



## PPs and Applicatives in Late Archaic Chinese

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### Abstract

This paper proposes an analysis of the functional morpheme 以 *yi* in Late Archaic Chinese as a high applicative (in the sense of Pylkkanen 2002) located above VP within  $vP$ . The Appl head YI selects a DP argument in its specifier and moves to  $v$ , deriving the order YI-DP-VP. The order in which the verb and object precede YI-DP is derived by fronting the VP to the edge of the  $vP$  phase. This proposal also challenges the traditional assumption that YI is a preposition. Evidence for this proposal comes primarily from structural asymmetries between YI-DP-VP and VP-YI-DP orders which would not be accounted for if YI-DP were a PP. For example, movement of the DP selected by YI or of the direct object is only possible when YI precedes the verb. This is accounted for on the proposal that movement of VP to the outer specifier of  $vP$  fills this phase edge and prevents further movement. Movement of the VP also results in this constituent becoming an island.

### Keywords

Archaic Chinese, applicative, preposition, word order, diachronic syntax

## 1. Introduction

This paper challenges the traditional analysis of the functional morpheme 以 *yi* in Late Archaic Chinese (LAC)<sup>1</sup> as a preposition and proposes instead that it heads a high applicative phrase within *v*P. Support for the preposition analysis comes in large part from the variable position of YI and the nominal argument it selects. Specifically, the sequence YI-DP could appear in either preverbal position, as in (1a), or following the verb and direct object, as in (1b).<sup>2</sup>

- (1) a. 何可廢也？以羊易之。 (Mencius, Liang Hui Wang 1)  
 He ke fei ye? **Yi yang yi zhi.**  
 what Pot stop Nmlz YI sheep change 3.Obj  
 ‘How could we discontinue (the sacrifice)? Exchange it for a sheep.’
- b. 我非愛其財。而易之以羊也。 (Mencius, Liang Hui Wang 1)  
 Wo fei ai qi cai er yi zhi **yi yang ye.**  
 1 not.be love 3.Gen cost Conj change 3.Obj YI Sheep Nmlz  
 ‘It is not that I care about the cost and exchanged it for a sheep.’

It is widely acknowledged that such word order flexibility was a general characteristic of PPs in LAC (He 1989, 1992, Peyraube 1996, Sun 1996, Zhang 2002, and others). A source PP follows the verb in (2a) and precedes the verb in (2b).

- (2) a. 吾聞出於幽谷遷于喬木者。 (Mencius, Teng Wen Gong 1)  
 Wu wen **chu yu you gu** qian yu qiao mu zhe  
 1 hear exit Loc dark valley move P tall tree Det.  
 ‘I have heard of leaving a dark valley and heading to a tall tree.’
- b. 世子自楚反，復見孟子。 (Mencius, Teng Wen Gong 1)  
 Shizi **zi Chu fan,** fu jian Mengzi.  
 heir from Chu return again see Mencius  
 ‘The heir returned from Chu and again visited Mencius.’

Interestingly, this contrasts with Modern Mandarin, in which adjunct PPs are generally limited to preverbal position.

- (3) Modern Mandarin  
**Cong you gu chulai.**  
 from dark valley emerge  
 ‘emerge from dark valley’

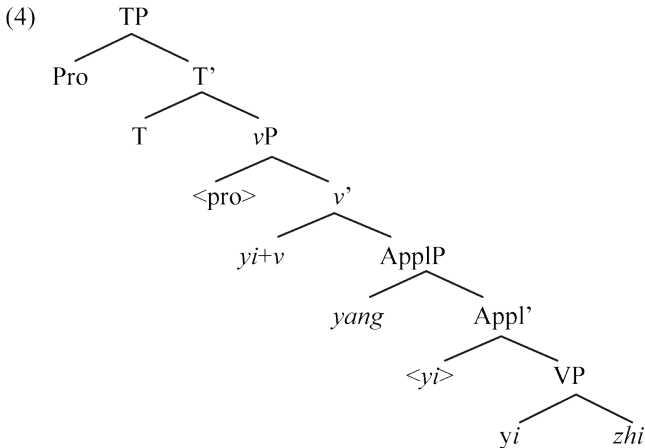
<sup>1</sup> I follow Wang (2004) and Zhou (1963) in identifying the Warring States period of the 5<sup>th</sup> – 3<sup>rd</sup> centuries BCE as a distinct period in the history of Chinese, which they term Late Archaic Chinese.

<sup>2</sup> The abbreviations used in this paper: 1 “first person”; 2 “second person”; 3 “third person”; Abs “absolutive”; Adv “adverb”; Appl “applicative”; Conj “conjunction”; Dem “demonstrative”; Det “determiner”; Erg “ergative”; Excl “exclamation”; Fut “future”; Gen “genitive”; Lk “linker”; Loc “locative”; Nmlz “nominalizer”; Obj “object”; Obl “oblique”; P “preposition”; Perf “perfective”; Pot “potential”; Q “question particle”; Rel “relativizer”; s “singular”; Tr “transitive”.

If YI in (1a, b) is a preposition heading an adjunct prepositional phrase, as is widely assumed in the literature (Wang 2004, Zhou 1959, Yang and He 1992, Hsueh 1997, Guo 1998, Djamouri 2009, among many others), then the word order alternations in (1) and (2) can be given a uniform treatment by assuming either movement of the PPs or free base generation of adjuncts internal or external to the VP.

However, I argue in this paper that YI-DP is not in fact a PP. Rather, YI heads a high applicative phrase (in the sense of Pylkkanen 2002) located above VP within vP. The Appl head YI moves to *v*, deriving the order YI-DP-VP exemplified in (1a). The subject in this example is the null pronominal “pro”. The brackets indicate a trace position left by movement of the DP.

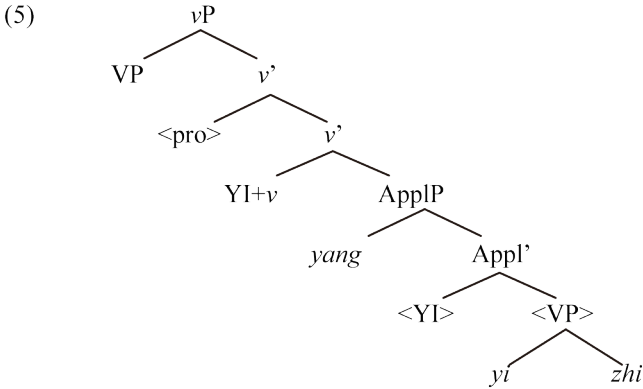
Movement of YI to *v* follows the standard assumption (Huang 1994, Lin 2001, Tang 2001, and others) that verbs in Chinese move to a functional projection above VP. The lexical verb is unable to move in applicative constructions, as this movement would violate Travis’ (1984) Head Movement Constraint. The applicative, however, is able to move to support the features in *v*.<sup>3</sup>



One fundamental assumption of the preposition analysis is that, aside from the relative positions of the PP, the structures of examples like (1a, b) do not differ in any significant way. As I demonstrate in section 2, however, the structure of (1b) differs markedly from (1a). I argue in section 2 that the order exemplified in (1b), in which the verb and object precede YI-DP, is derived by fronting the VP to the edge of the vP phase, specifically the outer specifier of vP. Consequently, the verb and object do not form a constituent

<sup>3</sup> Note further that this analysis is parallel in some key respects to the analysis put forth by Whitman and Paul (2005) for the Modern Mandarin disposal construction involving *ba*. *Ba* is base generated in a functional projection within vP but above the lexical VP. *Ba* selects an argument in its specifier and subsequently moves to *v*, deriving the word order in which *ba* precedes the DP it selected.

together with the YI-DP sequence. The position of the VP is also very different in (1a) and (1b).



In the following section, I offer empirical evidence from LAC in favor of this analysis, which in turn demonstrates that YI cannot be a preposition. In section 3, I discuss a cross-linguistic parallel which supports positing the applicative structure for the YI construction. In section 4, I return to a general discussion of PPs in LAC and further demonstrate the lack of parallelism between YI and prepositions.

## 2. Evidence for ApplP and VP movement

This section provides evidence for the analysis in (4) and (5) of the variable position of YI-DP shown in (1). In the analysis in (4) and (5), YI-DP-VP order is taken to be basic and the order V(-DP)-YI-NP derived. Initial evidence for this comes from the fact that the former is more commonly attested. The following table summarizes occurrences of these orders in the first eleven chapters of the 5<sup>th</sup> century text *Zuozhuan*. Comparing first YI-DP-VP and V(-DP)-YI-DP, the former is more than three times as frequent as the latter: 637 occurrences to 204.

### *Zuozhuan* (Yin-Ding)

- (6) YI DP VP: 637 (53%)  
 V ... YI DP: 204 (17%)  
 DP YI VP: 368 (30%) (DP=WH 95; DP=*shi* 152; DP=focused DP 121)

The remaining 368 examples involve fronting of the DP selected by YI for focus. Examples of this sort provide additional evidence for the analysis in (4) and (5). The focused DP can be a *wh*-word, the demonstrative pronoun *shi*, or a full NP. (7) shows examples of *wh*-words.

- (7) a. 失忠與敬，何以事君？ (*Zuozhuan*, Xi 5)  
 Shi zhong yu jing, he yi shi jun?  
 lose loyalty and respect what YI serve lord  
 ‘Having lost loyalty and respect, what does one serve his lord with?’

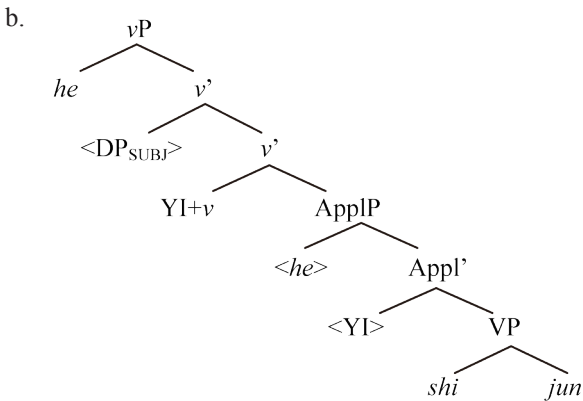
- b. 吾何以堪之? (Zuozhuan, Xi 30)  
 Wu he yi kan zhi?  
 I what YI rate 3.Obj  
 ‘How do I rate such treatment?’

I assume that the position of the *wh*-word is the result of movement, specifically the type of short *wh*-movement found generally in LAC. LAC was a strict SVO language, with non-interrogative objects appearing post-verbally. But object *wh*-words appeared between the verb and the subject.

- (8) 吾誰欺? 欺天乎? (Analects, Zihan)  
 Wu shei [<sub>VP</sub> qi t<sub>shei</sub>]? Qi tian hu?  
 I who deceive deceive Heaven Q  
 ‘Who do I deceive? Do I deceive Heaven?’

Aldridge (2010) analyzes *wh*-movement in LAC as focus movement to the edge of *vP*. Assuming this analysis, the *wh*-words preceding YI, move from the specifier ApplP to the focus position.

- (9) a. 何以事君? (Zuozhuan, Xi 5)  
 He yi shi jun?  
 what YI serve lord  
 ‘What does one serve his lord with?’



Aldridge (2012) argues that the other cases of DP-YI also involve focus movement, for example the demonstrative *shi*. In (10a), *shi* refers to the lack of good government and a strong penal code introduced in the immediately preceding context. It is clear that *shi* is focused, serving to exhaustively identify this antecedent as the subject of the following predicate. This exhaustivity is characteristic of the particular type of focus that Kiss (1998) terms identificational focus.

- (10) a. 既無德政，又無威刑，是以及邪。  
 Ji wu de zheng, you wu wei xing,  
 both not.have virtuous govt. and not.have imposing penalty  
**shi yi ji xie.**  
 SHI YI reach evil  
 ‘Lacking in both virtuous government and an imposing penal code, this is what leads to evil.’
- b. 夫名以制義，義以出禮，  
 Fu ming yi zhi yi, yi yi chu li,  
 Dem name YI set right right YI emerge rites  
 禮以體政，  
 li yi ti zheng,  
 rites YI embody government  
 政以正民。  
 zheng yi zheng min,  
 government YI correct people  
 是以政成而民聽。  
**shi yi zheng cheng er min ting.**  
 Dem YI government mature Conj people obey  
 ‘With a name, (a ruler) determines the codes of righteousness; from righteousness the rites of proper conduct emerge; the rites determine the form of good government; with good government, the people are led into correct conduct. It is in this way that the government matures and the people become obedient.’

The interpretation tends to be contrastive when a full noun phrase appears preceding YI. In (11a), for example, the purposes of governance and a penal code are being contrasted with each other.

- (11) a. 君子謂  
 Junzi wei  
 good.man say  
 鄭莊公失政刑矣。  
 Zheng Zhuang gong shi zheng xing yi.  
 Zheng Zhuang lord lose govt. penalty Perf  
 政以治民，  
**Zheng yi zhi min,**  
 govt. YI govern people  
 刑以正邪。  
**xing yi zheng xie.**  
 penalty YI correct evil  
 (Zuozhuan, Yin 11)  
 ‘Superior men say that Lord Zhuang of Zheng has misplaced the concept of good government and a penal code. Government is used to govern the people; a penal code is used to correct evil.’

## b. 楚國方城以為城，

Chu guo Fangcheng yi wei cheng,  
 Chu state Fangcheng YI be wall  
 漢水以為池。 (Zuozhuan, Xi 4)

Han Shui yi wei chi.  
 Han river YI be moat

‘The Chu will use Mt. Fangcheng as their castle wall and the River Han as their moat.’

Focus movement supports the proposal in (4) and (5) in the following ways. First, extraction was possible only when YI-DP was preverbal and never when it was post-verbal.

- (12) a. [<sub>TP</sub> ... [<sub>vP</sub> DP<sub>[WH]</sub> ... YI < DP<sub>[WH]</sub> > V ... ]]  
 b. \* [<sub>TP</sub> ... [<sub>vP</sub> DP<sub>[WH]</sub> ... V ... YI < DP<sub>[WH]</sub> > ]]

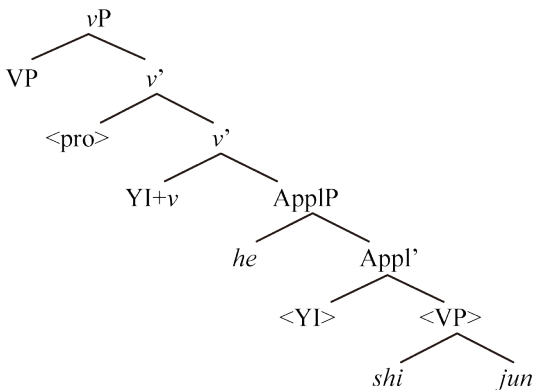
In other words, there are no attested instances of YI being stranded in postverbal position by movement of a focused DP.

## (13) \*何事君以？

He [shi jun yi \_\_ ]?  
 what serve lord YI  
 ‘What does one serve his lord with?’

This is accounted for on the analysis in (5) in the following way. The verb and direct object achieve their position preceding YI through VP fronting. This movement then fills the outer specifier of vP, which is also the intended landing site for focus movement, with the result that focus fronting is blocked. Therefore, the order shown in (12b) and (13) cannot be derived.

## (14)



Let me point out that the lack of examples like (13) is not due to a locality violation,

e.g. Chomsky's (2000) Phase Impenetrability Condition. Since movement is from within VP to the edge of the immediately dominating vP, no phase boundaries are crossed. (15) shows that movement from the VP following YI, which skips the object selected by YI, is in fact possible.

- (15) a. 子何以其志為哉？ (Mencius, Teng Wen Gong 2)  
 Zi [<sub>vP</sub> **he** [<sub>v</sub> *yi qi zhi* [<sub>VP</sub> *wei* \_\_\_ ]]] *zai*?  
 2 what YI 3.Gen intention consider Excl  
 'What do you consider to be his intention?'

- b. 君子質而已矣，  
 Junzi zhi er yi yi,  
 Gentleman substance Conj end Perf  
 何以文為？ (Analects, Yan Yuan)  
 [<sub>vP</sub> **he** [<sub>v</sub> *yi wen* [<sub>VP</sub> *wei* \_\_\_ ]]]?  
 what YI appearance do  
 'All that matters to a superior man is substance. What would (he) do with outer appearance?'

Evidence from extraction also militates against the analysis of YI as a preposition. This analysis would predict that the direct object could be extracted from a VP with a postverbal YI. However, this is unattested.

(16) \*V <DP> YI DP

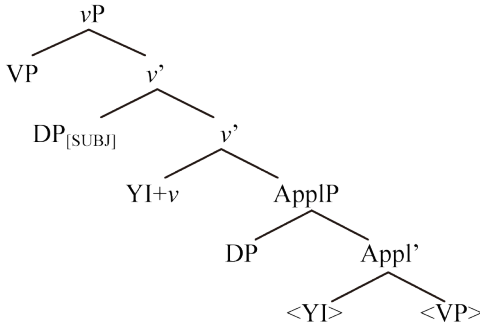
The lack of this movement would be extremely surprising if YI-DP were analyzed as a PP base generated as the verb's complement, as schematized in (17a). The verb and object are not contained within an island. Nor are there any potential interveners between the object *wh*-word and the focus position in the vP layer. More importantly, *wh*-extraction is not blocked by a VP-internal PP, as shown in (17b). The asymmetry between (16) and (17b) strongly suggests that YI is not a preposition.

- (17) a. [<sub>TP</sub> ... [<sub>vP</sub> DP [<sub>WH</sub>] ... [<sub>VP</sub> V <DP [<sub>WH</sub>]> [<sub>PP</sub> YI DP]]]]]  
 b. 何求於民？ (Guanzi 74)  
 He [<sub>VP</sub> *qiu* \_\_\_ [<sub>PP</sub> *yu min*]]?  
 what ask of people  
 'What would you ask of the people?'

The analysis in (4) and (5) offers a straightforward explanation for the lack of cases like (16). The verb and direct object to be extracted are contained within the fronted VP. Movement of the object from this constituent would violate Huang's (1982) Condition on Extraction Domain.



(18)



The preceding discussion has shown that the DP selected by YI can precede YI only when YI is preverbal. This situation observed in (7), (10), and (11) for focalization contexts is also mirrored in relativization. When a relative clause is formed on the object of YI, YI must likewise be preverbal.

- (19) a. 此昔吾先王之所以霸。 (*Lüshi Chunqiu* 14.5)  
 Ci [[xi wu xian wang] zhi suo yi \_\_ ba].  
 this past 1.Gen former king Gen Rel YI conquer  
 ‘This is why our former king was victorious in the past.’

- b. 此商君之所以車裂于秦而  
 Ci [Shang Jun zhi suo yi \_\_ che-lie yu Qin] er  
 this Shang lord Gen Rel YI cart-rip in Qin Conj  
 吳起之所以肢解于楚者也。 (*Hanfeizi* 14)  
 [Wu Qi zhi suo yi \_\_ zhi-jie yu Chu]zhe ye.  
 Wu Qi Gen Rel YI limb-remove in Chu Det Cop  
 ‘This is the reason why Lord Shang was executed (by being torn apart by moving carts) in Qin and Wu Qi was executed in Chu (by having his limbs removed).’

Relativization on *vP*-internal positions in LAC was mediated by the functional morpheme *suo*, which was located in a position between the subject and *vP*. *SUO* itself can be analyzed as the head of a nominalized embedded clause binding a null operator which moves from argument position in *VP*, thereby forming the relative clause. The fact that the embedded clause is nominalized is evident from the genitive case marking on the embedded subject. This analysis allows the relative operator to utilize the same landing site as *wh*-movement and focus movement, i.e. the outer specifier of *vP*, with the result that this movement is parallel to the focus movement discussed above.<sup>4</sup>

<sup>4</sup> An alternative approach might analyze *SUO* itself as the operator moving from its base position in *VP* to the edge of *vP*. I will not consider this alternative here but simply note that the predictions of these two approaches are the same with regard to the YI construction. It is inconsequential whether the moving constituent is a null operator or *SUO* itself.

- (20) [[xi wu xian wang] zhi suo<sub>i</sub> [<sub>vP</sub>OP<sub>i</sub> ... yi <OP> ba]].  
 past 1.Gen former king Gen Rel YI conquer  
 ‘why our former king was victorious in the past’

Once again, there are no attested examples of relativization of the DP selected by YI when YI is postverbal, which is consistent with the analysis in (4) and (5). The fronted VP occupies the position in the vP edge which the operator needs to move to, thereby blocking this movement.

- (21) \*先王之所霸以  
 xian wang zhi suo [<sub>vP</sub> [<sub>vP</sub> ba] [<sub>v</sub> yi [<sub>AppIP</sub> OP <VP> ]]]  
 former king Gen Rel conquer YI  
 ‘why our former king was victorious’

The asymmetry in direct object *wh*-movement observed between (16) and (17b) is also mirrored in relativization. No SUO relative clauses are found in which the gap is the direct object and YI-DP follows the embedded verb, as schematized in (22a). On the other hand, it is possible to relativize on the direct object in the presence of a VP-internal PP, as in (22b). This asymmetry provides further evidence that YI is not a preposition.

- (22) a. \*SUO V <DP> YI DP  
 b. 所存於己者未定 (Zhuangzi, Renjianshi)  
 [Suo [<sub>vP</sub> OP cun <OP> [<sub>pp</sub> yu ji] zhe]] wei ding  
 Rel store in self Det not.yet stable  
 ‘If what is stored within oneself is not yet stable, ...’

An argument of a different type for the analysis in (4) and (5) comes from the behavior of negation in the YI construction. YI-DP, as well as the following VP, are in the scope of negation only if YI-DP precedes the VP.

- (23) a. 君子不以其所以養人者害人。 (Mencius, Liang Hui Wang 2)  
 Junzi bu yi [qi suo yi yang ren zhe] hai ren.  
 good.man not YI 3.Gen Rel YI nourish person Det harm person  
 ‘A superior man does not harm people using that with which he nourishes them.’  
 b. 富與貴是人之所欲也，不以其道得之，不處也。 (Analects, Li Ren)  
 Fu yu gui shi ren zhi suo yu ye.  
 wealth Conj position Dem person Gen Rel desire Nmlz  
 Bu yi [qi dao] de zhi, bu chu ye.  
 not YI 3.Gen way obtain 3.Obj not stay Nmlz  
 ‘Wealth and position are what people desire. If one does not obtain them by the proper means, then they will not remain.’

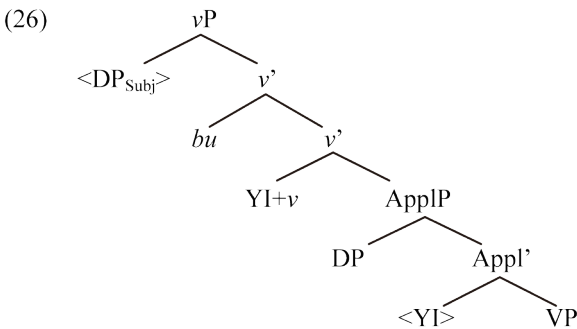
If YI-DP follows the verb, then the negator intervenes between the VP and YI-DP.

- (24) a. 域民不以封疆之界，  
 [<sub>VP</sub> Yu min] **bu** yi feng jiang zhi jie,  
 enclose people not YI close strong Gen border  
 固國不以山谿之險，  
 [<sub>VP</sub> gu guo] **bu** yi shan xi zhi xian,  
 secure country not YI mountain stream Gen steep  
 威天下不以兵革之利。 (*Mencius*, Gongsun Chou 2)  
 [<sub>VP</sub> wei tianxia] **bu** yi bingge zhi li.  
 impress world not YI military Gen advantage  
 ‘(A ruler) keeps his population not with tight borders, secures his country  
 not with steep mountains and gorges, and impresses the rest of the world  
 not with military might.’
- b. 動之不以禮，未善也。 (*Analects*, Wei Ling Gong)  
 [<sub>VP</sub> Dong zhi] **bu** yi li, wei shan ye.  
 move 3.Obj not YI Rites not.yet good Nmlz  
 ‘If you move them other than with the Rites, it is still not good.’

What is not attested is examples in which the negator precedes VP when YI-DP is post-verbal, i.e. the pattern schematized in (25c).

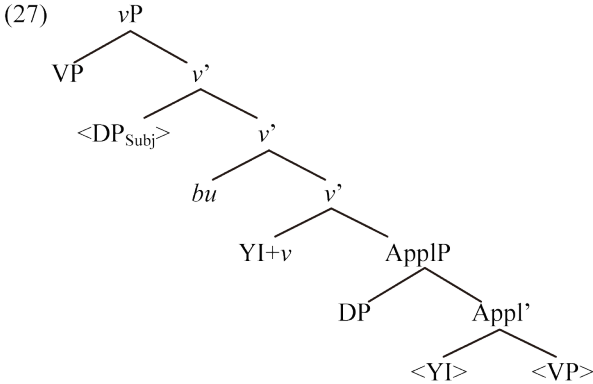
- (25) a. NEG YI DP VP  
 b. VP NEG YI DP  
 c. \*NEG V ... YI DP

The asymmetry between (23) and (24), as well as the lack of the pattern in (25c), is accounted for straightforwardly on the analysis in (4) and (5). The pattern in (23), which is schematized in (25a), reflects the base-generated order of (4), with YI-DP preceding the VP and negator adjoined in the vP layer.<sup>5</sup>



<sup>5</sup> Aldridge (2011) offers evidence that the clausal negator *bu* was an adjunct and not a functional head in the Late Archaic period.

(24), schematized in (25b), reflects the derived order of (5). The VPs have moved above YI and the negator to the edge of  $vP$  and consequently precede the negator in surface order. This also accounts for the lack of examples like (25c), since the fronted VP will precede the negator.



On the other hand, the asymmetry between (23) and (24) is not predicted if YI is analyzed as a preposition. The unmarked position for sentential negation is preverbal.

- (28) 聖人不愛己。 (Xunzi, Zhengming)  
 Shengren bu [ai ji].  
 saint not love self  
 ‘A saint does not love himself.’

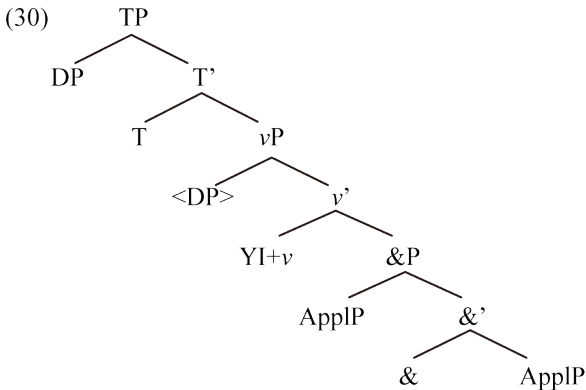
If YI-DP were analyzed as a PP within VP, negation in (24) would be predicted to precede the verb and take scope over YI-DP. This is the pattern schematized in (25c), which is unattested.

The constituency of the YI-DP sequence also bears closely on the debate regarding whether YI is preposition or a functional head on the clausal spine. The preposition analysis necessarily entails that YI forms a constituent with the DP it selects. This prediction is not made by the applicative analysis. There is clear evidence from Early Middle Chinese of the Han period that YI and the following DP do not in fact form a constituent, as predicted by the applicative approach. (29) shows coordination of [DP VP] to the exclusion of YI.

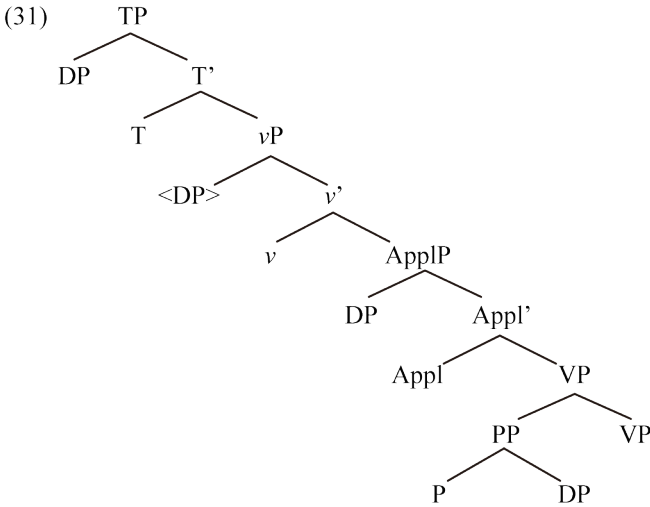
- (29) a. 臣請以彫玉為棺，文梓為槨。 (1<sup>st</sup> C. BCE; *Shiji* 126)  
 Chen qing yi [diao yu wei guan],  
 minister ask YI carve jade be outer.coffin  
 [wen zi wei guo].  
 inscribe wood be inner.coffin  
 ‘I request making carved jade into the outer coffin and inscribed wood into the inner coffin.’

- b. 以大將軍吳漢為大司馬，  
 Yi [da jiangjun Wu Han wei da sima]  
 YI great general Wu Han be great commander  
 偏將軍景舟為驃騎大將軍。 (5<sup>th</sup> C. CE; *Hou Hanshu*)  
 [pian jiangjun Jing Zhou wei piaoqi da jiangjun].  
 lesser general Jing Zhou be cavalry great general  
 ‘(The emperor) made General Wu Han commander in chief of the military  
 and Lieutenant General Jing Zhou commander of the cavalry.’

The separation of YI and the following DP goes unexplained on the preposition analysis but is completely consistent with the applicative analysis defended in this paper. What is coordinated is the ApplPs containing the applied object and the VP. YI, which has moved to *v* is thereby excluded from the coordinate structure.



As I have just pointed out (29a,b) are Middle Chinese examples. I have found no examples in Classical period texts of coordination of verbal constituents smaller than *vP*. Still, (29a,b) do suggest indirectly that YI was not a preposition, even in Late Archaic Chinese. This is because of the unlikelihood of the change which would be required if YI had been a preposition in LAC. For example, assuming that grammaticalization is the result of head movement of the category in question (Roberts and Roussou 2003), the reanalysis of YI might involve movement of the LAC preposition YI to the applicative position in EMC. However, this movement violates not only Travis' (1984) Head Movement Constraint but also Huang's (1982) Condition on Extraction Domain.



On the other hand, positing that YI was an applicative in both LAC and Early Middle Chinese, as advocated in this paper, then there is no need to posit a change otherwise unsupported by existing evidence. YI simply remained an applicative into Middle Chinese.

To summarize the discussion up to this point, I have presented arguments involving movement, the position of negation, and constituency in support of the proposal in (4) and (5) and against the analysis of YI as a preposition. In particular, I have shown that the existing patterns are accounted for on the current proposal, while the preposition approach makes certain predictions which are not attested.

One task remaining is to identify a motivation for VP fronting which derives the post-verbal positioning of YI-DP. I propose that this is VP scrambling. Note that it is not topicalization to the clause periphery. This is clear in (32a), which has another topicalized constituent *Zilu* in the left periphery. The VP itself is also preceded by an indefinite subject, clearly indicating that the VP must be located within the TP, given that an indefinite subject cannot be a topic. Another point to bear in mind here is that VP fronting in the YI construction is always accompanied by contextual support. Specifically, the VP or the object contained within the VP is always related to the preceding discourse. This is obvious in (32a), because the object refers to the topic *Zilu*. In (32b), the pronoun in the fronted VP likewise refers to *sao*, which has just been mentioned in the preceding clause.

- (32) a. 子路，人告之以有過。 (Mencius, Gongsun Chou 1)  
 [<sub>CP</sub> *Zilu* [<sub>TP</sub> *ren* [<sub>VP</sub> [*gao zhi*] *yi* you *guo*]]].  
*Zilu* person tell 3.Obj YI have error  
 ‘Zilu, someone told him he made a mistake.’

- b. 嫂溺則援之以手乎？ (Mencius, Lilou 1)  
 Sao ni ze [<sub>VP</sub> [yuan zhi] yi shou] hu?  
 sister drown then save 3.Obj YI hand Q  
 ‘If (my) sister in law is drowning, do I save her with my hands?’

One additional indication that VP fronting is related to context is the fact that it is very rare for V (DP) YI DP order to appear in embedded contexts. (33a) shows a complement clause and (33b) a sentential subject. Both have YI DP VP order.

- (33) a. 我不忍以夫子之道反害夫子。 (Mencius, Lilou 2)  
 Wo bu ren [yi fuzi zhi dao fan hai fuzi]  
 I not bare YI master Gen way Adv harm master  
 ‘I cannot bare to harm my master with his own technique.’
- b. 以天下與人易。 (Mencius, Teng Wen Gong 1)  
 [YI tianxia yu ren] yi.  
 YI world give person easy  
 ‘To give the world to someone is easy.’

In this section, I examined structural asymmetries between pre- and post-verbal YI-DP which cannot be accounted for if YI is analyzed as a preposition. I proposed instead that YI is an applicative and that the word order alternation is the result of VP-movement or its lack to a position above ApplP. I further suggested a motivation for VP movement as scrambling. An open question which must be addressed is the labeling of YI as an applicative and not some other functional head within vP. I turn to this question in the following section.

### 3. Cross-linguistic perspective

In this section, I discuss a parallel construction in Austronesian languages that provides indirect support for the analysis of YI as an applicative. To begin, YI often occurs in ditransitive constructions, where it selects the theme DP. Archaic Chinese had three types of ditransitive construction. (34a) shows a dative construction with a direct object and PP goal. (34b) is a double object construction. In (34c), the theme appears in preverbal position as the DP selected by YI.

- (34) a. 天子能薦人於天。 (Mencius, Wan Zhang 1)  
 Tianzi neng [<sub>VP</sub> jian ren [<sub>PP</sub> yu tian]].  
 ruler can recommend person to heaven  
 ‘The ruler can recommend someone to heaven.’
- b. 不能使天與之天下。 (Mencius, Wan Zhang 1)  
 bu neng shi tian [<sub>VP</sub> yu zhi tianxia]  
 not can make heaven give 3.Obj world  
 ‘(He) cannot make heaven give him the world.’

- c. 天子不能以天下與人。 (Mencius, Wan Zhang 1)  
 Tianzi bu neng yi tianxia [<sub>VP</sub> yu ren].  
 ruler not can YI world give person  
 ‘The ruler cannot give the world to someone.’

The behavior of YI in ditransitive constructions bears striking resemblance to an applicative found in Austronesian languages spoken in the Philippines and Taiwan. Tagalog, for example, has two applicative morphemes. The low applicative *-an* selects the goal in a ditransitive, as in (35a). Tagalog is an ergative language, so objects in transitive clauses have absolutive status. Given that applied objects cross-linguistically have the syntactic status of direct objects (Marantz 1984, Baker 1988, and others), the argument selected by an applicative head in Tagalog is licensed as the absolutive object of the clause. The low applicative construction in (35a) corresponds to the LAC double object construction in (34b). In (34b), the goal appears immediately following the verb and has accusative case. Thus, the goal DPs in both (34b) and (35a) have the syntactic status of direct objects. In Tagalog, the applicative corresponding to LAC YI is the high applicative *i-*, which selects the theme, as in (35b).

Tagalog

- (35) a. B<in>igy-**an** ng babae ng bulaklak *ang lalaki*.  
 <Tr.Perf>give-Appl Erg woman Obl flower Abs man  
 ‘The woman gave the man a flower.’
- b. I-b<in>igy ng babae *ang bulaklak* sa lalaki.  
 Appl-<Tr.Perf>give Erg woman Abs flower to man  
 ‘The woman gave the flower to the man.’

As shown by Rackowski (2002), the *i-* verbal prefix in Tagalog has the properties of a high applicative. As in many other languages with high applicatives, e.g. Kichaga and Kinyarwanda (McGinnis 2001), Tagalog *i-* can select a benefactive argument, as in (36a), or an instrument, as in (36b). Note further that the applicative combines with an unergative VP in (36a), which is one of Pytkkanen’s (2002) hallmark diagnostics for a high applicative, as opposed to a low one.

Tagalog

- (36) a. I-t<in>awa ng babae *ang anak=niya*.  
 Appl<Tr.Perf>laugh Erg woman Abs child=3s.Gen  
 ‘The woman laughed for her child.’
- b. I-bi-bili=ko ng pagkain *ang pera-ng ito*.  
 Appl-Fut-buy=1s.Erg Obl food Abs money-Lk this  
 ‘I will buy food with this money.’

LAC YI did not select a benefactive argument, but it did frequently merge with an instrument, as in (37a). The VP following the instrument in (37a) is transitive. YI-DP could also combine with an unergative VP, as in (37b). The object selected by YI is the gap in a headless relative clause formed on SUO and does not appear overtly. The VP within the relative clause consists of a single unergative verb.



- (37) a 君子不以其所以養人者害人。 (*Mencius*, Liang Hui Wang 2)  
 Junzi bu **yi** [qi suo yi  
 good.man not YI 3.Gen Rel YI  
 yang ren zhe] *hai ren*.  
 nourish person Det harm person  
 ‘A superior man does not harm people using that with which he nourishes them.’
- b 此昔吾先王之所以霸。 (*Lüshi Chunqiu* 14.5)  
 Ci [xi wu xian wang] zhi suo<sub>i</sub> [ **yi** e<sub>i</sub> [<sub>VP</sub> ba]].  
 this past 1.Gen former king Gen Rel YI reign  
 ‘This is means with which our former king reigned supreme in the past.’

Thus, it can be seen that the distribution and function of LAC YI are similar in key respects to the Tagalog high applicative *i-*. An additional example of the parallelism between LAC YI and Austronesian high applicatives is in causative constructions like (38b). In the monotransitive, non-causative, example in (38a), the subject of *dai* is an external argument, specifically the one who performs the replacement in this example. (38b) is a causative construction with the applicative YI. The argument selected by YI is an internal argument but also a causee, the one that is made to replace the heir in this example.

- (38) a. 文公子佗殺太子免而代之。 (*Zuo zhuan*, Huan 5)  
 Wengong zi Tuo sha taizi Tu er **dai** zhi.  
 CW son Tuo kill heir Tu Conj replace 3.Obj  
 ‘Chen Wen’s son Tuo killed the heir Tu and replaced him (on the throne).’
- b. 欲以其子奚齊代太子申生。 (*Hanfeizi* 31)  
 Yu *yi* *qi* zi *Xiqi* **dai** taizi Shensheng.  
 want YI 3.Gen son Xiqi replace heir Shensheng  
 ‘(She) wanted to replace the heir Shensheng with her son Xiqi.’

Tagalog high applicatives also appear in causative constructions. In its intransitive use, *balik* means ‘return’. With the applicative, it becomes transitive and causative. The object selected by *i-* is made to undergo some motion.

#### Tagalog

- (39) a. Ba-balik=ako.  
 Fut-return=1s.Abs to house  
 ‘I am going back.’
- b. I-ba-balik=ko *ang libro* sa aklatan.  
 Appl-Fut-return=1s.Erg Abs book to library  
 ‘I will return the book to the library.’

Due to space limitations, I will not discuss their proposals here, but Cole and Son (2004) and Son and Cole (2008) also present an analysis of the corresponding applicative in Standard Indonesian as a causative morpheme. The reader is also

referred to Sneddon (1996) for additional arguments for the causativizing function of this applicative.

The analysis proposed in section 1 for YI as an applicative is informed by Rackowski's (2002) analysis of Tagalog. Chang (2012) also argues for an applicative analysis of the corresponding morpheme in the Formosan language Tsou.

#### 4. Positioning of true PPs

In this section, I consider an analysis of PP positions in LAC and argue further for the lack of parallelism between PPs and the YI applicative construction. Recall first from section 1 that PPs sometimes surfaced in preverbal position and sometimes in post-verbal position in LAC.

- (40) a. 吾聞出於幽谷遷于喬木者。 (Mencius, Teng Wen Gong 1)  
 Wu wen *chu* **yu** **you** gu qian yu qiao mu zhe.  
 I hear exit P dark valley move P tall tree Det  
 'I have heard of leaving a dark valley and heading to a tall tree.'
- b. 世子自楚反，復見孟子。 (Mencius, Teng Wen Gong 1)  
 Shizi **zi** **Chu** fan, fu jian Mengzi.  
 heir from Chu return again see Mencius  
 'The heir returned from Chu and again visited Mencius.'

Huang (2006) suggests that this alternation can be accounted for if the preverbal order is analyzed as basic and the post-verbal order derived by VP movement to the left of the adjunct. In short, this proposal is conceptually very similar to the analysis of YI constructions which I defended in section 2. In this section, I argue against the VP-movement analysis of adjunct PP positioning, showing further that PPs and YI-DP do not manifest parallel behavior.

First, Huang's VP-movement analysis predicts much greater freedom in PP placement than was actually the case in LAC. As in Modern Standard Mandarin, adjunct PPs tended to surface in preverbal position, while argument PPs appeared post verbally, within the VP. In the oracle bone inscriptions of Pre-Archaic Chinese, PPs headed by the preposition *yu* were required to be post-verbal when they expressed a goal or destination (Shen 1992), a restriction which continued into the Archaic period. In fact, all PPs headed by *yu* occurred post-verbally in Archaic Chinese (Wang 2004, He 1989, 1992, Sun 1996, Zhang 2002, Qian 2004, Hong 1998, and others).

- (41) a. 天子能薦人於天。 (Mencius, Wan Zhang 1)  
 Tianzi neng [*jian* ren **yu** **tian**]  
 ruler can recommend person to heaven  
 'The ruler can recommend someone to heaven.'

- b. 子路宿於石門。 (Analects, Xianwen)

Zilu *su* **yu** **Shimen.**

Zilu lodge in Shimen

‘Zilu spent the night in Shimen.’

The difficulty for Huang’s VP-fronting analysis is that post-verbal placement of *yu* PPs in Late Archaic Chinese was obligatory. Consequently, Huang would have to posit that VP fronting was required to take place when the adjunct PP was headed by *yu* but not necessarily by other prepositions. It is not clear to me how a feature on an intervening adjunct PP would be able to trigger movement of VP to a higher position.

Another difficulty for the VP-fronting approach to post-verbal PPs is the fact that, like Modern Mandarin, adjunct PPs in LAC also tended overwhelmingly to appear in preverbal position. Post-verbal positioning of adjuncts was very limited. For example, PPs introduced by *zi* ‘from’ generally appeared preverbally (Zhang 2002 and Hong 1998). Zhang (2002) points out, however, that *zi* PPs could be post-verbal only when they were the sole constituent following the verb. The VP-fronting analysis again makes the incorrect prediction that the PP in (42b) should be able to surface in post-verbal position, a scenario which is not attested for *zi* PPs in LAC.

- (42) a. 冬，王歸自虢。 (5<sup>th</sup> C. BCE; *Zuozhuan*, Zhuang 21)

Dong wang gui **zi** **Guo.**

winter king return from Guo

‘In the winter, then king returned from Guo.’

- b. 吾自衛反魯。 (5<sup>th</sup> C. BCE; Analects, Zihan)

Wu **zi** **Wei** *fan* Lu.

I from Wei return Lu

‘I returned from Wei to Lu.’

This restriction in LAC recalls Huang’s (2006) “V2 counting backward” word order generalization for Modern Mandarin, according to which the verb is followed by no more than one major constituent in surface order. The asymmetry in (42) suggests that this tendency is not a recent innovation but rather is already observed for certain types of adjuncts well before the Middle Chinese period.

Furthermore, VP-fronting would incorrectly predict the position of negation in negated clauses with a post-verbal PP. As shown in section 2, the entire VP precedes both the negator and YI-DP in a negated clause with post-verbal YI-DP. (24b) is repeated below as (43a). In contrast to this, the negator precedes the entire VP containing an adjunct PP, as shown in (43b).

- (43) a. 動之以禮，未善也。 (Analects, Wei Ling Gong)

[<sub>VP</sub> Dong zhi] **bu** yi li, wei shan ye.

move 3.Obj not YI Rites not.yet good Nmlz

‘If you move them other than with the Rites, it is still not good.’

- b. 今女不求之於本。 (Xunzi, Yi Bing)  
 Jin ru bu [qiu zhi yu ben],  
 now 2 not seek 3.Obj in root  
 ‘Now, you do not seek it in the root.’

Some of the movement asymmetries discussed in section 2 are likewise not accounted for if VP-fronting is the mechanism which derives post-verbal positioning of PPs. In section 2, I showed that direct objects could be extracted from a VP containing a post-verbal PP. If the VP had been fronted, we would expect these to invoke a violation of the Condition on Extraction Domain and be ungrammatical, contrary to fact. The crucial examples, (17b) and (22b) are repeated below.

- (44) a. 何求於民? (Guanzi 74)  
 He [<sub>VP</sub> qiu — [<sub>PP</sub> yu min]]?  
 what ask of people  
 ‘What would you ask of the people?’
- b. 所存於己者未定 (Zhuangzi, Renjianshi)  
 [Suo [<sub>VP</sub> OP cun <OP> [<sub>PP</sub> yu ji] zhe]] wei ding  
 Rel store in self Det not.yet stable  
 ‘If what is stored within oneself is not yet stable, ...’

Let me point out here that there are indeed slightly different constraints on the placement of PPs in LAC and Modern Mandarin. I draw particular attention to the VP-internal adjuncts in (41b) and (42a). I assume these PPs to base-generated within VP, which is generally not allowed in Modern Mandarin. This means that one or more changes have indeed taken place in the language. Let me summarize some of these here.

It is true that the proportion of post verbal adjunct PPs does decrease overall during the Middle Chinese period. Huang (2006) accounts for this change by positing the loss of VP-fronting. But this appears unlikely when the facts are carefully considered. As noted by He (1992) and Hong (1998), locative constituents began surfacing as bare NPs in post-verbal position in Early Middle Chinese. This is illustrated by He’s (1992: 240) following comparison of parallel passages in the two historical chronicles *Zuozhuan* (5<sup>th</sup> century BCE) and *Shiji* (1<sup>st</sup> century BCE). The preposition is present in the earlier text but missing in the latter. Clearly, this innovation represents a change in category rather than position. If VP-fronting or the lack thereof were the determinant of adjunct positioning, then we would expect for the locative NP to be able to be stranded in preverbal position in (45b).

- (45) a. 辛巳，朝于武宮。 (5<sup>th</sup> century BCE; *Zuozhuan*, Cheng 18)  
 Xinsi, chao [<sub>PP</sub> yu Wu gong].  
 Xinsi pray in Wu shrine  
 ‘On the day Xinsi, (he) paid his respects at the Wu shrine.’

- b. 辛巳，朝武宮。 (1<sup>st</sup> century BCE; *Shiji*, Jin Shijia)  
 Xinsi, chao [<sub>NP</sub> Wu gong].  
 Xinsi pray Wu shrine  
 ‘On the day Xinsi, (he) paid his respects at the Wu shrine.’

Grammaticalization of verbs heading modifying (adjunct) VPs also led to the creation of prepositions which could only surface in preverbal position (Huang 1978, Sun 1996, Hong 1998). For example, the Modern Mandarin source preposition *cong* ‘from’ grammaticalized from a verb meaning ‘follow’ in a construction like the one exemplified by (46a), in which *cong* heads an adjunct VP modifying another VP.

- (46) a. 從晉文公伐鄭。 (5<sup>th</sup> century BCE; *Zuozhuan*, Xuan 3)  
 [<sub>VP</sub> Cong Jin Wen Gong] fa Zheng.  
 follow Jin Wen lord attack Zheng  
 ‘(He) accompanied Lord Wen of Jin to attack the Zheng.’
- b. 孝文帝從代來。 (1<sup>st</sup> century BCE; *Shiji*, Xiaowen Benji)  
 Xiaowen Di [<sub>PP</sub> cong Dai] lai.  
 Xiaowen emperor from Dai come  
 ‘Emperor Xiaowen arrived from Dai.’

Whitman (2000) proposes that the grammaticalization process involved changing the category of the head of the adjunct from V to P. Since no other structural changes were involved, the newly created PPs continued to surface in the same preverbal adjunct position. This grammaticalization process, then, simply reflects a change in category and not a shift in basic word order.

- (47) [[<sub>VP</sub> follow NP] [<sub>VP</sub> ...]] > [<sub>VP</sub> [<sub>PP</sub> from NP] [<sub>VP</sub> ...]]

Replacement of *yu* with *zai*, the Modern Mandarin locative preposition, also contributed to the increase in preverbal positioning of locative PPs. Like *cong*, *zai* grammaticalized from a verb heading an adjunct VP. It is therefore unsurprising that locatives introduced by *zai* continue to be preverbal.

- (48) 你在這里作什麼？ (*Zutangji* 4)  
 Ni [<sub>PP</sub> zai zheli] zuo shenme?  
 2 at here do what  
 ‘What do you do here?’

In this way, it was independent changes in Middle Chinese which resulted in the increase in adjunct PPs in preverbal position and not the loss of an earlier VP-movement transformation. In particular, new source and locative prepositions were created through grammaticalization within adjunct VPs in preverbal position. These new adjunct PPs surfaced in preverbal position, because the VPs they formerly headed also occupied this position. As for the decline in post-verbal adjunct PPs, this is the result of the loss of the locative *yu* and source *zi*

prepositions and their replacement with the newer prepositions which were restricted to preverbal position.

In this section, I argued against Huang's (2006) proposal and showed that VP-movement did not account for the variable positioning of adjunct PPs in LAC. These are rather best analyzed as base generated either within the VP or external to it. Hence, the positioning of PPs and YI-DP were derived through separate mechanisms. Only the post-verbal position of YI-DP involved fronting of the VP.

## 5. Conclusion

In this paper, I have argued that the functional morpheme YI in Late Archaic Chinese was an applicative and not a preposition. The possibility of the YI-DP sequence appearing in either preverbal or post-verbal position is accounted for by fronting the VP to the edge of *vP* in the latter case. The argumentation for this proposal is based primarily on structural asymmetries between constructions involving preverbal YI-DP and those involving post-verbal YI-DP. The asymmetries cannot be accounted for if YI-DP was a PP which could be base generated either inside or outside of VP. I have also argued against Huang's (2006) analysis of variable PP positioning by means of VP fronting. Showing that the surface positions of YI-DP and PPs were derived by different mechanisms further emphasizes the differences between YI and prepositions.

I have not yet made any claims about post-LAC changes in the YI construction. Detailed investigation is beyond the scope of the present paper. But I note here that the ratio of post-verbal YI-DP decreased in comparison with preverbal YI-DP in Middle Chinese before the construction was lost altogether. He (2005: 256) offers the following statistics contrasting the *Zuozhuan* (5<sup>th</sup> century BCE) with the Early Middle Chinese text *Shiji* (2<sup>nd</sup> century BCE). First, it is clear that these tallies confirm the claim in section 2 that the overwhelming number of instances of YI-DP occurred in preverbal position. In the *Zuozhuan*, preverbal YI-DP occurs 3.67 times more frequently than post-verbal. But even more impressive than this is the discrepancy observed in the *Shiji*, where preverbal YI-DP occurs 15.57 times more often.

(49)	<u>Preverbal YI</u>	<u>Post-verbal YI</u>
<i>Zuozhuan</i>	826	225
<i>Shiji</i>	576	37

On the analysis put forth in this paper, the decrease in post-verbal YI-DP in Middle Chinese is unsurprising, given other changes taking place concurrently in the language. As Aldridge (2010) observes, *wh*-movement, object relativization with the morpheme SUO, and focus movement of full NPs and pronouns were also lost during this period. Consequently, the loss of all of these movement operations can be given a uniform analysis by simply positing the loss of A'-movement to the edge of *vP*.

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## 先秦漢語的施用結構與介詞

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### 提要

本文將先秦漢語虛詞“以”分析為施用結構（high applicative, Pylkkanen 2002）的中心語，同時主張“以”不是介詞。從結構上看，“以”位於  $vP$  內並且選擇 VP 作為補足語。“以”之後的 DP 出現在施用結構的指定語位置上。因此，“以 -DP-VP”的詞序是由“以”移位到輕動詞  $v$  的位置上派生而來的。同時，先秦漢語也允許“VP-以 -DP”的詞序。本文提出這種詞序是通過 VP 移位至  $vP$  的外指定語位置上派生而來的。本文的論據主要來自於“以 -DP-VP”和“VP-以 -DP”在結構上的不對稱性。如果將“以”分析為介詞，則無法解釋這種不對稱性。例如，只有當“以”出現在動詞之前時，“以”之後 DP 才能進行移位。根據本文分析假設，“以”出現在動詞之後的詞序是由 VP 移位至  $vP$  的外指定語位置上派生的。當  $vP$  的外指定語位置被 VP 所佔據時，DP 的移位便被阻止了。

### 關鍵詞

先秦漢語，施用結構，介詞，詞序，歷時句法學