary strike phone to Mary  
 ‘Phone Mary right away.’
- c. Wǒ {[gěi Měili]} dǎ -le yī jiàn máoyī {[gěi Měili]}  
 1SG to Mary knit-PERF 1 CL sweater to Mary  
 ‘I knitted Mary a sweater.’ (postverbal PP).  
 ‘I knitted a sweater for Mary.’ (preverbal PP)

As reflected in the different translations provided in (51c), the postverbal *gěi*-PP indicates the recipient only, whereas the preverbal *gěi*-PP is ambiguous between a recipient and a benefactive reading, on a par with English *for Mary*. In the latter case, *Mary* as benefactive can, but need not coincide with the recipient, thus allowing for a person different from *Mary* (e.g. her child) to receive the sweater.

(ii) The patient/theme of complex predicates in the form of V-O phrases is encoded as a preverbal PP (Paul 1988: chapter 4)

(52) Wǒ zhǐ shì kāi wánxiào, nǐ kě bié [PP gēn wǒ] rèn zhēn  
 1SG only be open joke 2SG really NEG with 3SG recognize true  
 ‘I’m only joking; for heaven’s sake, don’t take me seriously.’

(53) Nǐ wèishenme [PP gēn wǒ] jiàn wài?  
 2SG why with 1SG see foreign  
 ‘Why do you treat me as a stranger?’

(iii) Some PPs headed by *duì* ‘to(wards)’ (mostly with stative predicates) and *wàng* ‘in the direction of, to(wards)’ might be analysed as encoding an argument rather than an adjunct:

(54) a. Wǒmen [duì nǐ] wánquán (bù) xìnren  
 1PL to(wards) 2SG completely NEG have.confidence  
 ‘We have complete confidence in you.’ / ‘We have no confidence in you at all.’  
 (Lü Shuxiang et al. 2000:182; negation added)

b. Rénjiā dōu xìnren tā, nǐ yě kěyǐ xìnren tā  
 people all have.confidence 3SG 2SG also can have.confidence 3SG  
 ‘Everybody trusts him, you can trust him, too.’

(55) a. Wǒ [duì Lǎozhāng] yǒu yīdiǎn yìjiàn  
 1SG to(wards) Laozhang have a.bit opinion  
 ‘I’m somewhat prejudiced against Laozhang.’ (Lü Shuxiang et al. 2000: 183)

b. Dàjiā [duì wǒ] dōu hěn rèqing  
 everybody to(wards) 1SG all very warm  
 ‘Everybody is very kind to me.’

(56) a. Xiǎohái [wàng tā] xiào -le xiào  
 child to(wards) 3SG smile-PERF smile  
 ‘The child smiled at him.’

b. Nǐ [wàng qián] kàn  
 2SG to(wards) front look  
 ‘Look ahead.’

The clearest case is (54a-b), where the argument of *xìnren* ‘trust, have confidence’ is either encoded as a (necessarily postverbal) DP or as a (necessarily preverbal) PP.<sup>13</sup>

Given the constrained nature of argument PPs in preverbal position (i.e. in a low specifier position above negation), it should be evident that these cases do not invalidate the generalization that the postverbal position is the default position for argument XPs in Modern Mandarin.

<sup>13</sup> In fact, only argument PPs headed by *gěi* ‘to, for’, *dào* ‘to, until’ and *zài* ‘at’ are allowed in postverbal position.

## 6. The Tangwang language

Chinese and more generally Sinitic languages have always had an underlying VO order. The alleged OV characteristics observable in some non-Mandarin varieties can only be fully understood and analysed against the backdrop of this robust VO order.

This can be illustrated by the Hezhou subvarieties of Northwestern Mandarin spoken in the Gansu Province, such as the Tangwang language. The presence of OV order in addition to VO in Tangwang is in general said to be due to contact with Mongolic OV languages spoken in the same area (cf. Chen Yuanlong 1985).

However, this claim does not bear further scrutiny. As demonstrated by Djamouri (2013, 2015), the pre- vs. postverbal position of the object in Tangwang can be accounted for by precise syntactic-semantic constraints and thus contrasts with the generalized OV order in the Mongolic languages.

The main evidence for VO as unmarked underlying word order in Tangwang is the fact that noun incorporation respects VO order (cf. (57a)), and thus contrasts sharply with noun incorporation in Khalkha Mongolian, which displays OV order (cf. (58b)):

(57) a. 我吃肉/洋芋/兔肉寮  
 wɔ [Asp° [v° tʂhɿ-ʒu ] /-jãjɿ /-tʰu.ʒu ] -ljɔ ]  
 1SG eat -meat/-potato/-rabbit.meat-PERF  
 ‘I have eaten meat/potatoes/rabbit.’

b. \*我吃寮肉/洋芋/兔肉  
 wɔ [Asp° tʂhɿ-ljɔ] ʒu /jãjɿ /tʰu.ʒu  
 1SG eat-PERF meat/potato/rabbit.meat

(58) a. Ter xün [DP zurag -ig ] [Asp° zur -dag ]  
 that man picture-ACC paint-HAB  
 ‘That man paints (the) pictures.’

b. Ter xün [Asp° [v° zurag -zur ] -dag ]  
 that man picture-paint-HAB  
 ‘That man is a picture-painter.’

Indefinite quantified phrases in Tangwang must likewise follow the verb, but unlike bare nouns cannot be incorporated (59b). When in preverbal position, a QP is necessarily analysed as definite (irrespective of the presence/absence of the demonstrative pronoun ‘this’) and must carry the objective suffix *-xa* (59c).

(59) a. 我吃寮 (\*这) 三/几个果子  
 wɔ tʂhɿ-ljɔ (\*tʂə) sɛ̃/tei kɛ kwɿtsɿ  
 1SG eat -PERF DEM three/few CL fruit  
 ‘I have eaten three/some fruits.’

b. \*我吃三个果子寮  
 wɔ [Asp° [v° tʂhɿ-sɛ̃ -kɛ-kwɿtsɿ]-ljɔ ]  
 1SG eat -three-CL-fruit -PERF

- c. 我(这)三/几个果子\*(哈)吃寮  
 wɔ̯ (tʂə) sɛ̃/tei kɛ kwɔ̯tsɿ\*(-xa) tʂhɿ-ljɔ̯  
 1SG DEM three/few CL fruit -OBJ eat-PERF  
 ‘I have eaten these/the three/few fruits.’

By contrast, definite DPs must occur in preverbal position; this also holds for the indirect object in a double object construction, irrespective of its semantic-syntactic properties. Accordingly, only (60a) is acceptable, where both the direct object and the indirect object precede the verb and are marked by *-xa*. The indirect object can neither be incorporated (cf. (60b)) nor follow the verb (cf. (60c)):

- (60) a. 我書哈 (三个) 老師哈卡寮  
 wɔ̯ [ʂu -xa] [(sɛ̃ kɛ) lɔ̯ʂɿ -xa] kʰa -ljɔ̯  
 1SG book-OBJ 3 CL teacher-OBJ give-PERF  
 ‘I gave the book to (the) three teachers / the teacher.’

- b. \*我書哈卡老師寮  
 wɔ̯ [ʂu -xa] [<sub>Asp°</sub> [<sub>v°</sub> kʰa -lɔ̯ʂɿ ]-ljɔ̯]  
 1SG book-OBJ give-teacher-PERF

- c. \*我書哈卡寮(三个) 老師(哈)  
 wɔ̯ [ʂu -xa] [<sub>Asp°</sub> [<sub>v°</sub> kʰa -ljɔ̯ ] ] [(sɛ̃ kɛ) lɔ̯ʂɿ (-xa)]  
 1SG book-OBJ give-PERF 3 CL teacher -OBJ

Tangwang thus largely displays OV order, but this surface OV order is conditioned by clearly identifiable constraints, thus indicating that VO is the underlying order. This VO order is confirmed by the head-initial nature of the projections within the extended verbal projection, where adverbs, negation and modal auxiliaries all precede the verb.

Moreover, many alleged OV characteristics in Tangwang likewise exist in Modern Mandarin. The fact that adjunct XPs must precede the verb mirrors the situation in Mandarin Chinese. Mandarin Chinese likewise has cases of argument PPs that must occur in preverbal position. Postpositions have existed alongside prepositions in Mandarin since the 1st c. BC. Tangwang is clearly a Sinitic language, hence VO. Its ‘mixed’ nature is superficial only, as demonstrated by our careful syntactic analysis. Whether ultimately the high frequency of surface OV sequences is due to contact with the neighbouring OV languages or not is not our concern here, the more so as there are no means to convincingly demonstrate such an influence.

## 7. Conclusion

Chinese, and more generally, Sinitic languages have always had an underlying VO order. The alleged OV characteristics observable in different varieties can only be fully understood and analysed against the backdrop of this robust VO order.

Evidently, there have been changes in Chinese in the past 3000 years. However, the changes observed cannot be formulated in terms of reducing ‘disharmony’ etc. Quite on the contrary, the emergence of SFPs and postpositions could be presented as ‘increasing’ the already existing ‘disharmony’ displayed by the combination of VO order and head-final NP.

Although statistical correlations can be established in terms of harmony and disharmony, these correlations do not result in viable concepts with explanatory force for linguistic theory. Even a language such as Japanese, which had been claimed to be *the* prototype of a fully harmonic language, turns out to be of a ‘mixed’ type under a careful analysis that takes into account its array of functional categories (cf. Whitman 2001). Moreover, the alleged harmonic or disharmonic nature of a language has no influence whatsoever on acquisition, and hence no influence on change, either (change being ‘incorrect’ acquisition) (cf. Newmeyer 2005, chapter 3 and references therein). Chinese nicely confirms that ‘(dis)harmony’ indeed is an artefact, not part of UG.

## References

- Aldridge, Edith. 2012. PPs and applicatives in Late Archaic Chinese. *Studies in Chinese Linguistics* 33: 139-164.
- Baker, Mark & McCloskey, Jim. 2007. On the relationship of typology to theoretical syntax. *Linguistic Typology* 11: 273-284.
- Berwick, Robert C. & Chomsky, Noam. 2016. *Why only us*. Cambridge MA: MIT Press.
- Biberauer, Theresa & Roberts, Ian. 2015. The significance of what hasn't happened. Talk presented at the University of York, February 2015. Handout downloadable at <[https://www.york.ac.uk/media/languageandlinguistics/documents/conferences/wlvce2015/Biberauer\\_Roberts\\_handout.pdf](https://www.york.ac.uk/media/languageandlinguistics/documents/conferences/wlvce2015/Biberauer_Roberts_handout.pdf)>
- Boeckx, Cedric. 2014. What Principles and Parameters got wrong. In *Linguistic Variation in the Minimalist Framework*, M. Carme Picallo (ed.), 155-178. Oxford: OUP.
- Cao, Guangshun & Yu, Hsiao-jung. 2000. The influence of translated later Han Buddhist Sutras on the development of the Chinese disposal construction. *Cahiers de linguistique - Asie orientale* 29: 151-177.
- Chen Mengjia 陳夢家. 1956. *Yinxu buci zongshu* 殷墟卜辭綜述. Beijing 北京: Kexue chubanshe 科學出版社.
- Chen Yuanlong 陳元龍 (= A. Yibulaheimai 阿·伊布拉黑麥). 1985. Gānsù jìngnèi Tángwāng huà jìlùè 甘肅境內唐汪話記略. *Minzú Yǔwén* 民族語文 6: 33-47.
- Cheng, Lisa Lai-Shen & Sybesma, Rint. 2015. Mandarin. In *Syntax – Theory and Analysis. An International Handbook*, Tibor Kiss & Artemis Alexiadou (eds), vol. 3, 1518-1559. Berlin: Mouton de Gruyter.
- Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36: 315-332.
- Cinque, Guglielmo. 2010. Mapping spatial PPs: An introduction. In *Mapping Spatial PPs*, Guglielmo Cinque & Luigi Rizzi (eds), 3-25. Oxford: OUP.
- Cinque, Guglielmo. 2013. Word order typology: A change of perspective. In *Theoretical Approaches to Disharmonic Word Order*, Theresa Biberauer & Michelle Sheehan (eds), 47-73. Oxford: OUP.
- Cinque, Guglielmo. 2017. A microparametric approach to the head-initial/head-final parameter. *Linguistic Analysis* 41: 309-366.
- Cinque, Guglielmo & Rizzi, Luigi (eds). 2010. *Mapping Spatial PPs* [The Cartography of Syntactic Structures 6]. Oxford: OUP.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge MA: MIT Press.
- Djamouri, Redouane. 1988. *Etude des formes syntaxiques dans les écrits oraculaires gravés sur os et écaille de tortue (Chine 14<sup>e</sup>-11<sup>e</sup> av. J.-C.)*. PhD dissertation, Ecole des Hautes Etudes en Sciences Sociales, Paris.
- Djamouri, Redouane. 1999. Evolution of *zhi* in Archaic Chinese. In *In Honor of Mei Tsu-lin. Studies on Chinese Historical Syntax and Morphology*, Alain Peyraube & Sun Chaofen (eds), 33-48. Paris: EHESS-CRLAO.
- Djamouri, Redouane. 2000. Preverbal position of the pronominal object in Archaic Chinese. Paper presented at the 9<sup>th</sup> International Conference on Chinese Linguistics, NUS, Singapore.
- Djamouri, Redouane. 2001. Markers of predication in Shang bone inscriptions. In *Sinitic Grammar. Synchronic and Diachronic Perspectives*, Hilary Chappell (ed.), 143-171. Oxford: OUP.
- Djamouri, Redouane. 2005. Chinois ancien et constructions verbales en série. Ms, EHESS-CRLAO. Electronic version available at <<http://crlao.ehess.fr/index.php?58>>



- Djamouri, Redouane. 2013. 從上古漢語構詞形態的角度再談商、周兩代語言區別 *Cóng shànggǔ hànǔ gòucí xíngtài de jiǎodù zài tán Shāng Zhōu liǎng dài yǔyán qūbié* [Reconsidering the difference between the languages of the Shang and the Zhou people from the point of view of Old Chinese derivational morphology]. *Lìshǐ yǔyánxué yánjiū* 歷史語言學研究. Beijing, Shangwu yinshuguan.
- Djamouri, Redouane. 2014. 對上古漢語否定句裡代詞賓語位置的進一步討論 *Duì shànggǔ hànǔ fǒudìngjù lǐ dàicí bīnyǔ wèizhì de jìn yī bù tāolùn* [On the preverbal position of object pronouns under negation in Archaic Chinese]. *Lìshǐ yǔyánxué yánjiū* 歷史語言學研究 8: 47-57. Beijing, Shangwu yinshuguan.
- Djamouri, Redouane. 2015. Object positioning in Tangwang. In *Languages in Contact in North China: Historical and Synchronic Studies* [北方漢語中的語言接觸--歷時與共時研究] [Collection des Cahiers de Linguistique Asie Orientale 13], Guangshun Cao, Redouane Djamouri & Alain Peyraube (eds), 251-274. Paris: EHESS-CRLAO.
- Djamouri, Redouane & Paul, Waltraud. 1997. Les syntagmes prépositionnels en *yu* et *zai* en chinois archaïque. *Cahiers de Linguistique Asie Orientale* 26: 221-248. Electronic version available at <[http://crlao.ehess.fr/docannexe/file/1928/djamouri\\_paul\\_1997\\_cahiers.pdf](http://crlao.ehess.fr/docannexe/file/1928/djamouri_paul_1997_cahiers.pdf)>
- Djamouri, Redouane & Paul, Waltraud. 2009. Verb-to-preposition reanalysis in Chinese. In *Historical Syntax and Linguistic Theory*, Paola Crisma & Giuseppe Longobardi (eds), 194-211. Oxford: OUP.
- Djamouri, Redouane, Meisterernst, Barbara & Paul, Waltraud. 2009. Particles in Classical Chinese: Complementisers and topic markers. Paper presented at the 29th International Conference on Historical Linguistics, University Radboud, Nijmegen, 10-14 August 2009.
- Djamouri, Redouane, Paul, Waltraud & Whitman, John. 2013a. Syntactic change in Chinese and the argument - adjunct asymmetry. In *Breaking down the Barriers: Interdisciplinary studies in Chinese Linguistics and Beyond* [Language and Linguistics Monograph series 50], Guangshun Cao, Hilary Chappell, Redouane Djamouri & Thekla Wiebusch (eds), 577-594. Taipei: Academia Sinica.
- Djamouri, Redouane, Paul, Waltraud & Whitman, John. 2013b. Postpositions vs. prepositions in Mandarin Chinese: The articulation of disharmony. In *Theoretical Approaches to Disharmonic Word Orders*, Theresa Biberauer & Michelle Sheehan (eds), 74-105. Oxford: OUP.
- Dryer, Matthew S (1992). The Greenbergian word order universals. *Language* 68 (1): 81-138.
- Dryer, Matthew S. (2009). The branching direction theory revisited. In *Universals of Language today*.
- S. Scalise, E. Magni, and A. Bisetto (eds.), 185-207. Berlin: Springer.
- Dryer, Matthew S. & Haspelmath, Martin. 2013. *The World Atlas of Language Structures Online*. Munich: Max Planck Digital Library. Available online at <http://wals.info>.
- Emonds, Joseph. 1987. The invisible category principle. *Linguistic Inquiry* 18: 613-632.
- Gould, Stephen Jay. 1989. *Wonderful Life. The Burgess Shale and the Nature of History*. London: Hutchison Radius.
- Greenberg, Joseph H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In *Universals of language. Report of a conference held at Dobbs ferry, New York, April 13-15, 1961*; Joseph H. Greenberg (ed.), 73-113. Cambridge, Mass.: MIT Press.
- Hale, Mark. 1998. Diachronic syntax. *Syntax* 1: 1-18.
- Hale, Mark. 2007. *Historical Linguistics. Theory and Method*. Oxford: Blackwell.

- Hawkins, John A. 1980. On implicational and distributional universals of word order. *Journal of Linguistics* 16: 193-235.
- Hawkins, John A. 1982. Cross-category harmony, X-bar, and the predictions of markedness. *Journal of Linguistics* 18: 1-35.
- Huang, C.-T. James, Li, Y.-H. Audrey & Li, Yafei. 2009. *The Syntax of Chinese*. Cambridge: CUP.
- Kauhanen, Henri. 2017. Neutral change. *Journal of Linguistics* 53: 327-358.
- Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Larson, Richard. 1985. Bare NP adverbs. *Linguistic Inquiry* 16: 595-621.
- Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.
- Li, Charles N. & Thompson, Sandra A. 1974. An explanation of word order change SVO > SOV. *Foundations of Language* 12: 201-214.
- Liu Jingnong 劉景農. 1998. *Hanyu wenyao yufa* 漢語文言語法. 北京: 中華書局.
- Longobardi, Giuseppe. 2001. Formal syntax, diachronic minimalism, and etymology. The history of French *chez*. *Linguistic Inquiry* 32: 275-302.
- Lu, Guoyao 魯國堯. 1982. Mèngzǐ "yǐ yáng yì zhī", "yì zhī yǐ yáng" liǎng zhǒng jiégòu lèixíng de duìbǐ yánjiū 《孟子》“以羊易之”、“易之以羊”两种结构类型的对比研究 (Study of two parallel structures "yǐ yáng yì zhī" and "yì zhī yǐ yáng" in the Mencius). In *Xiānqín hànǔ yánjiū* 先秦漢語研究 (Studies on the pre-Qin period Chinese). Cheng Xiangqing 程湘清 (ed.). Jí'nán 濟南, Shangdong jiayu chubanshe 山東教育出版社. (Reprinted in *Lǔ Guóyáo zìxuǎnjí* 魯國堯自選集 (Selected works by Lu Guoyao). 1994, 1-18. Zhengzhou 鄭州, Henan jiaoyu chubanshe 河南教育出版社).
- Lü, Shuxiang (ed.). 2000 [1980]. *Xiàndài hànǔ yǔ bābáicí* [Eight Hundred Words of Modern Mandarin]. Beijing: Shangwu.
- McCawley, James D. 1988. Adverbial NPs: Bare or clad in see-through garb? *Language* 64: 583-590.
- Ng, Siew Ai. 1987. Bare NP modifiers in Chinese: A government and binding approach. *Working Papers in Linguistics, University of Hawai'i* 19: 79-110.
- Mulder, René & Sybesma, Rint. 1992. Chinese is a VO language. *Natural Language and Linguistic Theory* 10: 439-476.
- Newmeyer, Frederick J. 2005. *Possible and Probable Languages*. Oxford: OUP.
- Pan, Victor Junnan & Paul, Waltraud. 2016. Why Chinese SFPs are neither optional nor disjunctors. *Lingua* 170: 23-34.
- Paul, Waltraud. 1988. *The Syntax of Verb-Object Phrases in Chinese: Constraints and Reanalysis*. Paris: Editions Langages Croisés. Electronic version available at <<http://crlao.ehess.fr/index.php?/publications/publicationscacheesmembrescrlao/1558-syntax>>
- Paul, Waltraud. 2005. Low IP area and left periphery in Mandarin Chinese. *Recherches Linguistiques de Vincennes* 33: 111-134.
- Paul, Waltraud. 2009. Consistent disharmony: Sentence-final particles in Chinese. Ms., CRLAO, Paris. Electronic version available at <<http://crlao.ehess.fr/index.php?177>>
- Paul, Waltraud. 2012. Why Chinese *de* is not like French *de*: A critical analysis of the predicational approach to nominal modification. *Studies in Chinese Linguistics* [The Chinese University of Hong Kong] 33: 183-210. Electronic version available at <[www.cuhk.edu.hk/ics/clrc/scl\\_33\\_3/paul.pdf](http://www.cuhk.edu.hk/ics/clrc/scl_33_3/paul.pdf)>
- Paul, Waltraud. 2014. Why particles are not particular: Sentence-final particles in Chinese as heads of a split CP. *Studia Linguistica* 68: 77-115.

- Paul, Waltraud. 2015. *New Perspectives on Chinese Syntax* [Trends in Linguistics. Studies and Monographs 271]. Berlin: Mouton de Gruyter.
- Paul, Waltraud. 2016a. Adverbs in Mandarin Chinese. In *Encyclopedia of Chinese Language and Linguistics*, Rint Sybesma et al. (eds), vol. 1, 122-127. Leiden: Brill.
- Paul, Waltraud. 2016b. Double object construction. In *Encyclopedia of Chinese Language and Linguistics*, Rint Sybesma et al. (eds), vol. 2, 125-130. Leiden: Brill.
- Paul, Waltraud. 2017. The in subordinate subordinator *de* in Mandarin Chinese: Second take. In *Hanyu de de yanjiu* [Studies of *de* in Chinese] [Frontiers in Chinese Linguistics Series], Sze-Wing Tang (ed.), 3-30. Beijing: Peking University Press.
- Paul, Waltraud & Whitman, John. 2008. *Shi...de* focus clefts in Mandarin Chinese. *The Linguistic Review* 25: 413-451.
- Paul, Waltraud & Whitman, John. 2010. Applicatives structure and Mandarin ditransitives. In *Argument Structure and Syntactic Relations from a Cross-Linguistic Perspective*, Maia Duguine, Susuna Huidobro & Nerea Madariaga (eds), 261-282. Amsterdam: John Benjamins.
- Peyraube, Alain. 1996. Recent issues in Chinese historical syntax. In *New Horizons in Chinese Linguistics*, C.-T. James Huang & Yen-Hui Audrey Li (eds), 161-213. Dordrecht: Kluwer.
- Shen, Pei. 1992. *Yinxu jiagu buci yuxu yanjiu*. Taipei: Wenjin.
- Stowell, Tim. 1981. Origins of Phrase Structure. PhD dissertation, MIT.
- Svenonius, Peter. 2006. The emergence of axial parts. *Nordlyd* 33: 49-77. Electronic version available at <<http://www.ub.uit.no/baser/nordlyd/>>
- von Stechow, Kai. 1995. The formal semantics of grammaticalization. In *Proceedings of the 25th Annual Meeting of the North-Eastern Linguistic Society*, Jill Beckman (ed.), vol. 2, 175-189. Amherst, Mass: GLSA.
- Whitman, John. 2000. Relabelling. In *Diachronic Syntax. Models and Mechanisms*, Susan Pintzuk, George Tsoulas & Anthony Warner (eds), 220-238. Oxford: OUP.
- Whitman, John. 2001. Kayne 1994: P. 143, Fn. 3. In *The Minimalist Parameter. Selected Papers from the Open Linguistics Forum, Ottawa, 21-23 March 1997*, Galina M. Alexandrova & Olga Arnaudova (eds), 77-100. Amsterdam: John Benjamins.
- Whitman, John. 2008. The classification of constituent order generalizations and diachronic explanation. In *Linguistic Universals and Language Change*, Jeff Good (ed.), 233-252. Oxford: OUP.
- Whitman, John & Ono, Yohei. 2017. Diachronic interpretations of word order parameter cohesion. In *Micro-Change and Macro-Change in Diachronic Syntax*, Eric Mathieu & Robert Truswell (eds), 43-60. Oxford: OUP.
- Whitman, John & Paul, Waltraud. 2005. Reanalysis and conservancy of structure in Chinese. In *Grammaticalization and Parametric Change*, Montserrat Batllori et al. (eds), 82-94. Oxford: OUP.
- Zhang, Niina Ning. 1999. Chinese *de* and the *de* construction. *Syntax* 2: 27-48.
- Zhang, Niina Ning. 2015. Nominal-internal movement in Mandarin Chinese. *The Linguistic Review* 32: 375-425.