Emergence and Formation of the Modern Chinese Anaphor ZIJI
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1. Introduction

This paper presents an analysis of the formation of the Modern Mandarin anaphor 自己 ZIJI. The primary characteristic of ZIJI which I consider in this paper is the fact that it can be either locally or long distance bound, as has been noted repeatedly in the literature (Y.-H. Huang 1984; C.-T. Huang et al. 1984; Tang 1989; Yu 1992; Huang and Liu 2001; Cole et al. 1990; Huang and Tang 1991; Cole and Sung 1994; Cole and Wang 1996; Pan 1998, 2001; Cole et al. 2001; Y. Li 1993b; Xu 1993; Xue et al. 1994; and others). In (1), the anaphor in the embedded clause can take either the embedded or the matrix subject as its antecedent.

(1)  Zhangsan 姓 [Lisi 姓 Hai-le ziji].
     ‘Zhangsan thought that Lisi hurt him/himself.’

ZIJI emerged in the Six Dynasties period (3rd-6th centuries CE). It is composed of two anaphors which had different binding requirements in Late Archaic Chinese (LAC) of the Warring States period (5th – 3rd centuries BCE). The first member of the compound, 自 ZI, was required to be locally bound in LAC. In (2a), ZI refers to the clause-mate subject. The second member of the compound, 己 JI, could be bound locally or long distance. In (2b), JI in the embedded clause refers to the matrix subject and is therefore long distance bound.

(2) a. 多 行 不 義, 必 自 斃。 (Zuozhuan, Yin 1)
     Duo xing bu yi, e bi zi bi.
     “Having done much wrong, he will certainly do himself in.”

b. 諸侯 惡 其 禁 自己。 (Mencius 10)
     Zhuhou wu [qi hai ji].
     “The feudal lords dislike it that they inconvenience self.”

It is uncontroversial that ZIJI is a compound consisting of the two Archaic Chinese anaphors ZI and JI. But there is disagreement as to what features of these two are inherited by the compound. Dong (2002) proposes that the combination of local and long distance binding capability of modern ZIJI is the result of adding the features of the anaphor ZI to the pronominal JI. An obvious complication inherent in this proposal is the logical contradiction in asserting that a pronominal form can be subject to both Condition A and Condition B. Condition A of Chomsky’s (1981, 1986) Binding Principles requires that an anaphor be bound in a local domain, while Condition B requires a pronominal to be free in the same domain. Given that it is not

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possible to meet both of the requirements simultaneously, ZIJI cannot be said to be an amalgam of the features of an anaphor and a pronominal.

Dong’s proposal also fails on the empirical front. As I show in section 2.1, JI could in fact be locally bound in the Late Archaic period and was therefore not a Condition B pronominal at that time. An additional empirical complication for Dong’s analysis is the fact that ZI was reanalyzed in Middle Chinese and could be long distance bound by the time the compound ZIJI was formed. I discuss this in section 3.1.

In contrast to Dong’s approach, Zhu (2007) proposes that ZIJI is a compound consisting of like members, both of which could be either locally or long distance bound. However, he assumes that the change which took place allowing ZI to be long distance bound was the result of contact with Sanskrit, citing the large numbers of this innovated use of ZI in translations of Buddhist texts. I show in section 3.1, however, that the key changes in ZI can be observed in the first Han dynasty, before the introduction of Buddhism to China. Therefore, the changes in ZI must be understood as an indigenous development.

Wei (2004) correctly captures the empirical difference between LAC ZI and JI, specifically that ZI must be locally bound, while JI can be either locally or long distance bound. However, like Dong (2002), he assumes that the local and long distance potentiality of modern Mandarin ZIJI are the result of the respective inheritance of features from each of the Archaic Chinese anaphors, which I have pointed out is a logical contradiction. Wei also misrepresents the empirical distribution of ZIJI by suggesting that early instances of the compound all involve local binding. As I point out in section 4, long distance binding of ZIJI was very free even in Middle Chinese.

I propose in the paper that the compound ZIJI is compound composed of like members. Specifically, ZI was reanalyzed in Middle Chinese as a potentially long distance anaphor, so it comes to have the same binding requirements as JI by the time the compound is formed. I also show that ZIJI and JI coexist during Middle Chinese with similar functions. The main difference between them is prosodic. ZIJI occurs with other disyllabic phrases to form four-syllable phrases, while JI is paired with other monosyllabic words to form disyllabic phrases. Ultimately, JI is replaced by ZIJI.

2. Properties of Archaic ZI and JI

As mentioned in the preceding section, ZI and JI had distinct binding requirements in Late Archaic Chinese. JI could be locally or long distance bound, while ZI had to be locally bound. There was also a positional difference between the two. JI was a free form, occurring in argument position, while ZI was a bound form, adjoined or cliticized to the verb. This section elucidates each of these characteristics in turn.

2.1. Binding

LAC JI was a free morpheme and occurred in the full range of argument positions. The examples in (3) are all instances of binding of JI by the local subject. (3a) shows JI functioning as a direct object. In (3b), JI is a possessor. In (3c), JI is the object of a preposition.

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(3) a. 修己以安人。\textit{(Analects 14)}

\begin{align*}
  e_i & \text{ xiu } j_i \text{ yi an ren.} \\
  \text{train self to protect person} \\
  \text{‘Train yourself in order to protect other people.’}
\end{align*}

b. 堯以不得舜為己憂。\textit{(Mencius 5)}

\begin{align*}
  \text{Yao yi bu de Shun wei } [j_i \text{ you}]. \\
  \text{Yao take not obtain Shun be self concern} \\
  \text{‘Yao took not obtaining Shun (as his successor) as his own concern.’}
\end{align*}

c. 於己取之而已矣。\textit{(Mencius 11)}

\begin{align*}
  e_i & \text{ yu j_i qu zhi er yi yi.} \\
  \text{P self seek 3.Obj Conj finish Asp} \\
  \text{‘(One) seeks it in himself and that’s all.’}
\end{align*}

(4) shows examples of long distance binding of JI. In both cases, JI appears in object position in an embedded clause. JI is bound by the matrix subject.

(4) a. 諸侯惡其害己。\textit{(Mencius 10)}

\begin{align*}
  \text{Zhuhou, wu } [qi \text{ hai } j_i]. \\
  \text{feudal.lord dislike they inconvenience self} \\
  \text{‘The feudal lords dislike it that they inconvenience self.’}
\end{align*}

b. 不患人之不己知。\textit{(Analects 1)}

\begin{align*}
  e_i & \text{ bu huan } [ren \text{ zhi bu } j_i \text{ zhi}]. \\
  \text{not worry others Gen not self understand} \\
  \text{‘Do not worry that others do not understand you.’}
\end{align*}

JI could also be unbound. In (5a), JI is the subject of a root clause and is therefore clearly unbound. In (5b), JI is the object in a root clause, but its antecedent is not the subject, so JI is likewise unbound.

(5) a. 人皆取先，己獨取後。\textit{(Zhuangzi 3.11)}

\begin{align*}
  \text{Ren jie qu xian, j_i du qu hou.} \\
  \text{other all take lead self alone take rear} \\
  \text{‘While others all take the lead, one alone himself remains in the rear.’}
\end{align*}

b. 莫己知也。\textit{(Analects 14)}

\begin{align*}
  e_j & \text{ mo } j_i \text{ zhi ye.} \\
  \text{none self know Decl} \\
  \text{‘Noone understands me!’}
\end{align*}

In contrast to JI, ZI was always bound by a clause-mate subject in Late Archaic Chinese. (6) shows monoclausal examples in which ZI functions as the direct object and is bound by the subject.
(6) a. 多行不義，必自彊。
   (Zuo zhuan, Yin 1)
   Duo xing bu yi, e_i bi zi bi.
   much do not right certain self kill
   ‘Having done much wrong, he will certainly kill himself.’

b. 夫子自道也。
   (Analects 14)
   Fuzi zi dao ye.
   master self speak Decl
   ‘The master is speaking of himself.’

(7) and (8) contrast ZI and JI in embedded clauses. In (7), JI and ZI are objects inside relative clauses. JI in (7a) is bound by the matrix subject, but ZI in (7b) refers to the embedded subject, which is also the gap in the relative clause.

(7) a. 愧不若黃帝而
   e_i kui bu ruo Huangdi er
   be ashamed not like Huangdi Conj
   哀不己若者。
   (Zhuangzi 3.2)
   e_i ai [e_j bu ji_i ruo zhe].
   feel sympathy not self like Det
   ‘(He) is ashamed of not being as good as Huangdi and feels sympathy for those who are not as good as he is.’

b. 吾未見能見其過
   Wu i wei jian [e_j neng jian qi guo
   I not yet see can see 3.Gen error
   而內自詬者也。
   (Analects 5)
   er nei zi_j song zhe ye.
   Conj privately self blame Det Decl
   ‘I have never seen someone who can see his errors and privately blame himself.’

(8) shows parallel behavior in a complement clause. JI refers to the matrix subject in (8a), while ZI is bound by the embedded subject in (8b).

(8) a. 謂己謔人，則怫然作色。
   (Zhuangzi 2.5)
   e_i wei [ji_j yuren], ze e_j furan zuose.
   say self flatterer then anger flush
   ‘If someone, says he_j is a flatterer, then he_j flushes in anger.’

b. 言非禮義，謂之自暴也。
   (Mencius 7)
   Yan fei Li Yi, e_i wei [zhi zi bao] ye.
   speech betray Rite Righteousness say 3.Obj self injure Decl
   ‘If his speech betrays the Rites and Righteousness, then (one) says of him that he harms himself.’
2.2. Distribution: Archaic ZI adjacent to V

This section considers the position of ZI and argues that ZI was restricted to immediate preverbal position and is probably best analyzed as a clitic or prefix on the verb. Before entering the discussion, it is necessary to mention that in addition to functioning as an object, ZI also had an adverbial use. Adverbial and argumental ZI both occurred in the same preverbal position and were both bound by the local subject. In (9), it is clear that ZI is an adverb and not the object, because there is another object in postverbal position, the third person pronoun zhi.

(9) 魯君之使者至，
鲁君之使者至，
Lu jun zhi shi zhe zhi,
Lord Gen send Det arrive

顏闔自對之。
颜闔自对之。
Yan He zi dui zhi

‘The envoy of the lord of Lu arrived, and Yan He met with him himself.’

In the following discussion, I show that ZI follows all other material which can appear in preverbal position. I use examples of both object ZI and adverbial ZI wherever possible in order to show that ZI in both functions occupies the same position. I indicate the object use of ZI with a line following the verb to show that there is a gap in VP for the base position of ZI. Note first that ZI follows the subject in (9). In many of the examples I consider, the subject is null, as null pronominalization in subject position was quite common in LAC. This does not mean, however, that ZI should be understood as the subject, since an overt subject would never appear in the positions in which we find ZI in this section. In (10), ZI follows a subject-oriented quantifier.

(10) 四面之吏亦皆自行其守。
四面之吏亦皆自行其守。
Si mian zhi li yi jie zi xing qi shou.
4 side GEN officer also all self perform 3.GEN duty

‘The officers at each of the four sides (of the fortress) also all perform their duties by themselves.’

The quantifier in turn always follows an overt subject in both matrix (11a) and embedded (11b) clauses. Assuming that the subject is not likely to be a topic in embedded contexts, (11b) offers very clear evidence that the position for subjects is higher than for ZI.

(11) a. 有民如此，
有民如此，
You min ru ci,
exit subject like this

先古聖王皆不能臣。
先古圣王皆不能臣。
xiangu sheng wang jie bu neng chen.
antiquity great king all not can make.serve

‘Subjects like this, all of the great kings of antiquity were not able to press into service.’
b. 民知讞罰之皆起於身也。
Min zhi [zhufa zhi jie qi yu she] ye.
people know punishment GEN all originate in body DECL
‘The people know that all punishments are the result of their own actions.’
(Hanfeizi 38)

Furthermore, like modern Mandarin *dou, jie* quantifies only to its left (Chiu 1993; Cheng 1991, 1995; Lee 1986; Li and Thompson 1981; Lü 1980; and others). (12) shows that *dou* quantifies over plural subjects but not VP-internal objects. Consequently, it is clear that ZI cannot be functioning as the subject in (10), since it follows the quantifier.

(12) a. Ta-men *dou* hen xihuan wo.
   3-Pl all very like 1
   ‘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)

ZI also follows the modal adverb *jiang*. Note that the subject in both examples below precedes the modal.

(13) a. 勿引勿推，福將自歸。
    Wu yin wu tu, fu jiang zi gui.
    NEG.IMP pull NEG.IMP push fortune will self return
    ‘Do not pull or push it; fortune will return by itself.’ (Guanzi 49)

b. 不欲以靜，天下將自正。
    Bu yu yi jing, tianxia jiang zi zheng ___.
    not desire C passive world will self aright
    ‘If (one) is without desire and passive, the world will aright itself.’

(14) shows more examples of ZI in embedded clauses. The subject in both cases is the third person genitive pronoun *qi*. There were no finite embedded clauses in LAC. LAC non-control embedded clauses were nominalized in this period, so the subject appeared in genitive case.

(14) a. 君子深造之以道，
    Junzi shen zao zhi yi dao
gentleman deep study 3.OBJ with way
    欲其自得之也。 (Mencius 8)
    yu [qi zi de zhi] ye.
    desire 3.GEN self attain 3.OBJ DECL
    ‘A gentleman studies deeply in the proper way, as he desires that he attain enlightenment himself.’

b. 其自任以天下之重如此。
    [Qi zi ren ___ yi tianxia zhi zhong] ru ci.
    3.GEN self burden with world GEN weight like this
    ‘Thus was his burdening himself with the weight of the world.’ (Mencius 9)
ZI also follows object-oriented quantifiers like "jin ‘all’ or ‘completely’.

(15)  
    Jin zi zhi qi shi, ze shi duo.  
    all self govern 3.gen affair then affair many
    ‘If (the ruler) takes care of all matters himself, then there is too much for him to do.’

Object-oriented quantifiers in turn are located very low in the structure. (16a) shows that they follow negation. They also naturally follow the subject, as shown in (16b).

(16)  
    a. Bu jin [VP shou pro] ze bu jin [VP yu pro]  
       not all harvest then not all use
       ‘If (the grain) is not all harvested, then it cannot all be used.’ (Mozi, Qihuan)
    b. Zhu duo [VP nu ] er hao yong bing  
       lord much anger conj enjoy use military (Hanfeizi 15)
       ‘If the lord often becomes angry and enjoys using military might….’

Among the clearest evidence for the low position of ZI comes from its placement in subject-control embedded clauses. ZI is left-adjacent to embedded verb and is not located in the matrix clause. This clearly shows that ZI does not occupy the position of the overt subject. Assuming that the subject of the embedded clause is PRO, the overt controller can only occur in the matrix clause.

(17)  
    a. Guiren huo de ji er jin yi wei gong.  
       ruler sometimes succeed plan conj want self take be credit
       ‘Sometimes the ruler succeeds in some endeavor and wants to take credit for it himself.’
    b. Wei gan [zi shi ___], zi ming yue su.  
       not dare self rely self call say insignificant
       ‘One does not dare to be overconfident in himself and refers to himself as “insignificant”.’
    c. Neng zi bao ___ er quan sheng ye.  
       can self preserve conj completely win decl
       ‘(One) can protect oneself while achieving total victory.’

(18) shows that ZI follows negation.
Significantly, ZI does not raise to the negator. In Late Archaic Chinese, pronouns typically raised from their base positions in negative contexts to a position immediately following the negator. With some negators, this was even possible across a clause boundary, as in (19).

(19) a. 虎負嶽，莫之敢攖。 (Mencius 14)
    Hu fu yu, mo zhi gan [ying ___].
    'The tiger backed into a crevice and no one dared to approach it.'

b. 如火烈烈，則莫我敢遏。 (Xunzi 15)
    Ru huo lielie ze mo wo gan [e ___].
    'If (we) are fierce as fire, then no one will dare to stand in our way.'

ZI, however does not raise, even in this context.

In sum, I have shown in this subsection that ZI always immediately precedes the verb. It does not occupy subject position and cannot be analyzed as the argument in subject grammatical function. Before proceeding, I mention one exception to the above generalization. When ZI functioned as an adverb, there were a limited number of examples in which it preceded negation.
The ruler of a violent state will observe that he himself cannot use his weapons.

I assume that this is not an accidental occurrence. As I show in section 4, adverbial ZI came to lose its morphological dependence on the verb and occur in a higher position. (21) may be an early example of this change.

Regarding the analysis of the position of ZI, Aldridge (2009) proposes that ZI was a bound form, either adjoined or cliticized to the verb. When it functioned as direct object, it was base merged in argument position in VP. ZI, as the head of the object DP, underwent head movement and incorporated to the verb.

The incorporation analysis also accounts for why only JI (as in 3c), and ever ZI, can occur in a PP. This is because movement of ZI to the verb would also violate Travis’ (1984) Head Movement Constraint, since ZI would have to skip the intervening P position in order to adjoin to the verb.

When ZI functions as an adverbial ZI, its base position can plausibly be analyzed as a v’ adjoined position. Since it is base merged in an adjoined position, it does not incorporate to the verb.
Consequently, its position is somewhat freer, allowing it to appear separated from the verb, as we have seen in (21).

(24) a. 自為之與？
   (Mencius 5)
   ‘Did you make it yourself?’

b. 

To summarize this section as a whole, LAC JI could be locally or long distance bound, like modern Mandarin ZIJI, while ZI was required to be bound by the clause-mate subject. This empirical finding is consistent with that of Wei (2004) and Zhu (2007) and clearly refutes the proposal by Dong (2002) that JI could not be locally bound. Positionally, ZI appears to have been a bound morpheme, either prefixed or cliticized to the verb, while JI was a free form occurring in argument position. In Middle Chinese, ZI loses both of these requirements. It continues to appear in preverbal position but comes to be able to surface in a position further to the left and not merely in immediate preverbal position. Most crucially, ZI acquires the ability to be long distance bound.

3. Middle Chinese Changes in 自 ZI

In this section, I show that ZI underwent two crucial changes in Middle Chinese before the compound ZIJI was formed. First, ZI was reanalyzed as a potentially long distance anaphor. Thus, the compound ZIJI was formed by combining two anaphors with similar binding requirements. Secondly, ZI lost the requirement that it incorporate or cliticize to the verb. This enabled ZI to combine with the nominal category JI to form the compound anaphor.

3.1. Emergence of Long Distance ZI

In this subsection, I offer an analysis of how ZI was reanalyzed as a potentially long distance anaphor in early Middle Chinese. The pivotal construction was a Late Archaic Chinese applicative construction in which the applied object was interpreted as a causee. The applied object in this period was not a potential antecedent, since it was not a subject. However, its
function as causee facilitated reanalysis of ZI as a potentially long distance anaphor. Supporting evidence for this proposal comes from the fact that the first examples of true long distance binding of ZI involve causative constructions in early Middle Chinese. The causee in these cases was a subject, specifically the subject of the clause embedded under a causative verb. The object of these embedded clauses was the anaphor ZI; the subject therefore was an intervening potential antecedent. In later Middle Chinese texts, long distance binding of ZI was extended to other contexts, including binding across a finite clause boundary.

3.1.1. Archaic Chinese ApplP

In Late Archaic Chinese, there are a few examples in which ZI appears at first glance to be long distance bound. In the examples in (25), there is a DP intervening between the subject and ZI. This is the overt jiachen in (25a) and the null pronominal in (25b).

(25) a. 身士以家臣自代者幾何人？
    [Shen shi yi jiachen zii dai] zhe jihe ren?
    own job YI retainer ZI replace Det how.many person
    ‘How many persons are there who replace themselves with retainers in their own occupations?’
    (Guanzi 24)

b. 何為言徐子以自代？
    [He wei yan Xuzi j yi zii dai?]
    what for speak Xuzi YI ZI replace
    ‘Why do you recommend Xuzi to replace yourself with?’
    (Hanfeizi 33)

There are two possible explanations for the fact that the intervening DP does not bind the reflexive. One is that it is contained within a PP headed by the morpheme yi and therefore does not c-command the reflexive in the first place. This is a very attractive solution, given that the prepositional status of yi is widely assumed in the field of Chinese historical linguistics (Wang 1958, Zhou 1958, Yang and He 1992, Hsueh 1997, Guo 1998, Djamouri 2009, among many others). However, there are empirical, as well as theoretical reasons to disfavor the preposition analysis. I mention an empirical reason at the end of section 3.2. In this section, I focus on the cross linguistic factor. In this paper, I suggest that yi is a high applicative head in the sense of Pylkkanen (2002). The DP which follows it in surface order is selected in its specifier. The surface order is derived by moving yi to \(v'\).

(26) \([TP \, DP_1 \ldots [\text{ApplP} \, DP \, [\text{VP} \, ZI^{+}V]]]\)

Before proceeding, let me point out that the structure in (26) still does not pose a problem for the lack of binding between the applied DP and the reflexive. Although the applied object c-commands the reflexive, it still does not qualify as a binder, if we assume that ZI was like modern Mandarin ZIJI in requiring its binder to be a subject. (27) illustrates this requirement for modern ZIJI.

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An analysis along these lines has been proposed by Whitman (2000) and Whitman and Paul (2005) for the modern Mandarin ba construction, which shares many characteristics with LAC yi.

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2 An analysis along these lines has been proposed by Whitman (2000) and Whitman and Paul (2005) for the modern Mandarin ba construction, which shares many characteristics with LAC yi.
(27)  Wangwu_i  shuo  Zhangsan_j  zengsong  gei  Lisi_k  
Wangwu say  Zhangsan give to Lisi  
yipian  guanyu  zi ji_j/k  de  wenzhang.    (Cole & Sung 1994:360)  
one  about  self REL  article  
‘Wangwu_i says that Zhangsan_j gave an article about him_j/himself_j to Lisi_k.’

Given that I have found no instances in which the antecedent of ZI in Archaic Chinese is not a subject, it is safe to conclude that the subject-orientedness of anaphor binding in Chinese has been a feature of the language throughout its attested history. This makes it reasonable to conclude that (25) is not a counterexample to the local binding requirement of Archaic Chinese ZI.

What I wish to suggest in this subsection is that the construction in (25) is in fact significant for the analysis – and even more for the reanalysis – of the binding requirements of ZI. Wei (2004) observes that pseudo-long distance bound ZI appears precisely in the yi constructions like (25), and he regards this construction as playing a pivotal role in the reanalysis of ZI as a potentially long distance anaphor. Unfortunately, he does not offer an explanation as to why this is the case.

I agree with Wei that the yi construction is instrumental in the reanalysis and offer the following analysis. I propose that yi applicatives are actually a type of causative construction. The applied object is the causee. This leads to an extension in early Middle Chinese in which ZI is able to be bound over an intervening causee in subject position in the clausal complement of a causative verb. In the remainder of this subsection, I argue for the analysis of yi constructions as causative.

My analysis is based partly on the parallel behavior between yi and causative applicatives in other languages, specifically Austronesian languages. First, yi often selects a transported theme in a ditransitive construction. Archaic Chinese had three types of ditransitive construction. (28a) shows a dative construction with a direct object and PP goal. (28b) is a double object construction. In (28c), the theme is preposed with yi. The causative interpretation involves making the theme be located at or possessed by the goal.

(28)  a.  天子  能  薦  人  於  天。  (Mencius 9)  
Tianzi  neng  jian  ren  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 9)  
bu  neng  shi  tian  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 9)  
Tianzi  bu  neng  yi  tianxia  yu  ren  
ruler  not  can  Appl  world  give  person  
‘The ruler cannot give the world to someone.’

In (29b), the causative sense is even clearer. Note that the main verb dai is the same verb in the examples with ZI in (25). In the monotransitive (29a), the subject of dai is an external argument, specifically the one who replaces the internal argument object. (29b) is a causative applicative
with yi. The argument selected by yi is an internal argument, but it is the argument which replaces the innermost object.

(29) a. 文公子佗杀太子而代之。

Wengong zi Tuo sha taizi Tu er dai zhi.

‘Chen Wen’s son Tuo killed the heir Tu and replaced him (on the throne).’

(Zuozhuan, Huan 5)

b. 欲以其子奚齊代太子申生。

Yu yi qi zi Xiqi dai taizi Shensheng.

‘(She) wanted to replace the heir Shensheng with her son Xiqi.’

As indirect support for the analysis of yi constructions as causative, I point out here that many Austronesian languages also have an applicative which selects a transported theme in a type of causative construction. An argument selected by an applicative head in Tagalog is licensed as the absolutive object of the clause. The low applicative –an selects the goal in a ditransitive, as in (30a). The theme is selected by the high applicative i-, as in (30b). The reader is referred to Rackowski (2002) for arguments in favor of the applicative status of these two morphemes. I note here that the high applicative i- in (30b) exhibits the behavior parallel to Archaic Chinese yi in (28c).

(30) 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-an ng babae ang bulaklak sa lalaki.

Appl<Tr.Perf>give-Appl Erg woman Abs flower to man

‘The woman gave the flower to the man.’

The connection with causativity is also clear in alternations like the following. In its intransitive use, balik means ‘return’. With the applicative, it becomes transitive and causative.

(31) a. Ba-balik=ako sa bahay.

Fut-return=1.sg.Abs to house

‘I am going home.’

b. I-ba-balik=ko ang libro sa aklatan.

Appl-Fut-return=1s.Abs Abs book to library

‘I will return the book to the library.’

The connection between applicatives and causation can also be seen in Standard Indonesian. (32) shows ditransitive clauses. There is no suffix in the double object construction in which the goal is the primary object in immediate post-verbal position, as in (32a). When the applicative –kan is added, the theme becomes the primary object and immediately follows the verb, as in (32b). These examples are parallel to LAC (28b) and (28c), respectively.
    Ali Tr-buy Nuri book
    ‘Ali gave Nuri a book.’

    Ali Tr-buy-KAN book to Nuri
    ‘Ali gave Nuri a book.’

(33) shows the -kan applicative in causative function.

(33)  a. Adik saya sudah mandi.
    brother 1s already bathe
    ‘My brother has already bathed.’

    b. Dia me-mandi-kan adik saya.
    3s Tr-bathe-KAN brother 1s
    ‘He bathed (caused to bathe) my brother.’ (Cole and Son 2004:341)

Interestingly, Sneddon (1996) also analyzes applicative –kan as a causativizing suffix. The causative sense is very clear in the following examples.

(34)  a. Dokter me-meriksa mata saya.
    doctor Tr-check eye 1s
    ‘The doctor checked my eyes.’

    b. Saya me-meriksa-kan mata ke dokter.
    1s Tr-check-KAN eye to doctor
    ‘I had my eyes checked by the doctor.’ (Sneddon 1996:75)

Cole and Son (2004) and Son and Cole (2008) also argue for a unified approach of the various uses of -kan. Extending Pylkkanen’s (2002) proposal that causative verbs introduce an event argument ranging over causative events, Son and Cole (2008) propose that –kan heads a result phrase which selects an argument and the result state of the causing event. They locate this RP low in the structure, specifically within the VP. A causative sentence like (35a) has the structure of (35b). The transitivizing suffix *meN*- is the head of VoiceP which introduces the external argument can case license the internal argument. The internal argument is introduced in the specifier of the result phrase (RP). The predicate *pecah* ‘break’ is the result state, selected by the result head.

(35)  a. Janet me-mecah-kan cankir-nya (Son and Cole 2008:146-7)
    Janet Tr-break-KAN cup-3s
    ‘Janet broke her cup.’

    b. [VoiceP Janet [Voice  meN- [VP do (something) [RP cup [R  kan- [AP break]]]]]]

There are two aspects of Son and Cole’s (2008) analysis that I wish to draw attention to. First, is the unifying characterization of causative –kan with –kan introducing dislocated themes as involving causative semantics. Second is the assertion that the argument introduced by –kan is always an internal argument. This second point has also been observed by Soh and Nomoto (2011), who credit Vamarasi (1999:27-33) with the discovery. These two properties of
Indonesian –kan are mirrored by LAC yi. LAC yi also involves causative semantics and it crucially introduces only internal arguments. This latter fact accounts for the lack of local binding by the applied argument in examples like (25). The reason that the reflexive does not take the causee as its antecedent is because this argument is not a subject. However, I propose in the following subsection that the causative semantics of this construction allows for the emergence of true long distance binding of ZI in early Middle Chinese.

3.1.2. Middle Chinese LD ZI

Given the preceding discussion that examples of pseudo-long distance bound ZI can be found in Late Archaic Chinese, it should not be surprising that the first instances of true long distance bound ZI are also in causative constructions. The examples in (36) date to Early Middle Chinese of the Han period. Note in particular the causative verb shi in (36b).

(36) a. 王 又 以 其 力 之 所 不能 攻
   Wang you yi qi li zhi suo bu neng gong
   king also with 3.Gen force Gen Rel not can conquer
   “If your majesty grants them what they were unable to conquer by force, then this is aiding the Qin to conquer us.”    (1st C. BCE: Zhanguoce, Zhao 3)

b. 高祖 追 及 老公，止 使 自 相。
   Gaozu zhui i ji laogong j zhi
   Gaozu chase reach old.man stop make self tell.fortune
   ‘Gaozu chased after the old man, stopped (him) and made (him) tell his fortune.’    (1st C. CE: Lunheng 11)

The causee in these causative constructions is an external argument and subject of the embedded clause. Aldridge (2010) presents evidence that causative verbs embed a clausal structure, not just a vP. As shown in (37), passives could be embedded under a causative verb like shi ‘make’.

(37) a. 善 治 者， 使 跖 可 信。
   Shan zhi zhe shi Zhi ke xin.
   well govern Det make Zhi Pass believe
   ‘One who governs well makes (the thief) Zhi able to be believed.’

b. 使 國 可 長 保 而 傳 于 子 孫，
   Shi [guo ke chang bao er chuan yu zisun],
   make nation Pass long keep Conj pass to descendant
   豈 不 樂 哉？
   q i bu le zai?
   Part not joy Excl
   ‘To make the nation be able to be maintained for a long time and passed on to one’s descendants; is this not a cause for joy?’
This means that the embedded structure must have a position for derived subjects, entailing the presence of a TP layer above the vP.

(38)  \([\text{TP} \ \text{DP}_1 \ldots \text{TP} \ \text{DP} \ [\text{VP} \ \text{ZI}+\text{V}]])\]

Consequently, the embedded subjects in the examples in (36) are potential antecedents for the reflexives, yielding the result that the reflexives in these examples are long distance bound. The examples in (39) confirm that the causees are subjects, since they are able to locally bind reflexives in their respective embedded clauses. (39a) is from a Late Archaic Chinese text; (39b) is Early Middle Chinese.

(39)  a. 因而任之，使自事之
Yiner ren zhi, shi e\textsubscript{i} zi\textsubscript{i} shi zhi.
basis assign 3.\text{Obj} make self perform 3.\text{Obj}
…使皆自定之。
shi e\textsubscript{i} jie zi\textsubscript{i} ding zhi.
make all self clarify 3.\text{Obj}
‘On this basis, assign them their duties and make them perform their tasks themselves…make them all clarify their positions.’

b. 李斯使人遺非藥，使自殺。
Li Si shi ren qian Fei yao, shi e\textsubscript{i} zi\textsubscript{i} sha.
Li Si make person send Fei poison make ZI kill
‘Li Si had someone send (Han) Fei poison and made him kill himself.’

Once ZI had been reanalyzed as a potentially long distance anaphor, it could appear in a variety of embedded clauses and be bound by the matrix subject (across the intervening embedded subject). The following are from a 3rd century CE text.

(40)  a. 或疑洪知裔自嫌。
Huo yi Hong\textsubscript{i} zhi [Yi zi\textsubscript{i} xian].
some suspect YH know ZY ZI dislike
‘Some suspected that Yang Hong knew that Zhang Yi disliked him.’

b. 翔恨靖之不自納。
Xiang\textsubscript{i} hen [Jing zhi bu zi\textsubscript{i} na].
ZX hate XJ Gen not ZI join
‘Zhang Xiang resented Xu Jing’s not joining him.’

Examples like (40) make it clear that Middle Chinese ZI was a potentially long distance anaphor like JI. This fact presents a problem for Dong’s (2002) analysis of the formation of ZIJI. She claims that ZIJI combines the local character of ZI with the long distance character of JI. But this claim is nullified by the fact that Middle Chinese ZI was no longer restricted to local binding. There is also a problem for Zhu’s (2007) approach. Zhu claims that the reanalysis of ZI was the result of influence from Sanskrit. But long distance binding of ZI is clearly found in pre-Buddhist-influenced Chinese texts, as (36a) attests. Buddhism did not reach China until the first century CE. But the example in (36a) predates this contact.
To summarize the change involved in the emergence of long distance bound ZI, the possibility of binding by a grammatical subject over an intervening causee applied object was present in Late Archaic Chinese. In early Middle Chinese, we see examples of long distance binding of ZI across a causee functioning as the subject of an embedded TP. As a subject, this causee was a potential antecedent for the anaphor in the embedded clause. Hence, this anaphor was long distance bound when it referred to the matrix subject. Once the possibility of long distance binding was introduced, then ZI could appear in a variety of embedded contexts and be bound by the subject outside these embedded clauses.

Before closing this section, I point out that there is evidence that yi itself could embed a clausal complement beginning in early Middle Chinese. Complements of yi are conjoined in (41) but yi is not repeated.

(41) a. 臣請以雕玉為棺。
   Chen qing yi [diao yu wei guan],
   minister ask YI carve jade be outer.coffin
   文梓為椑。
   [wen zi wei qi],
   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马，
   Yi [da jiangjun Wu Han wei da sima]
   YI great general Wu Han be great commander
   偏將軍景舟為騶騎大將軍。
   [pian jiangjun Jing Zhou wei piaoji 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.’ (5th C. CE; Hou Hanshu)

I have found no examples of this sort involving coordination under yi in Archaic texts. What can be found is coordination of TPs under the causative verb shi. (41) then suggests a structural parallel between yi and shi, which can be accounted for if both embed full clausal complements. Incidentally, the coordination evidence in (41) further suggests that yi could not have been a preposition, since it does not form a constituent with the following DP.

(42) a. 今王發政施仁，使
   Jin wang fa zheng shi ren, shi
   now king institute government extend benevolence make
   天下仕者皆欲立於王之朝，
   [TP Tianxia shi zhe jie yu li yu wang zhi chao]
   world serve Det all want stand in king Gen court
cultivate Det all want cultivate in king Gen field
‘Now, if your majesty institutes benevolent government, this will make [all those wishing to serve want to join your government] and [all farmers want to cultivate your fields].’

(Mencius 1)

b. 今 大人 欲 王 天下，正 諸侯，
now you want rule world direct feudal lords
將 欲 使 意 得 乎 天 下，
Mod want make will obtain in world
名 成 乎 後 世。
name know in later generation
‘Now, you want to rule the world and lead the feudal lords, and you will want to make [your will be done throughout the world] and [your name be known in generations to come].’

3.2. Separability of ZI

I showed in section 3.1 that ZI was reanalyzed as a potentially long distance anaphor in early Middle Chinese. Consequently, when ZI combined with JI to form the compound ZIJI in the 3rd century, the two anaphors had the same binding requirements. One other change was required, however, before ZI could combine with JI. I show in this section that Middle Chinese was no longer required to adjoin to a verb and could select non-verbal hosts. Crucially, it could function as a possessor, showing that it could combine with a nominal constituent.

Wei (2004) observes that ZI achieved morphological independence in early middle Chinese. In (43), ZI precedes an adverb.

(43) 長 男 既 行，
eldest son Asp go
亦 自 私 齊 數 百 金。
also self privately carry many hundred gold
‘Having left, the eldest son also privately took with him several hundred gold pieces.’

(44) is taken from Wei (2004). In this example, a PP intervenes between ZI and the verb.

(44) 然 猶 不 能 已，乃 作 射 虎 車，
yet still not can stop so make shoot tiger charriot
Yet, (he) still could not stop, so he made a tiger-hunting chariot. (He) made square holes but left it open and didn’t put a top on. One person acted as driver, while (he) himself shot from inside.’

(3rd C. CE; Sanguozhi, Zhang Zhao)

In the following examples, ZI is the object of the embedded verb and yet appears to the left of the higher verb. These are from one of the 5th century translated Buddhist Agama texts.

(45) a. 自得解脫，能解脫人。
   Zi de jietuo __, neng jietuo ren.
   ‘If one can release himself, then (he) can release others.’
   (Chang Ahan Jing 9)
   b. 自得滅度，能滅度人。
   Zi de miedu __, neng miedu ren
   ‘If one can cross oneself over, then (he) can cross over others.’

In Archaic Chinese, the reflexive would have to adjoin to the lower verb.

(46) a. 其運轉而不能自止邪?
   Qi yunzhuan er bu neng zi zhi __ ye?
   3.GEN rotate CONJ not can self stop Q
   ‘(The sky), is it rotating and not able to stop itself?’
   b. 能自保而全勝也。
   Neng zi bao __ er quan sheng ye.
   can self persever CONJ completely win DECL
   ‘(One) can protect oneself while achieving total victory.’

Crucially, ZI could be used as a possessor in Middle Chinese, as noted by both Wei (2004) and Zhu (2007). This clearly shows that ZI was no longer morphologically dependent on the verb and could attach to nominal categories.

(47) a. 大呼自名，衝壘。
   Da hu [zi ming] chong lei.
   great call self name charge fort
   ‘He called out his own name and charged into the fort.’
   (3rd C. CE; Sanguozhi, Zhang Liao)
   b. 汝執自法破他執，
   Ru zhi [zi fa] po ta zhi,
   2.SG take self law break other hold
故汝是破法人。 (5th C. CE; Bailun 10)

gu ru shi po fa ren.

so 2.SG COP break law person

‘You take your own doctrine to argue against another’s, so you are arguing against someone of this faith.’

The point made with the examples in this section is that Middle Chinese ZI could precede categories other than verbs, in particular nominal categories. This is what allows ZI to combine with JI to form the compound ZIJI. Specifically, ZIJI is a compound of like members. Both are Ds and both can be either locally or long distance bound.

4. Emergence of ZIJI

In the previous section, I have shown that the compound ZIJI consists of two anaphors which can be locally or long distance bound. In other words, the two members of the compound have the same requirements with respect to the Binding Theory. Therefore, it is not possible to accept Dong’s (2002) proposal that ZIJI takes its local binding possibility from ZI and its long distance binding possibility from JI. This is because ZI was reanalyzed as a potentially long distance anaphor in Middle Chinese before the compound was formed.

Zhu (2007) does agree with the current proposal that ZI allowed long distance binding by the time the compound ZIJI was formed. However, he attributes this reanalysis to influence from Sanskrit. This cannot be the case, since long distance binding of ZI can be seen in native texts which predate the arrival of Buddhism in China, for example (36a). In section 3.1, I showed how the reanalysis was a native development and took place in causative constructions.

Wei (2004) correctly analyzes the binding requirements of ZI and JI. However, he incorrectly asserts that early examples of ZIJI all involve local binding. In this section, I show that ZIJI could be either locally or long distance bound from at least the 4th century. Thus, ZIJI in Middle Chinese had the same binding requirements as it does in modern Mandarin. In fact, ZIJI was completely parallel in its syntactic function and distribution to JI, which maintained its LAC function of allowing both local and long distance binding and its LAC distribution as occurring in argument position as a free morpheme.

The tables in (48) and (49) show the distributions of JI and ZIJI in the 4th century translation of a Buddhist sutra. There are examples of both local and long distance binding of each of them. As shown in (48), when they are locally bound, they tend overwhelmingly to function as possessors.

(48)  Local

<table>
<thead>
<tr>
<th></th>
<th>JI</th>
<th>ZIJI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object (of P):</td>
<td>8 (30%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Possessor:</td>
<td>19 (70%)</td>
<td>4 (80%)</td>
</tr>
</tbody>
</table>

As can be seen in (49), when they are long distance bound, they rarely function as possessors, but occur with roughly equal frequency in subject and object position.
Clearly, then, there is no significant difference between them in terms of syntactic function or distribution. I propose that the difference was purely prosodic. The disyllabic form 自己 ZIJI was used in conjunction with other disyllabic words or phrases in order to form four-syllable phrases. In (50a), ZIJI is a possessor. The noun it possesses consists of two syllables. The entire possessed DP consists of four syllables. Incidentally, (50a) is the only example in this text in which ZIJI used as a possessor is not locally bound. ZIJI in (50a) is in fact unbound. In (50b), ZIJI is the object of a disyllabic verb, forming a four-syllable VP. This ZIJI is long distance bound by the subject of the highest clause.

(50) a. 自己衣鉢亦師房中。(4th C: Mohe Seng Qilü 3)
   [Ziji yi bo] yi shi fang zhong.
   self robe bowl also teacher room inside
   ‘His own robe and bowl were also in the master’s quarters.’

b. 但令執作供給自己。(4th C: Mohe Seng Qilü 3)
   Dan ei ling ej zhizuo [gongji ziji].
   but order labor supply self
   ‘But (you) order (them) to labor to supply you.’

Monosyllabic 己 JI combined with other monosyllabic words in order to form disyllabic phrases. (51a) shows a VP with a monosyllabic verb and JI as the object. (51b) shows a PP. Interestingly, all of the examples in which a preposition takes an anaphor as its object, the object is JI and not ZIJI. I assume this is because a P+ZIJI combination would result in a three-syllable phrase, which is rare in this text. (51c) shows JI as a possessor possessing a monosyllabic noun. (51b) involves long distance binding, while JI in (51a) and (51b) is bound by the local subject.

(51) a. 自稱者, 稱己也。(4th C: Mohe Seng Qilü 4)
   ei zi i cheng zhe, [VP cheng ji] ye.
   self refer DET refer self NMLZ
   ‘A self-proclaimer refers to himself.’

b. 若師知為己敷。(4th C: Mohe Seng Qilü 14)
   Ruo shi i zhi ei [PP wei ji] fu …
   if teacher know for self spread
   ‘If the master knows that (you) spread (it) for him …’

c. 若我自取己分, 不久當盡。(4th C: Mohe Seng Qilü 2)
   Ruo wo i zi qu [DP ji i fen], bu jiu dang jin.
   if I self take self share not long will end
   ‘If I only take my own share, then it will soon be gone.’
From the above discussion, it can be seen that ZI and ZIJI are parallel in their syntactic function and distribution. Their difference in distribution seems to be only due to prosodic factors. Before concluding this section, I briefly consider the case of ZI at this time.

Wei (2004) points out that the use of ZI as an anaphor declines in Middle Chinese. (52) shows the distribution of ZI in the first three volumes of the *Mohe Seng Qilü*. In this very preliminary survey, I have not separated the local and long distance cases. Nor have I counted the instances of ZI as an anaphor as opposed to ZI not used as an anaphor. But it is clear from the table that the overwhelming number of cases involve ZI as an adverbial (whether as an anaphor or not) and not as an argument.

(52)   自 ZI  (4th C: *Mohe Seng Qilü* – volumes 1-3)
Adverb:  80 (77%) (includes anaphor and non-anaphor uses)
Argument:  13 (13%)
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(53) gives some examples. In (53a), ZI functions as direct object. In (53b), ZI is an adverb but it is still an anaphor bound by the local subject. In (53c), ZI is an adverb and not an anaphor. It is cases like (53c) that Wei (2004) notes are increasing in Middle Chinese.

(53)  a. 或有自供，或有賣者。 (4th C: *Mohe Seng Qilü* 3)
   Huo you zi gong __, huo you mai zhe.
   some exist self supply some exist sell DET
   ‘Some took (it) for themselves; some sold (it).’

 b. 諸比丘各各自作屋住。 (4th C: *Mohe Seng Qilü* 2)
   Zhu biqiu gege zi zuo wu zhu.
   PL monk each self make house live
   ‘Each monk made a house to live in.’

c. 家自無材，王材亦盡。 (4th C: *Mohe Seng Qilü* 2)
   Jia zi wu cai, wang cai yi jin.
   home self not.have wood king wood also gone
   ‘The house was long since out of wood. The king’s wood was likewise gone.’

The decline in use of ZI as an argument seen in (52) suggests that ZI was being lost from the language in Middle Chinese.

5. Conclusion

In this paper, I have shown that ZI was a locally bound anaphor in Late Archaic Chinese that was morphologically restricted to positions adjoined or cliticized to the verb. In contrast, JI was a free form occurring in argument position. JI also could be either locally or long distance bound.

In Middle Chinese, ZI was reanalyzed as a potentially long distance anaphor. It also lost the morphological requirement that it be adjacent to the verb. This allowed it to combine with other categories, crucially allowing it to form the compound ZIJI with the nominal JI.

JI and ZIJI coexisted in Middle Chinese with similar binding requirements, the difference between them being prosodic.
References


