Lexical Decomposition, Silent Categories, and the Localizer Phrase

Lexical Decomposition, Silent Categories, and the Localizer Phrase

C.-T. James Huang

Harvard University
Beijing Language and Culture University

1. Introduction

An important feature of recent syntactic theory is the postulation of syntactic structures that are more complex than traditionally meet the eye. One approach that bears this feature is the theory of lexical decomposition.

By its narrow definition, lexical decomposition refers to the hypothesis that an apparent simplex or mono-morphemic X^0 category encompasses a larger structure with one or more silent X^0 heads above or below it. This theory had an origin in early generative grammar in the works of McCawley (1969) and Ross (1972). Larson (1988) and Baker (1988) initiated a revival of interests in this approach and the theory has continued to inspire current research. A lot of works in current grammatical theory, including those carried out in the principles-and-parameters framework, distributed morphology, and various versions of argument structure theory, have made use of lexical decomposition at some level, contributing to important advances in our understanding of the relationship between lexical semantics and syntax, between lexical structure and its syntactic projection. Thus, although the initial attempts by the early generative semanticists were deemed unsuccessful owing to a number of difficulties raised but unanswered at the time, their early insights together with recent new discoveries have given rise to important advances in modern grammatical theory.[1]

In Chinese syntax, an early revival of lexical decomposition can be found in Huang (1988), where certain resultative constructions exhibiting causative-inchoative alternation were given a syntactic analysis involving movement to silent light verb positions. Subsequent works have proven productive in uncovering and accounting for a range of old and new facts. Indeed, Modern Chinese, given its high degree of analyticity, provides particularly rich evidence for the hypothesis in several ways. First, it exhibits structures where the hypothesized silent X^0s are overtly instantiated (by overt light verbs, for example). Second, certain lexical categories exhibit high polysemy, including meanings that instantiate partial structures of a hypothesized complex structure—thus providing evidence for covert or silent light categories that occupy positions in such complex structures. And third, the language exhibits extensive syntax-semantics mismatches which suggest the symptoms of movement into silent head positions.

Most of the decomposition analyses in the literature focus on verbs, but few touch on the decomposition of other lexical categories. The purpose of this paper is two-fold:

---

[1] The reason why the lexical decomposition hypothesis failed when it was first proposed by early generative semanticists was that certain non-trivial empirical problems were raised as objections that were not answered at the time. (For example, the famous '3 reasons' put forth by Fodor 1970.) But such objections have become irrelevant in later models of grammar, for example in Hale and Keyser's treatment in terms of lexical syntax, and in other models. Shen (2006, 2007) raised an objection to lexical decomposition, based on the reason that it was an idea that they (the generative theorists) had abandoned before. This apparently misses the point.

(a) to review facts (some old and some new) that support the postulation of silent light verbs, and (b) to present arguments for the analysis of other categories that involve silent heads, in particular a silent localizer as a light noun, or a silent P in the structure of a prepositional phrase. Section 2 will highlight some of the facts (in summary form) that have motivated analyses postulating silent light verbs, and Section 3 will directly home in on place-denoting nominal categories involving prepositions and localizers as their heads. It is shown that while such heads are often absent in corresponding phrases in Classical Chinese or English, they nevertheless exist in covert form, and that the overt-covert difference corresponds to the relative analytic-synthetic difference between Modern Chinese on the one hand, and Classical Chinese and English on the other. In Section 4 we present independent motivations in support of the existence of silent L and P which provides for an explanation of certain properties associated with *suo*-relatives and the seemingly peculiar semantic change of *qu* 'go' in the history of Chinese. Section 5 summarizes the paper and puts it in the perspective of parametric theory.

2. Light verbs: DO, CAUSE, HAVE, EXIST

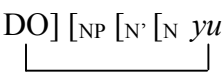
2.1. Overt light verbs. Modern Chinese possesses a rich array of light verb constructions with semantically bleached or empty verbs that directly fill the hypothesized positions in a structure incorporating lexical decomposition. These include examples in (1)-(2) with light verbs like *da* (literally 'hit') that instantiates the empty verbal head of a denominal structure of Hale and Keyser (1993) or the empty verbal head of a Larsonian VP shell (Larson 1988 and much subsequent work).

(1) da yu, da dianhua, da penti, da majiang, etc.
da fish, da phone, da sneeze, da mahjong, etc.
'to do fish, to do phone, to do a sneeze, to play mahjong, etc.'

(2) da po, da bai, da kai, da bu-jian, etc.
da break, da lose, da open, da not-see, etc.
'to cause to break, to defeat, to make open, to cause not to be seen (to lose), etc.'

The overt light verb *da* provides evidence for the position of a silent light verb with the elementary semantics of DO or CAUSE in a decomposition analysis of English and Old Chinese denominals and simplex causatives. In particular, unlike Modern Chinese, the light verb in OC and English is occupied by a silent category, which triggers movement of a lower N (as depicted in (3), hence an instance of denominalization), or of an unaccusative V (as in (4), hence an instance of causativizaion):

(3) English and OC denominals: *yu* 'fish or to fish', *shi* 'food or eat', *fan* 'rice or have rice', *yi* 'clothes or to clothe', *yin* 'drink or to drink', etc.



(4) English and OC causatives: *bai* 'lose or defeat', *po* 'break', *hao* 'good or to like', *wang* 'king, to regard as king', etc.

[$_{VP}$ [$_{V}$ CAUSE] [$_{VP}$ [$_{V}$ *po* 'break']]]

2.2. High polysemy. Another way Chinese provides evidence for lexical decomposition is its display of high polysemy with some lexical categories. One good example is the ditransitive verb *gei* 'give' in Mandarin and its counterpart in Classical Chinese and other modern dialects of Chinese. I will cite a few cases.

First, in Taiwanese (Southern Min), the word *ho:* [与] is multiply ambiguous, ranging over the equivalents of 'cause, give, passive' (and meanings closely related to these). As argued in Cheng, et al (1999), these meanings can be related naturally under a decompositonal analysis of its 'give' meaning in terms of a causative event structure of the form represented by 'x CAUSE y to HAVE z'. The other two readings may simply be seen as the results of grammaticalization from this basic meaning. In particular, the pure 'cause' *ho:* is a generalization from 'x CAUSE y to HAVE z' to 'x CAUSE y to VP' where VP denotes a predicate of any kind. And the 'passive' *ho:* is in turn a grammaticalized form of the general *cause*. The Chinese passive is an ergativzed or 'inchoativized' form of the causative (a causative event minus the causer is an ergative or inchoative event), much like English *get* passive (as in *John got hooked*) is an ergativized form of the *get*-causative (as in *Bill got John hooked*).[2]

Second, the Old Chinese counterpart of the same element *yu* [与] includes three common meanings, the ditransitive 'give', the comitative 'with', and the conjunction 'and'. The existence of the first two meanings gives direct evidence for the theory of Hale and Keyser (2002) and Harley (2003), according to whom *give* is related to an event structure of the form 'x CAUSE y to BE WITH z', viz., where the possessive verb is further decomposed to include a 'preposition of central coincidence'. (The guy with z is the guy who has z.) In other words, the comitative *yu* in OC is simply the ditransitve *yu* minus its causative component, much as the unaccusative *break* is the causative *break* minus the cause.[3]

There is also interesting paleographic evidence from *yu* with the traditional written form 與, which means 'to be together > to part-take'. The latter meaning might have served as the basis that underwent causativization with the resultant 'give' meaning, as suggested in Feng, et al (2008). Furthermore, the cognates of similar morphemes in

---

[2] See Cheng et al (1999) for more details. Peyraube (2007 and in other works) has argued for a theory of the *path* of grammaticalizaion which predicts that any language with a given lexical item (LI) with both a ditransitive *give* meaning and a passive, must also have a pure *causative* meaning for the same LI. That is, the passive meaning must have derived from the pure causative meaning, not directly from the ditransitive meaning. This clearly squares well with the synchronic facts of Taiwanese but, since the path of grammaticalization refers to a historical process, it is not clear if the theory does make a strong synchronic prediction. For example, it does not rule out a historical process by which the passive derived from the causative, but then the causative fell into disuse (say by lexical replacement) while the passive continued to the present.

[3] As for the conjunction meaning 'and', it is usually agreed that this is a further grammaticalization from the comitative. See Wu 2003 for a useful typological survey.

other dialects exhibit even wider polysemy, instantiating different heights of an applicative structure in the sense of Pylkännen (2008), as reported in Chappel, Peyraube and Wu (2007) more recently.

Finally, even in Modern Mandarin, there exists evidence for the decomposition of the verb *gei* 'give' into ingredients that include a pure unaccusative verb (like 'exist' or 'happen'). The relevant examples are more widely used in Northern Mandarin dialects. (See also Sybesma 2007.)

(5) a. ta you gei pao-le. 他又给跑了。
he again give run-Perf
'He ran away again.'

b. ni you rang ta gei pao-le. 你又让他给跑了。
You again let him give escape-Perf
'You again let him run away.'

c. ta ba pingguo dou gei chi-diao-le. 他把苹果都给吃掉了。
ta BA apples all give eat-up-Perf
'He ate up all the apples.'

As can be seen by comparing the word-for-word glosses with the full-sentence translations, the verb *gei* 'give' does not seem to contribute anything to the propositional content of each sentence. Indeed, these sentences are equally grammatical without *gei*, with little or no loss of semantic content. I claim that these sentences are subject-raising constructions with *gei* as an existential raising verb meaning 'happen'. It is derivationally related to the transitive/causative *gei* by subject dethematization, as illustrated below for (5a):

(6) a. The two-place *gei* (= 'cause, let, experience, undergo')
ni you gei [ta pao le]. 你又给［他跑了］。
you again give he run-away Perf
'You again let him run away.'

b. Dethematized subject:
[e] you gei [ta pao le]. [e] 又给［他跑了］。
[It] again give he ran-away Perf.
'[It] again happens that he ran away.'

c. Subject-raising:
ta_i you gei [t_i pao le] 他$_i$又给［t_i 跑了］。
he again give run-away Perf
'He again ran away.'

The transitive *gei* in (6a) may range from a strong to weak causative meaning 'cause, let' to an experiential reading 'undergo' (possession of an experience). (When the experience is perceived as undesirable, we have a case of an 'adversative passive' construction, well

known in the literature on Japanese passives.) Suppression of the external argument 'you' in (6a) results in a raising *gei*, and raising of the embedded subject finally derives (6c) = (5a). Thus, we see that there is reason for the decomposition of a transaction verb like 'give' into the ingredients of causation, possession and existence. In this connection, it is interesting to note that 'give' as an existential verb is also found in other languages. German is famous, with *Es gibt* . . . meaning 'There is …'; or *Was gibt es?* 'What's the matter, what's happening?' Also, in informal American English: *what gives?*.[4]

2.3. Syntax-semantics mismatches. Huang (1997, 2008) notes that Mandarin has a number of constructions that exhibit syntax-semantics mismatches. For example, the following examples contain noun phrases whose heads are structurally paired with the wrong kind of nominal modifiers:

(7) ta nian-le san tian shu.
he read-Perf 3 day book
Lit.: 'He read 3 days of books.'
'He read books for 3 days.'

(8) nimen jing nimen-de zuo, tamen shi tamen-de wei.
you quiet your sit, they rally their rally
'You sit in, and they rally.'

(9) ta liang-ci Shanghai gen san-ci Beijing dou zhu-le hen jiu.
he twice Shanghai and thrice Beijing both lived-Perf very long
'Both times of staying in Shanghai and all three times of staying in Beijing he stayed a long time.'

In (7), the constituent *san-tian shu* has '3 days' as a modifier of 'book', but a book cannot be measured by an amount of time. In (8) a possessive phrase occurs in construction with the second part of a phrasal idiom meaning 'sit in' or one meaning 'rally' so the sentence reads literally like 'You sit your in, and they ral- their –ly.' And in (9) expressions like 'twice, thrice' form constituents with city names, as if cities could be counted by *twice, thrice,* etc. As the translations show, the surface syntactic forms do not match their semantic interpretations.

Another interesting case of form-meaning mismatch is found in classifier selection, as illustrated in (10):

(10) Zhe-ge niu, ni chui-de tailipu le.
This-CL cow you blow-till out-of-proportion FP
Lit. This cow, you blow out of proportion.
'This act of bluffing (chui-niu), you did it out of proportion.'

[4] Some people assume that *what gives* is a calque from German or Yiddish, though the exact counterpart *was gibt?* is itself ungrammatical. Joseph (2000) thinks it might in fact be a basis for the reconstruction of Proto-West-Germanic existential *give*.

The expression *chui niu* literally 'blow a cow' is a phrasal idiom meaning 'to bluff'. In (10), the object noun *niu* 'cow' occurs in construction the classifier *ge*, which is otherwise unacceptable as a classifier for *niu*. But in (10), *ge* is needed; in fact, substituting *ge* with a normal classifier for *niu*, i.e., *tou* 'head', results in ungrammaticality:

(11) *Zhe-tou niu, ni chui-de tailipu le.
This-CL cow you blow-till out-of-proportion FP

Examples of form-meaning mismatches of this kind abound in the language. In each case, the prenominal modifier semantically modifies not the noun that follows it, but a verb phrase taking the NP as its object. For example, in (7), 'three days' expresses a quantity of the event of book reading, in (9) 'twice, thrice' quantify over the event of living in Shanghai, etc., and in (10) the demonstrative-classifier phrase specifies the event of *chui niu* or 'cow-blowing' (hence the classifier is *ge*, not *tou* 'head'). In Huang (1997, 2008) it is proposed that each of these sentences involves a decomposed complex predicate with a silent light verb above a root predicate or nominalized (gerundive) VP, and a head-movement of the root verb into the silent light verb position. Thus, for example, (7) is underlyingly of the form (12), with '3 days' quantifying the VP 'read books'. The surface form is obtained by movement of the head V 'read' to the silent light verb (with the elementary semantics of 'DO'):[5]

(12) $[_{vP}$ ta $[_{v'}$ DO $[_{VP}$ $[_{V'}$ san tian $[_{V'}$ nian-le shu]]]]]
he 3 day read-Perf book

The structure (12) correctly characterizes the sentence as meaning that he did 3 days of book-reading (an event of 'reading books' quantified by '3 days') though, because of the movement, it comes to acquire the surface that reads literally as 'he read 3 days of books'. An analysis of (8) in the same spirit takes it to be the result of denominalization: an underlying structure of the form 'you do your sit-in; they do their rally' (where the light verb is silent) takes on the surface form of 'you sit your in, they ral- their -ly' as a result of the verb moving out of the possessive phrase. The following pair shows vividly the effect of this type of verb movement:

[5] In a public comment on this analysis in summer 2008, William S.-Y. Wang opined that a sentence like *ta nian-le san tian shu* is so simple that every three-year old should have no problem learning or using it, and therefore that a complex analysis of the type proposed here is not warranted. Little can be more objectionable than such a line of reasoning. For one thing, no one is saying that the analysis represents the child's conscious knowledge. Furthermore, the analysis proposed here is about as simple as any grammatical operation as anyone has assumed for any interesting linguistic phenomenon. More importantly, the notion that if a phenomenon has the appearance of being simple, then the explanation for that phenomenon must be a simple one, is never heard of in any branch of science. As a student privately remarked, every three-year-old knows well that when an apple drops, it drops to the ground, but does not, say, whirl around with a medfly in the air. From here it does not follow that the explanation for it must be as simple-minded as a child might be. Finally, what is more interesting about this and other phenomena of language is that while they seem to be acquired effortlessly, a careful investigation of them reveals fairly complex properties, a level of robustness that defies any theory of language learning on the sole basis of inductive learning.

(13) a. tamen gao-le san nian de ge-ming.
they do-Perf three years DE revolution
'They engaged in three years' revolution.'

b. tamen ge-le san nian de -ming.
They ge-Perf three years DE -ming
'They engaged in three years' revolution.'

In (13a), an overt *gao* 'do' blocks verb movement, so there is no mismatch; in (13b) a silent light verb triggers verb movement, splitting *ge-* from *–ming*, thus giving rise to a sentence that reads like 'they revolted 3 years of –utions.'

Example (9) similarly involves the same process, except that we have the verb *zhu* 'reside in' moved across-the-board out of a coordinate structure denoting two events: [twice *zhu* Shanghai] and [thrice *zhu* Beijing], resulting in [twice Shanghai and thrice Beijing] which then moves to the left of *dou* subsequently.

As for (10), again the natural assumption is that the classifier *ge* selects a (nominalized) event of *chui niu* 'blow cow', whose verb moves into the higher silent light verb that selects the DP containing *ge* and the event:

(14) $[_{cP}$ ta $[_{v'}$ DO $[_{DP}$ zhe ge $[_{vP}$ chui niu]]]]
he this CL blow cow

The movement results in a phrase like *zhe ge niu* 'this *ge* cow' with the appearance that *niu* 'cow' takes *ge* as its classifier.[6]

According to this line of analysis, then, there is no syntax-semantics mismatch in each of these examples here. In each case, the surface VP of an action sentence is treated as the internal argument of a light verb [$_{LV}$ DO]. We can see this internal argument as the direct instantiation of the event argument in Davidson's seminal analysis of the logical form of action sentences. The fact that Modern Chinese provides such vivid evidence for the event argument, hence also for lexical decomposition analysis that goes with it, thus makes it a Davidsonian language par excellence. [7,8]

---

[6] Other examples of classifier mismatch include *chi ge fan* 'eat CL rice', *kan ge baozhi* 'read CL newspaper' (with classifier *ge* taking 'rice' and 'newspaper') and *chi ge bao* 'eat CL full', *tiao ge guoyin* 'dance CL to-one's-content' (with classifier *ge* a resultative complement). Under the proposed analysis, each such example involves an event phrase, selected by *ge*, as required.

[7] See the references above for more details of analysis for the relevant examples. See also Lin (2001) for a thorough study of light verb syntax across other domains.

[8] The phenomena discussed here and in earlier work have recently been analyzed as resulting from some sort of structural analogy or 'blending' (notably in Shen 2006 and 2007), based on some early remarks by Chao (1957), recalling some works during the late years of structural linguistics. Details aside, such analyses appear to raise more problems than they are claimed to have solved. For one thing, while analogy is perhaps unavoidable—as a last resort—in explaining certain isolated exceptions to general rules, the advantage of the movement analysis is that it makes it unnecessary to treat them as exceptions, in at least the cases discussed, by deriving them from independently available grammatical mechanisms, and so in this sense it is a theoretical improvement. An easy resort to analogy in these cases seems to

3. Light nouns:

Just as Modern Chinese exhibits overt light verbs and other phenomena that provide evidence for lexical decomposition of the verb, it also exhibits overt *light nouns* that provide evidence for lexical decomposition of the noun.

3.1. Classifiers. One category in Modern Chinese that may be treated as a light noun is the classifier. There are several reasons to think of classifiers in a noun phrase as being parallel to light verbs in a verb phrase.

First, just as classifiers help to classify nouns that they select, light verbs also stand in a selection relation with the verb roots that they select (for example, DO selects activities, CAUSE selects accomplishments, etc.). In this sense, light verbs might as well be termed verbal classifiers.

Second, there is also a sense that the light verbs serve as auxiliary verbs, helping their selected roots by the addition of the required semantic components. The same goes with classifiers, as their function is to atomicize, or individuate, an otherwise homogenous entity for the purpose of counting. Indeed, as Chao (1948) already showed, classifiers might as well be termed 'auxiliary nouns'.

A third parallel between classifiers and light verbs is their distribution in typological and historical terms. Modern Chinese requires overt classifiers and extensive use of overt light verbs, but English requires neither. Old Chinese, also, did not require classifiers nor overt light verbs. It is generally agreed among scholars that (count) classifiers and the increased use of overt light verbs had its earliest beginnings in the Han Dynasties, but neither category was in full bloom until late Middle, during the Tang-Song period.

The existence of an obligatory (count) classifier system in Modern Mandarin has inspired much recent work in the postulation of a silent classifier for each atomic noun in a non-classifier language. See Borer (2005) and Chierchia (1998, 2008). Borer takes the classifier in English to be that projection that realizes itself as the plural morphology. Chierchia assumes the universal classifier as an element that introduces the measure function, which operates on an NP and returns a set of atoms, as required for the purpose of counting. This view then decomposes a count noun like *book* into something like *ben shu*, where the equivalent of *ben* is a silent category. A similar reasoning would dictate that Old Chinese also had a silent classifier, though it was later replaced by an overt category in late Middle Chinese, as the language peaked in syntactic analyticity.

3.2. Localizers as light nouns.

Another light noun category is the localizer. In the rest of this paper it will be argued that localizers in Chinese provide evidence for lexical decomposition and for the postulation

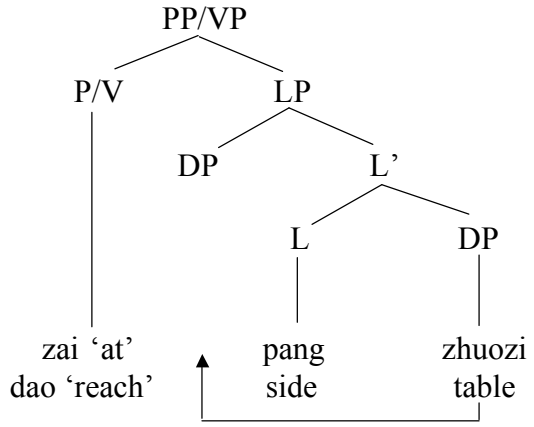
---

bring us backward. The movement theory also explains why some apparent cases of syntax-semantics mismatch do not occur, given the general constraints on movement. Finally, the claimed direction of analogy is often difficult to establish. One thing lacking in Shen's analyses is the evidence that the basis for a given claimed analogy is indeed more basic than the target itself—a chicken-and-egg problem that threatens to render the account circular. For other related discussions, see Tang (2008).

of a Localizer head with the elementary semantics of PLACE, for all locative arguments in natural language.

3.2.1. Modern Chinese. Modern Chinese verbs or prepositions that select locations as their complements require the complements to take a localizer (denoting an 'axial part' like *side, top, bottom, interior*) unless the DP already inherently denotes a location (e.g. New York). Although the localizer typically follows the N whose axial part it indicates, I shall consider it to be a relational head noun that selects the N as its complement. We can also say that the CSR (canonical structural realization, Chomsky 1986) of a location is an LP of the following form, and that all location-selecting heads categorially select an LP:[9]

(15)



The localizer *pang* 'side' is a relational (transitive) noun taking *zhuozi* 'table' as its complement. In Chinese, because the Case requirement of *zhuozi* 'table' cannot be satisfied via a process akin to *of*-insertion, it is moved to Spec of LP, where it also serves as the host for the cliticization of the localizer, resulting in *zai zhuozi-pang* 'at table's side' (viz. beside the table), or *dao zhuozi-pang* 'reached the table's side'.[10]

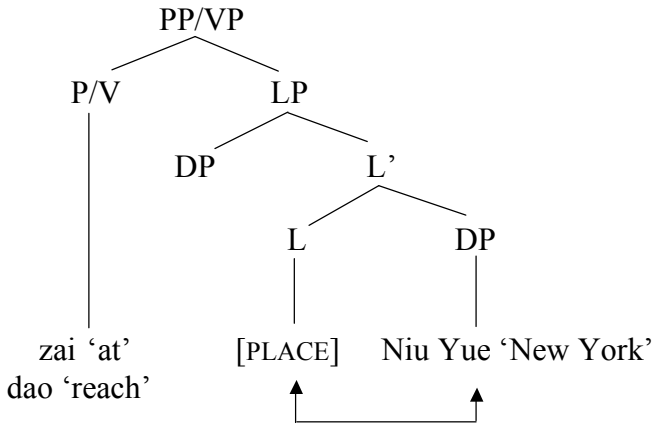
As for an inherent location-denoting DP (such as *New York*), one possibility is to say that in such cases a DP containing the requisite locative feature suffices as a complement to the location-selecting heads. On the other hand, assuming the LP to be CSR of a location, a structure like (16) would be in order, with the location-denoting DP selected by a null L with the elementary semantics of PLACE.

---

[9] See Guo (2002) for variation among heads in the strength of their selection requirement for a location. He lists 5 types with decreasing requirement in the object's denotation as a location: (a)"在～"：在墙上，在泰山，在门口; (b)"到～"：扩展到长江，去筒子河滑冰，来过黄河; (c)"上/下/进/出/回/过/～"：过黄河，进院子，出桥洞，上讲台; (d)"往/向/朝～"：往胸膛刺，抛向人群，朝天放; (e)用"这里（儿）、那里（儿）、哪里（儿）"指代或提问：打脸→打哪儿，走大路→走哪儿。

[10] A monosyllabic localizer like *pang* is phonetically defective and must cliticize to the immediately preceding XP. The localizer may be bisyllabic, in which case it retains full phonetic strengths and does not cliticize. This gives rise to *zhuozi (de) pangbian*, etc., with optional *de*. Since *de* is itself a clitic, it cannot serve as a host for another clitic and co-occur with the monosyllabic localizer (**zhuozi de pang*). In this ungrammatical case, the *de* would be like a *ni pusa* 泥菩萨 'clay buddha' crossing the river who cannot be sure of his own safety, let alone carrying someone else on the journal to the opposite bank.

(16)



The crucial aspect of this structure is that the presence of a location-denoting DP licenses the phonetically defective L. Intuitively, the null L inherits its interpretable feature from the inherent locative DP. Borrowing and adapting a mechanism from Chomsky (2001), we can assume that the phonetic deficiency of L renders its [+L] feature uninterpretable (or unvalued), hence unable to satisfy the selectional requirements of the higher head. This deficiency can be overcome, however, by the relation Agree, just in case L finds an element in its minimal search domain that contains an interpretable [+L], such as *New York*. The Agree relation allows L to inherit an interpretable [+L] from the goal in this case. With a non-locative DP like *Zhangsan,* on the other hand, the L cannot inherit any [+L] feature from its goal, and so **dao Zhangsan* 'reach Zhangsan' is unacceptable in Mandarin. In short, in Mandarin, a location-selecting head selects an LP whose L head may be covert only if it selects a DP with an inherent [+L] feature.

3.2.2. Old Chinese. It has now been well known that the overt localizer requirement did not hold of OC. Relevant examples as observed by Guo 2002, Wei 2003, and Peyraube 2003 include the following:

(17) 八佾舞於庭，是可忍也，孰不可忍也？（论语）

bayouwu yu ting, shi ke ren ye, shu bu ke ren ye?
8x8-dance at hall this can tolerate Prt, what not can tolerate Prt
'(Confucius said of Jishi) To have the 8x8 grand ball in the house courtyard, if this can be tolerated, what cannot be tolerated?'

(18) 管夷吾举於士，孙叔敖举於海，百里奚举於市。（孟子）

Guanyiwu ju yu shi, Sunshu'ao ju yu hai, Bailixi ju yu shi.
Guanyiwu rise at officer, Sunshu'ao rise at sea, Bailixu rise at street
'Guanyiwu rose among the jail officers, Sunshu'ao rose at the seaside, and Bailixi rose among the city streets.'

(19) 天下诸侯朝觐者，不之尧之子而之舜。（孟子）
tianxia zhuhou chaojian zhe, bu zhi Yao zhi zi er zhi Shun.
Kingdom princes hajj Nom, not go Yao's son but go Shun
'Those princes who come to pay their homage, they do not go to Yao's son, but go to Shun.'

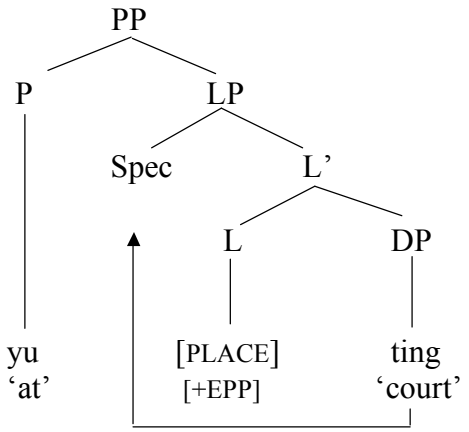
This pattern parallels English, which also does not require an overt localizer for a place-denoting argument, as the translations above demonstrate. What makes the difference between OC and English on the one hand and Modern Chinese on the other? In line with current thinking in parametric theory, the difference must lie in the nature of L. I submit that this difference places Modern Chinese and OC (and English) on different positions of the analytic-synthetic continuum.

(20) Modern Mandarin (analytic):
- L may be overt, with its own interpretable [+L] feature.
- L may be covert, entering into Agree with an inherently locative goal.
- In either case, L does not trigger movement of its complement.

(21) Old Chinese (synthetic):
- L is generally covert, hence in need of licensing.
- The covert L has [+EPP], triggering movement to Spec of LP.

In particular, in Mandarin the L is either lexical or only weakly functional in that it only triggers Agree but no Move. In OC the L is usually covert, and is strongly functional, hence triggering movement.[11] The structural analysis of *yu ting* 'at the courtyard' is as follows:

(22)



Since movement to the Spec under the stronger requirement of [+EPP] licenses the L already, there is no need for L to enter Agree with its complement. (In other words, the

[11] In OC the L may also be lexical and overt (in principle), but under normal circumstances this overt strategy is 'shelved', owing to 'synthetic blocking' (presumably on economy grounds).

uninterpretable [+L] gets a 'free ride' under Spec-Head checking. This allows OC non-locative DPs to occur directly with a location-selecting L head without an overt localizer.

So far, by assuming the universal existence of an LP with a possibly silent L head, we are able to account for language-internal differences and cross-linguistic differences in the distribution of an overt localizer.

3.2.3. Pre-Middle Chinese. Peyraube (2003) points out that during the period of Pre-Medieval, while certain non-locative nouns started to require overt localizers, the use of a pure location-selecting preposition (i.e., *yu*) became unnecessary. (This was true only for the pre- and early Medieval period, after which the localizer system in Chinese remained pretty much the same as in Modern Mandarin.) Examples from *Shiji*, as cited by Peyraube, include:

(23) 西与秦将杨熊战白马
Xi yu Qin Jiang YangXiong zhan Bai Ma
Xi and Qin general Yang Xiong fight Bai Ma
'Xi and the general of Qin, Yang Xiong, fought at Bai Ma.'
[In this example, *Mai Ma* is a place name]

(24) 杀义帝江南
sha Yi Di Jiang nan
kill Yi Di river south
'(He) killed Yi Di at the south of the River.'

(25) 桓公與夫人蔡姬戲船中。
Huan gong yu furen Cai Ji xi chuan zhong
Huan prince and spouse Cai Ji have-fun boat in
'Prince Huan and his spouse Cai Ji had fun in a boat.'

(26) 乃求楚怀王孙心民间。
nai qiu Chu Huai wang sun Xin min jian
then seek Chu Huai king grandson Xin people among
'Then, (Xiang Liang) sought Xin, grandson of the king Huai of Chu, among the people.'

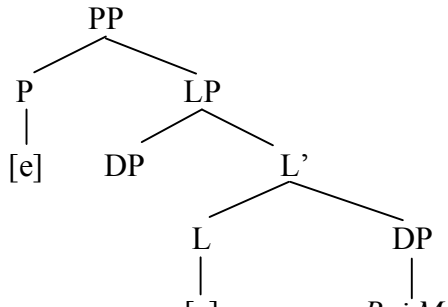
(27) 孔子去曹适宋，与弟子习礼大树下。
Kongzi qu Cao shi Song yu dizi xi Ii da shu xia
Confucius leave Cao go Song with disciple practice rite big tree under
'Confucius left Cao and went to Song to practice the rites with his disciples under a big tree.'

However, there are no examples with non-locative DPs where *both* the localizer and the preposition are overtly missing. Example (27) with the localizer missing would presumably be ungrammatical.

(28) *孔子去曹适宋，与弟子习礼大树。
Kongzi qu Cao shi Song yu dizi xi Ii da shu
Kongzi leave Cao go Song with disciple practice rite big tree

This state of affairs shows that the two patterns depicted in (a-b) were acceptable, but not the pattern (c):

(29)



(a)	[e]	*Bai Ma City*	(ex. 23, 24)
(b)	*xia* 'bottom'	*da shu* 'big tree'	(ex. 25, 26, 27)
*(c)	[e]	*da shu* 'big tree'	(ex. 28)

In (29a), a null P is allowed when it takes an LP containing a null L and an *inherent* locative DP. In (29b), a null P is allowed if the LP contains a lexical and a DP that need not be inherently locative. But crucially in (29c), a null P is not allowed if the LP has a null L and the DP is not inherently locative. Ignoring the null P for the moment, notice that (a) and (b) represent the two types of LPs that are allowed in Modern Chinese: (a) is allowed because the null L is licensed under Agree with a locative goal, and (b) is allowed because the lexical L does not require Agree. (The surface form is obtained when the object 'big tree' moves to Spec of LP for reason of Case.) Crucially, (c) is not allowed because Agree does not apply here, the DP not being a locative phrase with inherent [place]. (This last case was allowed in OC because the null L has [+strong] or [+EPP], which triggers movement of the DP, but not in Modern Chinese because the null L is neither [+strong] nor [+EPP].)

This situation of Pre- or Early Middle Chinese suggests that it has just lost the [+strong] or [+EPP] feature of a null L, and accordingly also lost the movement strategy that moves a DP into the Spec of a null L. The strategy of Move has given way to the strategy of Agree, because the null L has lost the [+strong] or [+EPP] feature, resulting in some degree of analyticity. In other words, this period marks the emergence of a system involving Agree in place of Move.

If this hypothesis is correct, then the use of a null P in this period simply represents a generalization of the Agree system from LP to PP domains. An LP-selecting P (such as *yu* 'at') can be null if it can be licensed under Agree by an LP that is legitimate with interpretable [+L] features. This is the case in (29a-b) because the LP contains the requisite feature, inherent in (29b) and by inheritance in (29a), that may enter into Agree with—and value—the null P. In (29c) on the other hand, the LP cannot itself be licensed under Agree, and so it also cannot serve as a goal under Agree with the null P.[12]

[12] A similar point can be observed with the example 楚人和氏得玉璞楚山中《韩非子.和氏》 The localizer *zhong* 'middle' appears to be undeletable. There are other examples that appear to contradict the claim that P can be silent only if L is independently valued. The following examples are cited in 张美兰 (2008): (a) 景公问政孔子《史记．孔子世家》(b) 又献玉斗范增《国语.越语》. Each of these cases may be rephrased with a preposition *yu* before the last non-locative DP: (a) 景公问政于孔子, (b) 又献玉斗于范增。There are two ways to put away these examples. On the one hand we can assume

From this point of view, the difference between Pre-Middle and Modern Chinese is simply the loss of a null P that may be licensed under Agree. This represents another example of a further step of analyticization that characterizes the shift from OC to MC in the history of Chinese syntax. In other words, the Pre-Middle stage is in the transition stage of the shift into analyticity that peaked in late Middle Chinese near the Sui-Tang period.

And this process of syntactic change seems well captured by the theory of parametric change we are assuming under the Principles-and-Parameters framework and the vocabulary of Minimalist theorizing. Through the loss of strong functional features like [+EPP], a fragment of grammar went from a system of Move to a system of Agree. Further loss of uninterpretable features led to the loss of Agree in certain areas of grammar, resulting in sentence structures that are 'overtly Davidsonian', exhibiting high analyticity.

4. Independent motivations

I defend the specific analysis proposed here, in particular the postulation of a silent L (with unpronounced PLACE) and a silent P (with unpronounced AT). I shall show that the postulation of an LP with silent L provides an account for several otherwise puzzling facts.

4.1. The story of *suo* 所

One such fact concerns the syntax of non-subject relatives and passives involving the element *suo*. These are commonly used in Classical Chinese, and remain as residues in a semi-literary variety of Modern Chinese.

(30) OC object relative:
君子有所为，有所不为。
junzi you suo wei, you suo bu wei.
moral-man has SUO do, have suo not do.
'The moral man has what he does, and has what he does not do.'

(31) OC *suo* passive:
其弟今被贼所殺。(變文)
qi di jin bei zei suo sha
his brother now BEI bandit SUO kill
'His brother was killed by the bandits.'

---

that the silent P is independently licensed by the higher verb 问 'ask' or 献 'to present' selecting the PP. On the other hand, the position of the hypothesized silent P may in fact be a trace of head-movement: 以玉斗献范增 → [e] 玉斗献范增 → 献玉斗 [t] 范增 → 献玉斗范增 (present Fan Zeng with jade wine cups).

Under standard analyses, the preverbal *suo* is related to the postverbal object position in these cases by movement, presumably to an operator position, or a clitic or some left-edge position from which it is bound by an operator. Since *suo* is a word with the original meaning of a 'place' (as in *chusuo* 'place', *cesuo* 'toilet', *changsuo* 'venue'), and the relativized or passivized object is a DP denoting a human or non-human individual, the question arises as to why relativization or passivization turns an individual-denoting phrase into a place-denoting one. A consideration of the common expression 所以 *suoyi* 'so, therefore' with its related non-*suo* counterpart in OC raises the same point:

(32)

以是	→	所以
yi shi[13]		suo yi
for this		therefore

In other words, an object-denoting 'this' after a preposition becomes a place-denoting 'there' before the preposition. The *for this* > *therefore* alternation is, in fact, commonly observed in English and other Germanic languages, the so-called 'r-pronouns' of van Riemsdijk (1978), though some of the following examples are rather archaic:

(33) English:
- a. in this > herein; under this > hereunder; by this > hereby; to this > hereto
- b. for that > therefore; to that > thereto; by this > thereby; of that > thereof
- c. in which > wherein; for which > wherefore 'why'; by which > whereby

(34) Dutch (from van Riemsdijk 1978):
- a. **op het* 'on it'; **op er* 'on there'; but *er op* 'there-on'
- b. *op die* 'on that one (human)'; **op dat* 'on that'; **op er* 'on there'; but *er op* 'there-on'
- c. *op wie* 'on whom', *op wat* 'on what'; **op waar* 'on where'; but *waar op* 'whereon'

In Greek, Swiss German and some other languages, the relative pronoun is also often rendered with an equivalent of 'where':

(35) Greek (Sabine Iatridou, p.c.)

a. to vivlio pu agorase o Yanis ine akrivo
the book where bought the John is expensive
'The book that John bought is expensive.'

b. o anthropos pu egrapse to vivlio ine plusios
the person where wrote the book is rich

[13] The expression 是以 might be seen as an example meaning 'for this' showing that the form 所以 is not necessary. But there is another interpretation where 是以 simply means 'this reason', where *yi* is an N = reason, not a P meaning 'for'. Example from 李白：古人秉燭夜游，良有以也。

'The person who bought the book is rich.'

(36) German (Clemens Mayr, p.c.)

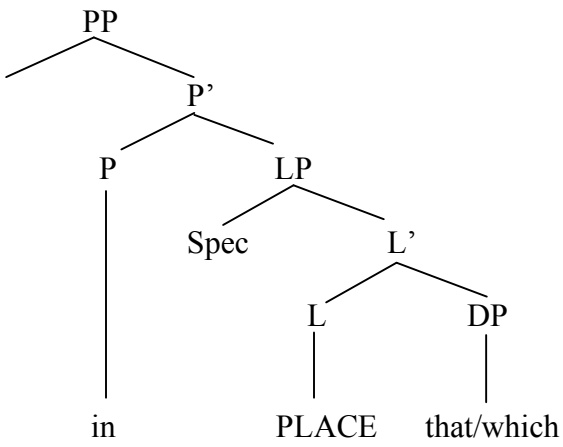
a. das Buch wo Hans gelesen hat
the book where Hans read has
'the book that Hans has read'

b. das Buch wo uns nicht gefältt
the book where us not please
'the book that does not please us'

Two questions arise: First, why is a place word required when an argument is fronted? Second, why *only* when fronting takes place (e.g. **by there, *on here*)? I propose an ECP account for the obligatory alternations.[14] A crucial hypothesis is that the underlying object position is in fact occupied by an LP whose L may be silent with unpronounced PLACE.

Take English *by the house* for example. This would be treated like *beside the house,* or rather *by (the) side (of) the house,* except that SIDE is unpronounced. More generally every DP after a locative preposition is actually contained in an LP with an unpronounced PLACE under L. Then the alternations illustrated in "*in which* → *wherein*" and "*by that* → *thereby*" may be explained as follows. The underlying structure would be as in (37):

(37)



The unpronounced L is properly head-governed by the preposition *in*. Suppose now that the DP is to be fronted to Spec of PP. If *that/which* is fronted directly out of LP and straight into Spec of PP, its trace would be neither head-governed (assuming that head-government, a PF requirement, cannot be fulfilled by a null head), nor antecedent governed. If *that/which* is first moved to Spec of LP (satisfying antecedent-government), then subsequent movement would be prevented by the LBC. Suppose now that movement pied-pipes the L' or the entire LP to Spec of PP. This would also result in an ECP violation with the null L not being head-governed. To avoid such violations, the

[14] ECP = Empty Category Principle, which requires an empty category of a certain kind to be 'properly governed' (e.g., immediately c-commanded by a lexical category, other details aside).

whole LP is spelled out and lexicalized as *there* or *where* (with no null L). Hence the only permissible fronted versions are *therein, wherein, thereby, whereby,* but not **thatby, *whichby*.[15]

The alternation of 以是 *yi shi* → 所以 *suo yi* can be accounted for in precisely the same way, in parallel with the alternation *for that* → *therefore*.

The other cases involving non-subject relative clauses and passives with *suo* can also be similarly analyzed as involving an underlying LP that gets fronted, and so can the parallel cases of relativization in Greek and Swiss German above—although the case for an unpronounced PLACE node is not compelling. As Guo (2002) observes, locative pronouns like *there* and *where* can be quite compatible with a wide range of verbs: *kan nali* 'look where', *da zheli* 'hit here', *ti nali* 'kick where'. Thus it is plausible to suppose that some languages simply use an LP as the indefinite, non-specific argument to serve as the target of relativization.

The ECP account thus treats the otherwise peculiar phenomenon involving *suo* on a par with the left-right asymmetry in the definiteness interpretation of bare nouns in the account of Longobardi (1994) and the distribution of *yi*-deletion before a classifier in Mandarin Chinese in the account of Li (1998). In the latter case, Li (1998) shows that a classifier may be stranded by omitting an indefinite, non-specific *yi*, only if it occurs in position but not, say, in subject position, and she argues that this asymmetry follows from the head-government of the ECP.

4.2. The story of *qu* 去

Finally, the postulation of a silent P (as in the analysis of some Pre-Medieval PPs above) also helps to give a plausible account of the history of 去 *qu*, which used to mean 'to depart from' but now means 'to go to', a well known observation among researchers. (See Hu 2008 for related discussion.) Based on the acceptability of 出于幽谷 *chu yu yougu* 'emerge from the dark glen' alongside with 出幽谷 *chu yougu*, and 出自污泥 *chu zi wu ni* 'emerge from dirty mud' alongside with 出污泥 *chu wu ni*, we may represent the shorter forms with a silent preposition, as in (26):

(38) [出 [$_{PP}$ [$_{P}$ e] 幽谷/污泥]]]
chu yougu/wuni
emerge glen/mud

Note that if the object of *chu* 'emerge' is preposed, it becomes necessary to spell out the overt P *zi* 'from':

(39) *(自) 幽谷/污泥 出
(zi) yougu/wuni chu.

[15] Movement of the LP to the Spec of PP leaves the P stranded. Presumably this makes it necessary for the P to clitcize, resulting in *thereby,* etc. But if the selecting head is not P but a verb, then no cliticization is needed, as in the relativization cases discussed immediately below. I assume that both the head-government requirement of ECP and the head-movement operation (with its consequences in word-order variations) apply at PF.

(from) glen/mud emerge

This left-right asymmetry follows again from the ECP, because the null P would not be properly head-governed at the left periphery. In the same vein, we can hypothesize that in OC the following structures are possible. Hu (2008) argues that under one path of development, the following change took place: 去秦之楚 → 去之楚 → 去楚。I interpret this more fully as follows:

(40) a. 去自秦而之于楚
qu zi Qin er zhi yu Chu
depart from Qin and go to Chu
'Leave Qin and go to Chu.'

b. 去 [e] 秦 (而) 之 [e] 楚
qu [$_P$ e] Qin (er) zhi [$_P$ e] Chu
depart Qin and go Chu

(40a) shows that either source PPs (adjuncts) or goal PPs (complements) may follow their verbs, in OC. (40b) shows that both prepositions 'from' and 'to' may be silent, each properly governed by the verb.[16] (The conjunction may also be omitted.) After the inception of Middle Chinese, a source PP, being an adjunct, must occur preverbally and, because of the ECP, must do so with overt P 'from'. After this, it became impossible to have the sequence *qu e Qin*. Instead we have:

(41) 自秦去（而）之楚
zi Qin qu (er) zhi [e] Chu
from Qin leave (and) go Chu
'Left and go to Chu from Qin.'

Since 'from Qin' is optional as an adjunct, we may have 去之楚 *qu zhi Chu* 'leave go-to Chu' → 去楚 *qu Chu* 'leave for Chu' [= go to Chu]. At this point, the surface meaning of *qu* is 'go to'. Hence the rise of *qu* as 'go to' is related to the historical word order change that requires source adjuncts to occur in preverbal position only, and the possibility of deleting a preposition in governed positions. It should be noted that there wasn't a real change in the lexical meaning from 'depart' to 'reach'. The meaning of *qu* was always 'go' or 'leave'. When 'go' paired with a following source phrase without P, it meant 'go from = depart', but when it paired with a following goal phrase without P, it began to mean 'go to = reach'.

A different path of recent development of *qu* is can be seen from the following micro-variations among three varieties of Chinese, as reported by Lamarre (2008).

(42) a. ta dao Beijing qu-le. 他到北京去了。

[16] An incorporation or restructuring account of the null P (extending Hornstein and Weinberg 1981) would be inadequate since it would wrongly allow for P-stranding. Compare *the table that I put the book on*, and **wo fang-le yi-ben shu zai t de zhuozi-shang*.

he to Beijing go-$LE_{1/2}$.
'He went to Beijing.'

b. ta qu-le Beijing le. 他去了北京了。
he go-LE_1 Beijing LE_2
He went to Beijing.

In particular, Lamarre indicates that while both (42a) and (42b) are generally acceptable to Modern Mandarin speakers, in Cantonese only the form represented by (42b) is acceptable, whereas in Ming-Qing Chinese (as evidenced by the Ming-Qing *Piaotongshi* texts), only the form represented by (42a) was acceptable. As Lamarre correctly notes, (42a) represents the analytic form, and (42b) the synthetic form. In our system, we can describe the change as one that results from the grammaticalization of *dao* 'to' (and the verb movement that it triggered. In particular, at the relevant stage of development, adjunct phrases denoting source could no longer follow *qu*. And a directional light verb *dao* 'to' occurring on top of *qu* gave the analytic form (42a), as required in Ming-Qing. With grammaticalization, it became possible to use the null form of *dao*, as in (43), which triggers verb raising and gives rise to the synthetic form (42b):

(43) [ta [$_V$ e] Beijing qu-le].
He Beijing go-$LE_{1/2}$.

This picture depicts the path of grammaticalization among these various forms. While grammaticalization has progressed most fully in Cantonese, Mandarin is in an intermediate status between Ming-Qing and Cantonese, since the deletion of preverbal *dao* is still optional.[17]

5. Summary and conclusion

This paper argues for decomposition in the representation of various syntactic phenomena of Chinese. In the domain of VP syntax, a number of previous analyses are summarized that argue for lexical decomposition based on the robust distribution of light verbs, the high level of 'visible' polysemy exhibited by simplex predicates with complex meanings, and a range of otherwise bewildering cases of syntax-semantics mismatches. In the realm of non-verbal syntax, it provides an analysis of localizers as light nouns heading their own projections above NP/DPs and argues for the existence of null light nouns for location-denoting constructions that apparently do not carry them and for languages (English and Old Chinese) that apparently do not require them. It is shown that the requirement of overt localizers in Modern Chinese parallels that of overt classifiers and overt light verbs in showing its high degree of analyticity as opposed English and Old Chinese where such requirements are not overtly instantiated generally. The postulation of silent categories (such as null localizers, prepositions) allows us to account for the differences between (stages of) these languages in the terms of parametric

[17] For discussion of other micro-parametric variations among Chinese dialects within the framework of parametric syntax, see Cheng and Sybesma (2005) and Tang (2006).

theory, as parametric variations and changes in the relevant syntactic-morphological-phonological nature of given lexical items.

In fact, the theory with its analytical tools adopted from current syntactic theory does more than that. It allows us to capture a 3-stage syntactic change from Old to Middle to Modern Chinese in the distribution of overt or covert L and P, as a progressive unidirectional change in the loss of strong functional feature that triggered Move, its replacement by a system involving Agree, and a further replacement by a system involving fully overt categories. It also allows us to capture a 3-stage micro-parametric change in the recent history of *qu* as an example of a new cycle of change, from high analyticity to mild synthesis. Finally, given independent principles (such as the ECP) that govern the distribution of null categories, the theory also provides an explanation for where, in a given language, a given postulated null category may appear. If the analysis proves to be on the right track over time, then this can be seen as providing important support for the analytical tools of the grammatical model of description we have assumed.

References

Baker, Mark. 1988. *Incorporation*. Chicago: University of Chicago Press.

Borer, Hagit. 2005. *Structuring sense.* Oxford: Oxford University Press.

Chao, Yuen-Ren. 1948. *Mandarin Primer*. Cambridge, MA: Harvard University Press.

Chao, Yuen-Ren. 1957. Formal and semantic discrepancies between different levels of Chinese structure. *BIHP* 28: 1-16. [中译本 2002]

Chappel, Hiliary, Alain Peyraube, and Yunji Wu. 2007. The grammaticalization pathway of the lexeme 跟 [kai55] in the Waxiang language of western Hunan. Paper presented at IACL-15, Columbia University.

Cheng, Lisa L.-S., C.-T. James Huang, Y.-H. Audrey Li, and C.-C. Jane Tang. 1999. *Hoo, hoo, hoo*: syntax of the causative, dative and passive constructions in Taiwanese. In *Contemporary studies on the Min dialects*, ed. by Pang-Hsin Ting, 146-203. Berkeley: Project of Linguistic Analysis.

Cheng, Lisa L.-S., and Rint Sybesma. 2005. Classifiers in four varieties of Chinese. In *The Oxford handbook of comparative syntax,* ed. by Guglielmo Cinque and Richard Kayne, 259-292. Oxford: University Press.

Chierchia, Gennaro. 1998. Plurality of mass nouns and the notion of a 'semantic parameter'. *Events and Grammar*, ed. by Susan Rothstein, 53-103. Dordrecht: Kluwer Academic Publishers.

Chierchia, Gennaro. 2004. Scalar implicatures, polarity phenomena, and the syntax/pragmatics interface. In *Structures and beyond: the cartography of syntactic structures 3*, ed. by Adriana Belletti. 39-104. Oxford: Oxford University Press.

Chierchia, Gennaro. 2008. On being one. Invited speech, IsCLL-11 Conference, National Chiao-Tung University, Hsinchu, Taiwan.

Chomsky, Noam. 1986. *Knowledge of Language*. New York: Praeger.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: a life in language*, ed. by S. J. Keyser and M. Kenstowics, 1-52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2008. The biolinguistics program: where does it stand today? Paper submitted to IACL-16, Peking University.

Feng, Shengli, W.-T. Dylan Tsai and C.-T. James Huang, et al. 2008. 冯胜利、蔡维天、黄正德. 传统训诂与形式句法的综合解释：以“共、与”为例谈‘给与’义的来源及发展。Ms., Harvard University and National Tsing Hua University.

Fodor, Jerry. 1970. Three reasons for not deriving ‘kill’ from ‘cause to die’. *Linguistic Inquiry* 1: 429-438.

Guo, Rui. 2002. 郭锐. 2002. 实体和位置：汉语名词功能的分化。《中外文化交流与澳门语言文化国际研讨会论文集》宋柏年、赵永新主编，280-286。澳门：澳门理工学院出版。

Hale, Kenneth and S. Jay Keyser. 1993. On argument structure and lexical expression of syntactic relations. In *The view from building 20: Essays in linguistics in honor of Sylvan Bromberger*, ed. by Kenneth Hale and S. Jay Keyser, 52-109. Cambridge, MA: MIT Press.

Hale, Kenneth and S. Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, MA: MIT Press.

Harley, Heidi. 2003. Possession and the double object construction, *Linguistic Variation Yearbook* 2: 31-70.

Hu, Chirui. 2008. On the development and change of 去 *qu* in the history of Chinese. Colloquium presentation, Harvard University.

Huang, C.-T. James. 1988. *Wo pao de kuai* and Chinese phrase structure. *Language* 64: 274-311

Huang, C.-T. James. 1997. On lexical structure and syntactic projection. *Chinese Languages and Linguistics* 3:45-89.

Huang, C.-T. James. 2005. Syntactic analyticity and the other end of the parameter. Lecture notes, 2005 Summer LSA Linguistic Institute.

Huang, C.-T. James. 2007. Unaccusativity, ditransitives and extra-argumentality. Paper presented in EACL-5, Leipzig, September 2007.

Huang, C.-T. James. 2008. 从“他的老师当得好”谈起.《语言科学》7.3 (34): 225-241.

Jiang, L. Julie. 2008. On *suo* and the left edges. Ms., Harvard University, presented at IACL-16, Peking University.

Joseph, Brian. 2000. What gives with *what gives*? Paper presented to Jorge Hankamer, http://ling.ucsc.edu/Jorge/joseph.html.

Lamarre, Christine. 2008. Divergent evolution of directionals in two non-standard varieties of Sinitic. Paper presented at the conference The Past Meets the Present, at Academia Sinica, Taipei.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.

Li, Y.-H. Audrey. 1998. Argument determiner phrases and number phrases. *Linguistic Inquiry* 29: 693-702.

Lin, T.-H. Jonah. 2001. *Light verb syntax*. Doctoral dissertation, University of California, Irvine.

Longobardi, Giuseppe. 1994. Reference and proper names. *Linguistic Inquiry* 25: 609-665.

McCawley, James D. 1969. Lexical insertion in a transformational grammar without deep structure. Proceedings of the 4th annual meeting of Chicago Linguistic Society.

Peyraube, Alain. 2003. On the history of place words and localizers in Chinese: a cognitive approach. In *Functional structure(s), form and interpretation*, ed. by Y.-H. Audrey Li and Andrew Simpson, 180-198. London: Routledge-Curzon.

Peyraube, Alain. 2007. Analogy, reanalysis, exaptation and degrammaticalization in Chinese syntactic change. Invited speech at EACL-5, Leipzig.

Ross, John R. 1972. Act. In *Semantics of Natural Languages*, ed. by Donald Davidson and Gilbert Harman, 70-126. Dordrecht: D. Reidel and Company.

Shen, Jiaxuan. 2006. 沈家煊. 2006. “王冕死了父亲”的生成方式－兼说汉语“糅合”造句. 《中国语文》2006.4: 291-300.

Shen, Jaixuan. 2007. 沈家煊. 2007. 也谈“他的老师当得好”及相关句式. Paper presented at IACL-15, Columbia University.

Sybesma, Rint. 2007. Middles, unergatives and transitivity. Paper represented at EACL-5, Leipzig.

Tang, Sze-Wing. 2006. 邓思颖. 2006. 汉语方言受事话题句类型的参数分析.《语言科学》 5.6: 3-11.

Tang, Sze-Wing. 2008. 邓思颖. 2008. 南非北是：名物化的参数差异. Invited talk, Beijing Language University, 2008.

Tsai, W.-T. Dylan. 2001. On subject specificity and theory of syntax-semantics interface. *Journal of East Asian Linguistics* 10:129-168.

Tsai, W.-T. Dylan. 2007. Four types of affective constructions in Chinese. Ms., National Tsing Hua University.

Van Riemsdijk, Henk. 1978. *A case study in syntactic markedness*. The Peter de Ridder Press.

Wei, Pei-Chuan. 2003. 魏培泉. 2003. 上古漢語到中古漢語語法的重要發展. 何大安编《古今通塞：漢語的歷史與發展》75-106. Taipei: Academia Sinica.

Wu, Fuxiang. 2003. 吴福祥. 2003. 汉语伴随介词语法化的类型学研究. 书稿《语法化与汉语历史语法研究》第四章. 中国社会科学院语言所.

Yang, Chung-Yu Barry. 2008. On the *ka*-Construction in Taiwanese Southern Min: an Applicative Approach. Paper presented at the Workshop on Mostly Historical Chinese Syntax, Harvard University.

Yang, Rong. 2001. Common nouns, classifiers and quantification in Chinese. Doctoral dissertation, Rutgers University.

Zhang, Meilan. 2008. 张美兰. 2008. 先秦两汉汉语双宾语研究中的几个问题. Paper presented at the Workshop on Mostly Historical Chinese Syntax, Harvard University.

C.-T. James Huang
ctjhuang@fas.harvard.edu
Department of Linguistics
Harvard University
Cambridge, MA 02138
USA