

## **Object Relative Clauses in Archaic Chinese**

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### **1. Introduction**

This paper examines headless object relative clauses in Late Archaic Chinese of the 5<sup>th</sup> to 3<sup>rd</sup> centuries BCE<sup>1</sup> and proposes that they are reduced relative clauses with genitive subjects. Accordingly, they should be analyzed as mixed projections in the sense of Abney (1987), Borsley and Kornfilt (2000), Baker (2005, 2011), Grohmann and Panagiotidis (2009), and others. I argue specifically that they are structurally composed of a  $\nu$ P dominated by a nominal layer, similar to approaches put forth by Krause (2001), Hale (2002), Aygen (2002), Miyagawa (2008, 2011), and others.

Late Archaic Chinese employed different strategies for relativizing on subject position, as opposed to VP-internal positions. In the former type, the functional morpheme *zhe* appears following the clause, as in (1a). When the gap is VP-internal, the functional morpheme *suo* appears to the left of the VP.

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<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. I also agree with them that the language of the few hundred years following this period exhibits its own characteristics. They label this period Pre-Medieval Chinese. I refer to this period, roughly corresponding to the Han period (2<sup>nd</sup> century BCE – 2<sup>nd</sup> century CE), as Early Middle Chinese.

(1) a. 欲戰者 (Zuozhuan, Cheng 6)

yu zhan **zhe**

desire fight DET

‘(those) who desire to fight’

b. 人之所畏 (Laozi 20)

ren zhi **suo** wei

person GEN SUO fear

‘what people fear’

Aldridge (2009) argues that ZHE is a determiner, based in part on the fact that ZHE could also select an NP complement, as in (2). Additionally, the fact that the ZHE constituent in (2) occurs with a demonstrative suggests that ZHE is probably not the head of DP but a lower functional head.

(2) a. 夫三子者之言何如？ (Analects 11)

[**Fu** [san zi **zhe**]] zhi yan he ru?

DEM 3 gentleman DET GEN word what like

‘How about what those three gentlemen said?’

b. 夫二人者，魯國社稷之臣也。 (Zuozhuan, Cheng 16)

[Fu [er ren **zhe**]], Lugo sheji zhi chen ye.

DEM two person DET Lu nation GEN minister COP

‘These two men (will become) ministers of Lu at the national level.’

(3) clearly shows that ZHE occupies a position below D, since the constituent projected by ZHE can be possessed.

(3) 庾公之斯衛子之善射者也。 (Mencius 8)

Yugongzhisi [Weizi **zhi** [shan she **zhe**]] ye.

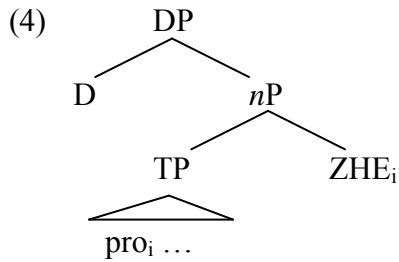
Yugongzhisi Weizi GEN well shoot DET COP

‘Yugongzhisi is a skilled archer of Wei.’

Aldridge proposes that ZHE is *n*, a determiner on the DP spine, but structurally lower than the D position itself. She follows Williamson (1987), Kayne (1994), and others in assuming that a determiner can take a relative clause<sup>2</sup> as its complement. She further assumes with Basilico (1996) that the determiner can serve as the binder for the gap to form the relative clause. The head position in the relative clause is limited to VP-external positions by the Phase Impenetrability Condition of Chomsky (2004), since the VP is no longer accessible to the computational system by the time ZHE is merged.

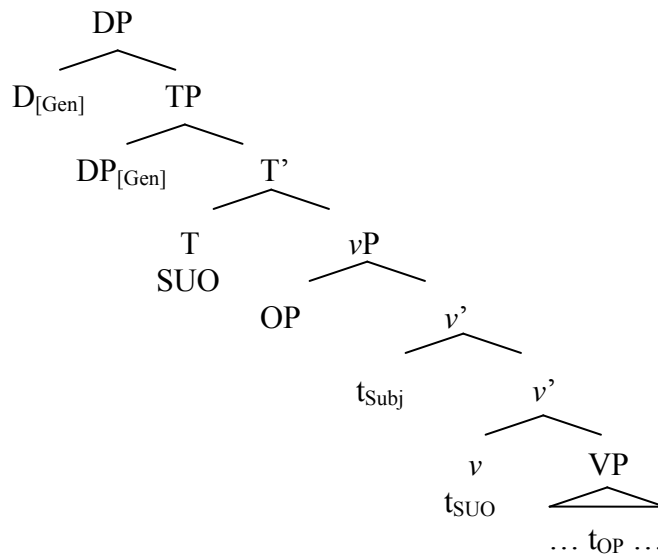
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<sup>2</sup> Aldridge (2009:241, fn. 2) assumes that the relative clause is a TP and not a CP. This is primarily because Archaic Chinese lacked finite embedded clauses; these all show evidence of nominalization. On this analysis, then, the phase head for the embedded clause is D rather than C.



For object relatives like (1b), I propose that the functional morpheme SUO plays two key roles. First, SUO is merged in  $v$  and forms relative clauses on VP-internal positions by attracting an operator to the edge of this phase. This operator movement serves to create a headless relative clause. The operator can also be coindexed with an external NP to create a headed relative clause. The second function performed by SUO is to nominalize the embedded clause. Historically, SUO was a noun meaning ‘place’. I assume that the grammaticalized SUO continued to have a nominal category feature. After attracting the operator from VP, SUO subsequently moves to T, with the result that T obtains a nominal feature, which allows it to be selected by D. Hence, SUO relative clauses are like ZHE relatives in not projecting a CP layer. The subject in the SUO relative moves to the specifier of the nominalized T, where it values genitive case with D. SUO relatives are thus reduced relative clauses with genitive subjects in the sense of Krause (2001), Hale (2002), Aygen (2002), Miyagawa (2008, 2011), and others.

(5)



In this paper, I argue in turn for each component of the analysis in (5). I begin by showing that SUO occupies a clause-medial position and is not associated with the CP layer. I next offer indirect evidence for movement of the operator to [Spec, vP] and confirm that SUO is not this operator but rather must be analyzed as occupying a position external to vP. Finally, I argue for the reduced nature of the clause by showing that the subject receives genitive case. However, this case is valued under Agree with D; the subject remains in the specifier of the nominalized T and does not move to [Spec, DP]. I further suggest how analyzing SUO relatives as nominalizations accounts for their subsequent loss as the primary object relativization strategy in the language.

## 2. Position of SUO

This section argues that SUO occupies a clause-medial position between the genitive subject and *v*P. Crucially, SUO is not associated with the CP layer or other TP-external position.

### 2.1. Below subject

To begin, SUO is able to relativize on any VP-internal position. The gap is the direct object in (6a), a locative constituent in (6b).

- (6) a. 人之所畏 (*Laozi* 20)  
ren zhi **suo** wei  
person GEN SUO fear  
'what people fear'
- b. 文王之所避風雨 (*Zuozhuan*, Xi 32)  
Wen Wang zhi **suo** [<sub>VP</sub> bi feng yu e ]  
Wen king GEN SUO escape wind rain  
'where the (Zhou) king Wen escaped the storm'

However SUO never relativizes on subject position. Even if the VP following SUO is unaccusative, the gap in the relative clause will never be the subject. In (7), the relativized position is a locative adjunct.

(7) a. 穀食之所生 (Zhuangzi 2.10)

[gushi zhi suo [vP sheng e ]]

grain GEN SUO grow

‘where grain grows’

b. 風之所漂 (Guanzi 64)

[Feng zhi suo [vP piao e ]]

wind GEN SUO blow

‘where the wind blows’

Aldridge (2010) shows that the EPP was active on T in Late Archaic Chinese, and subjects were required to move out of vP to [Spec, TP]. The preverbal position of the internal argument subjects in (7) suggests that the EPP was active for nominalized T as well. We have seen above that SUO could not bind a gap in subject position. We can thus conclude that [Spec, TP] is not in the c-command domain of SUO. Therefore, SUO cannot occupy a position external to TP, e.g. in the CP layer. If it did, then it would c-command [Spec, TP] and be able to relativize on subject position, counter to fact.

One final piece of evidence for the TP-internal position of SUO comes from that fact that SUO follows temporal adverbs. On the assumption that temporal adverbs are adjoined to TP or T', then SUO clearly occurs within the TP projection. Note that (8a) contains the determiner ZHE in addition to SUO, which can serve as the external binder for the operator in [Spec, vP] in the absence of an external head NP. The addition of ZHE

makes gives the headless relative a definite or specific interpretation. I will have more to say about the function of ZHE in SUO relatives in section 4.2.

(8) a. 今之所爭者 (Zhuangzi 3.6)

[**Jin** zhi suo [v<sub>P</sub> zheng e ] zhe]

now GEN SUO fight DET

‘what you are fighting over now’

b. 始時所是 (Zhuangzi 3.5)

[**Shishi** suo [v<sub>P</sub> shi e ]]

beginning SUO agree

‘that with which (he) agreed in the beginning’

## 2.2. Above vP

The preceding subsection showed that SUO is located below the position for the subject. This subsection argues that the surface position for SUO is located outside of vP. First, SUO precedes everything in the relative clause except the subject and temporal/locative adverbials. SUO also precedes other functional categories which are likewise located outside the lexical verbal projection. SUO precedes the perfective auxiliary in (9a) and a modal in (9b).



- (9) a. 不以所已藏害所將受。 (Xunzi 21)

bu yi [suo **yi** cang] hai suo jiang shou  
not APPL SUO already store harm SUO will receive  
‘to not use [what you already have] to harm what you will receive’

- b. 非人之所能為也。 (Mencius 9)

Fei [ren zhi suo **neng** [v<sub>P</sub> wei e ]] ye.  
not.be human GEN SUO can do COP  
‘(That) is not something which a human being can do.’

I assume with Meisterernst (in preparation) that the perfective aspect marker *yi* in (13a) was an adverb located in the specifier of an outer aspect projection between T and vP. Since SUO precedes this adverb, the position for SUO is clearly higher than AspP<sup>3</sup>.

Clinching evidence for the positioning of SUO outside the extended verbal projection vP comes from the fact that it precedes the subject-oriented quantifier *jie*.

- (10) 此天下百姓之所皆難也。 (Mozi 15)

Ci [tianxia baixing zhi suo **jie** nan] ye.  
this world commoner GEN SUO all suffer COP

‘This is something which commoners the world over all agonize over.’

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<sup>3</sup> This contrasts with Krause (2001), Aygen (2002), and Hale (2002), who propose that reduced relatives in Turkish and Dagur, respectively, contain AspP but not TP. The current proposal is, however, in agreement with Miyagawa (2011), who includes a TP layer in his analysis of reduced relatives in Japanese.

Like Modern Mandarin *dou*, *jie* quantifies only to its left<sup>4</sup> (Lü 1991; Li and Thompson 1981; Lee 1986; Chiu 1993; Cheng 1991, 1995; and others).

- (11) a. Ta-men dou hen xihuan wo.  
3-PL all very like 1.SG  
'They all like me.'
- b. \*Ta dou hen xihuan wo-men  
3.SG all very like 1-PL  
'He likes all of us.' (Cheng 1995:198)

*Jie* quantification is not limited to semantic subjects in [Spec, *v*P] but also includes derived subjects, as in the passive example in (12). The exact analysis of how quantification takes place is not at issue in this paper. The reader is referred to Lee (1986), Cheng (1991, 1995), Chiu (1993), Tsai (1994), among many others, for analyses of Modern Mandarin *dou*. What is at issue here is the relative positions of the Archaic Chinese quantifier *jie* and SUO. The fact that *jie* can quantify over a derived subject in a passive suggests that *jie* is not a stranded quantifier in [Spec, *v*P]. It also cannot be located inside VP, since it never occurs in postverbal position and never quantifies over a

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<sup>4</sup> The reader should note that Harbsmeier (1982) cites some cases in which *jie* appears to quantify to its right. However, Harbsmeier himself points out that this happens only when the object is a resumptive pronoun referring to a topic. Consequently, *jie* can still be analyzed as quantifying only to its left.

VP-internal constituent. It is most natural, then, to assume that *jie* is located outside *vP*. Note further that the quantifier precedes the passive auxiliary *ke*. Assuming that a passive auxiliary is located no lower than Voice or *v*, then the quantifier is clearly located outside of this projection. Crucially, given that SUO also precedes the quantifier, we can safely conclude that SUO is located outside of *vP*.

- (12) 皆可謂能禮士矣。 (Lüshi Chunqiu 13.5)
- |     |           |     |      |         |           |      |
|-----|-----------|-----|------|---------|-----------|------|
| Jie | <b>ke</b> | wei | neng | li      | shi       | yi.  |
| all | PASS.POT  | say | can  | respect | gentleman | PERF |
- ‘(They) all can be said to be able to respect a man of class.’

### 2.3. Base position in *v*

In the previous subsection, I demonstrated that the surface position of SUO is above *vP*. If SUO were base merged in this position, then the Phase Impenetrability Condition would prevent it from attracting an operator inside VP. In this subsection, I propose that SUO is base merged in *v* and subsequently moves to T in object relative clauses. I discuss two constructions in which SUO occurs in a lower position which is plausibly analyzed as *v*. It is also suggestive that these constructions involve higher functional heads which would block movement of SUO T, further suggesting that SUO moves to T when it can.

There are two other constructions in which SUO licenses a gap in object position: existential constructions like (13a) and passive constructions like (13b). Li (to appear) analyzes the existential verb *you* and the copula *wei* as heading a *vP* which in turn selects

a reduced clausal constituent consisting only of a  $\nu$ P. The embedded object is a null operator which is attracted to the edge of  $\nu$ P. In the existential construction, this object is the constituent which is asserted to exist. In the passive<sup>5</sup>, the operator is coindexed with the matrix subject. Both of these constructions employ SUO to attract the operator to the edge of the embedded  $\nu$ P.

(13) a. 力有所不能舉。 (Hanfeizi 24)

[<sub>TP</sub> Li<sub>i</sub> [<sub>νP</sub> you [<sub>νP</sub> OP *pro*<sub>i</sub> **suo** bu [<sub>νP</sub> neng ju *t<sub>OP</sub>* ]]]]  
 strength exist SUO not can lift

‘Strength cannot lift *some* things.’

(Lit. ‘Strength has some things which it cannot lift.’)

b. 為魚鱉所食。 (Zhuangzi 3.7)

[<sub>TP</sub> *e*<sub>i</sub> [<sub>νP</sub> wei [<sub>νP</sub> OP<sub>i</sub> yubie **suo** [<sub>νP</sub> shi *t<sub>OP</sub>* ]]]]  
 COP tortoise SUO eat

‘(He) was eaten by a tortoise.’

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<sup>5</sup> This passive is parallel in structure to “long” passives in Modern Mandarin, which have been analyzed by Feng (1995), Chiu (1995), Ting (1995), Huang et al. (2009), Li (to appear), and others. Proposals differ in the details, but they are in agreement that long passives involve a biclausal structure in which an operator moves from the embedded object position to an A’-position in the periphery of the embedded domain. Thus, Chinese long passives resemble English ‘tough’ constructions as analyzed by Chomsky (1981). The reader is referred to Huang et al. (2009) for a survey of the literature.

Li demonstrates the low position for SUO in these constructions by showing that material following SUO in relative clauses never follows SUO in passive and existential constructions. For example, in the previous subsection, I showed that SUO in relative clauses precedes the subject quantifier *jie*. However, Li shows that this quantifier never follows SUO in existential or passive constructions. Rather, it can only appear in the matrix clause preceding the copula or existential verb.

(14) a. 人皆有所不為。 (Mengzi 14)

Ren      *jie*      you      **suo**      bu      wei.

person      all      exist      SUO      not      do

‘All people have some things which they do not do.’

b. 皆為所歿。 (Houhanshu, Liezhuan 9)<sup>6</sup>

*Jie*      wei      **suo**      mo.

all      COP      SUO      kill

‘All (of them) were slaughtered.’

SUO also never precedes aspectual markers like *yi* ‘already’ in the existential and passive constructions. Recall from the previous subsection that *yi* is an adverb located in the specifier of AspP.

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<sup>6</sup> This example is from a Middle Chinese text. This type of passive emerged in the Late Archaic period but did not become common until Middle Chinese after the 2<sup>nd</sup> century BCE. Consequently, there are very few examples in the Late Archaic period.

(15) a. 夫已有所簡矣。 (Zhuangzi 1.6)

Fu yi you **suo** jian yi.

DEM already exist SUO thrifty PERF

‘Those (people) have already done it in a thrifty way.’

b. 大月氏王已為胡所殺。 (Shiji, Liezhuan 63)

Dayueshi wang yi wei Hu **suo** sha.

Dayueshi king already COP Hu SUO kill

‘The king of the Dayueshi had already been killed by the Hu.’

The low position for SUO in these constructions provides evidence for the base position of SUO in  $\nu$  and establishes the basic function of SUO as licensing a VP-internal gap. The subsequent movement to T in object relative clauses is also suggested, since existential and passive constructions contain a functional category in the higher  $\nu$  position which intervenes between SUO and T, thereby preventing the movement of SUO, as per Travis’ (1984) Head Movement Constraint.

### 3. Evidence for movement

Having shown the position occupied by SUO to be between the subject and the  $\nu$ P and having provided evidence for the connection between the appearance of SUO and the existence of a VP-internal gap, I now offer evidence that the gap in VP is the result of null operator movement to the edge of  $\nu$ P. I first discuss *wh*-fronting, which demonstrates

the existence of an A' landing site in the  $\nu$ P edge. I then offer supporting evidence for operator movement on the basis of island sensitivity in SUO relatives.

### 3.1. Parallel with *wh*-movement

Late Archaic Chinese VP-internal constituents generally underwent fronting to preverbal position when they were *wh*-phrases. Interestingly, this operation is parallel to SUO relatives in targeting any and only VP-internal constituents and utilizing a landing site in the edge of  $\nu$ P. (16a) shows movement of a direct object. Note in the second clause of (16a) that basic word order in the language is VO, with the object following the verb when it was not a *wh*-constituent. (16b) shows movement of a locative or dative element.

- (16) a. 吾誰欺？欺天乎？ (*Analects* 9)  
 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?’
- b. 其子焉往？ (*Mencius* 7)  
 qi zi **yan** [<sub>VP</sub> wang *t<sub>yan</sub>*]?  
 3.GEN son where go  
 ‘Where will their sons go?’

It is somewhat challenging to demonstrate that the landing site for *wh*-movement is below the CP layer, since subjects could also be questioned and appeared in preverbal

position. Simply showing that the object *wh*-word follows a referential subject in surface order does not suffice, because subjects could easily be topicalized in Archaic Chinese. This leads to two possible analyses of Archaic Chinese *wh*-movement. Either the *wh*-word moves to [Spec, CP], as in (17a), or it targets a position in the lower phase edge, as in (17b). On the former analysis, the referential subject is analyzed as a topic, also located in the CP layer.

- (17) a. [<sub>TopP</sub> DP<sub>Subj</sub> [<sub>FocP</sub> XP<sub>WH</sub> [<sub>TP</sub> t<sub>Subj</sub> V t<sub>WH</sub> ]]]? (Wh-position in CP edge)  
 b. [<sub>TP</sub> DP<sub>Subj</sub> [<sub>vP</sub> XP<sub>WH</sub> [<sub>v'</sub> t<sub>Subj</sub> [<sub>v'</sub> V t<sub>WH</sub> ]]]]? (Wh-position in vP edge)

The choice between the two alternatives depends on indirect evidence, specifically the relative positions of subject and object *wh*-words with respect to other elements in the clause. (17a) predicts that both subjects and objects move to the same position, since both subjects and objects would be in the c-command domain of a probe on C triggering *wh*-movement. (18) shows that this prediction is not borne out. As first observed by Wei (1999), subject *wh*-words precede the modal *jiang*, as in (18a), while object *wh*-words follow *jiang*, as in (18b). This clearly shows that object *wh*-movement targets a position lower than subject *wh*-words. Furthermore, this position cannot be in the CP layer, but rather in a position which does not c-command the subject in [Spec, TP].



(18) a. 誰將治之？ (Yanzi Chunqui, Nei 1.13)

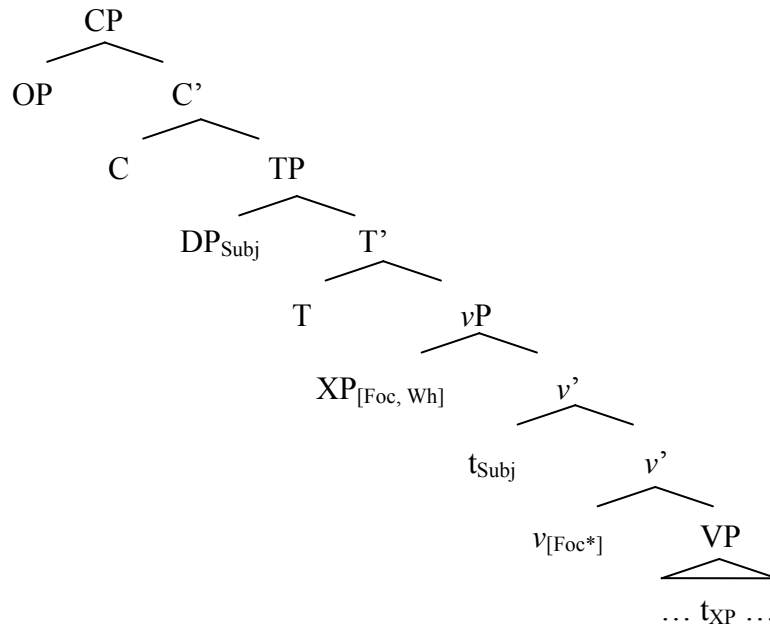
*Shei* **jiang** zhi zhi?  
who will govern 3.OBJ  
‘Who will govern them?’

b. 我將何求？ (Zuozhuan, Xi 28)

Wo **jiang** *he* qiu?  
I will what ask.for  
‘What will I ask for?’

Adopting proposals for the existence of A' positions for topic and focus in the  $\nu$ P layer in Italian (Belletti 2004) and Modern Mandarin (Paul 2005), Aldridge (2010) proposes that object *wh*-movement targets a focus position in the  $\nu$ P phase edge. Subject *wh*-words are assumed to remain in situ in [Spec, TP]. The interrogative interpretation is obtained via unselective binding by an operator merged in [Spec, CP], as per Tsai's (1994) analysis of Modern Mandarin *wh*-in-situ.

(19)



Support for the unselective binding analysis comes from evidence that Late Archaic Chinese *wh*-words are indefinites and not quantificational operators. As shown in (20), *wh*-words could be used in this period with non-interrogative interpretations.

(20) a. 不知我者謂我何求。 (Shijing, Shuli)

Bu zhi wo zhe wei [wo **he** [qiu *t<sub>he</sub>*]].

not know 1 DET say 1 what seek

‘Those who do not know me say that I am looking for *something*.’

b. 誰之不如，可以求之。 (Guoyu, Jin 6)

[**Shei** zhi bu [ru *t<sub>shei</sub>*]], keyi qiu zhi.

who GEN not compare can follow 3.OBJ

‘If you don’t measure up to *someone*, you can follow him.’

What the above proposal suggests for SUO relative clauses is that there was an A'-position in the edge of *v*P. In object *wh*-questions, this was a focus position hosting the moved *wh*-phrase. In object relatives, this position was the landing site for the null operator attracted by SUO. The following example provides additional evidence that SUO is located outside of *v*P and above the position of the operator, since SUO clearly precedes the modal *jiang*. Recall from (18b) that object *wh*-words follow this modal.

- (21) a. 不以所已藏害所將受 (Xunzi 21)
- bu yi suo yi cang hai [suo jiang shou]  
 not APPL SUO PERF store harm SUO will receive  
 ‘to not use what you already have to harm what you will receive’
- b. 其所將為 (Zhuangzi 3.3)
- [qi suo jiang wei]  
 3.GEN SUO will do  
 ‘what he will do’

It might be suggested at this point that SUO itself might serve as the operator. This could potentially be accomplished by binding a VP-internal gap from its base position in *v*, thereby inheriting the index of the empty category in VP before moving to T. However, this possibility is made unlikely by cases involving a long distance dependency. In (22), the base position of the gap is inside the *v*P of the embedded clause (and thus contained

within another phase domain). Consequently, SUO would not be able to enter into an Agree relation with this position unless this constituent underwent movement.

- (22) 是所使夫百吏官人為也。 (Xunzi 11)
- Shi [SUO shi [TP [fu baili guanren] [vP wei e ]]] ye  
 Dem SUO make Dem clerk official do Decl  
 ‘This is something which one makes those clerks and officials do.’

### 3.2. Locality in SUO relatives

Having seen in the preceding subsection that Late Archaic Chinese had *wh*-movement to the edge of vP, this subsection presents evidence that SUO relatives are likewise derived through movement. First, there is no evidence that operator movement in a SUO relative can cross an island barrier. Specifically, I have found no examples of SUO relativization out of an island. This indirectly suggests that operator movement in SUO relatives was sensitive to locality constraints on movement. More concrete evidence is provided by the Modern Mandarin reflex of SUO relative clauses. Both subject and object relatives are typically formed with the linking element DE in Modern Mandarin, as in (23a, b). However, it is also possible to add SUO in object relatives, as in (23c).

- (23) a. [Lisi mai **de**] shu  
 Lisi buy DE book  
 ‘book which Lisi bought’

- b. [mai shu **de**] ren  
 buy book DE person  
 ‘person who bought the book’
- c. [Lisi **suo** mai de] shu  
 Lisi SUO buy DE book  
 ‘book which Lisi bought’

Interestingly, Chiu (1995) shows that, while gaps in DE relatives are permitted in some types of islands, gaps are not permitted to occur inside islands in relatives involving SUO. In (24), the gaps are contained within sentential subjects within the relative clauses. (24a), without SUO, is grammatical, while the relative with SUO in (24b) is ungrammatical. I discuss approaches to Modern Mandarin SUO in section 5.

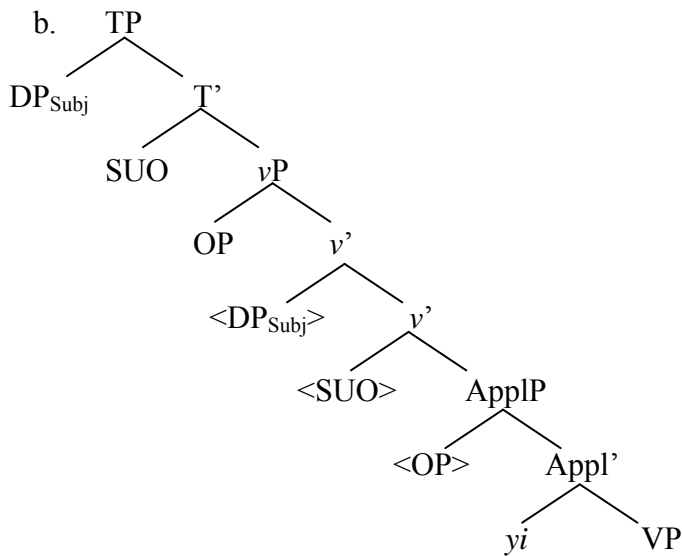
- (24) a. [[Lisi kan  $e_i$ ] zui heshi de] shu<sub>i</sub>  
 Lisi read most appropriate DE book  
 ‘the book that it is most appropriate for Lisi to read’
- b. \*[[Lisi **suo** kan  $e_i$ ] zui heshi de] shu<sub>i</sub>  
 Lisi SUO read most appropriate DE book  
 ‘the book that it is most appropriate for Lisi to read’

There are some Late Archaic period instances of SUO which appear on the surface to violate island constraints by forming a relative clause on the object of a preposition.

Assuming that adjunct PPs are islands to extraction, then movement of the operator from the gap position to the edge of  $vP$  should violate Huang's (1982) Condition on Extraction Domain (CED) and would therefore be a counterexample to the generalization made above that SUO relativization is sensitive to island barriers. In the following discussion, I present evidence suggesting that what look like prepositions on the surface might actually be better analyzed as heads along the clausal spine, for instance applicatives. Since these functional heads do not form a constituent with the DP they select, movement of this DP to [Spec,  $vP$ ] to form a relative clause would not violate the CED.

One case involves the functional morpheme *yi*. As shown in (25), a SUO relative clause can be formed on the argument selected by YI. YI is often assumed to be a preposition meaning something like 'with' (Wang 2004, Zhou 1959, Yang and He 1992, Hsueh 1997, Guo 1998, Djamouri 2009, among many others). However, Aldridge (2012) argues that it is an applicative. It selects a DP in its specifier and then moves to *v*.

- (25) 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 SUO APPL conquer
- 'This is why our former king was victorious in the past.'



Crucial evidence comes from the fact that YI and the following DP do not form a constituent. (26) shows that the DP selected by YI can appear in one conjunct of a coordinate structure together with the following VP but to the exclusion of YI. (26) can be accounted for if the remnant ApplPs are coordinated after YI undergoes across-the-board movement to  $v$ .

(26) 臣請以彫玉為棺，文梓為槨。(Shiji 126)

Chen	qing	[ <sub>vP</sub> yi	[ <sub>ApplP</sub> [diao	yu]	$t_{YI}$	[ <sub>VP</sub> wei	guan]],
minister	ask	YI	carve	jade	be	outer.coffin	
		[ <sub>ApplP</sub> [wen	zi]	$t_{YI}$	[ <sub>VP</sub> wei	guo]]].	
	inscribe	wood	be	inner.coffin			

‘I request making carved jade into the outer coffin and inscribed wood into the inner coffin.’

Given that the DP selected by YI does not form a constituent with YI, extraction of this DP does not cross any island barriers on its way to [Spec,  $\nu$ P] in (25).

It is yet to be determined whether a similar analysis can be applied to other functional categories which have been assumed to be prepositions in the literature. (27) shows a SUO relative clause formed on the DP selected by the commitative *yu*.

- (27) 其妻問所與飲食者 (Mencius 8)
- Qi qi wen [suo yu \_\_\_ yin shi zhe]
- 3.GEN wife ask SUO with drink eat DET

Initial evidence that *yu* is not a preposition and might be analyzable as an applicative comes from the fact that overt movement of the argument it selects is fully grammatical. (28a) shows that this argument can move to subject position in a passive, while (28b) shows that the same functional head can launch *wh*-movement. This suggests quite clearly that the argument selected by YU is not contained within an island.

- (28) a. 晉未可與爭。 (Zuozhuan, Cheng 3)
- Jin wei ke yu *t*<sub>Jin</sub> zheng.
- Jin not.yet PASS.POT YU compete
- ‘The Jin cannot be competed with.’



b. 吾又誰與爭？

(*Zuozhuan*, Zhao 4)

Wu you [<sub>vP</sub> [<sub>PP</sub> **shei** [<sub>P'</sub> *yu* *t<sub>shei</sub>* ]] [<sub>v'</sub> *t<sub>Subj</sub>* [<sub>VP</sub> *zheng*]]]?

I then who with then compete

‘Then who would we compete with?’

This section has presented evidence that SUO relativization is derived through A'-movement from VP to the edge of vP. SUO relativization thus makes use of the same landing site as focus movement in object *wh*-questions. The textual evidence also indirectly suggests that SUO relatives are sensitive to island constraints. Long distance dependencies in relative clause formation further suggest the role of movement. The next section addresses the final component of the analysis proposed in (5) by showing that the structure above vP is a nominalization and consequently that SUO relative clauses are a type of mixed projection.

#### 4. SUO clauses as nominalizations

To recap the discussion so far, I have shown that SUO is base merged in *v* where it attracts an operator to the edge of this phase. However, the operator does not undergo further movement to [Spec, CP]. I propose that this is because Late Archaic Chinese relative clauses did not project a CP layer. In object relatives, the vP was dominated by a nominalized TP, which was in turn dominated by DP. This section presents evidence for this proposal, specifically for the presence of a DP layer.

The nominalized nature of object relative clauses is clearly related to the existence of separate strategies for subject and object relativization. If the language employed finite embedded CPs to form relative clauses, then no structural difference would be predicted to exist between the two types of relative clause. Specifically, the presence of a CP layer would provide a uniform landing site for an operator, regardless of whether it was launched from [Spec, TP] or from a VP-internal position. I further demonstrate this connection by showing that the obligatory employment of the SUO construction in object relative clause formation disappeared from the language at the same time that morphology marking clausal nominalizations was lost. The loss of this morphology removed the trigger for acquirers to analyze relative clauses as nominalizations, thereby prompting them to adopt the less marked strategy employing a finite CP. Even though speakers of Modern Mandarin continue to use SUO relatives as a stylistic remnant of Archaic Chinese, this strategy is no longer obligatory for object relative clause formation.

#### *4.1. Genitive subjects*

The analysis of SUO relative clauses proposed and defended in this paper analyzes this construction as a reduced relative clause with a genitive subject in the sense of Krause (2001), Hale (2002), Aygen (2002), Miyagawa (2008, 2011), and others. One piece of evidence for this analysis has not yet been mentioned specifically, but most of the SUO examples discussed so far in this paper clearly have genitive marking on their subjects. Additional examples are shown below. The genitive marker on full NPs is *zhi* 之.

(29) a. 以丘之所聞，羊也。 (Guoyu, Lu 2)

Yi [Qiu **zhi** suo wen], yang ye.

by Qiu GEN SUO hear sheep COP

‘According to what I (Qiu) have heard, (it) is a sheep.’

b. 聖人之所不能勝也。 (Zhuangzi 1.4)

[shengren **zhi** suo bu neng sheng] ye.

saint GEN SUO not able overcome COP

‘(These) are things which (even) saints cannot overcome.’

Evidence that the morpheme *zhi* marks genitive case comes from the fact that it appears with possessors in a DP.

(30) a. 先王之道 (Analects 1)

Xian wang **zhi** dao

former king GEN way

‘ways of the former kings’

b. 寡人之身 (Mencius 1)

guaren **zhi** shen

1 GEN body

‘my body’

Subjects of nominalized clauses also take this case marker. (31a) is an example of a sentential subject. (31b) shows a complement clause. Both types of embedded clauses were obligatorily nominalized in Late Archaic Chinese.

(31) a. 臣之事君義也。 (Zhuangzi 1.4)

[chen **zhi** shi jun] yi ye.

minister GEN serve jun duty COP

‘A minister serving his lord is duty.’

b. 臣固知王之不忍也。 (Mencius 1)

Chen gu zhi [wang **zhi** bu ren] ye.

I already know king GEN not bare COP

‘I already knew you would not be able to bare it.’

Given that complements of perception verbs were nominalized, as in (31b), it is not surprising that a SUO relative clause can appear in this position. In fact, SUO relativization was the only way to express an embedded *wh*-question when a VP-internal constituent was questioned.

(32) a. 有司未知所之。 (Mencius 2)

Yousi wei **zhi** [OP suo zhi].

servant not know SUO go

‘I do not know [where you are going].’

b. 皆知其所以成。 (Xunzi 17)

Jie **zhi** [qi suo yi cheng]

all know 3.GEN SUO APPL form

‘Everyone knows how they are formed.’

It should be pointed out that there are also SUO relatives in which the genitive case marker does not appear overtly. This is primarily observed in the early part of the Warring States period (approximately 5<sup>th</sup> century BCE). In the *Analects* (of Confucius), the evidence suggests that the overt realization of the case marker had a prosodic basis. Note the near parallel examples in (33). The subject is identical in both cases. Both SUO relatives occur in subject position in the matrix clause. And they are both taken from the same chapter of the book. The difference is that the predicate in the relative clause in (33a) consists of only one syllable, while in (33b) it has two syllables. Given that there was an overall preference for four-syllable phrases in premodern Chinese texts, the appearance or absence of the genitive marker in these examples in (33) can be accounted for if we accept that post-syntactic lexical insertion of certain functional categories could be sensitive to prosodic effects.

(33) a. 子之所慎，齊戰疾。 (Analects 7)

[Zi zhi suo shen], zhai zhan ji.

master GEN SUO care purification war illness

‘Those things which the master takes great care about are ritual purification, war, and illness.’

b. 子所雅言，詩書執禮，皆雅言也。 (Analects 7)

[Zi suo ya yan], Shi Shu zhi li

master SUO elegant speak Songs History perform Rites

jie ya yan ye.

all elegant speak COP

‘Those things which the master speaks of elegantly (in the standard language) are the *Book of Songs*, the *Book of History*, and performing the Rites. These are all spoken of in elegant tones.’

However, it would be premature to conclude on the basis of examples like (33) that genitive marking of subjects in SUO relative clauses was optional in the syntax. In fact, pronominal subjects always appeared in their genitive forms. The following text, *Zuozhuan*, is another the 5th century BCE compilation. The QI ‘3.GEN’ form of the pronoun is completely obligatory in these examples.

(34) a. 若不信，是棄其所以服諸侯也。 (Zuozhuan, Xiang 27)

Ruo bu xin,

if not trustworthy

shi qi [qi suo yi fu zhuhou] ye.

this discard 3.GEN SUO APPL subdue lords COP

‘If he is not trustworthy, this is discarding that with which to subdue the feudal lords.’

b. 吾知其所由來矣。 (Zuozhuan, Xi 7)

Wu zhi [qi suo you lai] yi.

I know 3.GEN SUO from come PERF

‘I know where it comes from.’

Examples like (34) suggest that genitive case was assigned to subjects of SUO relatives across the board in the syntax, but full NPs were not required to be spelled out with overt case marking. As to why this marking could be omitted in the 5<sup>th</sup> century texts, Aldridge (2013) suggests that *zhi* might have been an innovation emerging in Early Archaic Chinese as a replacement for synthetic marking in relative clauses which was in the process of being lost. As for the etymology of *zhi*, according to Djamouri (1999)<sup>7</sup>, *zhi* was a distal demonstrative serving as object or possessor in Pre-Archaic Chinese of the 14<sup>th</sup> to 11<sup>th</sup> centuries BCE. The Pre-Archaic Chinese demonstrative *zhi* lost its deictic

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<sup>7</sup> See also Wang (2004), Zhou (1959), and Yue (1998) for additional discussion of the etymology and historical development of *zhi*.

feature in the Archaic period and grammaticalized into a neutral determiner (or pronoun). It functioned as the third person accusative pronoun and also as the genitive case marker on NPs. Aldridge (2009) analyzes *zhi* in Late Archaic Chinese uniformly as a determiner in the head of DP. Given that both pronouns and genitive case reside in the D position, cross-linguistically, the dual function of *zhi* in Late Archaic Chinese is unsurprising. Aldridge (2013) suggests that the apparent lack of obligatoriness of *zhi* in the first part of the Classical period is signaling a transitional period in which the synthetic and analytic forms coexisted.

This possibility is supported by that fact that the genitive marker becomes essentially obligatory in SUO relative clauses in the 4<sup>th</sup> and 3<sup>rd</sup> centuries BCE. I have counted the occurrences of SUO relatives with overt subjects in the *Zhuangzi*. Out of 255 total occurrences, 232 SUO have genitive subjects.

(35)	<u>DP+ZHI</u>	<u>其 <i>qi</i> ‘3.GEN’</u>	<u>吾 <i>wu</i> ‘1.GEN’<sup>8</sup></u>	<u>而 <i>er</i> ‘2.GEN’</u>	<u>Null</u>
	128	89	14	1	23

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<sup>8</sup> According to Wang (2004), this pronoun functioned as either subject or possessor, so it is not clear whether its case in SUO relatives is nominative or genitive. However, the fact that this pronoun did not occur in object position, which was strictly reserved for either accusative or dative DPs in this period, suggests that *wu* historically might have been a genitive form which later became syncretic with nominative. This conjecture is bolstered by the fact that most Chinese historical linguists do not make a syntactic distinction between root clauses and embedded nominalizations, leading to the possibility that a large number of *wu* subjects are genitive subjects of nominalized clauses.



This leaves 23 cases unaccounted for if we assume that genitive marking was obligatory in this period. One striking fact is that only four of these 23 examples occur in the chapters which were composed by Zhuangzi himself or his disciples. The remaining occurrences are found in the later chapters, which are very likely to post-date the Archaic period, after which time *zhi* genitive marking on embedded subjects itself was lost. Consequently, it is not surprising that texts postdating the Late Archaic period show a decline in the use of *zhi*.

The loss of genitive marking on embedded subjects, and consequently the loss of the nominal layer in embedded clauses, is evident as early as the beginning of the Middle Chinese period in the 1<sup>st</sup> century BCE. If we compare the following examples, (36a) shows a Late Archaic period sentential subject with genitive marking on the embedded subject. (36b) shows a similar sentence in a Han period historical chronical. The Han example does not use genitive case for the embedded subject.

- (36) a. 天下之無道也久矣。 (5<sup>th</sup> C. BCE; *Analects* 3)  
 [Tianxia **zhi** wu dao ye] jiu yi.  
 world GEN not.have way NMLZ long PERF  
 ‘It is a long time since the world has been without the proper way.’
- b. 天下無道久矣。 (1<sup>st</sup> C. CE; *Shiji* 47)  
 [Tianxia wu dao] jiu yi.  
 world not.have way long PERF  
 ‘It is a long time since the world has been without the proper way.’

Significantly, there is also evidence that SUO was no longer obligatory in forming object relative clauses in Early Middle Chinese. Both of the relative clauses in (37) are formed on the Archaic Chinese subject relativizer ZHE.

(37) a. 我請君塞兩耳無聽談者。 (1<sup>st</sup> C. BCE; *Zhanguoce*, Zhao 1)

Wo qing jun sai liang er  
 I ask lord close two ear  
 wu ting [tan **zhe**].  
 do.not listen discuss DET

‘I asked my lord to close his ears and not listen to what was being discussed.’

b. 君王將何問者也? (1<sup>st</sup> C. BCE; *Zhanguoce*, Chu 1)

Junwang jiang he [wen **zhe**] ye?  
 majesty will what ask ZHE COP

‘What is it that Your Majesty would like to ask?’

The pattern in (37) can be explained in terms of extension of the subject relativization strategy to object relatives. As I pointed out in section 3.2, a single strategy is employed to form both subject and object relative clauses in Modern Mandarin. The linking element DE appears following the clause in both cases.

- (38) a. [Lisi mai **de**] shu  
 Lisi buy DE book  
 ‘book which Lisi bought’
- b. [mai shu **de**] ren  
 buy book DE person  
 ‘person who bought the book’

Interestingly, DE traces its history as a relativizer to Archaic Chinese ZHE. Specifically, DE (的) – DI (底) in late Middle Chinese – was a lexical replacement for ZHE (者) (Lü 1943, Ohta 1958, Cao 1986, Feng 1990, and others). Therefore, it is clear that the subject relativization strategy was extended to object relatives.

I propose that this was made possible by the reanalysis of embedded nominalizations as finite CPs, thus making a CP layer available as a landing site for operator movement<sup>9</sup>. This was the indirect result of the loss of genitive marking in embedded clauses. Genitive case on the embedded subject provided the morphological trigger for learners to acquire the more marked nominalization structure for embedded clauses. With the loss of this trigger, the learners acquired the default (in the sense of Roberts 1997 and Roberts and Roussou 2003) clausal structure involving a finite CP. The reader is referred to Aldridge (2013, to appear) for additional discussion of the loss of morphological case distinctions and the role this played in syntactic changes taking place in Early Middle Chinese.

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<sup>9</sup> Alternatively, the operator may be base generated in [Spec, CP], given that Modern Mandarin DE relative clauses are less sensitive to islands than Archaic Chinese SUO relatives, as observed by Chiu (1995).

#### 4.2. Low subject position

Hale (2002), Aygen (2002, 2007), and others propose that the genitive subject in Dagur and Turkish raise to [Spec, DP] in order to value genitive case. But I demonstrate here that in Archaic Chinese relatives, the subject remains within the nominalized TP headed by SUO and values genitive case under Agree with D rather than moving to [Spec, DP]. The first indication that this is the case comes from the fact that genitive subjects follow demonstratives like *bi* in (39).

- (39) a. 彼其所與至者，必其民也。 (Xunzi 15)

[**Bi** [qi suo yu zhi] zhe] bi qi min ye.  
DEM 3.GEN SUO with arrive DET will 3.GEN people COP  
‘That with which he will arrive will certainly be his people.’

- b. 彼其所殉仁義也，則俗謂之君子。 (Zhuangzi 2.1)

[**Bi** [qi suo xun]] ren yi ye,  
DEM 3.GEN SUO self.sacrifice benevolence righteousness COND  
ze su wei zhi junzi.  
then common call 3.OBJ gentleman  
‘If that for which he sacrifices himself are the ideals of benevolence and righteousness, then commoners will call him a gentleman.’

Even more convincing is the fact that a temporal adverb can precede the genitive subject. Miyagawa (2008) uses similar evidence to argue that genitive subjects in Japanese relative clauses likewise do not raise to [Spec, DP].

(40) 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 SUO APPL conquer

‘This is why our former king was victorious in the past.’

b. 凡古今天下之所謂善者 (Xunzi 23)

[fan [gu jin [tianxia zhi suo wei shan]] zhe]

generally old now world GEN SUO call good DET

‘generally, what the world refers to as “good”, both now and in the past’

As can be seen in many of the SUO relatives given above, SUO can also occur with the determiner ZHE. I assume that ZHE can serve as the external binder for the operator in the edge of  $\nu$ P as it does in forming subject relative clauses, as discussed in section 1. As a determiner, the semantic contribution of ZHE is to add definiteness or specificity to the DP as a whole. This is clearly shown in (41a), where the context indicating that speakers have things to say is established in the first clause. The referent in (41b) is indefinite, since it is unknown. However it is clearly specific, since the wife assumes that her husband has been eating and drinking with someone. The reader is referred to Aldridge (2009) for further discussion on the semantic contribution of ZHE.

- (41) a. 言者有言，其所言者特未定。 (Zhuangzi 1.2)

Yan zhe you yan,

speak DET have speech

[qi suo yan zhe] te wei ding.

3.GEN SUO say DET but not uniform

‘Ones who speak have things to say, but what they have to say is not uniform.’

- b. 其良人出，則必饜酒肉而返。

Qi liangren chu, ze bi yanjiu rou er fan

3.GEN husband leave CONJ always fill liquor meat CONJ return

其妻問所與飲食者，則盡富貴也。 (Mencius 8)

Qi qi wen [suo yu yin shi zhe]

3.GEN wife ask SUO with drink eat DET

ze jin fu gui ye.

CONJ all rich powerful COP

‘Whenever the husband went out, he would come back well fed and liquored.

His wife asked who he had eaten and drunk with, and (the answer was) all rich and powerful people.’

As discussed in section 1, Aldridge (2009) argues that ZHE occupies a position structurally lower than D. With this in mind, now observe the following examples in which two SUO relatives with genitive subjects are coordinated under ZHE.

(42) a. 言之所不能論，意之所不能致者，不期精粗焉。 (*Zhuangzi* 2.10)

[[Yan zhi suo bu neng lun],

word GEN SUO not can debate

[yi zhi suo bu neng zhi] **zhe**,

intention GEN SUO not can bring DET

bu qi jing cu yan.

not limit fine coarse there

‘That which words cannot debate and intentions cannot summon is not limited to what is coarse or what is fine.’

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 SUO APPL cart-rip in Qin CONJ

吳起之所以枝解于楚者也。 (Hanfeizi 14)

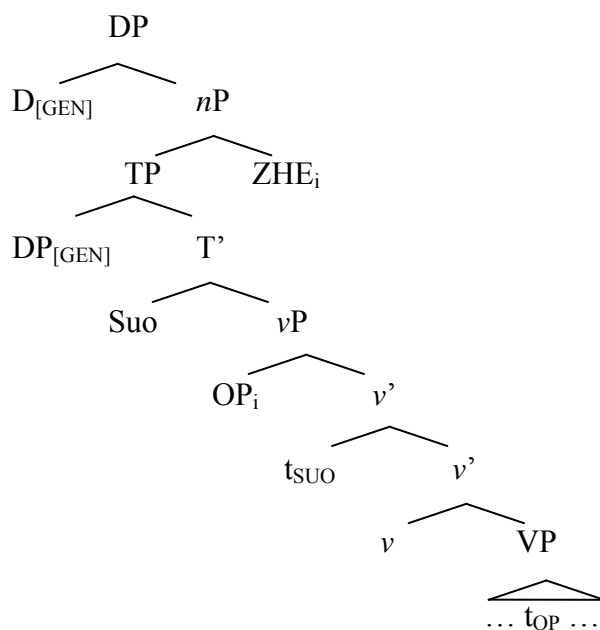
Wu Qi zhi suo yi zhi-jie yu Chu zhe ye.

Wu Qi GEN SUO APPL 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).’

Each of the conjuncts contains a genitive subject, indicating that these subjects must be located in a structurally lower position than ZHE. Given that ZHE occupies a position structurally lower than D, it is clear that the genitive subjects in (43) do not occupy [Spec, DP].

(43)





Further evidence for the low subject position comes from headed relative clauses. Headed relative clauses were less common in Late Archaic Chinese than headless relatives. But they did exist, and the head nominal always followed the clause. In a subject relative with an overt head, it was obligatory for the genitive marker to surface as a linker between the clause and the head NP, as in (44a). This linker could also appear in a SUO relative. Note, however, that the embedded subject did not have genitive case, as in (44b).

- (44) a. 豈若從避世之士哉。 (Analects, Weizi)
- qi ruo cong [DP [TP bi shi **zhi**] shi] zai.  
 how like follow escape world GEN gentleman EXCL  
 ‘How could that compare to following a gentleman who escapes from the world?’
- b. 仲子所居之室 (Mencius, Tengwen 2)
- [DP [TP Zhongzi suo ju] **zhi** shi ]  
 Zhongzi SUO live GEN house  
 ‘the house in which Zhongzi lives’

Another important fact to note is that the linker ZHI does not appear if the embedded subject surfaces with the same genitive marker ZHI. Consequently, ZHI can surface in either the linker position, as in (44b) above, or with the embedded subject, as in (45a) below. This complementarity suggests that there is only one position for genitive marker

*zhi*. However, it does not constitute evidence that genitive subjects raise from [Spec, TP] to [Spec, DP]. This is because of the co-occurrence of the linker ZHI with a pronominal genitive subject, as in (in 45b). If the genitive subject had to occupy [Spec, DP], then the co-occurrence with the linker would not be accounted for.

(45) a. 侍二先君之所職業。 (Guoyu, Lu 1)

Shi [DP [TP er xian jun **zhi** suo zhi ] ye].  
 based.on 2 former lord GEN SUO discharge duty  
 ‘... based on the duties discharged by my two former lords.’

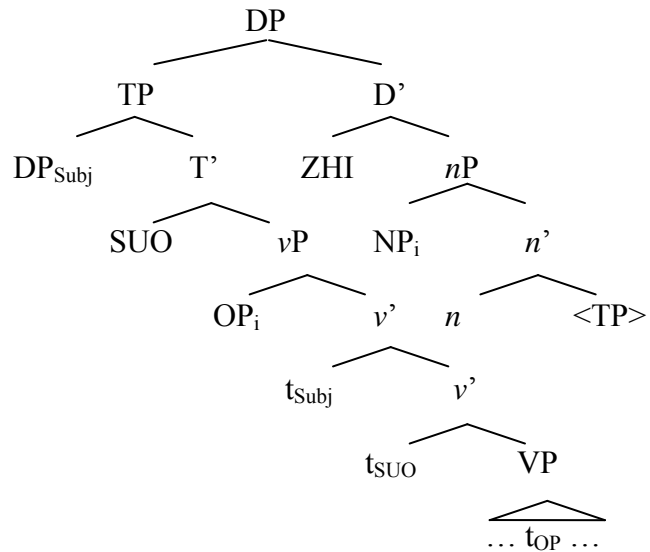
b. 失其所欲之路 (Hanfeizi 20, Jielaο)

... shi [DP [TP **qi** suo yu ] **zhi** lu] ....  
 lose 3.GEN SUO desire GEN path  
 ‘... loses the path that he desires ....’

The analysis of headed SUO relative clauses is shown in (46). The embedded subject values genitive case with D under Agree but remains in the specifier of the TP headed by SUO. The head nominal is merged in the specifier of *n*P. The *n* head is the position for the determiner ZHE. It never co-occurs with an overt head NP. I account for this complementarity by merging the head NP in this projection as well. The modifying clause moves to [Spec, DP] to derive the pronominal word order. ZHI can be spelled out either as the linker on the D head or as the genitive case valued on a full NP embedded subject. But for phonological reasons, only one ZHI may be spelled out. When the

genitive case marker takes a different form from the linker, as when the embedded subject is a pronoun, then both may be spelled out.

(46)



This section has demonstrated that Late Archaic SUO relative clauses contained a nominal layer above  $vP$  which housed a genitive subject. I have additionally shown that the genitive subject occupied the specifier of the nominalized TP and did not move to [Spec, DP]. This analysis firmly anchors SUO relatives in the cross-linguistic class of nominalized reduced relative clauses with genitive subjects. I have further suggested how the nominalized nature of the clause relates to having separate strategies for subject and object relativization in a language, specifically by showing how the lack of a CP layer requires the employment of a specialized strategy for object relatives. Finally, I have anchored the object relativization strategy within the overall history of the language by showing that the loss of the obligatoriness of the SUO construction in forming object

relative clauses correlates with the general loss of embedded nominalizations and emergence of finite embedded CPs.

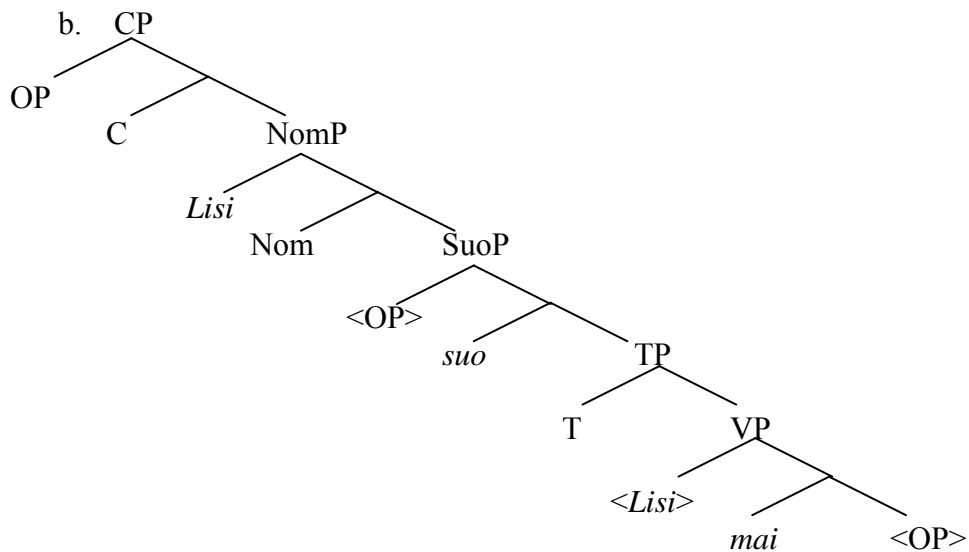
## 5. Comparing with Other Analyses

Before concluding this paper, I consider proposals which have been made for the Modern Mandarin reflex of SUO and show that these approaches cannot be applied to SUO of the Late Archaic Chinese period. As mentioned in section 3.2, SUO can optionally appear in a relative clause formed on a VP-internal position in Modern Mandarin. (47a, b) show that object relatives can be formed with SUO and the linker DE or just with DE in Modern Mandarin. (47c) shows that subject relatives must be formed with just the linker.

- (47) a. [Lisi **suo** mai de] shu  
Lisi SUO buy DE book  
'book which Lisi bought'
- b. [Lisi mai de] shu  
Lisi buy DE book  
'book which Lisi bought'
- c. [(**\*suo**)mai shu de] ren  
SUO buy book DE person  
'person who bought a/the book'

In order to account for the fact that SUO occurs only in relatives formed on VP-internal positions, Chiu (1993, 1995) proposes that SUO heads the accusative case-checking projection. The argument moving to the specifier of this projection is assigned accusative case, so SUO relativization is restricted to accusative objects. The overt appearance of SUO is triggered by operator movement to the specifier of SuoP, accounting for the restriction of SUO to relative clauses. SuoP is located above TP, due to the fact that SUO precedes TP-internal elements like aspectual markers, negation, and subject-oriented quantifiers, the last of which Chiu locates in T.

- (48) a. [Lisi **suo** mai de] shu  
 Lisi SUO buy DE book  
 ‘book which Lisi bought’



This analysis is able to account for the lack of subject relativization with SUO and also for the fact that SUO relativization is sensitive to island barriers, as discussed in section 3.

- (49) a. [[Lisi kan  $e_i$ ] zui heshi de] shu<sub>i</sub>  
 Lisi read most appropriate DE book  
 ‘the book that it is most appropriate for Lisi to read’
- b. \*[[Lisi **suo** kan  $e_i$ ] zui heshi de] shu<sub>i</sub>  
 Lisi SUO read most appropriate DE book  
 ‘the book that it is most appropriate for Lisi to read’

Nevertheless, this analysis cannot be adopted for Late Archaic Chinese. Most damaging is the fact that Late Archaic Chinese SUO does not always relativize on accusative object position. (50) is an example involving a locative gap. The locative here cannot be analyzed as the accusative marked argument, because there is a direct object inside the SUO relative which must value accusative case.

- (50) 文王之所避風雨 (Zuozhuan, Xi 32)  
 [Wen Wang zhi **suo** [<sub>VP</sub> bi feng yu  $e$  ]]  
 Wen king GEN SUO escape wind rain  
 ‘where the (Zhou) king Wen escaped the storm’

Furthermore, SUO can relativize on unaccusative (including passive) VPs, as seen in section 2.1. The gaps in (51) are locative adjuncts. The internal argument subject in (51a) surfaces to the left of SUO and values genitive case. The subject is topicalized in (51b) and is null within the relative clause itself. What is important for the argument at hand is that, given Burzio’s (1986) generalization that accusative case is not available in unaccusatives, examples like the following cannot be accounted for on an approach which requires SUO to head an accusative case projection.

(51) a. 穀食之所生 (Zhuangzi 2.10)

[gushi zhi **suo** [vP sheng e ]]

grain GEN SUO grow

‘where grain grows’

b. 是不材之木也，無所可用。 (Zhuangzi 1.4)

Shi bucai zhi mu ye,

this worthless GEN tree TOP

wu [pro suo **ke** yong].

not.exist SUO PASS.POT use

‘There is no place for this worthless tree to be used.’

Ting (2003) shows that, even in Modern Mandarin, SUO relatives are not limited to accusative object gaps. (52) shows a SUO relative formed on a locative constituent.

Consequently, Chiu's (1993, 1995) proposal suffers from inadequacies even in accounting for Modern Mandarin.

- (52) Lisi suo gongzuo de difang (Ting 2003:125)  
 Lisi SUO work DE place  
 'the place where Lisi works'

Another problem for the accusative case approach is that SUO in Modern Mandarin can be separated from the gap by a clause boundary, as in (53b), also noted by Ting (2003). Assuming that structural case on the operator forming the relative clause is valued locally by embedded *v* (as per Chomsky 2004), the function of SUO in the higher clause cannot be case-checking or valuing. Even if accusative case is assumed to originate from a higher functional head, accusative case valuing on the operator cannot be attributed to SUO in (53b), since the accusative case in the matrix clause is required by the matrix object.

- (53) a. [wo rang Zhangsan [PRO suo goumai *e* ]] de shu  
 1.SG make Zhangsan SUO buy DE book  
 'the book that I made Zhangsan buy'
- b. [wo suo rang Zhangsan [PRO goumai *e* ]] de shu  
 1.SG SUO make Zhangsan buy DE book  
 'the book that I made Zhangsan buy' (Ting 2003:127)





mentioning that Roberts (1994) restricts excorporation to L-related heads, specifically verbal and inflectional categories, but not other heads like Neg or C. An immediate problem concerns how to treat cases like (53b), in which SUO is separated from its base position by a clause boundary. Ting (2010) stipulates that the embedded clause can be a TP and not a CP, thereby circumventing the problem of excorporation from a non-L-related C head. This is not entirely implausible, given that SUO relativization takes place only from nonfinite embedded clauses and not finite ones.

A more damaging problem is the fact that Ting does not offer any independent evidence for her analysis of SUO as a pronoun. For example, SUO does not surface in other extraction contexts like topicalization. A resumptive pronoun did appear in Archaic Chinese when an object was topicalized. But SUO was not employed in this way.

(55) a. 諸侯之禮，吾未之學也。 (Mencius 6)

[Zhuhou zhi li] wu wei **zhi** xue ye.  
 feudal.lord GEN rite 1 not.yet 3.OBJ study COP  
 ‘The rites of the feudal lords, I have not yet studied.’

b. 子路，人告之以有過。 (Mencius 3)

Zilu, ren gao **zhi** yi you guo.  
 Zilu person tell 3.OBJ APPL have error  
 ‘Zilu, someone told him he made a mistake.’

This is surprising, given that other languages, e.g. Hebrew (Sharvit 1999) and Greek (Alexopoulou 2006), which allow resumption in relative clauses do not employ a special set of pronouns specifically for resumption in relative clauses. Rather, one set of pronouns appears in resumptive and non-resumptive contexts alike.

Finally, Ting's approach has no account of the fact that Archaic Chinese SUO relatives are nominalizations. This is particularly problematic for her (2005) analysis of Late Archaic Chinese SUO relatives. She claims that the crucial difference between Modern and Classical Chinese is that SUO was obligatory for object relativization in the latter and not in the former. In order to account for the obligatory nature of SUO relativization in Late Archaic Chinese, she stipulates that Archaic SUO is itself an operator and as such must undergo further head movement to C at LF. But by assuming a CP layer in the SUO relative, she leaves open the question of how genitive case is licensed on the subject. She also offers no principled account of the change from an operator to pronominal clitic.

## **6. Conclusion**

This paper has proposed that the Late Archaic Chinese morpheme SUO forms relative clauses on VP-internal positions by attracting an operator to the edge of  $vP$ . The operator in SUO relatives does not move to [Spec, CP], because the  $vP$  is dominated by a nominalized TP and DP layer. No CP is projected. SUO relatives are thus mixed projections, specifically of the type that Kause (2001) terms reduced relatives with genitive subjects. Tes analysis of SUO relatives as mixed projections accounts in turn for

the fact that separate strategies were required in Late Archaic Chinese for forming subject and object relative clauses. Since [Spec, CP] was unavailable as an operator position, SUO was necessary to draw an operator from inside VP to a phase edge so the relative clause could be formed. The analysis of SUO relatives as nominalizations further accounts for their loss. SUO relatives begin to disappear at the same time that genitive marking on embedded subjects is lost. If we assume that genitive case was the morphological trigger prompting learners to acquire the marked relativization strategy built on a nominalization, then it is easy to see that the loss of this trigger led to acquisition of the default CP structure for relative clauses.

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