# Linguistics by Heart Webfest for Horst-Dieter Gasde

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# Thoughts on Optional Infinitives (in Russian)<sup>\*</sup> Natalia Gagarina (ZAS, Berlin)

#### Abstract

The paper addresses the phenomenon of optional infinitives (OIs) in first language acquisition with the emphasis on the acquisition of Russian. The longitudinal data of three L1-speaking Russian children are used in the study. It is observed that OIs occur simultaneously with inflected verb forms and disappear within the next nine-twelve months. They are not used as predominantly as it is documented for the other OIs languages, and the period of their active use is slightly shorter as well. The following research questions are addressed in the study: What language-specific devices, if any, enable the OIs phenomenon? Why do OIs exist in Russian?

Claiming that the pro-drop factor does not play a significant role in the OIs phenomenon in Russian we suggest several reasons to account for the existence of OIs. Both stable clause position of infinitives in analytical constructions in the input and the nature of infinitives *per se*, create a favourable background for their recognition and production by children. (A) Predominantly final position of infinitives in the analytical constructions, in comparison to the free position of a single finite verb in a VP facilitates the early recognition of infinitives in the input. (B) The infinitival ending -t' is better perceived than other final verbal inflectional endings, e.g. reduced -a, which is an additional favourable factor. The minimal morphological markedness and higher morphotactic transparency in comparison with inflected forms encourage the overgeneralised use of infinitival forms. (C) Lastly, infinitives inherit the grammatical category of aspect (which is crucial for the verb morphology in Russian) and are not coded for any other grammatical categories. Thus, infinitives are more conceptually transparent, clear than as finite forms. All these features contribute to and form the high degree of salience of OIs.

Strong correlation between the development of verb grammar and the drop in the use of OIs is observed. Three stages in the development of verb grammar correspond to the two steep decreases in the use of OIs: a) at the onset of verb production and the subsequent two months when the children have no rule-based morphology, OIs constitute about one third of all utterances containing verbs; b) the enrichment of the verb lexicon within the next two months – first signs of the rule-based morphology correspond to a drop of 10% in the use of OIs; c) four months after the onset of verb production – further establishment of the rule-based (verb) morphology corresponds to the next 10% drop and subsequent disappearance of OIs. The OIs phenomenon hasn't a short-term existence. OIs show up along with the development of rule-based morphology and finiteness (e.g. the emergence of analytical constructions) and disappear only when children (fully) acquire the relevant grammatical categories.

<sup>&</sup>lt;sup>\*</sup> I would like to thank Insa Gülzow for fruitful discussions during the work on this paper.

In conclusion, the establishment of the fully productive rule-based morphology and finiteness, as well as the acquisition of the analytical constructions completely supersede the production of OIs.

## **1. Introduction**

Many main stream researchers of adult languages from time to time look behind the lock leading to the tributary of the language acquisition processes. Oftener and oftener, sometimes rather unexpectedly, psycholinguists come across various thoughts on the process of language learning, language processing and comprehension in comparison to production, etc. in the 'adult' linguistic studies. Horst-Dieter Gasde seems to follow this developing tendency. Investigating the pro-drop phenomenon in adult Chinese, namely, the differentiation between S-structures and base-generated empty categories, and the subdivision of the latter, Gasde (1991: 1-2) already in the introduction to his book following Fanselow and Felix (1987) writes:

"... Davon ausgehend, postuliert die generative Grammatiktheorie, daß die Grenzen, innerhalb derer die grammatischen Regelsysteme von Einzelsprachen variieren können, von vornherein verhältnismäßig eng gezogen sind. Denn je restriktiver die Prinzipien der UG wirken, je stärker sie die Zahl möglicher Hypothesen über die grammatische Struktur von Sätzen natürlicher Sprachen einschränken, desto leichter kann ein Kind den Prozeß des Erwerbs seiner Muttersprache bewältigen, kann es auf der Grundlage eines begrenzten, unvollständigen und individuell unterschiedlichen sprachlichen Dateninputs zu korrekten Generalisierungen hinsichtlich der syntaktischen Regeln der Sprache gelangen, die es erlernt."

Adult and child language research seem to have a mutual supplementary relationship, since, on the one hand, processes of language acquisition are often explained by means of terminological tools used within the systems of adult grammars and through the prism of a target language that a child has to acquire. On the other hand, facts of language acquisition research serve as the basis for the explanation of the peculiarities of human languages and for the elaboration of linguistic theories and for searching for the universals underlying numerous grammars. One of the examples of such connection may be the pro-drop factor. This factor/phenomenon has been investigated by Horst-Dieter Gasde and others<sup>1</sup> in order to understand its essentials and relationship to other phenomena in adult languages. In language acquisition research the pro-drop factor has been used as an account for another, frequently appearing child-specific phenomenon, the so-called optional infinitives (OIs) phenomenon. Before explaining the connections between both I will comment on OIs themselves and briefly sketch the state-of-the-art of related contemporary research.

<sup>&</sup>lt;sup>1</sup> For the purpose of the present study I will leave out the references on this topic.

## 2. Optional Infinitives: variety of languages and diversity of explanations

The phenomenon of OIs doesn't have a very long but a profound history of discussing. Although the notes on the non-grammatical use of infinitival verbs in matrix clauses may be found in the very early studies (see Ginneken (1917) for Dutch, cited in Wijnen et al. (2001); Stern and Stern (1928) for German, Gvozdev (1949) for Russian) the active debates over the essence and properties of such use started with the pioneering papers of Rizzi (1994) and Wexler (1994), who also introduced the terms: *root infinitives* or *optional infinitives*,<sup>2</sup> respectively.

At that point, OIs were documented for Danish, Dutch, English, French, German, Greek,<sup>3</sup> Hebrew, Icelandic, Norwegian, Russian and Swedish. On the contrary, languages such as Catalan and Spanish, Inuktitut,<sup>4</sup> Italian, Japanese, Polish, Portuguese and Tamil do not exhibit an OIs stage at all or show a very low (insignificant) percentage of subject-verb agreement errors (the overview of the selected studies: for Dutch – Wijnen et al. (2001), French – Pierce (1992), German – Poeppel and Wexler (1993), Dutch and English – Hoekstra and Hyams (1998), Greek – Hyams (in print), Hebrew – Rhee and Wexler (1995), Russian – Avrutin (1999); Bar-Shalom and Snyder (1999); Brun et al. (1999); Snyder and Bar-Shalom (1998), Russian, Italian and Polish – Bar-Shalom and Snyder (1997), Swedish – Platzack (1992); Santelmann (1995), Spanish and Catalan – Torrens (1995), Italian – Guasti (1995). Besides, the broad overlook of the recent studies on OIs in various languages is given in Hoekstra and Hyams (1998); Rhee and Wexler (1995).

The examples below present the use of OIs (marked with bold) in target-like finite clauses in some languages:

Dutch	<i>mama radio aan <b>doen</b></i> 'mummy, switch on radio'	(Peter 2;0.7)
	<i>eendje z<b>ien</b></i> '(I) look at the duck'	(Matthijs 2;5.1) Wijnen et al . (2001: 645)
French	<i>la Papa <b>gicler</b> (= là Papa va gicler)</i> 'squirt with water'	(Sophie 1;11)
	<i>faire</i> bobo là (= ça fait bobo là) 'is hurting there'	(Emma 1;8) Kilani-Schoch (2000: 92)

<sup>&</sup>lt;sup>2</sup> I will consequently use the term optional infinitives below, since infinitives in Russian have the inflectional suffix -t', i.e. *pisa-t'* 'to write', where *pis-* is a root and -a is a thematic vowel.

<sup>&</sup>lt;sup>3</sup> Modern Greek does not have an infinitive construction, but a construction resembling OIs (an -i form which corresponds to participle) was found in early child Greek by Varlokosta et al. (1998).

<sup>&</sup>lt;sup>4</sup> Typically developing children do not exhibit OIs in their speech production, however the production of OIs is documented for one child with SLI, see Crago and Allen (2001).

German	<i>hausschuh ausziehen</i> '(I) take off my slippers'	(Anna 1;11.6)	)
	<i>puppe essen</i> 'the doll is eating'	(Anna 1;11.6) Bittner (2002)	) : 30)
Russian	<i>molochko korovka <b>delat'</b></i> 'the milk is done by cows'	(Roma 2;7)	
	<i>spat</i> ' sleep-INF	(Liza 1;9a)	
	(Liza is tired, wants to sleep and tel	ls her mother about it)	Gagarina prep.)

Various (universal) explanations proposed for this cross-linguistic difference did not hold on for a long period. For example, the richness of agreement, suggested by Wexler (1994) was later called into question by Rhee and Wexler, himself: "rich agreement might not be the best way to characterise the class of languages which do not have OIs" Rhee and Wexler (1995: 383).

One of the latest accounts is based on the assumption that OIs are not found by children learning null subject languages, Bar-Shalom and Snyder (1997); Guasti (1995); Rhee and Wexler (1995); Wexler (1995). However, this account does not hold for Russian, which admits null subjects, yet shows the stable use of OIs in longitudinal language acquisition data. One more explanation has been proposed by Hoekstra and Hyams (1998: 48) who pointed out the empirical generalisation that "root infinitives occur only in languages where the expression of finiteness may be done exclusively through number morphology" and who connected the relatedness of the root infinitives phenomenon to the different roles of number and person categories in the grammar. They propose the *eventivity constraint* which restricts the use of root infinitives to event-denoting predicates and stresses the modal reference effect (the preponderating frequency of root infinitives with modal interpretation has been found in their data). The corpus of the longitudinal data of three L1-Russian speaking children was investigated in order to check this hypotheses. It was found that all three children produce – among the 6 most frequently used infinitives in OIs constructions - the stative verb sleep, as well as activity verbs make and draw. The amount of event-denoting predicates is higher not only among OIs, but generally, among all verbs produced by children. Another empirical observation is connected with the use of perfectives and imperfectives: verbs of both aspects have been similarly distributed within the first thirty verbal lexemes used in OIs constructions. I did not find any strict "constraint on the aspectual nature of the verbs occurring in RI-constructions, viz. only eventive verbs are allowed in such constructions" Hoekstra and Hyams (1998: 81), however the tendency to the preponderate use of 'irrealis' infinitives (i.e. future, modal) denoting different desirable actions has been documented.

Finally, as correctly noticed Snyder and Bar-Schalom (1998) the two above-mentioned claims, that the OIs stage may be found only during the L1 acquisition of a language without a rich verbal inflectional system (Hoeksta and Hyams 1995) and that the OIs are exhibited only in the non pro-drop languages (Rhee and Wexler 1995) contradict

(in

each other in respect to Russian, a language with OIs, which has a rich system of verbal inflectional endings and which admits null subjects in main clauses.<sup>5</sup> Snyder and Bar-Schalom (1998) suggest the following explanation: "the interaction between finiteness and the word order in child Russian is ... related to the featural neutralization of inflection in OI utterances" Snyder and Bar-Shalom (1998: 724).

The approach of the present article may be characterised as constructivist and functional. The author argues that in the early stages of language acquisition children do not have the adult grammatical competence and that in child language the grammatical categories do not exist in the same 'form' as they are exhibited in the adult language. The child has to learn form-function mappings, language-specific grammatical rules and has to detect (language-specific and universal) cues by means of which s/he will construct the grammar of his native language.

## **3.** Data description and method

The longitudinal data (the input and the production) analysed for the this paper come from three monolingual children acquiring the standard 'petersburgian' version of colloquial Russian. The period from the onset of the verb production up to the (full) disappearance of the OIs constructions within the subsequent nine-twelve months are analysed.

The girl, Liza (L.), is the second child (her brother is ten years older) in a family of linguists and the boys, Vanja (V.) and Roma (R.) are the first and only children during the period of recordings; both children are from middle-class families. The children were more or less systematically recorded and/or video-taped two-five hours a month, from the onset of speech (there is a gap in the recordings of R., see Appendix 1). The richest corpus is that of V's speech, recordings of whom (about 90 hours) – during the period of crucial lexical and inflectional development from 2;1 to 2;3 – were five to six hours long in each month. The numerous recorded sessions were united into two or three portions so that these portions of data per month have (a) a relatively equal quantity and, (b) minimal intervals between the recordings (the recordings of Liza at 1;9 and of Roma at 2;0 and 2;1 have been grouped in a similar way).

L. is the earliest of the children to develop inflectional morphology. Her first inflected verbs appear already at the age of 1;7 - 1;8 and their number increases more steadily than it is the case with the boys. Her first utterances consist mainly of one (predominantly inflected) component. The first sporadic multi-component utterances with verbs occur only at 2;0. L. exhibits the highest percentage of OIs (ca. 30% at 1;8 and 1;9a) and the period of their use is the longest within the three children (the last 4 tokens are registered at 2;8 one year after the emergence of verbs). Probably, such prolonged use of OIs is connected with the slow development of (finiteness in) multi-component utterances. As to the other speech peculiarities of L., she is rather careful in pronouncing different inflectional endings although her pronunciation in general cannot

<sup>&</sup>lt;sup>5</sup> Russian, however, disallows pro-drop for thematic (non-expletive) subjects. Probably, Russian maybe said to be 'an optionally pro-drop language', i.e. *(ja) stroju dom* '(I) build the house', *ona znaet, chto (ona) pridjot pozdno* 'She knows, that (she) comes late': all clauses are grammatically correct.

be said to be 'accurate'. She often preserves the syllabic structure of the word and changes its phonemic representation, like in *igigiki* (1;8) – for ogurchiki 'cucumbers-DIM', *gajaiki* (1;9b) – for goroshinki 'pears-DIM'. L.'s speech is also characterised by a number of so-called 'family specific' words registered during the whole period of recordings which are declined and serve as basic forms for derivation, for example, the name of her brother *Aljosha* (liter.) – *Apka* (family specific).

V., unlike L., is a late talker and is generally slow (in comparison to the two other children) in his language development. The rate of his OIs is very unstable especially in the early stages before he develops a rule-based production of finite forms. The whole period of OIs production is shorter than in L. and ends up exactly at the same age of 2;8 (the two last tokens) as L. The number of child-specific words in V.'s data corpus is not as frequent as in L.'s, but these words are more 'stable'. They are used for a longer period and are not easily superseded by their counterparts from the adult language, for example *mashina – bizinja* used (from 2;1b – 2;3b) for 'car'. In comparison to L., there are more verbs whose last vowel(s) or consonant(s) (or the whole inflectional endings) are not clearly distinct, like *poexa* for *poexali* 'start-go-by-car.PAST.PL'.<sup>6</sup> The lexical and inflectional diversity shown by V. is lower than L.'s, but he is more advanced than she in constructing multi-component sentences. This relative poverty in verb and (pro)nominal inflection is partially compensated by the number of utterance components in V.'s speech.<sup>7</sup>

R.'s data are not as representative as those of the other children: the whole corpus consists of about 18.5 hours of recordings during the period from 1;1 till 2;11 (with a gap between 2;2 and 2;5). R.'s pronunciation is more accurate than L.'s and V.'s pronunciation and the number of unclear forms is very low. He starts combining words in utterances later than V. (relative to the onset of verb production) and he has almost no child- or family-specific words. The percentage of the OIs in R.'s speech is very unstable in the first months after the onset of verb production and fluctuates between 7% and 25%. While we still find 9% of OIs after the gap at 2;5; they disappear within the subsequent two months. Interestingly, R. has the last sporadic OIs at approx. the same age (the last two tokens at the age of 2;7) as the two other children. All three children give up with OIs at the same age, but the onset of verb production is different, hence the periods of the use of OIs are different.

All utterances, containing only *yes* or *no* words, citations, immediate repetitions were excluded from the analysed speech production. All other distinct utterances, containing a verb were analysed (henceforth, VU). VU were used then as the basic measure (100%) for further calculations.<sup>8</sup>

<sup>&</sup>lt;sup>6</sup> These forms (but not lemmas) whose inflectional endings were affected by inaccurate pronunciation were excluded from the analysis.

<sup>&</sup>lt;sup>7</sup> The strategy of using multi-component vs. single-component utterances seems to have an impact on the detection and development of a rule-based verb morphology.

<sup>&</sup>lt;sup>8</sup> The data were transcribed in the CHILDES system. CLAN and MORCOMM tools were used for coding and tagging the corpus (MacWhinney 2002, Gagarina et al. in print).

## 4. Analyses

#### 4.1. Phases in the use of OIs

OIs occur simultaneously with the first finite verbs.<sup>9</sup> As Fig. 1 shows, the use OIs by L. and V. can be divided into the three intervals between the two steep decreases (drops). During the first one to two months, the number of OIs constitutes almost one third of all verb production (phase 1). Then it drops for about 10% percent and for the two subsequent months remains stable at the level between 14% -17% (overlapping phase). The next decrease by another 10% is observed in L. within one month and in V. within the two months. This second steep decrease signalises the beginning of the phase 2 in the use of OIs which ends with the disappearance of OIs in V.'s data within the subsequent four months (by the age of 2;9) and in L.'s case – within the next eight months (the last use of OIs is registered at 2;8). Before full disappearance OIs in all three children occur only very sporadically (two - four instances) during two-three months.



Fig.1. Optional Infinitives in the data of the three children

The quantitative changes in the use of OIs described above correspond to the three developmental stages of the acquisition of verb morphology (and verb grammar).<sup>10</sup> The

<sup>&</sup>lt;sup>9</sup> The first two months in Fig. 1 separated by the space from the main curves exhibit the onset of verb production in two children L. and R., when the number of VU is below a dozen utterances and only a very few verb types are found. R.'s grey curve will be described only briefly, since it presents the lowest amount of data and exhibits a gap.

<sup>&</sup>lt;sup>10</sup> For the stages of the early grammatical development within the framework of pre- and protomorphology see Dressler (1997a); Dressler (1997b); Dressler and Karpf (1995), etc.

main stages in the development of verb morphology (verb grammar) have been evaluated on the basis of the set of the following criteria:<sup>1</sup>

- verb lemmas: (a) emergence and increase of the utterances with verbs (henceforth, **(I)** VU), (b) emergence of new verb lemmas, (c) quantitative correlation of PERF and IPFV verbs, (d) emergence of aspectual pairs and verbs of complex (morphemically characterised) Aktionsarten;
- verb forms: (a) infinitives and their use, (b) inflected forms of PERF and IPFV, (II) cluster of tense and aspect, (c) contrastive forms, development of mini-paradigms (henceforth, MP), (d) morphological overgeneralizations, (e) syntactic use of inflected forms:
- (III) interrelation between (I) and (II);
- (IV) development of the syntactical complexity of VU.

During the first one-two month(s) after the onset of verb production "... no system of grammatical morphology has yet become dissociated from a general cognitive system that handles, inter alia, words of whatever form (including morphological forms), i.e. pre- and at least early protomorphology are part of the lexicon" Dressler (1997b: 11). The number of OIs in this short initial period constitute about one third of the whole (rote-learned) verb production and steeply decreases by 10% when the first signs of a rule-based morphology emerge and develop with some stability (see Table 1).

	Liza	Vanja	Roma
Premorphology	1;7 – 1;9	2;1 - 2;2b	1;10 – 2;0b
(onset of verb production)			
Overlapping phase (emergence of	1;10 – 1;11	2;2c - 2;3	$2;1a - (2;1b)^{12}$
the protomorphology 'features')			
Protomorphology (disappearance of	after 1;11	after 2;3	after 2;1b
the premorphology 'features')			

Table 1. Early periods in the development of (verb) grammar

The so-called overlapping phase when the features of both periods (initial pre- and subsequent protomorphology) manifest themselves and the production of OIs remains stable lasts the subsequent two months. After the end of the overlapping phase (1:11 for L. and 2;3 for V.) when almost no signs of premorphology can be observed the last steep decrease in the use of OIs starts. This decrease corresponds to the further active development of a rule-based morphology and acquisition of paradigmatic relations, to the emergence of analytical constructions and to the 'movement' of the whole grammatical system of a child to another level, the level of productive operations with abstract grammatical rules and morphological patterns. Further, the establishment of finiteness in analytical constructions (see Fig. 2 for the emergence of analytical constructions with finite verbs only)<sup>13</sup> additionally supersedes OIs.

<sup>&</sup>lt;sup>11</sup> For the detailed description of the demarcation of phases during the acquisition of Russian verb grammar and for the evaluation of the productivity of finite verb forms see Gagarina (2000), in print. <sup>12</sup> There is the gap in the recordings after 2;1b.

<sup>&</sup>lt;sup>13</sup> In Fig. 2 the more detailed calculations (several sets per month) are given. In Fig. 1 above sessions are united into the months sets.



*Fig.1. Optional Infinitives and the emergence of analytical construction in the data of V. and L.* 

## 4.2. Functions of Optional Infinitives

The quantitative changes in the use of OIs also correspond to qualitative changes, namely, the function of OIs in children's utterances. During the stage 1 and the overlapping stage OIs are used to denote past events. Such use is observed in past tense contexts 'created' by the questions of adults, see examples (1) - (3):

(1)Liza (1;8) \*MAM: Liza, a pomnish', kakie gribochki my nashli segodnja?<sup>14</sup> 'Liza, do you remember what mushrooms did we find today?' \*MAM: I ela Liza sup potom, da? 'And then Liza was eating the soup, yes?' \*LIZ: Chistit'. peal-INF \*MAM: Chistila; mama chistila griby, da. 'Was pealing, the mommy was pealing the mushrooms, yes' Vanja (2;1c) (2)\*BAB: Mamy ne bylo, ty odin spal? 'The mommy wasn't there, did you sleep alone?' \*VAN: Da. ves \*BAB: A gde zhe mama byla? 'And where was the mommy?' \*VAN: Spat'. sleep-INF \*BAB: Mama spala vnizu, da?

'The mommy was sleeping downstairs, yes?'

<sup>&</sup>lt;sup>14</sup> Glosses are given only for children's utterances.

*BAB:	A Vl	adik byl na d	ache?
	'Was	Vladik at the	dacha?
*17 4 37	37	.1	,

<i>VAN</i>	Ne	spat	nei
	no	sleep-INF	no
• - • -			

\*BAB: Ty tam ne spal?

'You didn't sleep there, did you?'

\*VAN: Net.

- no \*BAB: Ty begal na dache? 'Did you run at the dacha?'
- \*VAN: Da.

yes

During the first two stages children use OIs to denote on-going perceived processes (events), examples (4) and (5):

- (4) %sit: Vanja (2;2a) and grandmother are looking at the picture in the book
- \*BAB: A chto e~to delaet koza, chto koza delaet?

'And what is the goat doing, what is the goat doing?'

\*VAN: Spat'. sleep-INF \*BAB: Ne spat', spit, spit koza.

'Not 'sleep', the goat is sleeping, is sleeping.

- (5) %sit: Liza (1;9b) is trying to put her leg into the shoe and is commenting on her action
- \*LIZ: Odet'sja. dress-INF
- \*MAM: Obut'sja.
  - 'Put-on (shoe)-INF'
- \**MAM:* Esli ty nadevaesh' krossovki, znachit, ty ne odevaesh'sja, a obuvaesh'sja. 'If you put on shoes, you do not dress yourself up, but you put the shoes on'

The fact that children correctly use finite past and present tense forms with some verb lexemes and use OIs with other lexemes (especially in the early stages of acquisition) may support the hypothesis of a verb-by-verb (or item-based) learning strategy.

The overwhelming majority of OIs have an 'irrealis' (or modal) interpretation.<sup>15</sup> The child uses infinitives to name either an action s/he is intended to perform by her/himself or an action s/he wants to be performed by an adult. Since the data of the three children have a very detailed description of the extralinguistic contexts, the situations and the reaction/comments of the adults, the majority of OIs in irrealis/modal contexts is clearly definable, see examples (6) - (8) below:

<sup>&</sup>lt;sup>15</sup> About the Modal Hypothesis see Hoekstra and Hyams (1998); Ingram and Thompson (1996), the Null Modal Hypothesis (Hoekstra and Hyams, 1998: 94-101).

- %sit: Vanja (2;3a) is playing with cars (6) \*VAN: Babushka tozhe igrat'. grandmother-NOM also play-INF \*BAB: Babushka tozhe budet igrat'? Xorosho. 'Will the grandmother also play? Okey.' \*VAN: V malen'kie mashinki igrat' hahushka. cars-ACC:PL small-ACC:PL grandmother-NOM play-INF in \*BAB: Ugu. 'Hmm.' \*VAN: Katat' Vanja mashinki bol'shie. Vanja cars-ACC:PL big-ACC:PL roll-INF \*BAB: Ty budesh' bol'shie katat'? 'Will you roll the big cars?' Liza(1;9c)(7)\*MAM: ... byl dozhdik. Sejchas on ... po-moemu on konchilsja, kak ty schitaesh'? ... it was raining. now it ... I suppose, it's finished, what do you think?' \*LIZ: Guljat'. walk-INF \*MAM: Guljat' uzhe ty xochesh'? 'You want to go for a walk already?' %sit: Liza walkes out of the house. %sit: Liza (1;10) and mama are talking about the boots without the boot-laces (8) \*MAM: Da, bez shnurochkov, pravil'no! 'Yes, with the boot-laces, you're right'
- \*LIZ: Kupit'.

buy-INF

\*MAM: Kupit' nado! Gde nado kupit', Liza?

'It is necessary to buy them. Where should we buy them, Liza?'

\*LIZ: V magazine.

in shop-LOC:SG

It is noteworthy that children don't give up OIs very quickly and, even when they have the correct finite form of a verb and/or imperative, continue their use; examples (9) - (11):

(9)	%sit:	Roma	(2;7) v	vants hi	s grandn	nother to	open	the sw	eet
*D011	· Otlan	mat!	hahu	abba	othingi				

<i>KOM</i> :	Otkryvať,	babushka,	otkroj
	open-INF	grandmother	open-IMP

(10) %sit: Liza (2;6) brings a mosaic to her mother, who is sitting near her by the sofa and says:

*LIZ:	Mama sobirat',	тата	sobiraet.
	mama put-together-INF	mother	put-together-3S:PRES:IPFV

(11) %sit: Vanja (2;2c) is playing with car trying to open some parts of it \**BAB:* A chego tut otkryvat', tut uzhe netu nichego.

'Is there still anything to open here? There is nothing left here'

*VAN:	Slomal	net.
	break-PAST:MASC:SG:PFV	no
*BAB:	Ty slomal tut vse uzhe, nechego otki	'yvat'
	'You have broken already everything	, there is nothing left to open here
0/ -:+.	Varia continues broching the door of	Athe ear

- %sit: Vanja continues breaking the door of the car
- \*VAN: Slomat'.
- break-INF \*BAB: Ne nado lomat', Vanja ... 'Do not break, Vania ...'<sup>16</sup>

Such stable use should be facilitated and supported by the whole set of factors of the (different levels of) input which contribute to the infinitive as a highly salient input element. The ensuing sections will consequently treat the possible explanations for the existence of the OIs phenomenon in child Russian.

## 5. Discussion

It has been demonstrated in the description above that OIs in Russian are used for a relatively long period, yet their percentage in the data of the children steadily decreases from the beginning and is basically not high. A general presupposition maybe drawn from this empirical evidence: there are factors that act contradictory in respect to the support vs. the restriction of the OIs phenomenon. The first idea coming to the mind is that the non-syncretic rich verbal morphology, which is rather quickly and without great problems acquired by L1 speaking Russian children (very few agreement errors, early start of the productive use of the finite verb forms, etc., see Kiebzak-Mandera (2000), Gagarina (in print) creates a favourable background for the acquisition and production of high number of finite verb forms (first rote-learned, later rule-based), thus diminishing the use of other forms, in our case, the non-target use of infinitives. That's why their number steeply decreases soon after the onset of OIs production and remains basically low.

From another side there should be a support (on the different levels of language) which enables the stable and prolonged use of OIs and prevents their easy superseding by the correct target-like constructions. Support for such an influence includes a conglomerate of features which may operate on the different levels of language – phonetics, morphology, and syntax – will be treated below. I will first suggest hypothetical factors, which may constitute the salience<sup>17</sup> degree of infinitives in input: (a) perceptual salience, so that the child can 'easy recognise and identify' infinitives in input (I doubt the importance of the frequency factor in this case), (b) minimal (or un-) markedness (or functional specificity), so that the child is able to use them (from the onset of verb production and with a generalised meaning). (A) and (b) are the hierarchically high features contributing to the degree of the 'salience factor' that characterises infinitives

<sup>&</sup>lt;sup>16</sup> Vanja correctly uses (in the example (11)) the correct past form of the verb *slomat*' to denote the resulted past action, but he uses the infinitive in the context of 1S:PRES to denote the ongoing action. Vanja probably does not possess the appropriate present form of this verb.

<sup>&</sup>lt;sup>17</sup> For the definition of salience see Koepke (1993) "*Salienz* ist die Bestimmung des Ausmaßes, mit dem eine morphologische Markierung vom Hörer identifizierbar ist, also ihre akustische Prominenz."

in input. The third, hierarchically lower feature (but with the relatively strong influence on OIs production) in Russian, such as word order, belongs to the syntactical level. The analyses below will address the three 'levels' and will show that infinitives (a) have high level of (acoustic) perceptiveness, due to the length of the final palatalised [t'], (b) assign minimal morphological features and, thus, are conceptually transparent and easy for children to operate with, (c) occupy stable final position in the analytical constructions. Besides, it will be shown that the frequency factor does not play a significant role in the creation of the 'salience degree' of a form (infinitives in the input are not frequent), but more language-specific factors and the structure of the input influence the OIs phenomenon.

## 6. Infinitives in adult Russian/input

## **6.1.** Acoustic characteristics

Infinitives with their final palatal plosive (and preceding frequently stressed thematic vowel) are characterised by special acoustical peculiarities, facilitating their perception. A set of measurements has been executed in the Phonetic laboratory of the ZAS<sup>18</sup> aiming at measuring of the length of the final palatalised [-t'] in infinitives. Thirty sentences containing verbs with [-t'] in the middle and final position taken from adult Russian were analysed. One of the findings is that the length of the final [-t'] fluctuates between 0,108 – 0,250 ms and this is twice as long as of the palatalised plosives [-d'/t'] in the middle position which have the length of 0,017 – 0,076 ms, e.g. *nad'et'* [d'] – 0,54 ms, [t'] – 0,123 ms (see Table 2 with five randomly taken verbs and Fig. 3 for the verb *terjat'* 'loose', compare the length of the initial and final [t']).



Fig. 3. The acoustic measurements of the verb terjat' 'loose'

<sup>&</sup>lt;sup>18</sup> I would like to thank Jörg Dreyer for his help in the performing of the acoustic measurements.

	English	Verb lexeme	Middle [d'/t']	Final [t']
	translation		(length in ms)	(length in ms)
1	dress	odevat'	0,017	0,080
2	wash	stirat'	0,031	0,100
3	pull	ť anuť	0,060	0,162
4	run out	vytekat'	0,075	0,123
5	loose	ter'at'	0,052	0,105

Table 2. The length of middle and final [-t'] in five randomly taken verbs

In case of non-palatalised plosives this difference is even larger: *chitat*' 'read' [t] - 0,010 ms, and final [t'] - 0,110 ms. Another example is *budet myt*' 'be-3S:PRES wash-INF', where [t'] has the length of 0,108 ms and [d'] is reduced to zero,<sup>19</sup> see Fig. 4.



Fig. 4. The acoustic measurements of budet myt' 'be-3S:FUT wash-INF'

Jones and Ward (1969) report that in the case of palatalised dental plosives -t', -d' 'a very short fricative element is heard' which is to be interpreted as evidence for the fact that after a plosive the fricative release is perceived. Sawicka (2001: 11) mentions that t' (as well as d') is "frequently accompanied by affricatization". As the acoustic analysis

<sup>&</sup>lt;sup>19</sup> For comparison: the final non-palatalised [t] does not exceed 0,050 ms, e.g. delaet - 0,024 ms, *risuet*, *skazhet* - 0,050 ms.

above shows, the length of the fricative release is 2,1 times longer when plosives occupy the final position. The stressed thematic vowel immediately preceding final t in the majority of the infinitives in child-directed speech is an additional factor facilitating their recognition, since the stressed syllable obtains the highest perceptive prominence.

#### 6.2. Types of infinitival sentences in Russian

Various types of structurally different (analytical) finite and non-finite constructions with infinitives will be briefly described before the analysis of child-directed speech. Finite analytical constructions may include the auxiliary *byt*' 'to be', the modal verb *hotet*' 'to want', phasal verbs (that can denote beginning, continuation, termination, etc. of an action), or any other finite verb and a perfective and/or imperfective infinitive. With *byt*', phasal verbs only imperfectives are allowed, with *hotet*' verbs of both aspects are admitted, see examples (12) - (14):

(12)	<i>budu</i> be-1S:FUT	<i>myt'</i> wash-INF (only IPFV)
(13)	<i>nachnu</i> start-1S	<i>myt'</i> wash-INF (only IPFV)
	<i>zakonchu</i> end-1S	<i>myt'</i> wash-INF (only IPFV)
(14)	<i>xochu</i> want-1S <i>mogu</i> can-1S	<i>myt/pomyt</i> ' wash-INF:IPFV/PFV <i>myt'/pomyt'</i> wash-INF:IPFV/PFV

In non-finite constructions infinitives of either aspects occur with temporal, modal, or other adverbial predicatives (adverbial predicatives in these constructions (mis)advise or (dis)allow the performance of an action):

(15)	<i>rano</i> early-ADV	<i>myt</i> ' wash-INF (only IPF)	V)
(16)	<i>mozhno</i> (allows the ad	ction) ADV:PRED	<i>myt'/pomyt'</i> wash-INF:IPFV/PFV
(17)	<i>nel'zja</i> (disallows the	e action) NEG:PRED	<i>myt'/pomyt'</i> wash-INF:IPFV/PFV

Another construction (that is used frequently in child-directed speech) includes the modal adjective *nuzhno (neobhodimo)* 'necessary' plus the infinitive (the structure of this construction, however does not differ from those given in ((15) - (17)):

(18)	nuzhno (neobhodimo)	myt '/pomyt '
	(advises the action) ADJ:PRED	wash-INF:IPFV/PFV

Finally, children hear infinitives of both aspects in analytical impersonal (affirmative of negative) constructions with only an infinitive:

- (19) *nechego myt'/pomyt'* nothing-PRO:GEN wash-INF 'there is nothing to wash'
- (20) *nekomu myt'/pomyt'* no-one-PRO:DAT wash-INF 'there is no one to wash'
- (21) tebe dat' knigu? you-PRO:DAT give-INF book-ACC 'should I give the book to you'

It is not pertinent for the present article to go into a detailed analysis of all these constructions with infinitives. They were presented briefly in order to show that infinitival sentences are structurally very different. Infinitival (existential) sentences, for example, exhibit high (structural) complexity and markedness. As Babby (2000: 19) argues, affirmative and negative infinitival existential sentences "have radically different morphosyntactic structures".<sup>20</sup> What is important for language acquisition is that it definitely takes children more time to learn syntactically complex and structurally very different (analytical and synthetic impersonal) constructions containing infinitives. The spontaneous longitudinal data provide empirical evidence for this: analytical constructions with infinitives emerge and develop when children are able to operate freely with abstract grammatical rules and morphological patterns (three- to five months after the emergence of the verb production, for a more detailed discussion see Gülzow and Gagarina, in print).

An inference can be drawn at this point: infinitives *per se* are grammatically unmarked forms, semantically more transparent than their finite 'companions', perceptually well distinct; they occur in rather complex, syntactically very diverse structures. Thus, the controversy occurs: a child can relatively easy recognises infinitives and uses them to denote an action (or generally for predication), but it takes her/him more time to acquire the target syntactic structures with infinitives.

#### 6.3. Input: Frequency and Word order

The child has to confront with infinitives in the input also due to another controversy: their low frequency vs. stable (final) position in sentences. Let me clarify this point: the controversy "low frequency vs. stable position" creates different conditions for the child to detect infinitives: the former diminishes the salience features of infinitives (and does not facilitate their recognition), the latter considerably increases them: the predominant

<sup>&</sup>lt;sup>20</sup> He proposes a diachronic account for five 'anomalous' properties of negative infinitival existential sentences.

final position will especially 'leap to the eye' since Russian exhibits free word order (cf. cue validity Bates and MacWhinney (1987).

It is a well-known fact that Russian is characterised by a relatively free position for the finite verb (with an SVO preference). However, in the analytical constructions infinitives more often occupy the final position, see examples (22) - (24):

(22)	<i>Ja</i> I 'I believe th	<i>verju,</i> believe-1S nat he will play'	<i>chto on</i> that he	<i>budet</i> be-3S:FUT	<b>igrat'</b> . play-INF	
(23)	<i>Ty xoci</i> You wan 'Do you wa	<i>hesh' pit'?</i> ht-2S drinl ant to drink?'	s -INF			
(24)	<i>Uzhe</i> Already 'It's already	<i>pozdno,</i> late y late, you shou	<i>tebe</i> you-DAT ld go to bed'	nado necessary-Al	DV:PRED	<i>spat'</i> . sleep

Some statistics from the child-directed speech is given below. Table 3 illustrates<sup>21</sup> that children hear infinitives much more seldom as finite synthetic forms and imperatives. The number of infinitives (in the analytical and impersonal constructions) fluctuates between 14,5% and 20,7% of all VU (and 4,7% - 8,6% of all speech production: all analysed utterances of the input).

	All analysed	VU	Infinitives	Finite forms	Imperatives						
	utterances			(synthetic)							
Tokens (absol. numbers)											
Liza's input between $1;8-2;2$											
MAM	8902	3139	456	670	2013						
BRO	477	153	27	36	90						
Vanja's input b	etween 2;1-2;6										
BAB	18005	7464	1545	1094	4825						
MAM	5661	1395	267	194	934						
	]	Fokens (pe	ercentages - %	5)							
Liza's input be	tween 1;8 – 2;2										
MAM		100	14,5	64,1	21,3						
BRO		100	17,6	58,8	23,5						
Vanja's input between 2;1-2;6											
BAB		100	20,7	64,6	14,7						
MAM		100	19,1	67,0	13,9						

Table 3. Distribution of the verb forms in the input

<sup>&</sup>lt;sup>21</sup> The calculations for each adult participating in recordings were made separately: MAM stands for the mother, BRO – for brother and BAB – for grandmother.

Utterances with analytical constructions (containing infinitives) elicited at random (for Vanja from the recordings at 1;11 and for Lisa – from the recordings between 1;10 and 2;2) were analysed in order to check how frequent an infinitive occupies the position after another element. The table below shows the distribution of the finite/modal predicative element (PE) and the infinitive (INF) in all adult sentences containing infinitives:

	All VU,	PE + INF	INF + PE	only INF						
	containing INF	(absolute end of an utt.)		-						
Tokens (absol. numbers)										
Vanja's input	154	113 (95)	19	22						
Liza's input	125	88 (65)	13	24						
	Tok	ens (percentages - %)								
Vanja's input	100	73,4 (84)	12,3	14,3						
Liza's input	100	70,4 (74)	10,4	19,2						

Table 4. Infinitives in the input

Infinitives following another predicative element were found in more than 70% of all cases (and within this type of utterances they occupy the final sentence position in more than 74%). Taking into consideration Slobin's (1987) operating principle C "pay attention to order of words and morphemes", evidence to the very early understanding of word order (see Hirsh-Pasek and Golinkkoff (1993))<sup>22</sup> and the fact that Russian has free word order, it is clear that infinitives with their stable post-position are especially 'noticeable' by children.

## 7. Salience factor in models of language acquisition

Salience is often mentioned as an important factor in models of language acquisition emphasising the influence of the nature of the data on the process of acquisition (data driven models). For example, Hill (1983) argues that "the language learner selects examples from the input data available to him on the basis of the salience of the data to him, and that he projects classes for words based on his own capacity for word use."

In one electronic source (see http://englishraven.com/TEYL\_lang\_acqu.html) salience is considered to be one of the three microenvironmental factors (the two other are feedback and frequency) which are related to the language specific structures that the learner hears. It is argued that "salience refers to the ease with which the structure is heard. For example, in the phrase I am going to the store, "I", "going", and "store" are much more salient than "am", "to", and "the". It is not clearly explained in this claim what *the ease with which the structure is heard* means. The words enumerated in the

<sup>&</sup>lt;sup>22</sup> Hirsh-Pasek and Golinkkoff (1996) performed the experiment (the preferential looking paradigm with 19 months old infants) which demonstrated the very early understanding of word order. The comprehension of sentence like "Big Bird is tickling Cookie Monster" was checked. Two videos playing simultaneously - one correct, one showing Cookie Monster tickling Big Bird were shown. Infants looked longer at correct video.

example as more salient belong to the content words (in opposition to the functional words which are considered to be less salient). Thus, salience seems to be restricted to the notion of the *word class* with its division into content vs. functional words.

Salience is often treated through the prism of the (acoustic) perception; but such an approach is also rather restricted. It seems that the concept *salience* embraces more than only perception (comprehension). In order to say that a form has a certain degree of salience (or a certain salience coefficient), two groups of factors seem to be relevant: factors facilitating (a) the detection of a form in the input (perception/comprehension) and (b) the use of a form by a language learner (production). Within (a) and (b) different structural features of a form (acoustical, morphological, semantical, syntactical, etc.) and its 'behaviour' in the input should be considered. In the case of OIs their acoustic characteristics facilitate the perception and, thus, contribute to the (high) degree of salience. Syntactical peculiarities play a two-fold role: the stable final position in analytical constructions favours the comprehension and production of OIs while the complex diverse structures of the target constructions with infinitives restrict and slow down their acquisition and target production. The morphological properties (e.g. unspecificity) favour the possibility of (overgeneralised) production. The majority of the above-mentioned features contribute to the high degree of the salience of OIs, in other words, they make a form more (or easier) detectable (extraction from the input), identifiable (form-function mapping) and 'producable' (production).

## 8. Conclusion

The goal of this contribution was to show what language-specific devices enable the OIs phenomenon in Russian. The empirical data demonstrated that the existence of the observed phenomenon is stable despite a low number of OIs in the children's data. This specific development rises the following question: what features prolong vs. restrict the perception and production of OIs by children. Several factors contributing to the degree of salience were considered and the general concept of salience was briefly discussed. Further, the correlation between the development of verb grammar and the changes in the use of OIs was considered: the three stages in the development of verb grammar correspond to the two steep decreases in the use of OIs. OIs show up along with the initial development of a rule-based morphology and the marking of finiteness (e.g. the emergence of analytical constructions) and disappear only when children (fully) acquire grammatical categories.

Since the present article reports on the work in progress, a set of (theoretical and empirical) issues still remains open and needs further elaboration. The general concept of salience needs detailed discussion. The hierarchy of the validity cues (Bates and MacWhinney 1987) and their interrelation (within the concrete language) should be further investigated. Functions of OIs at the different stages of the grammatical development should be further specified and statistically evaluated. Correlation between the degree of salience of a given form in the input (in our case OIs) and its (frequency) rate in children's production in different languages maybe established. Investigation of these issues will provide the source for further research questions.

		Liza			Vanja		Roma			
	Age	Eng. trans.	Verb	Age	Eng. trans.	Verb	Age	Eng. trans.	Verb	
1.	1;8	wash	myt'	2;1a	sleep	spat'	1;11	dress	odet'	
2.		get down	slezť	2;1b	wash	pomyt'	2;0a	sleep	spat'	
3.		clean	chistit'		dress	nadet'		open	otkryť	
4.		gather	sobirat'	2;1c	walk	guljat'		take	vzjat'	
5.	1;9a	drive	katat'sja		stand	stojat'	2;0b	dig	kopat'	
6.		help	pomoch'	2;2a	draw	risovat'		switch off	vykljuchit'	
7.		dress	nadet'	2;2b	break	lomat'		drink	pit'	
8.		sleep	spat'		open	otkryt'		wash	stirat'	
9.	1;9b	tear	rvat'		drink	pit'		give	dat'	
10.		dig	kopat'		play	igrat'	2;1a	write	pisat'	
11.		dress	odevat'(sja)		dig	kopat'		pour in	nalivat'	
12.		dress	odet'(sja)	2;2c	close	zakryt'		put off	snimat'	
13.		open	otkryt'		drive	rulit'	2;5	gather	sobirat'	
14.		drink	popit'		repair	chinit'		carry	nosit'	
15.	1;9c	stand up	vstavat'		break	slomat'		throw	nakidat'	
16.		tear off	otorvat'	2;3a	roll	katat'		throw	kidat'	
17.		eat	est'		eat	kushat'		break	polomat'	
18.		throw away	vybrosit'		wash	pomyt'	2;6	write down	napisat'	
19.		close	zakryť		sit	sidet'	2;7	open	otkryvat'	
20.		sew on	prishit'		stand up	vstat'		make	delat'	

Appendix 1: The first twenty OIs

Appendix 2: The first two dozens imperatives and finite verb forms

		Liza			Vanja						
		1;7			2;1a						
	Eng. trans.	Verb	Asp.	Mood/ Tens. <sup>23</sup>		Eng. trans.	Verb	Asp.	Mood/ Tens.		
1.	give back	otdat'	pfv	imp	1.	give	dat'	pfv	imp		
		1;8			2.	fall down	upast'	pfv	past		
2.	be	byť'	impf	past		2	2;1b				
3.	dig	kopat'	impf	pres	3.	sit for a while	posidet'	pfv	imp		
4.	sit down	sest'	pfv	imp	4.	draw	risovat'	impf	imp		
5.	sleep	spat'	impf	pres	5	sleep	spat'	impf	pres		
6.	fall down	upast'	pfv	past		2	2;1c				
7.	climb up	zalezt'	pfv	past	6.	walk	guljat'	impf	past		
		1;9a			7.	go (by foot)	idti	impf	imp		
8.	clean	chistit'	impf	pres	8.	start going (by car)	poexat'	pfv	past		
9.	walk	guljat'	impf	pres	9.	start going (by foot)	pojti	pfv	past		
10.	catch	lovit'	impf	pres	10.	10. draw risovat' impf			imp		
11.	dress	nadet'	pfv	past	11.	draw	risovat'	impf	pres		
12.	write	pisat'	impf	pres	12.	12. sit sidet' impf					
13.	jump away	uskakat'	pfv	past	13.	build	stroit'	impf	imp		

 $<sup>^{23}</sup>$  If a verb is used in indicative, then the tense is given.

1;9b							2;2a					
14.	roll	k	katat'	impf	pres	14.	repair	chinit'	impf	inf		
15.	carry	r	nosit'	impf	pres	15.	hook on	pricepit'	pfv	past		
16.	dress	00	det'sja	pfv	inf	16.	drive	rulit'	impf	pres		
17.	get into	p	opast'	pfv	past	17.	sit down	sadit'sja	impf	imp		
18.	miss	pro	opustit'	pfv	past	18.	make a noise	shumet'	impf	pres		
19.	work	ra	botat'	impf	pres	19.	look	smotret'	impf	imp		
20.	eat	S	''est'	pfv	past	20.	stand	stojat'	impf	pres		
21.	break	sl	omat'	pfv	past	21.	pull	tjanut'	impf	imp		
22.	gather	SC	obirat'	impf	past	22.	go away	ujti	pfv	past		
23.	run away	ub	ezhat'	pfv	past							
24.	drink up	V	ypit'	pfv	past							
Rom												
		1;	11									
1.	give		dat'	pfv	imp	12.	drink	pit'	impf	pres		
2.	dig		kopat'	impf	pres	13.	wait	podozhdať	pfv	imp		
3.	start going (by for	oot)	pojti	pfv	past	14.	start go by car	poexat'	pfv	fut, past		
4.	break		slomat	' pfv	past	15.	break	polomat'	pfv	past		
5.	fall down		upast'	pfv	past	16.	tear	porvat'	pfv	past		
		2;	0a			17.	loose	poterjat'	pfv	past		
6.	go (by foot)		idti	impf	pres	18.	eat	s''est'	pfv	past		
7.	give back		otdat'	pfv	imp	19.	sit	sidet'	impf	pres		
2;0b						20.	break	slomat'sja	pfv	past		
8.	be ill		bolet'	impf	past	21.	put off	snjat'	pfv	past		
9.	go for car		exat'	impf	past	22.	sleep	spat'	impf	pres		
10.	carry		nesti	impf	pres	23.	be tired	ustat'	pfv	past		
11.	open		otkryt'	pfv	imp	24.	switch on	vkljuchit'	pfv	imp		

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Three people and a piano Daniel Hole (Freie Universität Berlin)

#### 1. Introduction

In this paper I want to investigate the Mandarin version of a problem in focus semantics that has been puzzling researchers for quite a while (cf., for instance, Jacobs 1983: 224ff or König 1991: 51, 101ff). The treatment of this problem does not just give us an opportunity to see how parametric *cái* and *jiù* are used in Mandarin to tell apart readings of sentences that are ambiguous in English. The paper also deals with the notion of translational equivalence. The result will be that translational equivalence is not to be confounded with identity of logical form. This finding may not be entirely new, but the empirical part of this paper illustrates it in an impressive way.

## 2. The English perspective: three-way ambiguity of piano-sentences

Before turning to the Mandarin data the English case will be discussed. One version of the problem is about three people and a piano.<sup>1</sup>

## (1) Only THREE people can move the piano.

(1) has several readings. For the first reading imagine you want to move your piano to a different room, and only one friend is there to help you. Since pianos are heavy your friend may say: "Sorry, I think we can't do it alone. Only three people can move the piano." Let us call this the heavy-piano reading. In this situation the speaker excludes the possibility that the number of people present, namely two, is enough to move the piano. Four or five people would, under most circumstances, also be a possibility, but these alternatives are probably not relevant in this setting.

On the second reading a professional piano transporter deals with a client who enquires about the number of people needed to move a piano. The client thinks that one needs at least five people, but the professional reassures him: "Only three people can move the piano." I will call this the light-piano reading. Under the circumstances of the light-piano reading it is excluded that more people are needed, and it is implicated, but not entailed or presupposed, that two people would not be enough.

<sup>&</sup>lt;sup>1</sup> Small caps mark foci (not just focus exponents).

Let us now compare these entailments and implicatures with what is commonly assumed to be the meaning of *only*. (2) is an example.

- (2) a. Only JOHN came to the party.
  - b. presupposition/implicature/entailment: John came to the party<sup>2</sup>
  - c. entailment:  $\neg \exists x [(x \neq John) \& (came to the party (x))]$
  - c'. entailment:  $\forall x \ [(came to the party (x)) \rightarrow (x = John)]$

According to (2b) and (2c), (2a) says that John's coming to the party is presupposed, or entailed, or at least implicated, and it is entailed that nobody apart from John came to the party. Note that this entailment is compatible with a situation in which there were many people at the party. What matters is that none of the contextually salient alternatives to John came to the party, e.g. none of his class-mates, or none of his friends. That is to say that the domain of quantification over which the existential quantifier operates is determined pragmatically (or semantically, if a context anaphor is assumed; see von Fintel 1994 for such an approach which "syntactifies" and "semantifies" the contextual restriction). (2c) and (2c') are equivalent ways of stating the same entailment. If we apply this to the heavy-piano reading of (1), everything is fine and we correctly predict what is entailed to be false, namely "Two people can move the piano" and "One person can move the piano". According to (2c) the general statement of what is entailed is "There are no contextually salient numbers other than three such that this number of people can move the piano". (Note that numbers higher than three are disregarded because they result in alternative sentences that are trivially true.) The setting with the light-piano reading is trickier. Above we said that, in this context, (1) entails "No more than three people are needed to move the piano". (1) does entail this, but this entailment cannot be due to the use of *only*, because (1) without *only* likewise entails "No more than three people are needed to move the piano"; cf. (3).

(3) *Three people can move the piano.* 

To see more clearly what is really excluded by the use of *only* in the light-piano reading of (1) consider the following paraphrase.

#### (1') If there are only three people they can move the piano.

 $^2$  I will not indulge in yet another discussion of whether presupposition, entailment or conventional/conversational implicature is the right notion to capture the semantic/pragmatic status of . (2) is an example.

<sup>(2</sup>b). A fairly recent comprehensive treatment of this classic problem can be found in Horn (1996). My interest concentrates on the entailment in . (2) is an example. (2c/c')

Inasmuch as this paraphrase reflects the relevant meaning portions of the light-piano reading, it shows two things: (i) only in the light-piano reading does not have sentential scope because in the paraphrase (1') its scope is clearly confined to the *if*-clause, and (ii) since entailments are lost in protases, the only-entailment which the protasis of (1') would have as an independent sentence ("There are only three people" entails "There are no more than three people") does not hold for the whole conditional. Although the only-entailment is not truthconditionally active with respect to the whole sentence, some non-trivial alternative proposition ("There are four people", "There are five people") must be contextually given. In our setting the client's wrong assumption introduces this proposition into the common ground, and although the calculation of alternatives takes place on a "sub-truth-conditional" level, the evaluational implicature going along with this calculation is surely felt to be present in the light-piano reading of (1): three people are less than expected. The fact that the entailment, but not the evaluational component, is hidden in cases analogous to the lightpiano reading is taken by Jacobs as an argument in favour of his daim that both the quantificational component of meaning and the evaluational component form part of the lexical meaning of *only*-words and that either may be lost in special contexts. I take a different position here which derives the "neutralization" of the quantificational entailment from its truth-conditional inactivity in protases of conditional structures (which may be implicit), while the evaluational implicature is still triggered by the context. What I cannot discuss here is what syntactic consequences arise from the postulated propositional interpretation of the subject of (1) in the light-piano reading.

(1) has at least one more reading. This reading surfaces when we think of a very delicate piano which must be handled with greatest care. Only three people have received the right training, and only these three people can move the piano. Let us call this the delicate-piano reading. On this reading the subject is interpreted existentially ("There are only three people who can move the piano, namely Horst, Dieter and Charly"), and *only* takes scope immediately below the existential quantifier binding the indefinite subject.

Let us now turn to the translational equivalents of the English piano-sentence in Mandarin.

#### 3. The Mandarin perspective: no lumping

In Chinese each reading of the English piano-sentence must be expressed in a univocal way.

(4)	a.	The hear	<u>vy-piano</u>	settin	<u>g:</u>							
		SÂN-ge	rén	cái	bânde	edòng	zhè-j	iâ g	ângqín.			
		3-CL	person	CAI	can.m	nove	this-	CL p	iano			
		'Only (a	s many a	s) THE	REE pe	ople can	move	e this pia	no.'			
	b.	The ligh	t-piano s	etting		-		-				
		Zh -yào	SÂN-Ę	ge réi	n	jiù/*cái	be	ândedòng	g zhè-jiâ	gâi	ngqín	le.
		only-nee	ed 3-CL	pe	ople	JIU/CAI	Ca	an.move	this-CL	pia	no	PRT
		'Only (a	s few as)	THRE	Epeop	ole are n	eeded	to be ab	le to mov	e thi	is pian	10.'
	c.	The deli	cate-piar	no sett	ing:							
		Zh y	u SÂN-g	ge réi	n	(*cái)	k y	bândòn	g zhè-j	iâ	gângq	jín.
		only ex	ist 3-CL	pe	ople	CAI	can	move	this-0	CL	piano.	•
		'(There a	are) Only	THRE	EE peo	ple (who	) can	move the	is piano.'			

Each of the Chinese sentences in (4) is limited to one setting, and the interesting question from the point of view of our investigation is whether we can account for the different focus readings in each case. At the same time the function of  $c\dot{a}i$  and  $ji\dot{u}$  will be relevant to our discussion.

As laid out in detail in Hole (to appear [2000]),  $c\dot{a}i$  and  $ji\dot{u}$  as in (4) relate to preceding foci (or contrastive topics). *Cái* goes hand in hand with an *only*-reading of the focus; in terms of quantification over focus alternatives this amounts to negated existential quantification. The focus quantificational type connected with  $ji\dot{u}$  as in (4b) is negated universal quantification (Hole to appear [2000]: section 4.2): not all alternatives are true. More on this focus quantificational type will be said below. Let us now turn to the focus quantificational reasonings associated with each of the sentences in (4).

Consider (4a) first. The number word is in focus, and  $c\dot{a}i$  reflects the fact that the focus is intended as a focus excluding all non-trivial alternatives. The trivial alternatives are sentences with more than three people moving the piano: if three people can do the job, four or five people would do no harm, either. Thus only sentences with numbers lower than three are relevant, and all of them are excluded. No problems arise with this sentence, except for the fact that I have not been able to find a focus-marking device that could be used in front of the focus to ensure the correct reading other than contextual information ( $c\dot{a}i$  as a parametric word only r eflects a type of focus quantification by way of an agreement mechanism; cf. Hole to appear [2000]: chapter 3)).

Let us skip (4b) for the moment and move straight on to the delicate-piano setting in (4c). In this sentence *cai* is ungrammatical even though all the excluded alternatives are non-trivial alternatives. The reason for the deviance of (4c) must thus lie elsewhere. I assume it lies in the syntax of the sentence. As reflected by the parenthesized translational option in English, the

Chinese sentence is really an existential sentence in which the predication starting with k y 'can' is functionally similar to a relative clause much as in the English translation which makes use of a cleft, i.e. it restricts the interpretation of *sân-ge rén* 'three people' such that (in our context) only the collection of Horst, Dieter and Charly is a possible value of the argument. (cf. Li 1996 for the discussion of different kinds of existential sentences in Mandarin; according to her classification (4c) is an Ind-type y u-structure). If this is taken for granted, y u 'exist' is the matrix predicate of a complex sentence, and k y 'can' is embedded.<sup>3</sup> It is an independently established fact that parametric words attach to the syntactically superordinate predicates, and therefore *cái* may not be used before k y 'can' in (4c).

The Mandarin sentence for the light-piano setting is clearly trickiest. The status of zh yào sânge rén is the major problem for an analysis of (4b). With the facts concerning (4c) in mind one might aim at a complex-clause analysis, such that the sentence should be rendered as *Only three people are needed to be able to move this piano*. This is what (4b) means, but the syntax is different. The problem with zh yào is the following: (i) the necessity operator yào in zh yào is relevant for the interpretation, and this necessity operator takes wide scope with respect to other operators to its right; (ii) syntactically, zh yào does not take wide scope: in (4b) zh yào forms a constituent with the subject w -ge rén 'five people'; it would be possible not to use zh yào at all without a change in the overall syntax of the sentence, and the meaning would not change, either. But even if we ignore the mismatch and say that *Only three people are needed to be able to move this piano* is a good paraphrase it is still not immediately clear why jiù is used in (4b), and why cái must not be used.

I will try to give a step-by-step account of the matter.

First let us think about what we would predict the meaning of (4b) to be if zh yào were not used. This case is illustrated in (4b').

<sup>&</sup>lt;sup>3</sup> It is tempting to identify the sequence  $zh \ y \ u$  only exist' in (4b) with the bisyllabic *only*-word  $zh \ y \ u$  which is used before non-verbal categories and as a subordinator in *only-if*-clauses. This identification would be false. The sequence  $zh \ y \ u$  in (4c) is made up of two words; both words enter the semantic composition of the sentence separately. Formal proof of this comes from the possibility to drop zh in (4c): the resulting sentence would, as predicted, simply mean '(There are) three people (who) can move this piano'. In cases in which  $zh \ y \ u$  is used as a focus marker zh may not be dropped without influencing grammaticality; cf. (i) and (ii).

			•					00
(i)	Tâ	*(zh )	y u	ZHÈ-zh	ng	shû	cái	mãi-guo.
	(s)he	only		this -CL	.:kind	book	CAI	buy-ASP
	'(S)He'	s only b	oughtTH	IS kind o	f book ł	before.'		-
(ii)	*(Zh )	v u	ΤÂ	lái	w	cái	qù.	
	only.if		(s)he	come	Ι	CAI	go	
	'Only if	f (S)HE c	comes wil	ll I go.'			•	

(4) b'. SÂN-ge rén jiù bândedòng zhè-jiâ gângqín le.
3-CL people JIU can.move this-CL piano PRT
'(As few as) THREE people are needed to be able to move this piano.'

This sentence can be taken to express what (4b) means, but it has slightly different entailments.

(i) It asserts that three people can move the piano;

(ii) it implies that four or five people would also be sufficient;

(iii) the fact that  $ji\dot{u}$  is used reflects the fact that the sentence is interpreted in such a way that not all relevant alternative sentences are true.

The last point is what matters here. If no relevant alternative sentence with numbers lower than 'three' is true, the focus interpretation stated in (iii) is still true. This is what makes (4b') apt to be used in the light-piano setting. But with a different context it is easy to see that the truth-conditions of (4b') are more liberal than those of (4b). Think of a context again in which you want to hire professionals to move your piano to another room. The company allows you to book either a single person, or three persons, but for some reason booking two people is impossible. You may ask: "How many people will be enough?", and the professional uses (4b') to answer your question. His answer leaves open the possibility that actually two people would already be enough to move your piano, but since a single person is not sufficient, and two people cannot be booked, he only gives you the three-people option. Using (4b') is not a lie, because *jiu* leaves it open (due to n e g at e d universal quantification over alternatives) whether two people would not be an option, too. I claim that our original sentence (4b) (repeated below for convenience) would amount to a lie if uttered in our context. Let us see how this comes about.

 (4) b. Zh -yào SÂN-ge rén jiù bândedòng zhè-jiâ gângqín le. only-need 3-CL people JIU can.move this-CL piano PRT 'Only (as few as) THREE people are needed to be able to move this piano.'

First consider what the necessity operator of zh yào adds to the meaning of the sentence. Three people are needed to be able to move the piano, that is the paraphrase of the assertion of (4b) including the necessity operator: no less than three people will do. This does go together with the focus interpretation reflected by *jiù* because the extreme case of negated universal quantification over the domain of alternatives is negated existential quantification; it does not go together with our new context, though: the necessity operator makes it clear that three people moving the piano are the borderline case. Being in need of three people precludes the possibility that one would actually only need two. Therefore (4b) amounts to a lie in our context. The *only*-component of *zh*  $y\dot{a}o$  adds the (redundant) information that no more than three people are needed, and since this is redundant, the evaluational implicature, namely that three people are not much, has the field to itself.

Although I have not been able to solve the syntax-semantics puzzle posed by zh yào, the discussion of (4b) has shown the following. First, the semantics proposed by Hole (to appear [2000]) for *jiù*-sentences can handle such complicated cases. Second, if we compare the accout given for (4b) and for its English counterpart in section 2, we must state that the match between the two sentences is highly indirect. I have proposed above that (5a) in its light-piano reading is interpreted like (5b).

(5) a. Only THREE people can move the piano.b. If there are only THREE people they can move the piano.

As we know, the English paraphrase of the Mandarin version is more like (6).

(6) *Only three people are needed to be able to move the piano.* 

Paraphrased in terms of a semantics for conditionals in the spirit of the Lewis/Kamp/Heim/Kratzer tradition (Lewis 1975, Kamp 1981, Heim 1982, Kratzer 1991), (5b) comes out as (5').

(5') <u>The English light-piano reading</u> All situations in which there are only three people are also situations in which the piano can be moved. [i.e. '∀... [...only...]<sub>restrictor</sub>, [POSS...]<sub>nuclear scope</sub>']

A paraphrase of (6) that is more explicit in terms of scope facts to cover the Mandarin sentence can be found in (6').

 (6') <u>The Mandarin light-piano sentence</u> It is only true of the amount of people 'three' that it is necessary to have this number of people in a situation in which the piano can be moved. [i.e. 'only ...(NEC...(POSS...))']

I will not try to show how precisely the translational equivalence can be derived. My purpose here has been to illustrate that translational equivalence does not mean that the source sentence and the target sentence have identical logical forms.

4. Conclusions

This paper has demonstrated that ambiguities of the piano-moving kind, which consistently arise in English and other European languages, do not exist in Mandarin because the system of focus-background agreement encoded by parametric words such as *cái* and *jiù*, and certain structural peculiarities of Mandarin existential sentences and *zh* yào-sentences, conspire to yield univocal sentences. The exact matching of the syntax of *zh* yào with its semantics remains as a challenge for future research.

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## On the empirical basis and explanatory adequacy of linguistic theory: An illustration with pronominal clitics

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#### **1** Introduction

In formal analysis of linguistic problems, one is often bogged down by the technical details, and intrigued by abstract entities and representations like empty categories of Chomsky (1977, 1981) and functional projections of Abney (1987) and Pollock (1989), to name just a few, that are not obviously related to linguistic facts. Understandably one is legitimately concerned whether these elements are not simply technical devices that have little empirical justification, and more generally how formal analysis reflects the kind of empirical facts that one expects to find or not to find.

It is against this background that I would like to discuss a few general conceptual issues in linguistic theory, addressing this concern. The empirical facts that I will use are about pronominal clitics, primarily in Romance languages. Pronominal clitics are a good case study, since their grammatical properties bear on a wide range of facts falling under the purview of principles of phonology, morphology, syntax and semantics (cf. Zwick 1977 and the papers in Borer 1986 and van Riemsdijk 1999). I would like to show that given a certain conception of linguistic theory, if justified on independent grounds, the class of issues and possible explanations for grammatical properties of specific linguistic expressions are well-delimited, and that the empirical adequacy of formal analysis can be assessed on the basis of the range of empirical facts that we expect to find or not to find. I argue that this is not simply a consequence of a specific conception of grammar, conceived of as a system of principles and rules governing language, but has non-trivial empirical ramifications in that they can be falsified in principle.

I will first briefly discuss the constraints on scientific theory in general, encompassing theory of language or any other empirical science (section 2). I argue that they are not simply conceptual bounds that we must accept a priori, but have empirical bearings. Thus, to the extent that we can determine whether the empirical predictions of linguistic theory are correct, the conceptual conditions to which linguistic theory are subject are empirically warranted. I illustrate the relationship between theory and facts with some specific properties of pronominal clitics, including participial agreement, auxiliary selection, prosodic structure, and the clitic-doubling construction (section 3). I conclude the paper with some general remarks regarding the relation between conceptual framework and empirical facts (section 4).

As the major goal of the paper is to discuss the issue of how the conceptual framework for linguistic theory is related to empirical facts, that is, what kind of facts we should expect to see or not to see, if certain hypotheses put forth by linguistic theory is correct, I will therefore not review the extensive literature on pronominal clitics or go into the very many details and intriguing cross-dialectal properties of pronominal clitics. As we will see, certain aspects of clitics are fairly obscure, and would probably remain so for some time to come. For these cases, I will not attempt to give a satisfactory account; rather, I will discuss why they are especially difficulty.

#### **2** Constraints on linguistic theory

Like any scientific enterprise, linguistic theory is subject to the conceptual **principle of parsimony**, i.e. Occam's Razor, assuming no more than necessary. The **empirical adequacy** of a theory is measured by the range of facts it claims to account for. There is therefore a tension between the parsimony principle and empirical adequacy. More assumptions would of course account for more facts, but the parsimony constraint specifically limits this option. Thus, we need to make additional assumptions just when all others fail.

In linguistic theory, expressions of natural language may be taken as abstract formal objects,
and the distribution of these various objects are subject to general principles of grammar. Thus, it may very well turn out, as it often does, that superficially very different facts are subject to the same grammatical principle. To illustrate this point, consider the examples in (1) and (2):

- (1) a. John was told that Mary would be promoted.
  - b. John seemed to be very tired.
  - c. They expected John to be very tired.
  - d. It would be undesirable for there to be a riot.
- (2) a. \*It was told John that Mary would be promoted.
  - b. \*It seemed John to be very tired.
    - c. \*It was expected John to be very tired.
    - d. \*It would be undesirable there to be a riot.

It is not obvious that the examples in (1) are related to each other or to those in (2) in the sense that they are subject to the same principle of grammar. We need not go into the details of what grammatical principle relating the examples in (1) and how it relates them to those in (2) (cf. Rouveret and Vergnaud 1980, Chomsky 1981 for an account in terms of Case theory), the point I would like to make here is more general: a theory relying on some abstract principle of grammar to explain the grammaticality of the examples in (1) and the ungrammaticality of those in (2) makes further empirical claims, namely, there cannot be a language or dialect of English admitting the examples in (3) as all grammatical:<sup>1</sup>

(3)	a.	John was told that Mary would be p	romoted. (Pseudo-English)	)
· · ·				

- b. John seemed to be very tired.
- c. It was expected John to be very tired.
- d. It would be undesirable there to be a riot.

Nor can there be a language or dialect of English with the grammatical patterns in (4):

- (4) a. \*They expected John to be very tired. (Pseudo-English)
  b. \*It would be undesirable for there to be a riot.
  - c. It was told John that Mary would be promoted.
  - d. It seemed John to be very tired.

These are but two of the many logically possible languages or dialects but are excluded in principle by linguistic theory. The reason behind it is fairly simple. If the examples in (1) are permitted but those in (2) are ruled out by the same grammatical principle, then it is not possible, in principle, for a language with the same principle to partially permit or exclude them.

We may never know whether this empirical claim is true, for even if we cannot find a language allowing all the examples in (3) or having the grammatical patterns in (4), it does not follow that the claim is true. One may thus wonder in what way linguistic theory is empirical if its empirical predictions cannot be (positively) verified. Like any other sciences, the empirical basis of a hypothesis comes from the fact that the claims that it makes can be falsified in principle. In the case at hand, we can show that the claim that no dialects of English have the grammatical patterns in (3) or (4) is false if we can exhibit a dialect having exactly these grammatical patterns. The point can be generalized to other typologically diverse languages. That is, no language should admit comparable examples to (3) and (4) as grammatical, a claim that can be falsified in principle if we look at a wide variety of languages. It is therefore clear that linguistic theory is more than a theory about abstract formal objects; it is also an empirical science.

(English)

It is uncontroversial that the linguistic system consists of several subsystems, each of which has its own units, structures, and principles regulating their distributions. For instance, the distribution of phrases is clearly different from that of affixation on adjectives, verbs or nouns. While there is some degree of mobility for phrases, the place where a particular affix occurs is generally fixed. As shown in the German examples in (5) and (6), phrases may sometimes switch places, but affixes never can:

(5)	a.	Die	Frau	woll-te	den	Mann	küss-en.	(German)
		the	woman	want-PAST	the	man	kiss-INF	
		'The	woman w	vanted to kiss	s the	man.'		

- b. Den Mann woll-te die Frau küss-en.
- (6) a. Die Frau woll-te den Mann küss-en. the woman want-PAST the man kiss-INF 'The woman wanted to kiss the man.'
  - b. \*Die Frau woll-en den Mann küss-te.
  - c. \*Den Mann woll-en die Frau küss-te.

However, the elements belonging to each subsystem (structural units, sets of principles governing them, etc) are neither totally distinct nor unrelated to each other. Alongside cases like (5) and (6), where there seems to be no relation between the mobility of phrases and the fixed order of affixes, i.e. phrases may appear in different places regardless of the fixed positions of the affixes, there are other cases where elements of one subsystem co-incides with those of another. For instance, syntactic constituency often co-incides with phonological constituency. Thus, it is more natural to have an intonation break (indicated by a #) at the edge of a syntactic constituent than in the middle of it, as shown by the contrast in (7):

(7) a. [every student ]# is coming to the party.
(English)
b. ??[every#student ] is coming to the party.

The examples in (7) therefore show the relation between syntax and phonology subsystems of the grammar.<sup>2</sup> We may then take this and other similar relations to be the empirical basis of **the explanatory adequacy constraint** on linguistic theory requiring that to some extent structural units and conditions governing them in one subsystem should have a bearing on those of another. This constraint would then in effect mark a certain class of analyses as implausible, if not impossible in principle.

In short, we have three general constraints on linguistic theory: (i) The parsimony constraint: Occam's Razor (as few assumptions as possible), (ii) empirical coverage (the range of facts that the analysis can account for), (iii) explanatory adequacy (why should it be that the assumptions under (i) accounting for the facts under (ii) the way they are? More concretely, are there other facts in the language bearing on the analysis of a particular set of facts such that they may all receive the same explanation?). In this approach, then, properties of one linguistic entity in one subsystem of grammar may have consequences for other subsystems, as we will see in some case studies of pronominal clitics.

# **3** Some specific properties of pronominal clitics

In this section, we will look at some specific facts about pronominal clitics, and see how the general conceptual constraints limit the class of possible analyses for these. To illustrate their empirical ramifications, I will exhibit some logically possible languages but excluded in principle

by linguistic theory. However, as we will see, there are aspects of particular languages that are fairly obscure and it is unclear what the confine of cross-linguistic variations is.

We will first consider some facts about participial agreement and auxiliary selection in Romance languages when a pronominal clitic occurs (section 3.1). I argue that these are related to predicate adjective agreement and agreement in passive. We will then discuss some prosodic properties of Italian pronominal clitics, and see how considerations of the interface between phonology and other subsystems of grammar would lead to a certain type of analysis (section 3.2). Lastly, we will look at certain syntactic and semantic properties of the clitic doubling construction (section 3.3). We will see how the conceptual constraints on linguistic theory (cf. section 2) assess the adequacy of an analysis.

3.1. Participial agreement and auxiliary selection in Romance

In Standard French and Italian, the participial form of an active verb shows agreement with the accusative clitic object, but not with a full DP object in argument position:<sup>3</sup>

(10)	a.	Gianni	la	ha	lavata/*lavato.			(Italian)
		Gianni	it.FEM	have	wash.FEM/wash.	MAS	С	
		'Gianni	washed	it.'				
	b.	Gianni	ha	lavato/ <sup>s</sup>	*lavata	la	camicia.	
		Gianni	have	wash.F	EM/wash.MASC	the	shirt.FEM	
		'Gianni	washed	the sh	irt.'			

Notice that the auxiliary in (10) co-occurring with a transitive verb is the *have*-type (*avere* in Italian, and *avoir* in French). However, when the accusative clitic object is a reflexive, the auxiliary must be the *be*-type (*essere* in Italian, *être* in French), as in (11):<sup>4</sup>

(Italian)

(11)	Gianni	si	è∕*ha	lavato.
	Gianni	self	be/have	washed.MASC
	'Gianni	washe	d himself	

\*Gianni lavata/lavato. (12) a. la è Gianni it.FEM be wash.FEM/wash.MASC 'Gianni washed it.' \*Gianni è lavato/lavata la camicia. b. Gianni be wash.FEM/wash.MASC the shirt.FEM 'Gianni washed the shirt.'

There are thus several problems here. Why does the clitic/non-clitic distinction bear on participial agreement? Why should it be that the *be*-auxiliary occurs with a reflexive accusative object, but the *have*-auxiliary does not? and correlatively, why should it be that the *have*-auxiliary occurs with a non-reflexive accusative object, but the *be*-auxiliary does not?

These problems are not self-contained, however. Given the explanatory adequacy constraint, we should seek not only solutions to these problems, but also relate them to other facts, crucially, independently of pronominal clitics. With this in mind, let us consider these problems in turn.

# 3.1.1. Structural conditions for agreement

Kayne (1989) suggests that participial agreement with an object pronominal clitic in French and Italian is related to subject-verb agreement in that both involve the configuration in which the Spec-head relation holds. That is, if the Spec-head relation holds of the subject and the verb with

which it agrees in the structure in (13), then a similar relation should hold of participial agreement with an object clitic pronoun:

(13) Subject agreement [IP Marie [ est [AP belle ]]] (French) Marie be pretty.FEM 'Marie is pretty.'

In order for the Spec-head relation to hold of the object clitic pronoun and the participle, it must be that the object clitic at some point is in the Spec position of the participle; Presumably, the clitic pronoun moves from object position (cf. Kayne 1975) to the Spec of the participle, and eventually to its surface position, as in (14):<sup>5</sup>

(14) Participial agreement (Fre Je  $l_i$  ai  $[_{VP} t_i [$  peinte  $t_i ]]$ I it.FEM have paint.FEM 'I painted it.'

If there is only one way to get agreement, namely, the Spec-head relation must hold of the the agreeing elements (cf. Kayne 1989), then there is no other possible analysis for participial agreement but (14). Here, we see how the assumption on how agreement works in general limits the analysis of particular cases of agreement.

However, when we consider other facts about agreement, it becomes clear that the Spec-head relation does not always hold of the agreeing elements. Adnominal agreement and some instances of secondary predication are cases in point:

(15) a. Una signora simpatica/\*simpatico woman likeable.FEM/likeable.MASC а 'A likeable woman.' Un signore simpatico/\*simpatica. b. man likeabl.MASC/likeable.FEM a 'A likeable man.' Inquieta/\*inquieto, (16) a. Maria ha telefonato a Gianni. worried.FEM/worried.MASC to Gianni Maria have telefone 'Worried, Marie called Gianni.' Inquieto/\*inquieta, b. Gianni ha telefonato a Maria. worried.FEM/worried.MASC Gianni have telefone to Maria 'Worried, Gianni called Marie,'

There is no reason to believe that the structure of the examples in (15) are more complex than those in (17) (cf. Kayne 1994 for an alternative view), where the Spec-head relation fails to hold of the agreeing elements (*simpatica/simpatico* and *signora/signore* in (15), and *inquieta/inquieto* and *Maria/Gianni* in (16)):

(17) a.  $\begin{bmatrix} DP & una \begin{bmatrix} NP & signora \end{bmatrix} \begin{bmatrix} AP & simpatica \end{bmatrix} \end{bmatrix}$  (Italian) b.  $\begin{bmatrix} IP & inquieta \end{bmatrix} \begin{bmatrix} IP & Maria ha telefonato a Gianni \end{bmatrix} \end{bmatrix}$ 

Neither the predicate nor the phrase with which it agrees are the Spec position of the other. The APs in (17) are most plausibly an adjunct to the NP and IP respectively. Kayne's account of

(French)

(Italian)

participial agreement clearly does not carry over to cases like (15) and (16). In this sense, it is empirically limited, and hence explanatorily unsatisfying.

The relevant structural difference between (10a) and (10b) is that in (10b) the full DP is in object position, i.e. in the VP-projection of the predicate, as in (18b), while the clitic in (10a) with which the predicate agrees is clearly outside the VP, as in (18a):

(18)	a	Gianni	la	ha	[vp	lavata		]			(Italian)
		Gianni	it.FEM	have		wash.F	ΈM				
		'Gianni	washed	it.'							
	b.	Gianni	ha [	VP	lavato	)	la	camicia	]		
		Gianni	have		wash.	MASC	the	shirt			
		'Gianni	washed	the sh	nirt.'						

The structures in (18a) and (17), where there is agreement (with the participle and the adjective respectively), differ from the structure in (18b), where there is no agreement, in that the projection of the agreeing predicate does not contain the phrase with which it agrees. It is thus reasonable to bring this difference to bear on the agreement difference. Agreement between a DP and a predicate is possible when the DP is not contained in the projection of the predicate (for the standard varieties of Romance, cf. footnote 4).

Along these lines, predicate adjective agreement and agreement in passive fall under the same account:

(Italian)

(19)	a.	Maria	è	bell	a/*bello.
		Maria	be	pret	ty.FEM/pretty.MASC
		'Maria	is pr	etty.'	
	b.	Essa	è	stata	lavata/*lavato.
		it.FEM	be	be	wash.FEM/wash.MASC
		'It has	been	wash	ed.'

As the structure in (13) for predicate adjective agreement and a similar structure for passive show, the phrase with which the predicate agrees is not contained in the projection of the predicate.

Subject-verb agreement also falls under this account. The subject in its surface position is not contained in the VP-projection of the agreeing verb. The Spec-head relation that holds between the subject in SpecIP and the inflectional head **P** is but a consequence of SpecIP being the position to which Case may be assigned. Recall that Case assignment is largely independent of agreement. Although the SpecIP can be assigned (abstract nominative) Case by a finite I°, the two stand in a Spec-head relation and the verb agreeing with the subject in SpecIP, the SpecIP position (of a non-finite clause) may also be assigned (abstract accusative) Case by a Case-assigner outside of the IP, as in (20) for English:

(20)	a.	$[_{CP}$ for $[_{IP}$ John to win the race ]] would be desirable.	(English)
	b.	They expected $[_{IP}$ John to win the race ]].	

In (20), a prepositional complementizer *for* or an Exceptionally Case-Marking verb like *expect* may assign Case to the embedded SpecIP position, even though it does not bear the Spec-head relation with the embedded subject. The embedded (non-finite) verb in these cases clearly does not agree with the subject in SpecIP.

It does not seem necessary that there be a structural condition for participial, adnominal and secondary predication agreement. In fact, given the disparate structural relations between the agreeing elements in (13), (14) and (17), it does not appear plausible that the agreeing elements

stand in some specific structural relation like the Spec-head relation. Accusative object clitics largely occur in the same position as other pronominal clitics, which show no participial agreement. Just like accusative object clitics in (21), non-reflexive dative object clitics and pronominal clitics related to prepositional phrases ci 'there' and ne 'from there' occur adjacent to a finite verb, even though there is no agreement, as in (22)-(24):

- (21) a. La mangia. it.FEM eat 'He eats it.'
  b. La ha mangiata. it.FEM have eat.FEM 'He ate it.'
  (22) a. Le telefono.
- (22) a. Le telefono. her.DAT telefone 'I call her.'
  - b. Le ho telefonato. her.DAT have telefone 'I called her.'
- (23) a. Ci mangia. there eat 'He eats there.'
  - b. Ci ha mangiato. there have eat 'he ate there.'
- (24) a. Ne ritorna. from there return 'He returns from there.'
  - b. Ne è ritornato. from there be return 'He returned from there.'

We clearly need an account for the position of the pronominal clitics, independently of participial agreement.

The locality condition for adnominal modifiers and secondary predicates also seems to be independent from agreement. English has no adnominal or secondary predication agreement, but adnominal modifiers and secondary predicates appear pretty much in the same structural positions (apart from the different linear order in some cases, cf. (25a) vs (15a)):

(25)	a.	$[_{DP} a [_{NP} [_{AP} sympathetic ] [_{NP} woman ]]]$	(English)
	b.	[IP [AP worried ] [IP Mary called John ]]]	

The facts in (21)-(25) show that the surface positions of pronominal object clitics, adnominal modifiers and secondary predicates are determined on independent grounds. There need not be an independent condition specifically for agreement with pronominal clitics. From the parsimony constraint on linguistic theory, this is a desirable result.

Predicate agreement is thus quite general, encompassing predicate adjective, passive and object clitics. It is not the clitic/non-clitic difference that explains the presence or absence of participial agreement; rather, the clitic/non-clitic difference has structural correlates. In cases

(Italian)

where there is no agreement, the full DP agreeing with the predicate is contained in the projection of the predicate, but in cases where there is agreement the pronominal clitic is not in the projection of the agreeing predicate. If the necessary condition for agreement is that the argument not be in the projection of the head with which it agrees, then we can explain why a predicate shows agreement with a pronominal clitic, but not with a full DP in argument position. Significantly, the same explanation holds of other cases of adnominal agreement like (15) and secondary predication agreement in (16) as well.

#### 3.1.2. Auxiliary selection

Turning now to the question of why the *be*-auxiliary appears with an accusative reflexive object clitic, but the *have*-auxiliary occurs with an accusative non-reflexive object clitic.

Kayne (1993) claims that underlying the superficial *have/be* auxiliary alternation is an abstract auxiliary BE. Specifically, the complement of the abstract auxiliary BE is a DP headed by a preposition-like determiner, as in the structure in (26), which Kayne argues to be justified independently by the possessive construction cross-linguistically (cf. Freeze 1992):

(26) ... BE [<sub>DP</sub> Spec D/P° ... [<sub>VP</sub> DP<sub>subj</sub> [ V DP<sub>obj</sub> ]]]

If  $D/P^{\circ}$  incorporates into BE, then the combination is spelled out phonetically as the *have*-type auxiliary. If  $D/P^{\circ}$  does not incorporate into BE, BE surfaces as the *be*-type auxiliary.

In the structure in (26), the subject DP cannot be assigned Case in the SpecVP; it therefore must move to the Spec of BE (in the ... to the left of BE in (26)) in order to be assigned Case. For independent reasons, the subject DP must first move to the Spec position of the DP-complement of BE, before it lands in the Spec of BE. Assuming that the SpecDP position is an A-bar-position, Kayne argues that the subject DP cannot move to the Spec of BE, an A-position, without violating the proper movement condition barring moving from an A-bar-position to an A-position (Chomsky 1986). However, if D/P° incorporates into BE, the SpecDP position would become an A-position, making it possible for the subject DP to move from the SpecDP position to SpecIP.

In Kayne's account, the subject must move out of the VP to the Spec of BE, whether the object is a promininal clitic or a full DP in argument position. In both cases, D/P° must incorporate to BE, in order for the subject to move to the Spec of BE; consequently, the combination of BE+ D/P° is spelled out phonetically as the *have*-type auxiliary, as discussed above. For reflexive clitic pronouns, Kayne suggests that they adjoin to the participial AgrS (in the ... to the left of the VP in (26)) that activates AgrS in such a way as to allow AgrS to move to D/P° and turn SpecDP into an A-position, making it possible for subject DP to move through SpecDP to SpecBE without incorporation of D/P° into BE. As a result, BE surfaces as the *be*-type auxiliary.

I have no space here to discuss in detail Kayne's account of auxiliary selection, as it covers not only auxiliary selection with clitic pronouns, but also without them. However, I would like point out some problematic aspects of the analysis specifically for the co-occurrence of the reflexive and the *be*-type auxiliary. Conceptually, there is no independent reason to think that the reflexive clitic adjoins to AgrS. In the examples in (10a) and (11), repeated in (27), the reflexive clitic *si* in (27b) is related to the object of the verb *lavare* 'to wash', just as the non-reflexive clitic *la* in (27a):

(27) a. Gianni la ha/\*è lavata. Gianni it.FEM have/be wash.FEM 'Gianni washed it.' (Italian)

b. Gianni si è/\*ha lavato.
 Gianni self be/have wash.MASC
 'Gianni washed himself.'

If the non-reflexive clitic *la* is assigned abstract accusative Case, then so is the reflexive clitic *si*. There is thus no reason to suppose that the reflexive clitic *si*, but not the non-reflexive *la*, adjoins to AgrS. Moreover, to the extent that no independent facts can be brought to bear, there is no justification for the idea that adjoining the reflexive clitic to the participial AgrS would activate it and turn SpecDP into an A-position.

From the point of view of explanatory adequacy, we need to relate the contrast in (27) to other cases where the same constrast holds. Examples like those in (28) immediately come to mind:

(Italian)

(28)	a.	Maria	è∕*ha	bell-a/*bell-o.
		Maria	be/have	pretty.FEM/pretty.MASC
		'Maria	is pretty.	,
	b.	Piero	è∕*ha	piccol-o/*piccol-a.
		Piere	be/have	small.MASC/small.FEM
		'Piero	is small.'	

- (29) a. Essa è/\*ha stata lavata. it.FEM be/have be.FEM wash.FEM 'It has been washed.'
  - b. Esso è/\*ha stata lavato. it.MASC be/have be.FEM wash.MASC 'It has been washed.'

The examples in (28)-(29) show clearly that when the predicate agrees with the subject, then the auxiliary must be the *be*-type, not the *have*-type. We will see presently how this bears on the occurrence of the *be*-auxiliary when the accusative object clitic pronoun is a reflexive.

In (27b), the accusative object reflexive clitic pronoun agrees with the participle,<sup>6</sup> just like any other accusative object pronominal clitics. The crucial fact is that the reflexive is bound by the subject, and the two agree (here, in person). The combination of these two facts result in the predicate agreeing with the subject. And we know from (28)-(29), quite independently, that the auxiliary co-occurring with a predicate agreeing with the subject must be the *be*-type, not the *have*-type. In (27a), the participle agrees with the accusative object clitic pronoun in number and gender (here, feminine). The *be*-auxiliary is impossible since it would require that the participle agree with the subject in number and gender (here, masculine). Obviously, the participle cannot carry the two (different) agreement morphologies at the same time.

In sum, it is not the reflexive/non-reflexive difference itself that explains why the auxiliary in (27b) must be the *be*-type, not the *have*-type. Rather, the difference has syntactic correlates that bear on agreement. A predicate agreeing with a reflexive object pronoun bound by the subject would end up agreeing with the subject, and the auxiliary co-occurring with a predicate agreeing with the subject cannot be the *have*-type, but must be the *be*-type. Thus, the occurrence of the *be*-auxiliary in (27b) is not an isolated syntactic fact about reflexive object pronominal clitics, but is related to the predicate adjective agreement in (28) and passive in (29). Correlatively, the reason why the *be*-type auxiliary does not co-occur with an object clitic, cf. (27a), since the predicate does not agree with the subject; consequently, only the *have*-type auxiliary is possible.

Again, if linguistic theory is correct in that auxiliary selection and agreement, although superficially different, are different facets of the same phenomenon in constructions with object clitics, predicate adjectives and passive, then the empirical implication is that there cannot be a language in which auxiliary selection and agreement are not the same in all three constructions. For instance, one such impossible language or dialect of Italian would have the grammatical patterns in (30), where the *be*-type auxiliary co-occurs with an agreeing predicate adjective or with an agreeing active past participle in the construction with an object pronominal clitic, but the same auxiliary appear in passive but without agreement on the predicate:

(Pseudo-Italian)

(30) a. Maria be pretty.FEM 'Maria is pretty.' è b. La lavata. it.FEM be pretty.FEM 'He washed it.' Essa è с. stato lavato.

bell-a.

Maria è

it.FEM be be.MASC wash.MASC 'It has been washed.'

Nor can there be a language or dialect of Italian with the grammatical patterns in (31), where the have-type auxiliary occurs with an agreeing predicate adjective and with a non-agreeing active past participle, but the *be*-type auxiliary appears in passive without participial agreement:

(Pseudo-Italian)

(31) a. Maria ha/\*è bella. Maria have/be pretty.FEM 'Maria is pretty.' ha lavato/\*lavata. b. La it.FEM have wash/wash.FEM 'He washed it.' Essa è/\*ha с. stato lavato. it.FEM be/have be.MASC wash.MASC 'It has been washed.'

The examples in (30)-(31) are but two among many logically possible combinations that are excluded by linguistic theory as possible grammatical patterns of language (cf. footnote 4, however).

Two issues ensue: (i) is the empirical implication true? and (ii) if it is true, then why should it be? As discussed in section 1, it is difficult to settle the answer to (i) positively with certainty, for practical reasons. We probably cannot check all languages, those that still exist or used to exist but have died out, to see whether the implication is true. However, (i) can in principle be falsified if we can show a language with a combination of agreement properties that is excluded by linguistic theory, e.g. one that has the grammatical patterns in (30) and (31). It is in the latter case that we can see the empirical bearing of linguistic theory. The answer to (ii) is rather straightforward from the perspective of linguistic theory. To the extent that the empirical implication is true, it must be so since the grammatical principles underlying auxiliary selection and agreement are the same in the three constructions.

# 3.2. Some phonological properties of Italian clitics

Typically lacking stress, pronominal clitics cannot stand on their own. They therefore must be integrated in an adjacent prosodic unit. The question that arises is whether prosodic units integrating pronominal clitics are on a par with other independently established prosodic units like the prosodic word (henceforth **p-word**), a phonological unit bearing stress, or whether they are

11

independent prosodic units, and deserve a distinct status in the **prosodic hierarchy** for prosodic units liek the syllable, the mora, the foot, the p-word, the phonological phrase (**p-phrase**) and intonational phrase (**i-phrase**). The issue is of particular interest if there is indeed some relation between phonological structure and morphosyntactic structures. Should prosodic units with pronominal clitics turn out to be different from other well-established prosodic units, then morphological and syntactic structures containing pronominal clitics may have to reflect this fact, i.e. we may have to posit some morphological or syntactic unit of sorts corresponding to the prosodic units with promininal clitics. The issue thus bears on the interface between phonology and morphosyntax.

Selkirk (1980) suggests that a clitic and its host form a p-word, while Nespor (1984) argues that the two form an independent prosodic unit, which she calls **clitic group**, distinct from other prosodic units like p-word, p-phrase and i-phrase. There are several phonological facts of Italian that appear to be relevant to the issue of whether there is an independent prosodic unit called clitic group. First, Nespor and Vogel (1982) show that in Standard Italian, a sequence of two p-words, which may independently bear stress, has primary stress on the second p-word:

(32) a. Mezzo giórno. middle day 'Mid-day'
b. Senza tétto. without roof 'Without home, homeless'

But in a sequence consisting of clitics and their host the stress falls on the host regardless of the position of the clitics:

(33) a. Glie-lo diránno him-it say 'They will say it to him'
b. Dicéndo-glie-lo. tell-him-it 'Telling him it'

Apparently, then, clitics do not behave like p-words.

Second, the **vowel truncation** rule <u>optionally</u> deletes the vowel of the last syllable of a p word containing a single verb, when it is followed by another p-word beginning with a consonant:

(34) a. Andáre/andár vía. go way
'To go away.'
b. Vuolo scrivere/scriver gli indirizzi. want write the address 'He wants to write the addresses.'

But it <u>obligatorily</u> deletes the vowel of the verb if it is followed by a pronominal clitic:

(35) a. Andár/\*andáre ci go there 'To go there.' (Italian)

(Italian)

(Italian)

(Italian)

b. Dár/\*dáre gli. give them 'To give them.'

Note the difference between the determiner gli 'the' in (34b), and the pronominal clitic gli 'them' in (35b). In (34b), gli is part of the following p-word that includes the noun *indirizzi* 'address', so there is a p-word boundary separating gli and the preceding verb *scrivere* 'to write'. In (35b), however, the pronominal clitic gli is in the p-word containing the verb, with no p-word boundary separating the two:

(36) a. [scriver ]<sub>PW</sub> [gli indirizzi ]<sub>PW</sub> => [scriver ]<sub>PW</sub> [gli indirizzi ]<sub>PW</sub> (Italian) b. [dar-gli ]<sub>PW</sub> => [dar-gli ]<sub>PW</sub>

The optional deletion of the vowel of the verb in (36a), but not in (36b), can be accounted for by assuming that the truncation rule optionally applies across a pword boundary, but obligatorily within a p-word. Thus, the obligatory deletion of the vowel in (36b) shows that the clitic itself is not a p-word.

Third, the rule of **Raddoppiamento Sintattico** (RS) geminates the initial consonant of a p word, if it is immediately preceded by a stressed syllable belonging to another p-word (Nespor and Vogel 1982):

(37)	a.	Sará [p:]artito.
		He will have left
	b.	Sú[b/*b:]ito.
		'Immediately'

But the RS rule also applies to a sequence consisting of a verb and a following clitic, treating them as if they are two independent p-words:

(38)	a.	Dá[m:]i (< dá 'give'+mi 'me')	(Italian)
		'Give me!'	
	b.	Fá[t:]i ( <fá 'do'+ti="" 'you')<="" td=""><td></td></fá>	
		'Do (it) yourself!'	

That the pronominal clitics in (38) are <u>not part of the pword</u> containing the preceding verb is clear, for they were, then we should expect the RS rule not to apply, just as in (37b). Now we know from the facts about stress and the vowel truncation rule above that <u>the clitic itself is not a p-word</u>, so the conclusion is that <u>the forms in (38) with a clitic are prosodic units different from p-words</u>.

Fourth, the rule of **intervocalic s-voicing** in Northern Italian dialects applies to derived lexical items as in (39a)-(39b) and to underived lexical items as well as in (39c), but it never applies to an *s* if the vowel to its left belongs to an independent morphological category, as in (39d):

(39) a. Pre[z]úpporre. (<pre+supporre)</li>
'To presuppose'
b. Ca[z]ína. (<case+ina)</li>
'Little house'
c. A[z]ílo.
'Nursery school'

(Italian)

(Italian)

d. Una [s/\*z]ála. 'A hall'

Suppose the rule of intervocalic s-voicing applies to an s if it and the two vowels flanking its two sides are within one p-word. We can now distinguish (39a)-(39c) on the one hand and (39d) on the other, if in (39d), the determiner is not part of the following p-word.

In this light, the rule apparently treats the clitic and the form preceding it does not form a p-word:

(40) a. Affittá-[s/\*z]i rent-self 'For rent'
b. Ci-[s/\*z]álgo there-get off 'I'm getting off there' (Italian)

The examples in (40) thus appear to suggest, again, that the host and the clitic form <u>a different</u> prosodic category from p-word; perhaps they form a clitic group as Nespor suggests.

If this is correct, then it may have ramifications for the morphological and syntactic analyses of clitics. In particular, the morphological and syntactic representations for structures with clitics may have to contain some structural unit that corresponds to the prosodic unit clitic group. As it has far-reaching consequences, we need to closely examine the justification for the clitic group. Should it turn out to be possible to provide an alternative account for the various phonological facts discussed above with independently motivated assumptions, and crucially without imputing the prosodic unit clitic group, then we would not only show that clitic group is not a wellmotivated prosodic unit, but also buttress the support for the independently motivated assumptions, since no changes would then be required for our theory of morphosyntax.

On closer look, it turns out that phonological facts discussed above do not warrant clitic group as an independent prosodic unit. What the stress facts in (33) and those about vowel truncation in (35) show is that the pronominal clitics and their hosts do not form pwords of the sort that are ordinarily assumed for morphological units, e.g. *súbito* 'immediately' or *pre+súpporre* 'to presuppose'. It does not follow from that, however, that they form an independent prosodic unit called clitic group. It is conceivable that prosodic units integrating a clitic may have slightly more complex internal structure, but the structure as a whole is still a pword, the same prosodic unit that is independently motivated. Before discussing what the structure of the more complex p-word, let us consider the question of whether we need the notion of clitic group as an independent prosodic unit to account for these various facts.

The assumption that pronominal clitics and their hosts form a clitic group does not seem to provide much of an explanation for the facts in (39) and (40), however, for we may ask why the RS rule and the intervocalic s-voicing rule should treat p-words and clitic groups alike, if the clitic group is indeed a prosodic unit different from the p-word. In fact, we may wonder whether it is the formulations of the rules for these various phonological facts that lead to the assumption of the prosodic unit clitic group. So it is quite possible that we need not appeal to clitic group with some alternative formulations of the rules.

Using phonological facts of several dialects of Italian, Peperkamp (1996) argues that there is no need for an independent prosodic unit like clitic group, and that pronominal clitics can be integrated into an adjacent prosodic unit by adjoining to a p-word, incorporating into a phonological phrase or incorporating into a p-word:





Although she does not give an account for these various facts about pronominal clitics in Standard Italian, it is conceivable that the examples with pronominal clitics may have the PW-adjunction structure.<sup>7</sup>

Suppose the pronominal clitic in (33) is adjoined to a p-word, as in (42), and the stress rule operates on a sequence of two p-words shifting primary stress to the second p-word:



Now the reason why pronominal clitics do not affect stress in Standard Italian is now straightforward.<sup>8</sup> In (42), the pronominal clitics are adjoined to a p-word consisting of the verb; it is therefore part of a p-word. Since the two do not constitute a sequence of two p-words, they are not subject to the stress rule. By contrast, the examples in (32) are sequences of pwords, as shown in (43), and hence are subject to the stress rule, which shifts the primary stress to the second p-word:



Similarly, suppose the examples in (35) have the prosodic structures in (44), where the two occurrences of PW are taken to be two segments of the same prosodic category, the same assumption made for syntactic structure (cf. May 1985):



Crucially, the lower occurrence of PW in (44) does constitute a p-word; it is only a part of a larger p-word adjunction structure. Suppose further that the vowel truncation rule obligatorily deletes the final vowel of a verb if it is not at the edge of a p-word, and optionally does so otherwise. We can now distinguish the examples in (34) from those in (35).

In their prosodic structures in (44) for the examples in (35), the final vowel of the verb is not at the edge of a p-word, for the verb lies entirely within a larger p-word adjunction structure. The final vowel of the verb is therefore obligatorily deleted. By contrast, in the prosodic structure in (36a) for the example in (34b), and in a similar structure for the example in (34a), the final vowel of the verb is at the edge of a p-word. It is therefore only optionally deleted.

Turning now to the RS rule, and consider the prosodic structures in (45) for the examples in (38), where the pronominal clitic is adjoined to the preceding p-word:



Suppose, contrary to the earlier formulation of the RS rule, we state it as a rule applying to the initial consonant of an expression if it is preceded by a stressed syllable and the two are separated by (at least) one p-word segment. So formulated, the RS rule would apply to the structures in (45) as well as to the structure in (46a) for the example in (37a), but it does not apply to the structure in (46b) for the example in (37b):



In (45) and (46a), there is at least one pword segment separating a stressed syllable and the following consonant, while in (46b), there is no p-word segment separating the two.

Along the same lines, the intervocalic s-voicing rule, stated as a rule applying to an s that is not separated by a p-word segment, would fail to apply to the examples in (40), whose prosodic structures are given in (47):



By contrast, in the prosodic structures for the examples in (39) given in (48), the *s* is subject to the intervocalic s-voicing rule, since there is no p-word segment separating the *s* and the preceding stressed syllable:

(48) a. PW b. PW 
$$|$$
  $|$   $pre[z]úpporre ca[z]ína$ 

Without the clitic group as an independent prosodic unit, two desirable consequences follow directly. First, for the phonology, there is no need to assume the prosodic unit clitic group. Second, for the interface with morphology and syntax, there is no need to posit some morphological or syntactic unit corresponding to the clitic group. We can thus preserve the corresponding units in phonology and morphosyntax; roughly, p-words correspond to morphosyntactic units like heads and p-phrases and i-phrases correspond to syntactic phrases and larger constituents (cf. footnote 2, however). Both consequences are desirable from the perspective of the parsimony constraint on linguistic theory.

In the alternative account without appealing to the notion of clitic group as an independent prosodic unit, the pronominal clitics are part of a p-word. We should then expect the complex consisting of a verb and a clitic, a p-word, which corresponds to a morphosyntax unit  $X^{\circ}$  elsewhere, to behave as a morphosyntactic unit as well. This seems to be largely correct. The pronominal clitic, at least in Italian, seems to form a morphosyntactic unit with the verb, e.g. the pronominal clitic moves together with the verb wherever the verb moves.

3.3. The clitic - doubling construction

In Rumanian and some dialects of Spanish, a pronominal clitic may co-occur with a full DP object, giving rise to what is known as the clitic-doubling construction illustrated in (49)-(50) (we will discuss in section 3.3.2 the occurrence of *a* in Spanish or *pe* in Rumanian before the direct object):

(49)	a.	Lo vimos	a	Juan.			(Spanish)
		him see. IPL	to	Juan			
		'We saw Juan.'					
	b.	Le di	un	anillo	a	María.	
		her give.1SG	а	ring	to	María	
		'I gave Maria a	ring.	,			
(50)	a.	L'am vaz	ut p	be Jon			(Rumanian)
		him-have see	e t	o Jon			
		'I saw Jon.'					
	b.	I-am dat	ca	rtea	lui	Popescu.	
		him-have give	bo	ook 1	him	Popescu	
		'I gave his bool	k to F	opescu.	,		

However, the occurrence of a doubling pronominal clitic is excluded if the full DP is in some intuitive sense indefinite or non-specific, or has a non-human referent (Suñer 1988:396, Steriade 1980:283):

(51)	a.	No (*	lo)	oyeron	а	ningún	ladrón.			(Spanish)
		not l	him	hear.3PL	to	any	thief			
		'They	didn't	hear any th	ieve	s.'				
	b.	(*la)	busca	ıban	a	alguien	que	los	ayudara.	
		her	searc	h-for.3PL	to	somebody	who	them	could-help.3sG	

'They were looking for somebody who could help them.'

(52) a. (\*i)-am v©zut clinele lui Popescu. him-I-have seen the dog him Popescu 'I saw Popescu's dog.'
b. (\*le) caut un bac©tar. him I-look-for a cook 'I'm looking for a cook.'

In French or Italian, the clitic-doubling construction is simply impossible (the examples in (53c) and (54c) are grammatical with a pause after the verb, cf. Lambrecht (to appear). We will return to this important fact in section 3.3.2):

(53) a. Je vois la fille the girl I see 'I see the girl.' b. Je la vois. I her see 'I see her.' la \*Je vois la fille. C. Ι her see the girl 'I see her the girl.' (54) a. Je parle à Jean. Ι talk to Jean 'I talk to Jean.' lui b. parle. Je Ι him talk 'I talk to him.' \*Je lui parle à Jean. с. him talk Ι to Jean 'I talk to Jean.'

Given the explanatory adequacy constraint on Inguistic theory, we have to ask whether the grammatical contrast between the examples in (49)-(50) and those in (51)-(52) with respect to the presence of a clitic pronoun is related to any other property that may explain why the contrast should hold. In the same vein, we can also raise the same question for the variations within Romance languages, i.e. whether there are other differences between Spanish and Rumanian on the one hand, and French and Italian on the other that bear on the grammatical difference between the examples in (49) and (50) on the one hand and those in (53c) and (54c) on the other.

Intuitively, pronouns stand for full DP arguments. The ungrammaticality of the French examples in (53c) is thus unsurprising. Either the pronoun or the full DP argument, but not both at the same time, may satisfy the subcategorization property of a transitive verb requiring that there be an object. The same explanation carries straightforwardly over to the ungrammaticality of the examples in (54c). The Spanish and Rumanian sentences in (49) and (50) are problematic, however, since the same reasoning should lead us to expect, incorrectly, that they are ungrammatical as well, just like the French examples.

Another problem arises in (51)-(52). Regardless of how we resolve the issue of why both the clitic and DP it doubles may both occur at the same time, we must also address the question of why definiteness/specificity is relevant to the clitic-doubled full DP. The clitic-doubling construction therefore raises a host of syntactic and semantic issues, not only for the analysis of

(French)

(Rumanian)

the construction in languages that (sometimes) allow it, but also for the account of the variations in the closely related languages.

3.3.1. The position of the clitic -doubled DP and the definiteness/specificity restriction Essentially following earlier versions of Sportiche (1996), Uriagereka (1995) suggests that the clitic pronoun generally heads a projection in the direct object position, and head-moves to its surface position, as in (55a). The clitic -doubling construction essentially has the same structure, except that the Spec position of the direct object is occupied by the doubled full DP, as in (55b):

(Spanish)

(55)	a.	$Lo_i$	vimos	DP	$t_i [_{NP}$	pro ]]]
		him	see			
		'We	see him.	,		
	b.	Lo <sub>i</sub>	vimos	DP	a	Juan [ $t_i$ [ <sub>NP</sub> pro ]]]
		him	see		to	Juan
		'We	see Juan	.'		

There are problematic aspects of the analysis in (55) whose details I will not go into here, e.g. there seems to be no independent evidence for the doubled full DP appearing in the Spec position of a DP headed by the pronominal clitic, or for the pronominal clitic taking a complement (cf. Postal's (1969) idea that pronouns are intransitive determiners). What I like to do here is to discuss the empirical predictions of the analysis in (55), and to bring various independent facts to bear on the analysis.

It is clear that if the derivation and representation of the sort in (55) is possible, then we would expect the pronominal clitic to be able to double all types of full DPs, in particular, negative quantifiers. The grammatical contrast in (56) shows that the expectation is not borne out:

(56)	a. N'am vazut pe nimeni. not-have see to no one 'I didn't see anyone.'	(Rumanian)
	b. *Nu l <sub>i</sub> -am vazut [ <sub>DP</sub> pe not him-have see to 'I didn't see anyone.'	nimeni [ $t_i$ [ <sub>NP</sub> pro]]] no one
(57)	<ul> <li>a. No conozco a nadie.</li> <li>not know to no one</li> <li>'I don't know anyone.'</li> </ul>	(Spanish)
	b. *no lo conozco a nadie. not him know to no one 'I don't know anyone.'	
(58)	(*lo) vimos a uno. him see to one 'We saw one.'	(Spanish)

Steriade (1980) argues that the example in (56b), and by the same token those in (57b) and (58) as well (Uriagereka 1995), are independently excluded on semantic grounds. Specifically, the doubling clitic is definite/specific, having a definite/specific referent. In (56b), (57b) and (58), the pronominal clitic has no definite/specific referent, these examples are therefore ruled out semantically.

There are both empirical and conceptual problems with this explanation. Empirically, if

(clitic) pronouns must be definite/specific in that they must have a definite/specific referent, then we would expect, apparently incorrectly, that they may not be related to a referent that is indefinite/non-specific. But as shown in (59), the clitic pronoun can in fact be related to a negative quantifier, which is certainly indefinite/non-specific. The pronominal clitic here thus clearly has no definite/specific referent:

(59) Ningun estudiante (Spanish) quiere que su maestro 10 vea en el bar. No student wants that his teacher him see in the bar 'No student wants his teacher to see him in the bar.'

In fact, a clitic pronoun may also be related to a negative quantifier across discourse, showing again that it is generally not subject to a definiteness constraint:

- (60) a. Que cosa no cree ningun estudiante que hara su maestro. (Spanish) which thing no think no student that will-do his teacher 'What does no student think that the teacher will do?'
  - b. Pedir-le que suspenda la clase. ask-him that fail the class 'To ask him to fail the class.'
    c. Llevar-lo a un bar.
  - take-him to a bar 'To take him to a bar.'

Facts of the sorts in (59) and (60) are quite general, independently of the clitic-doubling construction and pronominal clitics. French does not have the clitic-doubling construction, but allows a clitic pronoun to be bound by an indefinite DP, and the binder of the pronominal clitic need not appear in the same sentence:

- (61) Aucun étudiant ne pense que le professor lui donne un cadeau. (French) no student not thinks that the professor him give a present 'No student thinks that the professor is giving him a present'
- (62) a. Qu'est-ce que aucun étudiant<sub>i</sub> pense que le professeur va faire?
  What-it that no student thinks that the professor go do 'What does no student thinks that the professor is going to do?'
  - b. Lui demander d'échouer à un examen. him ask to-fail in a exam 'To ask him to fail an exam.'

The same facts hold of languages like English that have no clitic pronoun. The pronoun in (63) and (64) may have an indefinite/non-specific referent:

- (63) No student thinks that the professor is giving him a present. (English)
- (64) a. What does no boy fail to forget?
  - b. His first dental appointment.

Therefore, there is no good reason to suppose that pronominal clitics are subject to the constraint that they be definite/specific and have a definite/specific referent. In other words, the proposed semantic constraint is descriptively inadequate.

Conceptually, Steriade and Uriagereka's accounts do not bring independent facts to bear on their explanations, and therefore are explanatorily inadequate. With this in mind, let us consider the examples in (65) and (66), which lack a doubling clitic:

(65)	a.	N'am vazut pe nimeni. not-have see to no one	(Rumanian)
		'I didn't see anvone'	
	b.	No conozco a nadie.	(Spanish)
		not know.1SG to no one	
		'I don't know anyone.'	
	c.	Vimos a uno. see.1PL to one	
		'We saw one'	
(66)	a.	*Pe nimeni n'am vazut.	(Rumanian)
		to no one not-have see	
		'I didn't see anyone'	
	b.	*A nadie no conozco.	(Spanish)
		to no one not know. 1SG	
		'I don't know anyone.'	
	c.	*A uno vimos.	
		to one know. 1PL	
		'We saw one'	

The direct object is in argument position in (65), but in non-argument position in (66). The same facts hold in English as well:<sup>9</sup>

- (67) a. I saw nobody yesterday.b. John, I saw yesterday.
- (68) a. \*I saw yesterday nobody.b. \*Nobody, I saw yesterday.

The grammatical contrast between (65) and (66) as well as that between (67) and (68) clearly show that negative quantifiers may not appear in non-argument position. The ungrammaticality of the examples in (66) and (68) remarkably resembles that of the examples in (56b) and (57b), apart from the presence of the clitic pronoun in the latter. If the clitic-doubled full DP in (56b) and (57b) in fact occupies a non-argument position very much like the object in (66)-(68), then their grammatical constrasts with (56a) and (57a) respectively fall under the same account for that between (65) and (66) as well as that between (67) and (68), a conclusion also reached by Aoun (1981) and Hurtado (1984) on some other grounds.

As it turns out, facts about the clitic-doubling construction are rather complex. Speakers do not seem to have uniform judgments. While many find (69a) quite good (Franco 2000), they seem to disagree on (69b):

(69) a. Juan lo invitaba a uno y luego se olvidaba. (Spanish)
Juan him invite to one and then self forget
'Juan used to invite people and then forget all about it.'

(English)

b. En ese departamento, lo admiten a cualquiera. in this department him admit.3PL to anyone 'In this department, they admit anyone.'

If *uno* 'one' in (69a), here interpreted as generic, is changed to *una* 'one', referring to some indefinite/non-specific entity with (grammatical) feminine gender, the sentence becomes very bad (Luis Lopez-Carretero, personal communication). Although it is unclear how the difference between dialects disallowing (58) and those permitting (69a) is to be accounted for, i.e. whether they have other differences bearing the contrast between (58) and (69a), it is worth noting that the clitic-doubled in (69a) may appear in a clearly non-argument position (with or without the clitic pronoun):

(70) A uno Juan (lo) invitaba y luego se olvidaba.
(5) to one Juan him invite and then self forget
(5) 'Juan used to invite people and then forget all about it.'

Given that a uno 'to one' may appear in a non-argument position in (70), it would not be too surprising that it may also do so in (69a), even though the two non-argument positions are obviously not the same.

Intonation is often brought up to argue that the clitic-doubled full DP is not in a nonargument position. It is often pointed out (Jaeggli 1986 and subsequent literature) that the examples in (53c) and (54c), repeated in (71), would be grammatical if there is an intonational break before the full DP in non-argument position, indicated orthographically by a comma (cf. Lambrecht to appear):

- (71) a. Je la vois, la fille.
  I her see the girl
  'I see her, the girl.'
  b. Je lui parle, à Jean.
  - b. Je lui parle, à Jean. I him talk, to Jean 'I talk to him, Jean.'

In the clitic doubling construction in (49) and (50) in Spanish and Rumanian, no such intonational break is detectable before the clitic doubled full DP. Hence, so the argument goes, the examples in (71) are not the clitic doubling construction. Thus, if the clitic doubled full DP in (71) in French is in non-argument position, as it is separated from the rest of the sentence by an intonation break, then the clitic doubled DPs in (49) in Spansih and in (50) in Rumanian cannot be in non-argument position, since these are not separated from the rest of the sentence by an intonation break.<sup>10</sup>

The argument is not very compelling, however. Non-subcategorized adverbials like those in (72) are clearly in non-argument position, but there need not be an intonational break before them:

- (72) a. Está totalmente enamorado. be.3sG madly in love 'He is madly in love.'
  b. Estoy totalmente agotado.
  - be.1SG totally exhausted 'I'm totally exhausted.'

(French)

(Spanish)

(73) a. Mergem duminic © la ruine. will go sunday the ruins 'We'll go to the ruins on Sunday.'
b. Maria e cu totul dezam©git©. Maria be with total disillusion 'Maria is completely disillusioned.'

Therefore, intonation break does not seem to be a good diagnostics for non-argument positions. Note that as there are many non-argument positions, so it is conceivable that the clitic -doubled full DP and those in (71) occupy different non-argument positions.

3.3.2. The Case property of the clitic -doubled DP

Returning now to the question of whether the apparent lack of the clitic-doubling construction in French and Italian is related to any other differences between them and Spanish and Rumanian. As mentioned above, a noticeable property of the clitic-doubling construction is the presence of an element preceding the clitic-doubled DP. It looks like a preposition that appears elsewhere (*a* in Spanish and *pe* in Rumanian). Significantly, this preposition-like element may also precede the direct object without the clitic pronoun:

(74)	a.	(Ii) iau <b>pe</b> asta.	(Rumanian)					
		him I-take to this						
		'I take this.'						
	b.	Caut <b>pe</b> alcineva.						
		I-look-for to somebody else						
		'I'm looking for somebody else.'						
(75)	a.	Vi <b>a</b> tres ingleses que llevaban pantalones a cuadros.	(Spanish)					
		saw to three Englishmen that wear check trousers						
		'I saw three Englishmen wearing check trousers.'						
	b.	Vamos a ver <b>a</b> los monos.						
		go to see the monkeys.						

'Let's go and see the monkeys.'

The conditions under which this preposition-like element may appear in front of the direct object are the same, whether it is doubled by a pronominal clitic (Farkas 1978, Steriade 1980 and Butt and Benjamin 1988), having to do with the argument being definiteness or specific, and having human reference.

At least superficially, then, the possible presence of a preposition-like element on the direct object in the clitic doubling construction is closely related to the presence of the same in (74) and (75). From this perspective, one might want to claim that the clitic doubling construction is possible just in case the language permits this preposition-like element on the direct object independently. Thus, the reason why French and Italian do not have the clitic-doubling construction is because they do not permit a preposition-like element to appear before the direct object in the first place (cf. Kayne 1975):

22

(76) a. \*Je la vois à la fille. I her see to the girl 'I see the girl.' (French)

(Rumanian)

	b.	*Io I	la vedo a la ragazza. her see to the girl	(Italian)
		ʻI s	see the girl.'	
(77)	a.	*Je	vois à la fille.	(French)
		Ι	see to the girl	
		ʻI s	see the girl.'	
	b.	*Io	vedo a la ragazza.	(Italian)
		Ι	see to the girl	
		ʻI s	see the girl.'	

Along these lines, then, the reason why Spanish and Rumanian have the clitic-doubling construction with a preposition-like element (*a* in Spanish and *pe* in Rumanian) to occur before a direct object DP is because they independently allow it independently, i.e. in cases without a pronominal clitic.

There are both conceptual and empirical problems with these lines of reasoning, however. While the facts concerning the distribution of the preposition-like element a in Spanish or pe in Rumanian are relatively clear it is not obvious what grammatical property underlies it. One might think that it is the same preposition that appears in cases like (78) and (79):

(78)	a.	Salté <b>a</b> un autobús.	(Spanish)
		jump to a bus	
		'I jumped on a bus.'	
	b.	El gato se subió <b>a</b> un árbol.	
		the cat self run to a tree	
		'The cat ran up a tree.'	
(79)	a.	A can <sup>©</sup> e <b>pe</b> mas <sup>©</sup> .	(Rumanian)
		a jug be on the table	
		'A jug is on the table.'	
	b.	Universitatea e <b>pe</b> st nga.	
		the university be to left	
		'The university is on the left.'	

But as we can see in (78) and (79), the preposition a or pe differs from that preceding a direct object full DP in that it has no restriction on the DP following it. It need not be definite/specific or have human reference.

Aoun (1979) and Borer (1984) suggest that quite generally the clitic pronoun on the verb absorbs Case. On this view, the presence of the preposition-like element a or pe is to Case-mark the DP that follows it. In the examples in (53), repeated in (80), if a pronominal clitic occurs, and hence absorbs Case for the direct object, the lack of a preposition-like element to Case-mark the DP direct object would lead to a violation of the Case Filter (Rouveret and Vergnaud 1980), which excludes overt DPs without Case:

(80) a. Je vois la fille (French)

I see the girl
'I see the girl.'

b. Je la vois.

I her see
'I see her.'

c. \*Je la vois la fille. I her see the girl 'I see her the girl.'

If the Case-theoretic account for the clitic-doubling construction is correct, what kind of facts should we expect to see or not to see in Spanish and Rumanian?

If the clitic pronoun on the verb absorbs Case, and as a result the verb can no longer assign Case, then we should expect to see that in the absence of a clitic pronoun, the verb should be able to assign Case to the full DP in argument position. This is largely true, as shown in (81)-(82):

(81)	a.	Iau ast	ta.						(Rumanian)
		I-take this	S						
		'I take this	s.'						
	b.	Caut	altceva.						
		I-look-for something else							
		'I'm looking for something else.'							
(82)	a.	Vi tre	es ingle	eses en	la	playa.			(Spanish)
		saw thr	ee Engl	ishmen on	the	beach			
		'I saw thre	ee English	men on the b	beach	.'			
	b.	Vamos v	ver los	insectos.					
		go se	ee the	insects					
		'Let's go a	and see th	e insects.'					

The problem is the examples in (74) and (75), however. Here, there is no Case-absorbing clitic pronoun on the verb. We should expect not to see the preposition-like element a or pe in front of the direct object DP. The fact that in these examples there is a preposition-like element on the direct object inspite of the absence of a Case-absorbing clitic pronoun shows that Case-assignment from the verb is independent of the preposition-like element a or pe.

Moreover, if the preposition-like element a or pe in the clitic doubling construction is there to Case-mark the DP following it, Case to the DP being absorbed by the clitic pronoun, then we should expect this element to appear in other instances where Case is absorbed. The passive construction now becomes relevant. Recall the standard assumption that passive morphology on the verb absorbs Case; consequently, the verb can no longer assign Case to the direct object in argument position (Aoun 1979, Chomsky 1981). The direct object of a passive verb therefore must move to subject position to get Case, to avoid a Case Filter violation:

(83)	a.	Juan <sub>i</sub> fue visto $t_i$ (por todos).	(Spanish)
		Juan be seen by everyone	
		'Juan was seen by everyone.'	
	b.	Turci, au fost $ nvin=i t_i $ (de Stefan).	(Rumanian)
		Turks be be defeat by Stefan	
		'The Turks were defeated by Stefan.'	

With respect to Case, then, the passive construction is completely parallel to the clitic-doubling construction.

But there are two facts showing that the two constructions do not have the same Case property. First, in contrast with the clitic-doubling construction, the passive construction does not allow the direct object to be Case-marked by the preposition-like element:

- (84) a. Todos lo vio **a** Juan. everyone him saw to Juan 'Everyone saw Juan.'
  - b. \*Fue visto **a** Juan (por todos). was seen to Juan by everyone 'Juan was seen (by everyone).'
- (85) a. Stefan îi învise pe turci.Stefan them defeated to Turks 'Stefan defeated the Turks.'
  - b. \*Au fost **pe** turci (de Stefan). be defeated to Turks by Stefan 'The Turks were defeated by Stefan.'

Second, while Case-absorption by passive morphology results in the direct object moving to subject position to get Case, Case-absorption by a pronominal clitic never does. The examples in (86), though grammatical, do not have the interpretation in which the surface subject is understood to be the direct object of the verb, an interpretation derivable on a par with passive with the direct object moving to subject position:

(86)	a.	Juan <sub>i</sub> lo vio t <sub>i</sub>	(Spanish)
		Juan him saw	
		'Juan saw him.' NOT 'Juan was seen.'	
	b.	$Jon_i$ îi-am vazut $t_i$ .	(Rumanian)
		Jon them-have see	
		'Jon saw them.' NOT 'Jon was seen.'	

This is contrary to what we would expect if the clitic pronouun absorbs Case on a par with passive morphology. The clear difference between passive and the clitic -doubling construction thus shows that the account for passive definitely cannot be extended to the clitic -doubling construction; therefore, there is no reason to assume that the presence of a preposition-like element a or pe in the clitic -doubling construction has anything to do with Case.

Return now to the French examples in (71), repeated in (87). As already mentioned, these examples are grammatical with a pause before the full DP in argument position:

- (87) a. Je la vois, la fille.
  I her see the girl
  'I see her, the girl.'
  b. Je lui parle, à Jean.
  - I him talk to Jean 'I talk to him, Jean.'

In fact, examples like (87) are also possible with other phrasal categories. Milner (1978) gives many examples of PPs in the right periphery doubled by an adverbial *en* on the verb, very much like an accusative or dative pronominal clitic:

(88) a. Mon amie en revient samedi prochain, de Paris. (French) my friend from there come back Saturday next, from Paris
 'My friend is coming back from Paris next Saturday.'

25

(French)

(Spanish)

(Rumanian)

Apparently, the full DP in the right periphery in (87) is in non-argument position, just like the right-peripheral PPs in (88). From this perspective, the position of the clitic -doubled DP in (87) is thus very much like the Spanish *a*-phrase or Rumanian *pe*-phrase in the clitic-doubling construction; they all occur in non-argument positions, although not necessarily in the same positions (cf. the discussion surrounding (71)-(73)). If this is correct, then we can conclude that the French examples in (87) do not differ that much from the clitic-doubling construction in Spanish and Rumanian. The difference between them is rather minimal: there is a pause before the clitic-doubled full DP in argument position in French, but not in Spanish and Rumanian. The conclusion seems plausible. French, Italian, Spanish, and to a lesser extent Rumanian, are closely related languages. If we assimilated the French examples in (87) to the clitic-doubling construction in Spanish and Rumanian, then the difference between them is accordingly reduced.

Facts in languages outside Romance also indicate that the presence of a preposition-like element on the direct object is not a condition for the clitic-doubling construction. In Nahuatl, a clitic pronoun may co-occur with an overt direct object, and the latter does not take any marker that may be taken to be the equivalent of Spanish a or Rumanian pe (Launey 1979). As shown in (89), the direct object may be incorporated in the verb as in (89a), or co-occur unmarked with what apparently is a pronoun *qui* on the verb, whether the direct object is a definite/specific as in (89b), or indefinite/non-specific as in (89c) (the examples are cited in Lazard (to appear).  $\emptyset$  indicates phonetically null marking, ART for article):

(Nahuatl)

- (89) a. ni-naca-cua. 1SG-meat-eat 'I eat meat.'
  - b. Ø-qui-cua in nacatl in pilli. 3SG-it-eat ART meat ART child 'The child meats the meat.'
  - c. Ø-qui-cua nacatl in pilli. 3SG-it-eat meat ART child 'The child meats the meat.'

Evidently, the example in (89b) can be treated on a par with that in (49a) or that in (50a). While the latter has a preposition-like element on the direct object (a in Spanish or pe in Rumanian), the former does not, showing that a special marking on the direct object is not required in the clitic-doubling construction.

The same fact holds of Bulgarian and Macedonian as well (Dimitrova-Vulchanova 1999:94, 104), as Ekkehard König (personal communication) points out:

(90)	a.	kupil	bih	ja knig	a.		(Bulgarian)
		bought	would	it the	book		
		'I wold	buy that	book.'			
	b.	mu ja	dadov	knigata	na	Petar.	(Macedonian)
		him it	gave	the book	to	Petar	
		'I gave t	the book	to Petar.	,		

Notice again that there is no special marking on the clitic -doubled direct object in (90).

It is thus seems that the clitic-doubling construction is rather common in natural language. Particular languages do differ, however. As we saw above, Spanish and Rumanian make use of a preposition-like element on the clitic-doubled direct object and French uses an intonational break, while Nahuatl, Bulgarian and Macedonian use none of these devices. The difference among particular languages certainly calls for an explanation, but it is not clear how it is to be accounted for. The major difficulty here is that with the explanatory adequacy constraint, we must bring <u>other facts</u> to bear on this difference. And it is fairly obscure what other facts may bear on, for instance, the difference between the use of a preposition-like element on the direct object in Spanish and Rumanian and the use of an intonational break before the direct object in French. That is, it is not obvious what principle of grammar would be violated if French used the device for marking direct object in Spanish and Rumanian.

#### 4 Conclusion

The properties of pronominal clitics discussed above are but a few among their many properties, many of which are still fairly obscure (cf. footnotes 4 and 6). Their obscurity is not helped by the apparent lack of other elements having properties remotely resembling those of pronominal clitics. To the extent that certain ideas in the discussion above are on the right track, they are subject to further examining. It should therefore come as no surprise if they turn out to be insufficiently general or simply incorrect, and hence have to be revised or even abandoned when further related facts are brought to light.

While it seems clear that general conceptual constraints on linguistic theory delimit the class of possible analyses of some particular facts, it is not obvious a priori why these facts should cluster together. The explanatory adequacy constraint on linguistic theory provides some guidance for this problem, for it requires that assumptions for some particular facts be brought to bear not only on other assumptions in the same subsystem encompassing those facts, but also on other subsystems of grammar. That is, if various facts are due to some specific grammatical principle, then they must cluster together. From this point of view, it is easy to see what typology of language linguistic theory predicts: there cannot be a language with grammatical principles allowing only a subset of facts that fall under that principle (cf. section 2, and the discussion of auxiliary selection, predicate adjective/passive agreement and reflexive clitics in section 3.1).

For sure, there are aspects of language that remain obscure for some time to come, but it bears pointing out that like any empirical science, linguistic theory need to be refined as more facts come to light and the problems are better understood. It is in this sense that linguistic theory is an empirical science; the form of theory is shaped by the form of the facts. This is the normal course of development of any rational inquiry. In no way do the changes we need to make invalidate the general approach.

#### Endnotes

1. Pseudo-English is meant to be dialects of English that is not known to me to have the indcated grammatical properties. Should there turn out to be such a dialect, then linguistic theory must be modified to accommodate such dialect. Similar remarks apply to other languages as well.

2. There are occasional mismatches between syntactic and phonological constituents. A wellknown case is the possessive marker 's in English, which is commonly taken to be a typical case of syntax/phonology mismatch. Voicing assimilation and vowel epenthesis apply to 's as if it is part of the preceding expression, even though the two do not form a syntactic constituent:

(i) a. The queen of England'[z] hat.

- b. A brother of Bruc[iz] hat.
- c. A friend of Kate'[s] hat.

(ii) a. Land[z]

- b. Juic[iz]
  - c. Mate[s]

Auxiliaries whose vowel is reduced behave like the possessive marker 's in that it is integrated in an adjacent prosodic unit:

- (iii) a. John'[z] coming to the party.
  - b. A brother of Bruc'[iz] left the country.
  - c. A friend of Kate'[s] in the choir.

Cases like (i) and (iii) do not seem to be compelling enough to completely obliterate the relation between syntax and phonology.

3. We need to exercise some care in determining when a participle shows agreement, as syncretism often obscures it. In (ia), the participle shows agreement with the accusative object clitic pronoun, not with the subject. There is thus no reason to think that in (ib) the participle agrees with the subject, even though the participle and the subject have the same gender feature:

(i)	a.	Gianni	la	ha	lavata/*lavato.				
		Gianni	it.FEM	have	wash.FEM/wash.MASC				
		'Gianni washed it.'							
	b.	Gianni	lo	ha	lavato/*lavata.				
		Gianni	it.MASC	c have	e wash.MASC/wash.FEM				
		'Gianni	washed	it.'					

4. Kayne (1993) gives the example in (i) from a central Italian dialect, contrasting sharply with (12b):

(i) Ntonio è rótta la bbròcca.
 Antonia be break the jug
 'Antonio broke the jug.'

The fact in (i) can be accommodated in the account given in section 3.1.1 if the direct object lies outside the projection of the agreeing predicate.

It would be interesting to see if there are other differences between this dialect and Standard Italian that may be related to auxiliary selection and agreement pattern in (i). Having no access to detailed description to this dialect, I will have nothing to say about agreement of the type in (i). 5. For simplicity, I label the projection of the participle as VP. For Kayne, it is in fact a small clause, assimilating it completely to the structure in (13). Alternatively, it can also be taken to be the functional category AgrO of Chomsky (1991), whose the Spec position the object clitic may move through where it agrees with the participle when the participle moves to the head of AgrO. The discussion in the text does not hinge on the category whose Spec position the object clitic moves through, but on the Spec-head relation holding of the object clitic and the participle at some point in the derivation. According to Sportiche (1996), participial agreement is mostly optional in colloquial French, and is obligatory in formal registers.

6. It is conceivable that participial agreement with reflexive clitics is independent from participial agreement with accusative clitics. Dative clitic pronouns show agreement with a participle just in case they are interpreted as having the same reference as the subject:

(i)	a.	(loro)	ci	hanno		telefonato/*telefonati.
		they	1pl	have.3P	Ľ	telephone/telephone.PL
		'They	called	us.'		
	b.	(noi)	ci :	siamo	tel	efonati.
		we	1pl	be.1PL	tel	ephone.PL
		'We ca	alled o	urselves	/ea	ch other.'

In (ia), the participle may agree with neither the subject nor the dative object clitic. Thus, the agreement in (ib) must have something to do with the dative being a reflexive.

Note that first and second person non-subject clitic pronouns are not syntactically reflexive; they need not to be bound by a subject, cf. (ia), in contrast with the third person clitic pronoun si, which is syntactically reflexive and must be bound syntactically:

(ii)	a.	loro	si	sono	telefonati.
		they	self.3	be.3PL	telephone.PL
		'They	called the	hemselve	s/each other.'
	b.	*noi	si	siamo	telefonati.
		we	self.3	be.1PL	telephone.PL
		'We c	alled the	emselves/	each other.'

It is not clear what other facts may bear the agreement patterns in (i).

7. The PW-adjunction structure in (41a) seems conceptually most plausible for the analysis in the text, since adjunction structure is independently assumed for syntax (cf. the discussion of (44)-(48) below). However, as far as I can tell, the PW-incorporation structure can also account for these facts, perhaps with different formulations of the various rules. The issue is whether there is any syntactic or morphological correlate of the PW-incorporation structure.

8. This is true only of Standard Italian. According to Peperkamp (1997), Lucianian enclitics always shift stress to the penultimate syllable of the encliticized string, while in Neapolitan an additional stress falls on the first of two enclitics, but there is no change in the stress pattern with a single clitic.

9. Ekkehard König (personal communication) points out that if topics are generally subject to some topicality constraint requiring topics to have definite/specific referents (Lambrecht to appear), then (68b) with a clause-initial negative quantifier as topic would be excluded. As topics are clearly in non-argument position, the explanation for (68b) based on the topicality constraint is consistent with the argument in the text that the negative quantifier in the example is in non-argument position.

10. According to Lambrecht (to appear), the clitic doubled DP in the clitic doubling construction in (ia) is necessarily accented (indicated in capital letters), and has a focus relation to the (preceding) proposition, in constrast with the right-dislocation construction in (ib) where the clitic-doubled DP is not accented:

(i)	a.	le	di	un	beso	а	MARIA.
		her	I.gave	a	kiss	to	Maria
		'I have a kiss to Maria.'					

b. le di un BESO a Maria.'I have Maria a KISS.'

The same apparently holds for French as well:

- (ii) a. Elle est venue ELLE. she is come she 'SHE came.'
  b. Elle est VENUE elle.
  - 'she CAME (her).'

The comparison of (i) and (ii) does not involve a minimal pair, however. The verb in (i) being a ditransitive verb, while that in (ii) being an intransitive verb. Lambrecht says that the clitic-doubled DP in the clitic-doubling DP is in argument position, while that in the right-dislocation construction is in non-argument position. But the second pronoun in both (iia) and (iib) is clearly in non-argument position, the verb being instransitive. So it is not clear what Lambrecht has in mind for the rightmost *elle* 'she' in (iia) being in argument position.

Nevertheless, the prosodic difference between the clitic-doubling construction and the rightdislocation construction presumably generalizes to the Spanish/Rumanian and French examples discussed in the text. As far as I can tell, the clitic-doubled DP in French may or may not be stressed, just like those in (ii). Thus, apart from an obligatory pause after the verb, French and Spanish have essentially the same constructions.

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#### ARGUMENT ORDERING IN GERMAN:

# LEXICAL DECOMPOSITION OF THE 'ATOMIC' PREDICATE POSS AND ITS IMPLICATIONS FOR THE HIERARCHIZATION OF ARGUMENTS OF DITRANSITIVE VERBS

#### André Meinunger

In this article it is argued that contrary to influential work by Höhle (1982) and Haider (1992, 1993), German ditransitive verbs do not display different base orders in the projection of dative and accusative arguments. The claim that there are three types of ditransitive verbs taking one dative and one accusative object characterized by the relative hierarchization of the given arguments cannot be maintained. It is a result of a misunderstanding of focus projection on the one hand, and the overlooking of some semantic facts with the DAT>ACC, ACC>PP alternation on the other. A doser look at the facts reveals that true dative objects generally precede and therefore c-command accusative arguments. There are no verbs which allow for both orders simultaneously. If dative objects appear to be closer to the verb than accusatives, the datives at issue are no true datives, but hidden PPs. The relation between the two non-accusative positions will be analyzed in the lexical decomposition framework as a transformational step creating the allegedly atomic predicate POSS by incorporation of a preposition into the primitive BE (transfer of Kayne's theory (1993) of the have-be alternation to the inner-lexical domain). The aim of this article can be characterized as an endorsement for a single universal hierarchy of arguments: [SU[IO[DO[PP (V]]]]).

#### 1. INTRODUCTION

The aim of this paper is to argue that there is a single case hierarchy according to which the arguments of a verbal head are projected - crosslinguistically as well as particularly in German. I will focus on ditransitive verbs of two different types and their relationship: verbs that govern one accusative and one dative object and verbs that govern one accusative object and a PP. I will make the assumption that the (internal) arguments of a verb are projected VP-internally in a linary branching fashion. This implies that out of any two arguments always one asymmetrically c-commands the other. This relation can also be labeled 'ranking over'. One controversial question is the ranking of dative and accusative objects. As for the basic orders, it has been claimed that all possible rankings are attested (Höhle 1982, for a reprise cf. Haider 1992, 1993). All possible

rankings means: (I) dative is higher than accusative, (II) accusative is higher than dative, and neither ranks over the other or both are mutually exchangeable (III). It is claimed that the instantiation depends on the nature of the verb.

(1)

(I)	abgewöhnen, beibringen, verweigern, zutrauen
	wean, administer, deny, to think somebody is able to
(II)	aussetzen, unterziehen, zuführen
	expose, submit, to bring to
(III)	geben, zeigen, empfehlen
	give, show, recommand

Indeed, at first glance this division seems to be well motivated. If one gives these verbs to subjects (native speakers of German) and asks them to build a sentence with them, they will with high probability order the arguments in the way the classification predicts. That means that, whereas in sentences with verbs of class I dative objects will precede accusative ones, sentences with class II verbs will show the reverse order. Sentences that contain class III verbs will come with both orders. This is of course not sufficient for the given classification.

# 2. DIFFICULTIES WITH FOCUS PROJECTION AND A DIAGNOSTIC FOR BASIC WORD ORDER

Höhle (1982) takes the intuitions described above only as a point of departure and develops a test to -order-hypothesis' theoretically. He proposes a correlation between basic word order and maximal focus spreading on the one hand, and derived word order and narrow focus on the other. Thus, his claim is that focus projection (along the lines of Selkirk 1984) is possible for base generated structures, but impossible for derived orders. I, too, assume that this is the right conjecture. However, I think that one has to be very careful in using focus projection as a reliable test. Later I will come back to the reason. But first, let's look at the data.

(2)	a.	daß Carl <sub>NOM</sub> die Lösung <sub>ACC</sub> fand	(spreading)
		that Carl-acc the solution-acc found	
		that Carl found the solution	
	b.	daß die Lösung <sub>ACC</sub> Carl <sub>NOM</sub> fand	(no spreading)
(3)	clas	ss I	
	a.	daß er seiner Frau <sub>DAT</sub> sein Geld <sub>ACC</sub> nicht gönnte	(spreading)
		that he his wife-dat his money-acc not to-not-grudge	2
		that he didn't grudge his wife his money	
	b.	daß er sein Geld <sub>ACC</sub> seiner Frau <sub>DAT</sub> nicht gönnte	(no spreading)
	clas	ss II	
	c.	daß er seine Kinder <sub>ACC</sub> ihrem Einfluß <sub>DAT</sub> aussetzte	(spreading)
		thet he his children-acc her influence-dat exposed	
		that he exposed his children to her influence	
	d.	daß er ihrem Einfluß <sub>DAT</sub> seine Kinder <sub>ACC</sub> aussetzte	(no spreading)
	clas	ss III	

e.	daß er seiner Frau <sub>DAT</sub> sein Geld <sub>ACC</sub> gegeben hat	(spreading)
	that he his wife-dat his money-acc given has	
	that he gave his money to his wife	
f.	daß er sein Geld <sub>ACC</sub> seiner Frau <sub>DAT</sub> gegeben hat	(spreading)

(2) is uncontroversial and shows that nominative must precede accusative to make focus projection possible. This fact then is carried over to the spreading possibilities in the double object examples from (3). However, the data here are less clear. Nevertheless, I claim that the mistake lies somewhere else, namely in the misunderstanding of the relation between questions and focus projection in possible answers. It is simply not the case that an answer to a wh-question only consists of the open proposition delivered by the question plus the (exhaustive) instantiation of the open proposition. It is very well possible for the answer to contain more material, for example in order to facilitate storing of new information. What I mean is that the answer to a question of the sort 'What happened?'/ 'What's the matter?' need not necessarily be an all-new sentence. A structured proposition in form of a categorial statement can also be a possible answer. A sentence like 'Aunt Lisa died' may have different information packagings. It can be a thetic statement, i.e. an all new sentence. In English, telicity of a one-argument clause is achieved by putting the main stress on the head of the argument. In that case the intonation pattern is:

(4) Aunt  $LIsa^1$  died.

Another possibility is the use of the term *aunt Lisa* as an expression for someone about who it is being asserted that she died. In that case, the expression *aunt Lisa* is (more) salient, and the stress goes on the verb. This is the intonation of a categorial statement.

(5) Aunt Lisa DIED.

Nevertheless, (5) is a possible answer to a what-happened-question. There is no necessary identity between the open proposition set by the question and the presupposed material in the answer. Otherwise, what-happened questions would only be allowed in situations where the speakers have no common ground at all, which is a very rare, if not even impossible case. It is true that presupposed material from the question cannot be used as the focus of the corresponding answer.

(6)A: What happened to aunt Lisa?B: \*Aunt LIsa died.

However, this fact does not imply that everything contained in the answer which does not belong to the question must be focus or new information. Let me give another example:

(7)A: (Why is Mary angry with Paul?) What did he do?B: The day before yesterday, he slept with Marianne.

<sup>&</sup>lt;sup>1</sup> When necessary I indicate stress by capitals.

This dialog does not have the slightest flavor of oddness. The question asks for some action of Paul that causes Mary's anger. The answer to that is his sex with Marianne, encoded in the VP [vp slept with Marianne]. For some reason, B decided to be a bit more explicit and gave the time of the action. The sentence initial position of the temporal adjunct, together with an intonation pattern that puts little weight on it, but more on Marianne, indicates that the temporal information encoded in 'the day before yesterday' is a (non contrastive) topic. Thus we have two constituents that are not in focus, but only one of them is delivered by the linguistic context, namely Paul = he. The other one, which contains a deictic expression, can still be easily accommodated. Thus, we see that  $\mathbf{\dot{t}}$  is not completely conclusive to consider question-answer pairs as a reliable diagnostics for focus projection. Given a question and a felicitous answer, one cannot claim that all the material which is contained in the answer which is missing in the question must be new information and hence in the range of focus projection. So, why this long discussion? (3 f.) claimed that focus projection is possible where accusative precedes dative. However, focus projection was understood there as question-answer felicity. Thus, (3 f.) is regarded as a possible answer to a question 'Was hat er gemacht?' (What did he do?). With the wrong theory about the focus projection test outlined above, this then leads to the conclusion that every constituent (including the verb), but er, must be focus. This, however, is not the case. I shall claim that the accusative argument in this case must be discourse-related and focus does not spread over it. This claim is also confirmed by many other native speakers. For example, Steinbach and Vogel (1995) argue that in sentence 3.f. focus does not project over both arguments. The accusative DP gets a duiscourse related interpretation here. In the light of Meinunger's work (1995, see also below) this means that the accusative argument has been scrambled over the dative DP. The structure is not a basic configuration anymore.

I argue that the focus projection capacities of class I verbs are not different from class III verbs. And, therefore, the contrast between (3 b.) and (3 f.) seems to me to be spurious.

# 3. THE STRICT WORD ORDER HYPOTHESIS

I want to show that there is a clear and more reliable test for showing that dative is ranked higher than accusative (for both class I and class III verbs). According to the work of Adger (1993) and Meinunger (1995), which is based on Diesing's Mapping Hypothesis (1992); I will argue that linguistic material which is being introduced into the discourse frame stays in its base generated position. Discourse related constituents (topical material) must be scrambled out of the VP.

(8)	[ CP[AgrPs	[VP ([discourse new adjuncts]) [VP]]
	$topic(s)^2$	comment

Thus we have to examine the order in which new material organizes. Since DPs containing ordinary nouns are not conclusive, we have to look for something else. Ordinary DPs are not conclusive because even indefinite DPs can easily obtain a presuppositional reading. However, with unstressed indefinite articles they are almost perfect indicators of what we are looking for. I think the best way of showing the linear order of arguments is to use indefinite pronouns that cannot or can hardly have a presuppositional reading. Such elements are *jemand, etwas, nichts, wer, wen, was,* (somebody,

 $<sup>^{2}</sup>$  Topics are to be understood as in Meinunger (1995), i.e. as anchoring expressions. This use is very different from the standard, where topic refers to sentence initial constituents inducing the typical aboutness feeling. The terminology is immaterial here, however.

something, nothing) and unstressed *einer, niemand* and their reduced forms '*ner,* '*was*, and and the like. When one constructs sentences with these pronouns, one sees that verbs of class I behave exactly as verbs of class III in that the dative object must precede the accusative one.

(9)	cla	ss III			
	a.	weil er jemandem (et)was	{gezeigt gegeben empfohlen erklärt geschickt	)       	hat

since he somebody-dat something-acc {shown, given, recommanded, explained...} has since he {showed, gave, recommanded, explained...} something to someone

		gezeigt	)
		gegeben	
b.	*weil er (et)was jemandem	{ empfohlen	hat hat
		geschickt	$\int$ (reverse order, i.e. ACC > DAT)

The same is of course the case with class I verbs, which is already predicted by Höhle's theory.

(10)	clas	s I			
			abgewöhnt	)	
			verweigert		
	a.	weil er jemandem (et)was	{ beigebracht	}	hat
			zugetraut		
			verübelt	J	

since he somebody-dat something-acc {weaned, denied, tought, blamed...} has

		abgewöhnt	J
		verweigert	
b.	*weil er (et)was jemandem	{ beigebracht	hat hat
		zugetraut	
		verübelt	$\int$ (reverse order, i.e. ACC > DAT)

As mentioned above, unstressed indefinite DPs behave similarly. However, things are more complicated here. The order ACC > DAT itself is not ungrammatical, and the unmarked stress always falls on the verb adjacent argument. In this sense (9/10) a. and (9/10) b. are equally good. What distinguishes (9/10) a. from (9/10) b. is that the former may serve for focus projection whereas the latter may not. However, as I have argued, the focus spreading test is not appropriate. So I propose that (9/10) b. get starred when the intended reading is one where the indefinite objects are introduced into the discourse frame.

- (11) class III
  - a. weil er einer Frau eine Rose geschenkt hat since he a woman-data rose-acc given has sine he gave a rose to a woman
  - b. \*weil er eine Rose einer Frau geschenkt hat
- (12) class I
  - a. weil er einem Freund ein Lied beigebracht hat since he a friend-dat a song-acc tought has since he taught a song to a friend
  - b. \*weil er ein Lied einem Freund beigebracht hat

I hope to have shown that class I and class III are not different with respect to argument projection and that we therefore should not speak of two different classes.

Let us now turn to class II. If we apply our test to the verbs of this class, we will find out that the base order is ACC > DAT. However, I have to admit that the ordering test with indefinite pronouns does not work very well here.

(13) class II

- a. weil ich auf der Party niemand(en) jemandem vorgestellt habe since I at the party nobody-acc somebody-dat presented have since at the party I introduced nobody to anybody
- b. \*<sup>/??</sup>weil ich auf der Party niemandem jemand(en) vorgestellt habe

Yet, we may have one argument as a full DP. The claim is that the relevant indefinite pronouns must be in their base position. Thus it does no harm if the linearly following argument is a structured DP and the indefinite pronoun precedes it. The data become uncontroversial again.

- - b. \*weil er einer schweren Prüfung jemanden unterzog
- (15) a. weil sie niemanden einer großen Gefahr aussetzen würde since she nobody-acc a big danger-dat expose would since she would not expose anyone to a big danger
  - b. \*weil sie einer großen Gefahr niemanden aussetzen würde

Thus it seems that there are not three classes - however, there may exist at least two: DAT > ACC and ACC > DAT. Nevertheless I would like to maintain the claim that DAT > ACC holds underlyingly.

The ACC > DAT order can be seen as an epiphenomenon similar to what is going on with the so-called ill-behaved experiencer verbs. For the discussion of the relevant parallelism see the next paragraph.
# 4. SOME SIMILARITIES WITH EXPERIENCER VERBS

Ideally, arguments should be projected uniformly (UTAH: Baker 1988) and according some hierarchy, for example the one advocated in Grimshaw (1990), here given under (16). There are some difficulties with some verb classes, however. One well-known puzzle is the existence of two different types of experiencer verbs. One class of experiencer verbs - the *fear* class (or Belletti and Rizzi's *temere* class (1988)) - is well-behaved. That means that the experiencer, located higher in the thematic hierarchy, becomes the subject of the sentence; the theme, located deeper, becomes the object.

- (16) (Agent (Experiencer (Goal / Source/ Location (Theme))))
- (17) Lohengrin fears Elsa's question.
- (18) Alberich likes the Rhine maidens.

However, there is the class of ill-behaved verbs - the *frighten* class (Belletti and Rizzi's *preoccupare* class)

(19) Alberich frightens the Nibelungs.

Here the experiencer appears as a postverbal object, and the theme occupies the subject position. Grimshaw however presents a way out of the dilemma. Her proposal is that there is not only one scale of hierarchy but more, at least two. She shows that the ill-behaved verbs have something to them which the other class lacks. There is a causative element involved such that (20) can be paraphrased by:

(20) Alberich causes the Nibelungs to experience fear.

Then she states that the causal structure of a predicate also defines a hierarchy, just as the thematic structure does, a hierarchy in which the cause argument is most prominent:

(21) (cause (....))

She claims that the causativity hierarchy overrides the other one(s) and imposes a structure where the causer is the most prominent argument. Another possible, and actually similar way of capturing the difference between the two classes is more along the lines of Pesetsky (1990). In his theory too, *frighten* is not equal in meaning to *fear* with the theta-roles in the reverse order. The difference lies in the additional causative component which the well-behaved class lacks, but the ill-behaved class exhibits. This can be represented in the following representation:

(22)	a.	like /fear:	λχλy [x Ε y]
	b.	please/ frighten:	λxλy [y CAUSE [x E y]]

If this notation, taken from Haider (1992), is translated into a syntactic tree, we get a specifier position where the agent is licensed in the topmost argument position. Instead of making the lambda

prefix unselectively bind two variables, we can handle the difference syntactically by assuming movement (or another position dependency):



Thus, decomposition of verb meanings into atomic predicates followed by related head and phrasal movement may explain the queer nature of experiencer verbs: FRIGHTEN = CAUSE + FEAR. The universal alignment principles are nicely obeyed under such an approach.

#### 5. THE DAT > ACC > DAT / PP ASYMMETRY

I would like to claim now that this kind of argument (position) manipulation can be fruitfully carried over to the bitransitive verb asymmetry. It has been observed that (in German) there seems to exist a tendency that when the non-theme object of bitransitive verb is +animate or +human, it is realized as a dative object (25a), (26a). On the other hand, when it is not animate or human, it is likely to be expressed in a directional PP (25b), (26b) (see Kaufmann (1993) among others). Another difference that Kaufmann overlooks or intentionally withholds is the fact that in the animate case the dative object appears preferably before the accusative object; in the inanimate case, the PP must appear after the accusative object.

- (25) a. Sie schickte ihre<u>r</u> Tante ein Buch. she sent her aunt-dat a book-acc
  b. Sie schickte das Buch <u>an</u> die Bibliothek.
  - she sent the bookACC to the library

(26)	a.	Sie brachte ihrem Vater einen Kuchen				
		she brought her father	-dat a cake-a	icc		
	b.	Sie brachte einen Kuc	hen <u>ins</u>	Büro.		
		she brought a cake	into+the	office		

I would like to claim that it is not primarily the interaction of animacy or humanness, but that the difference is mediated through a distinction concerning the interaction of the atomic predicates. In generative semantics it is generally assumed that POSS(ESSION) is an atomic predicate. I will argue, however, that it is of great advantage to analyze it as a derived one. For this conjecture I will assume a view of argument structure similar to that found in Speas (1990) and a theory of the broadly discussed have-be alternation much like in Kayne (1993). My claim is that many bitransitive verbs either refer to a relation between a theme and the theme's location, or express a process (or a state) in which the dative argument possesses / comes to possess the theme. I furthermore claim that the former relation (location) is underlying and the latter (possession), which contains more information, is derived. As for the constructions with a locational (secondary) predication, I assume that the lexically decomposed structure looks like:

(27) [x CAUSE [... BE [y [ IN/ AT/ ON z]]]]

Thus for *bringen* (to bring) and *schicken* (to send) with a prepositional complement, we would have a tree structure like in (28).



This is the representation for sentences like (24 a) and (25 b). Now comes Kayne's idea (which goes back to earlier work by traditional grammarians, especially Benveniste 1966). For him *have* is derived from a preposition which has incorporated into *be*. Transferred into a syntactic theory of lexical head decomposition, this means something like the deepmost locational P° incorporates into the primitive BE. This process results in the POSSESSION relation. Exactly as with the experiencer verbs, the head movement within the VP triggers the movement of an argument. In our case here, it is the former complement of the preposition which becomes the specifier of POSS. (The overt

<sup>&</sup>lt;sup>3</sup> For the shake of harmony I will assume that in German also the VP internal atomic predicates project head finally. This makes the trees appear somewhat less familiar. Nevertheless I think that this is not an insurmountable problem for the reader.

preposition disappears and a possession relationship comes across. See also Kayne.)<sup>4</sup> Semantically, that means that it becomes the possessor. Thus, my claim is that the possession relation is not a semantic primitive, but that it is a result of verb phrase internal changes. Thus:



<sup>&</sup>lt;sup>4</sup> Interestingly there is a fact that could be used as additional evidence for the analysis. The fact is the relation between dative Case and possession. It is well known that there is no one-to-one correspondence between morphological Cases on the one hand and thematic roles on the other. However, it is as well known that both are more than only loosely related. At any case, in many languages that have morphological dative, this case is often assigned to the possessor in a process similar to the one discussed here. For example in Hungarian (discussed in Szabolcsi (1981) and re-presented in Kayne (1993)), the possessive construction consists of a copula (BE) and a single DP containing the possessor and the possessee. When the whole DP is definite, the possessor can remain is situ carrying nominative Case, but in other cases it must or can move to the left to some specifier position where it gets assigned dative Case. Something similar also happens in my non-standard German. A DP expressing some possessive relation may come in two variants:

```
(i) der Garten von der Ingrid having the structure [_{DP} D^{\circ} [_{NP} N^{\circ} [_{PP} P^{\circ} POSSESSOR]]]
the garden of the Ingrid
```

(i) somehow corresponds to the base variant in (32) involving a PP. The other, more natural, variant is (ii) where the possessor has been moved to some specifier position where it appears in dative Case. The  $D^{\circ}$  element shows agreement with the phrase in the specifier position with respect to gender. Here, the dative's function is to mark the possession relation:

(ii) meiner Mutter ihr Garten my<sub>DAT</sub> mother her garden my mother's garden (ii) meiner Mutter ihr Garten my mother her garden

Also sentences that refer to possession relations make use of dative Case as possessor marker. In my variety of German, it is very common to express possession by a copula (BE) with two satellite DPs (I do not want to call them arguments). If the possessee is definite, it is likely to appear in nominative case. The possessor then carries dative Case:

(iii) Dieser Garten ist meiner Mutter. this garden<sub>NOM</sub> is  $my_{DAT}$  mother This garden belongs to my mother.

Thus, the link of POSS and a dative DP in its specifier seems to be motivated by an akin, but different construction across languages.



This analysis is corroborated by the following facts. The alluded tendency to dativize a +animate /+human DP is only an epiphenomenon. There is nothing strange about having an +animate/ +human DP within a PP construction.

- (31) weil ich ein Buch zu meinem Vater gebracht habe since I a book-acc to my father brought have<sup>5</sup> since I brought a book to my father
- (32) weil ich das Farhrad zu meiner Tante geschickt hatte since I the bicycle-acc to my aunt sent had since I sent the bike to my aunt

However, the meaning is different from the corresponding DAT > ACC construction. (31) and (32) do not tell us anything about possession. (31), for example, expresses that I brought some book to my father's residence. My father needn't even know of the book. In (32), there is not the slightest hint that the aunt becomes the possessor. On the other hand, the corresponding DAT > ACC constructions make a POSS reading much more likely.

- (33) weil ich meinem Vater ein Buch gebracht habe since I my father-dat a book-acc brought have
- (34) weil ich meiner Tante das Fahrrad geschickt habe since I my aunt-dat the bicycle-acc sent have

(33) strongly suggests that now my father owns the book. However, my claim is not that POSS necessarily expresses ownership. It merely means that someone is in the (perhaps temporary) possession of something. For example, (34) does not necessarily mean that the ownership of the bicycle changes from mine or someone else's to my aunt's. However, the sentence says that my aunt is somehow in <u>conscious possession</u> of the bike. This is not the case with the PP construction in (32). That sentence might describe a situation where I have sent a / my bike to my aunt's address in Paris. However, for the time being my aunt doesn't live there and I know that. The only reason for my sending action was that I want to go to Paris and did not want to take the bike with me in the train. Since I don't trust left-luggage offices, I wanted to pick up my bike at my aunt's place rather than at the station. In such a case, my aunt need not know anything about that. (34) cannot be used to describe such a situation.

This theory is also partly corroborated by the fact that the DAT > ACC vs. ACC > PP alternation is not freely allowed. It is not the case that to every DAT > ACC order there is a corresponding ACC > PP order. This possibility seems to me to be limited to the case with verbs where the non-accusative object can receive a locative reading. For verbs, where this is not possible, the ACC > PP construction sounds awkward.

<sup>&</sup>lt;sup>5</sup> Translations into English would blur the meaning. The interpretations are discussed below. For this reason I only give the word-by-word translation.

empfohlen	
(35a) <sup>ok</sup> weil ich es meiner Mutter { erklärt } habe   zugetraut     verübelt ]	6

'since I showed, recomanded, explained...it to my mother'

(35b)	*weil ich es <u>an</u> meine Mutter / <u>zu</u> meiner Mutter	{gezeigt   empfohlen { erklärt   zugetraut   verübelt	)       	habe

Now the reader might wonder why I have spent so much effort on the DAT > ACC vs. ACC > PP alternation. The answer lies in the DAT > ACC vs. ACC > DAT problem which was alluded to above, but for which a solution has still not yet been given. The following discussion revives this problem.

Above, I have shown that there is no DAT > ACC vs. DAT > ACC & ACC > DAT distinction, i.e. class I and class III collapse. The long discussion about the DAT > ACC vs. ACC > PP distinction was intended to prepare for the next verb class collapse; namely, I shall claim that the 'ill-behaved' class II verbs are hidden ACC > PP verbs. To put it in other words, the dative argument of ACC > DAT verbs (class II) is actually (the remnant of) a PP. The argumentation will not be very semantic. The only thing I want to mention is that also Müller (1993, p. 204, fn.3) admits that the dative arguments of verb II class verbs do not act as goals. I want to go further and say that the datives denote something local. Let us consider the verbs of class II. Haider (1992) gives the following examples:

(36)	<u>aus</u> setzen	to expose so to sth
	<u>aus</u> liefern	to extradite
	entziehen (!)	to take away from
	<u>unter</u> ziehen	to submit
	<u>unter</u> werfen	to subject
	<u>zu</u> führen	to bring to
		-

We can add:

<u>vor</u> stellen	to introduce
<u>vor</u> ziehen	to prefer

All these verbs, with one exception, can be morphologically decomposed into a verbal stem and a local preposition (underlined). The only exception *entziehen* can easily be shown to be misplaced

<sup>&</sup>lt;sup>6</sup> Now, my argumentation could be used against me. What I did was dealing with the opposition possession vs. location. Now, I am using the lack of a locational reading with the given verbs as an argument for the lack of the ACC > PP construction. So far, so good. However, if the matters were that simple, my narrow minded opposition predicts that with the given verbs, we only get a reading where POSS plays a role. This, however, is not the case. Here we do not get any (sub)relation which could be identified as POSSESSION. So what I have to say is that my theory of location to possession change does not explain every DAT > ACC ordering. This, however, has never been my claim. What I claim is only that it covers a considerable part.

here. Even people who accept the Höhle-Haider test of focus projection admit that the order is dative > accusative<sup>7</sup>. Thus my claim is that ACC > DAT verbs are ACC > PP verbs where the (local) preposition has been incorporated into the verb. A clear case where this incorporation can be shown by a related construction is the acceptability of both (35) and (36) with the verb (*zu*) *führen*.

- (37) weil sie ein neues Opfer **zu** ihrem Medizinmann \_geführt haben since they a new victim-acc to their wizard \_lead have since they led a new victime to their wisard
- (38) weil sie Ø ihrem Medizinmann ein neues Opfer \*(**zu**)geführt haben since they Ø their wizard-dat a new victim-acc **to**lead have

7

A: Und was hast du dann gemacht?

#### A: And what did you do then?

B: Dann habe ich dem Wasser die Giftstoffe B: Then I depoisened the water. then have I the water-dat the poisenous substances-acc entzogen away-taken

Also my test of the ordering of indefinite pronouns / or DP shows that *entziehen* is an ordinary DAT > ACC verb:

(i) <sup>ok</sup>weil ich jemandem etwas entzogen habe

since I someone-dat something-acc away-taken have

(ii) \*weil ich etwas jemandem entzogen habe (reverse order)



# 6. SOME PROBLEMS AND SPECULATIONS

Manfred Bierwisch (p.c.) draws my attention to that fact that a siple minded analysis in terms of movement from the verb adjacent PP position into the specifier of POSS / GOAL is not without problems. The reason for his objection are constructions where both positions are obviously present.

(39) Ich habe meinem Freund das Buch nach München geschickt. I have my friend-dat the book-acc to Munich sent 'I sent the book to my friend in Munich.'
(40) Ich habe meiner Tante das Rad in die Garage gebracht. I have my aunt-dat the bike-acc in the garage brought.

'I brought the bike into my ant's garage.'

There is clearly more to be said about the relation between the two relevent positions, i.e. the position of the dative DP and the PP.Be it as it may, the data in (39), (40) points into the direction that there is a referential dependency between the positions. In a construction with a dative DP and a PP, both must not be completely independent. In (40), for example; the garage is understood as the aunt's property. Thus, one has to abandon an analysis which declares goal datives as underlying PPs, yet it must be admitted that there is some referential dependency between both positions, either by movement (chains and indexing as discussed in the preceding sections) or by a relation akin to, but more abstract and loosly than inalienability.

## 7. SUMMARY

Within the (German) VP, the arguments are projected according to a universal hierarchy of thematic roles and corresponding cases. I have shown that the claim that German displays several base orders (DAT > ACC, ACC > DAT, ACC < / > DAT) cannot be maintained. The conclusion that there are different base-orders is the result of a misunderstanding of focus projection on the on hand, and the overlooking of some semantic facts with the DAT > ACC, ACC > PP alternation on the other. A closer look at the facts reveals that true dative objects generally precede and therefore c-command accusative arguments. There are no verbs which allow for both orders simultaneously. If dative objects appear to be closer to the verb than accusatives, the datives at issue are no true datives, but hidden PPs. The semantic prove comes from a lexical decomposition of the meaning. Higher ranked datives denote goal arguments, deeper ranked ones, which are actually PPs, denote locations or directions. The syntactic evidence comes from the morphological shape of the relevant class of verbs. All verbs that project an ACC > DAT VP, are particle verbs that consist of a verbal root and a prefixed (locational) preposition. I argue that this word-internal structure is the result of the incorporation of the preposition leaving the former prepositional complement surface as a(n apparent) dative argument. The internal structure of verbs projecting a goal argument is the result of an abstract incorporation of a locative/directional preposition into the semantic primitive BE. This process - similar to Kayne's have-be alternation (Kayne 1993) - creates a complex part of meaning denoting a possession relation: POSS, which hosts the derived goal argument in its specifier. The conclusion of all observations is that also the German VP projects according to a familiar hierarchy proposed by many linguists for many languages:  $[v_P SU [IO [DO [PP verb(]v]v]v])$ .

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# Adjectival Modification in Cantonese Chinese<sup>1</sup> Evelynne Mui <u>em10@soas.ac.uk</u> or <u>emkm88@hotmail.com</u> SOAS, University of London

Cinque's Universal Hierarchy of Clausal Functional Projections in his (1999) book *Adverbs and Functional Heads: A cross-linguistic perspective* claims that all languages have the same fundamental hierarchical structure at the structure level; and that it is necessary for every projection in this hierarchy to associate with a particular semantic interpretation.

It is in this spirit and based on other earlier proposals that the Chinese adjectival modification in the NP is developed<sup>2</sup>. In this article, by examining different Cantonese adjectival distribution in the DP, I argue that on top of the proposed adjectival modification in the NP, there should be a focus phrase projection in the DP. Furthermore, based on the evidence of certain restricted orderings displayed within the DP, somewhere along the line of projections within the DP, a mirroring image projection of its based generated prepositional phrase should be able to fit in.

#### **0. Introduction**

'Adjectives' in Chinese linguistics is known as a difficult issue to handle and there is not much work contributing to this area in the past. Recently, in order to investigate the possible typological or theoretical account for this area, certain amount of work has been dedicated to research on the adjectival modification and related issues in Mandarin Chinese (Chao, Mui and Scott (2001/in preparation), Huang (1997, 2001), Mui (in preparation), Scott (in preparation), Simpson (2001?), Sproat and Shih (1988, 1991) and Paul (in preparation)).

<sup>&</sup>lt;sup>1</sup> This article is part of my PhD thesis at SOAS, University of London. I would like to thank Wynn Chao, Waltraud Paul, Marie-Claude Paris and Gary Scott for comments during the course of data discussion for another project. I also thank Wynn Chao and Gary Scott for discussion of our Mandarin Chinese adjective co-paper (in preparation). These discussions certainly inspire me to have a better idea in writing this article. I am especially grateful to Chan Cheuk Fai for help with the data. Special thanks are due to Eve Leung and Terence Leong for help with typing and proof-reading as well as Bernard Howard for his IT advice. Of course, any errors or shortcomings remains my own responsibility.

<sup>&</sup>lt;sup>2</sup> Chao, Mui and Scott (2001/in preparation).

This paper is a preliminary attempt to explore other possible projections in the Chinese DP-internal structure on top of the one proposed by Chao, Mui and Scott, and also to check to what extent the proposal could be considered as part of the Universal Grammar  $(UG)^3$ .

As stated in Chao, Mui and Scott (2001/in preparation), Sproat and Shih (1988, 1991) point out that in constructions of direct modification in many languages with a productive class of adjectives, multiple adjectival modifiers can be subject to strict ordering – Sproat and Shih's *Adjectival ordering Restrictions* (AOR). However, there are 'counter-examples' which seem to hinder the 'universality' of this AOR.<sup>4</sup>

In this paper, I test the validity of the adjectival modification in the NP proposed by Chao, Mui and Scott<sup>5</sup> by examining the ordering and distribution of the adjectival modification in Cantonese Chinese. I argue that regarding the adjectival distribution within the DP, Cantonese is similar to Mandarin with (i) direct modification conforms to Sproat and Shih's *Adjectival Ordering Restrictions* (AOR) and (ii) indirect modification disobeys AOR. However, I suggest that the adjectival order is basically fixed with the only exception that there should be a Focus Phrase projection within the DP. Moreover I also point out that there is certain rigid ordering in the DP structure. For this, I would suggest this 'restricted ordering' is due to a 'mirror image effect' provided by the movement of its base-generated prepositional phrase.

In section 1 of this paper I compare Cantonese adjectives with the Mandarin ones. Section 2 briefly presents how the Mandarin adjectival modification in the NP is developed in Chao, Mui and Scott's co-paper. Section 3 shows how the proposal discussed in section 2 applies to Cantonese adjectival modification in the NP. Section 4 looks at the Cantonese 'counter-examples' of AOR and the Chao, Mui and Scott's proposal and before concluding the paper, section 5 includes my proposals which attempt to explain the Cantonese examples which are incompatible to AOR and Chao, Mui and Scott's proposal.

# **1.** Preliminary characterization of Cantonese adjectives

<sup>&</sup>lt;sup>3</sup> That is hoping that the proposals in this article can be applied to other languages to check and see to what extent the ordering is universal or language specific.

<sup>&</sup>lt;sup>4</sup> Sproat and Shih (1991) mentioned about 'counter-examples' to AOR. For instance, in Japanese, there are examples of ' (large red dog) and '*akai ookina inu*' (red large dog) and in our co-paper (in preparation), we also point out that there are certain Mandarin adjectival orderings within the DP which is alternative to AOR. <sup>5</sup> 2001/in preparation.

In this section I will have an initial characterization of Cantonese adjectives. In section 3 to 5, I will provide a more formal analysis. Basically, Cantonese adjectives are similar to the Mandarin ones in a sense of what Duanmu (1998) points out 'that although many Mandarin adjectives seem to be quite productive in the form [AN] (as in (1) and (2)), he also notes that Zhu (1980) argues that there are also many cases in which show no free comb inations in [AN] form with nouns' (as in (3) and (4)).

Mandarin	
1. bai zhi	'white paper'
Cantonese	
2. san syu	'new book'
Mandarin	
3. *bai shou	'white hand'
Cantonese	
4. *san tauh	'new head'

In Cantonese (and also Mandarin) Chinese, adjectives can be argued to be syntactically classified as nominal modifiers, which fall into the category of 'languages with partial restrictions'. There seems to be certain restrictions on Chinese adjectives to combine in the [AN] form with nouns as we have seen from the above examples (1) to (4).

Sproat and Shih (1988,1991) group Mandarin Chinese adjectives into two classifications: Direct and Indirect modification as in (5) to (8) below.

(i) Direct modification

# Mandarin

5.	(a)	qian	zongtong	'former	president'
			0 0		1

(b) \**gao ren* 'tall person'

# Cantonese

6. (a) <i>chihn jyu-jik</i>	'former chairman'
(b)*gou syuh	'tall tree'
(ii) Indirect modification	
Mandarin	
7. (a)*qian de zongtong	'former president'
(b) gao de shu	'tall tree'
Cantonese	
8. (a) * <i>chihn ge jyu-jik</i>	'former chairman'
(b) gou ge syuh	'tall tree'

As we can see, Cantonese adjectives are similar to the Mandarin ones in terms of restrictions of certain combinations with nouns whether in the case of direct modification or indirect modification.

# 2. AP-related functional projections in the NP/DP

Cinque (1999) proposes the Universal Hierarchy of Clausal Functional Projections, which consists of a strict systematic syntactic and semantic relationship between sentence and VP adverbials, and their semantically-related clausal functional projections. Cinque argues that adverbs are generated in the Spec of the relevant functional projections. He proposes that these functional projections are highly articulated projections of Mood, Tense, Modal and Aspect, and this holds universally in terms of the hierarchical order in every language. Mui (1998), Mui and Chao(1999) and Chao and Mui (2000) validate Cinque's (1999) proposal of the universal hierarchical order of the functional projections in the clause with evidence from Cantonese (as in (9)).

		Spec	Head
MOOD	Speech Acts Speaker-oriented	[frankly [fortunately	Mood/speech act Mood/evaluative
	1	[allegedly	Mood/evidential
	Epistemic	[probably	Mood/epistemic
TENSE/ MOOD	Realis	[once [then	Tense(Past) Tense(Future)
	Irrealis	[perhaps	Mood/irrealis
MODALS	Alethic Modal ity	[necessarily	Modal/necessity
		[possibly	Modal/possibility
	Root Modality	[willingly	Modal/volitional
		[inevitably	Modal/obligation
		[cleverly	Modal/ability or permission
ASPECT	External Aspect	[usually	Asp/habitual
		[again	Asp/repetitive I
		[often	Asp/frequentative I
		[quickly	Asp/celerative I
	Perfective/	[already	Tense (anterior)
	Imperfective	[no longer	Asp/terminative
		[still	Asp/continuative
		[always	Asp/perfect
		[just	Asp/retrospective
		[soon	Asp/proximative
		[briefly	Asp/durative
		[characteristically [almost	Asp/generic or progressive Asp/prospective
	Internal Aspect	[completely	Asp/sg. completive I
		[wuickly/early	Asp/mainer and voice
		[quickiy/carry	$A sp/celetative \Pi$
	Manner etc	[again/several times	Asn/ repetitive or
	<i>munu</i> , <i>cu</i> .		frequentative II
			noquonum o n

(9) The universal hierarchy of clausal functional projections

(From Chao and Mui (2000), based on Cinque (1999))

Following the argument of that clausal and nominal functional projections correspond fairly directly to each other, and based on other proposals such as Sproat and Shih's Adjectival Ordering Restrictions, Scott's (1998) proposes that AOR might be applied to argue that a similar hierarchy holds in the DP as in (10).



For example, as noted in the Chao, Mui and Scott's<sup>6</sup> co-paper that "the particular interpretation that a modifier has is semantically composed from both its 'base' meaning and the interpretation of the functional projection with which it is associated." This can be further illustrated by examples (11) and (12).

- (11) what a long *cool* red dress!
   ["ungrammatical" where *cool* receives the interpretation *excellent*]
   ["grammatical" where *cool* receives the interpretation *not hot*]
- (12) what a *cool* long red dress!
   ["ungrammatical" where *cool* receives the interpretation *not hot*]
   ["grammatical" where *cool* receives the interpretation *excellent*]

<sup>&</sup>lt;sup>6</sup> In preparation.

Applying the idea in (10) and adopting Sproat and Shih's concept of AOR, a revised hierarchy of functional projections in the NP/DP is then proposed as in  $(13)^7$ 

# (13) Adjectival Modification in the NP



Basically, in Mandarin, as we argue "we only get direct modification in a hierarchical configuration. Whereas, indirect modifiers are treated as adjuncts. Further, following the argument presented in Chao and Mui's (2000) earlier work: the existence of internal and external aspectual projections, we argue that there are also division of outer core and inner core in the DP internal structure. The functional projection F1P is the projection for the outer core, which correlates with the external aspect such as the relational SIZE in (14), and F2P is the projection for the inner core, which correlates with internal aspect such as the absolute COLOUR.

# (14) Hierarchy of Functional Projections in the DP/NP (revised)

<sup>&</sup>lt;sup>7</sup> For details of this proposal, see Chao, Mui and Scott (in preparation).

# **3.** A Test: Application of the proposed Mandarin adjectival modification in the NP to Cantonese.

If we expect the proposal in ((13) and (14)) to hold to universally across languages, we should be able to see that the proposal is applicable to give an account for the Cantonese adjectival distribution. In this section, we look at the evidence provided in Cantonese to serve this purpose.

## 1. Direct modification

Same as the Mandarin adjectives, this type of adjectival distribution in Cantonese is the type we have seen in (1) to (4) which is expected to obey AOR. Indeed, this turns out to be the case: Cantonese direct modification conforms to AOR. Therefore, (15) is grammatical and (16) is ungrammatical. This is due to the violation of the restricted ordering of F1P (SIZE in the outer core) has to precede F2P (SHAPE in the inner core).

Cantonese

(15)	<i>daaih</i> big	<i>yuhn</i> round	<i>toih</i> table
(16)	*yuhn	<i>daaih</i>	<i>toih</i>
	round	big	table

# 4. 'Counter-examples' of AOR and the proposed hierarchy in section (2)

#### 2.Indirect modification

This type of adjectival modification is considered to be the 'counter-examples' of AOR and the proposal of the Mandarin Chinese adjectival distribution discussed in section (2). Examples (17) and (18) indicate that the violation of the proposed order (SIZE (outer core, relative) > SHAPE (inner core, absolute)) does not make (18) ungrammatical.

#### Cantonese

(17)	<i>daaih-ge</i>	<i>yuhn</i>	<i>toih</i>
	big	round	table
(18)	<i>yuhn-ge</i>	<i>daaih</i>	<i>toih</i>
	round	big	table

In the next section, I will add another functional projection in order to explain the existence of such a phenomenon which is disallowed in AOR and the proposed DP-internal structure.

#### 5.0 A proposal: FocP in the DP

(19) DP-internal structure (revised)<sup>8</sup>



In the above diagram, we can see that the *yuhn* 'round' (the SHAPE adjective in the inner core) is projected to the Age position (Spec of FocP) and this explains why there is a violation of the AOR in the structure (18).

The argument of this proposal follows the earlier discussion: If the structure of the adverbial distribution can be reflected in the adjectival distribution<sup>9</sup>, then the FocP should

<sup>&</sup>lt;sup>8</sup> This is a proposed revised version of the structure of the Chinese adjectival modification in the NP proposed by Chao, Mui and Scott (2002).

<sup>&</sup>lt;sup>9</sup> Following Cinque (1999)), Sproat and Shih (1991), Scott (to appear) and Chao, Mui and Scott (2002).

also be allowed to fit into the adjectival distribution in the DP-internal structure. Such a proposal is based on the following prediction: If a similar hierarchy of adverbial distribution holds for the adjectives in the DP, and there is a FocP in the adverbial hierarchy for the adverbs to move up when necessary, then the same should also hold for the adjectives in the DP.

As we can see in the revised DP-internal structure (19), there is a projection of the SHAPE adjective from the Spec of F2P (inner core) up to the Spec of FocP. This explains why the indirect modification 'round-*ge* big table' does not conform to AOR but still grammatical. With regard to this, following what pointed out by Kiss (1997), that contrastive focus involves movement (as compared to information focus), the proposal here shows exactly there is an emphasis in the 'round-ge big table' phrase since in Cantonese Chinese, we can have this phrase in the following context, 'Yes, I would like to buy this big table, please. Oh, it's the ROUND big one that I meant. I didn't mean the SQUARE big one next to this ROUND big table...'

As proposed by Chao and Mui (2000) and also based on what proposed in the earlier chapters, certain adverbs in Chinese can be projected up to other functional categories in the Universal Hierarchy of Clausal Functional Projections due to various reasons. For example, a Modal adverbial 'possibly' can move up to the Spec of Mood when realized as an evaluative adverb; and an adverb of Modal/necessity can be moved up to the Spec of FocP for emphatic purpose. Based on the same reasoning, I propose that there should be a FocP in the Cantonese DP-internal structure, and adjectives in the DP could be projected to the Spec FocP for emphatic reasons.

# 5.1 Another proposal: Part of the NP is based-generated from PP

In the last section I have suggested that there should be a FocP in the DP. In this section I will argue that certain restricted orderings may be possible along the line of projections in the Cantonese DP above F1P and F2P.

In Cantonese<sup>10</sup> the following phrase in (20) is perfectly grammatical.

(20) hou-leng-ge	Jung-gwo(-ge)	Hohng-jau(-ge)	daaih	yuhn	toih
very beautiful	China	Hang-zhou	big	round	table

However, the order within the DP of the above phrase must be fixed as in (21). This seems to contradict with what proposed in the earlier version of the Chinese adjectival modification in the NP.

<sup>&</sup>lt;sup>10</sup> It is believed that this should also be the case in Mandarin. Further investigation will be carried out in Mui (in preparation) to confirm.



In regard to this issue, instead of considering all indirect modifiers to be real adjuncts, I would argue that certain restricted orderings should be allowed in the NP/DP. Furthermore, I would also argue that the indirect modifiers in the NP's in (21) are indeed in a mirror image ordering of the prepositional phrases in English<sup>11</sup>.

This is further illustrated as in (22 (a) and (b)).

(22) a. Cantonese

[[[AP-ge daaih-hohk-ge] AP-ge mahn-hohk-yun-ge] NP hohk-saang] of the University of the Faculty of Arts the student

b. English

[NP the student [PP of the Faculty of Arts [PP of the University]]]

<sup>&</sup>lt;sup>11</sup> Following the phenomena discussed in Cinque (1994), Larmarche (1991), Laenzlinger (2002) and Shlonsky (2000), there are obviously certain mirroring image projections in some phrasal structure across languages.

I would argue that basically there is a movement from the base-generated PP to the Cantonese NP as in (23) and thus there must be a restricted ordering in the phrasal structure. This explains why (24) is grammatical and (25) is not.



Nevertheless, this analysis needs further explanation relating to the optional realization of '-*ge*' in the Cantonese NP/DP. This alternation of '-*ge*' in the Cantonese NP/DP is accounted for by the proposal of a [+Stress/Link Focus] feature in the structure<sup>12</sup>. (26) illustrates the basic idea derived for this proposal.

<sup>&</sup>lt;sup>12</sup> See Mui (in preparation) for details.

#### (26) DP-internal movement: PP raising

friends of John's  $\Rightarrow$  John's friends



The idea is to adopt and apply the concept of the Principle and Parameter to the DPinternal movement: The principle is that there is/are PP raising(s) in the DP-internal movement only except that there are different parameters with regard to different languages. For instance, in English as we can see in (26), the movement costs a deletion of the preposition which originally realized in the base-generated prepositional phrase<sup>13</sup>.

Whereas in Cantonese Chinese, the parameter of this DP-internal movement is that the final position of the AP-ge phrase triggers the [+Stress/Link Focus] feature of the phrase and thus leads to the realization of the '-ge' of the final AP-ge phrase of the Cantonese Chinese indirect adjectival modification.

<sup>&</sup>lt;sup>13</sup> This is just a rough idea about the possible DP-internal movement in English to be borrowed to explain the Chinese DP-internal movement. Further research could possibly be carried out relating to this issue to explore other possible analyses of the DP-internal movements.

## 6. Conclusion

In this article I have investigated the Cantonese adjectival distribution in the NP/DP, provided evidence in support of, and concluded that its direct modification follows the Chao, Mui and Scott's Mandarin adjectival modification of the NP/DP. However, with alternative examples in the indirect modification, and confirmation of certain rigid orderings found in the Cantonese NP/DP, it is argued that part of the DP-internal structure could be accounted for by the mirroring image projection of its base-generated prepositional phrase.

This paper also includes a proposal of the FocP projection within the DP by arguing that if adverbial projections can be revealed in the adjectival distribution in the DP, a focus phrase which is available in the clausal functional projections should also be able to take part along the line of projections within the DP.

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# Null Object Constructions, VP-Ellipsis, and Sentence Interpretation

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This paper discusses issues related to VP-Ellipsis and null object constructions in Mandarin Chinese. It consists of two parts. First, pace Li (1998), I argue that it is not true that no null object construction (NOC) sentences can be analyzed as VP-ellipsis in Mandarin Chinese, and I will show that the fact that the interpretation patterns of the relevant sentences deviate from those of their English counterparts is not because there is no VP-ellipsis in Chinese but because Chinese pronouns and reflexives exhibit some special properties. My claim in this paper is that some NOC sentences can be interpreted as VP-ellipsis, and others need to be interpreted as an empty pronoun, depending on whether the V-to-INFL raising occurs or not. Second, pace Kehler (1993), I argue that it is not the parallel vs. non-parallel distinction but the semantic and discourse constraints of coordinate constructions with too and ye 'also' in VP-ellipsis that explains why some VP-ellipsis sentences are ungrammatical. Hence, the coordination construction in neither English nor Chinese is constrained by the so-called syntactic condition which is based on the parallel vs. non-parallel distinction, as proposed in Kehler (1993), and discourse factors play a crucial role in the interpretation of coordination construction in the two languages concerned.

# 1. Arguments for and against the VP-Ellipsis Analysis of the Null Object Construction

It is argued that the null object construction (NOC) in Chinese, Japanese, and Korean can be analyzed on a par with the VP-ellipsis in English after V-to-Infl raising and VP deletion (Huang 1988a, b 1991; Otani and Whiteman 1991), as exemplified in (1) below.

- (1) a. Zhangsan kanjian-le tade mama, Lisi ye kaniian-le. see-Perf his mother also see-Perf 'Zhangsan<sub>i</sub> saw his<sub>i</sub> mother, and Lis<sub>i</sub> also saw his<sub>i/i</sub> mother.'
  - b. Lisi ye  $[INFL [v kanjian-le] [v_P t_V [v_P ec]]]$ also see-Perf 'Lisi also saw his<sub>i/i</sub> mother.'
- (2) a. John<sub>i</sub> saw his mother, and  $Bill_i$  [INFL did [VP ec]], too.
  - b.  $Bill_i$  saw  $his_{i/i}$  mother.

The second clause in (1) can have the structure in (1) where the verb kanjian 'see' is raised to INFL. Since the head V and the complement NP are both empty, the whole VP can be considered as an empty category that is similar to the second clause of (2). The second clause in (2) has both readings as shown in (2): the sloppy reading where the pronoun his is coindexed with its local subject, the *j* reading of his; and the strict reading where his is interpreted with the subject of the first conjunct, the i reading of his. It is claimed that the second clause in (1) also has the strict and sloppy readings, similar to that in (2) (Huang 1988a, b, 1991).

Two arguments have been presented for the VP-ellipsis analysis of NOC: (i) Sentences like (1) exhibit the strict/sloppy ambiguity, typical of VP-ellipsis; and (ii) NOC sentences also show the locality effect of the VP-ellipsis for the sloppy reading (e.g. Huang 1988a, b). The first argument comes from the availability of both sloppy and strict readings in sentences like (1), just like the corresponding English sentences like (2).

The second argument is from the sentences given in (3) and (4). Like the sentence in (3), the second clause of the Chinese sentence in (4) can only have the local subject *Lisi* as the antecedent of the possessive pronoun *tade* 'his/her' for the sloppy reading (Huang 1988a, b), i.e., it cannot have *Mary* as its antecedent for the sloppy reading, as indicated by (3) for the second clause of (3) and the English translation for (4).

- (3) a. John<sub>i</sub> saw his mother, and Mary<sub>i</sub> knew that  $Bill_k$  did, too.
  - b. Mary<sub>i</sub> knew that  $Bill_k$  saw her\*<sub>i</sub>/his<sub>k</sub> mother.
- (4) Zhangsan kanjian-le tade mama, Mary zhidao Lisi ye kanjian-le.
  see-Perf his mother know also see-Perf
  'Zhangsan<sub>i</sub> saw his<sub>i</sub> mother, and Mary<sub>i</sub> knew that Lisi<sub>k</sub> also saw her<sub>i</sub>/his<sub>k</sub> mother.'

However, Hoji (1998) and Li (1998) argue against the VP-ellipsis analysis for Japanese and Chinese NOC, respectively. In this paper I will concentrate on Li's arguments which are given in (5). I will first present Li's arguments against the VP-ellipsis analysis of Chinese NOC.<sup>1</sup> Then I discuss the problems in Li's account in the next section.

(5)

- a. Although the sloppy reading is obligatory or much preferred for anaphors but is optional for pronouns, Chinese examples involving reflexive *ta-ziji* '3s-self' can also have a strict reading;
- b. The so-called VP-ellipsis sentences involving *bici* 'each other' do not have the "couple-internal reading" like their counterparts in English;
- c. No locality effect for the sloppy reading in Chinese;
- d. The sloppy reading in Chinese is really a sloppy-like reading, as suggested in Hoji (1998), and it can even occur with proper names; and
- e. No V-to-INFL raising, but still with sloppy identity reading.

At first, unlike English which does not allow a reflexive to have a strict reading in the second clause for conjoined sentences, as shown in (6), Li claims that it is very easy to get the corresponding Chinese reflexive to have the strict reading, as shown in (7), for the second clause in (7).

- (6) a. John criticized himself, and Bill did, too.
  - b. ??Bill criticized John.
- (7) a. Zhangsan piping-le ta-ziji, Lisi ye piping-le.
  - criticize-Perf he-self also criticize-Perf
  - b. Lisi criticized Zhangsan.

Li (1998) claims that she can even get a reading in which Lisi criticized someone other than *Zhangsan* and *Lisi*, which is prominent in the discourse. However, my informants cannot get this reading. The only way to get this reading is to say that the

 $<sup>^{1}</sup>$  Xu (to appear) makes a similar argument. Due to the time limit, I'll leave the discussion of his article to a difference occasion.

first clause and the second clause are two consecutive sentences in a discourse, but they belong to two different discourse segments.<sup>2</sup> That is, they are accidentally put together, and do not form a conjoined sentence, as required. Hence, it is not appropriate to claim that sentences like (7) can have a reading for the null object in the second clause in which Lisi criticized someone other than *Zhangsan* and *Lisi*, since this reading is not relevant for the discussion.

Secondly, Li claims that the contrast between Chinese sentences and English sentences, given in (8) and (9), indicates that Chinese NOC sentences are different from English VP-ellipsis sentences. This is because only the second clause in (8) (not that in (9)) can have the so-called "couple-internal reading," as given in (8) and (9), respectively. Note that the symbol # in (9) is used to indicate that the relevant reading is not appropriate for the second clause of (9).

- (8) a. Every Chinese couple recommended each other's friends, and every German couple did, too.
  - b. Every German couple recommended each other's friends.
- (9) a. Meidui Zhongguo fufu tuijian-le bicide pengyou, Every-CL China couple recommend-Perf each-other's friend meidui Deguo fufu ye tuijian-le. every-CL German couple also recommend-Perf
  - b. #Every German couple recommended each other's friends.

Thirdly, sentences like (10) and (11) suggest that only the English sentences observe the so-called locality effect when the relevant pronoun in the second clause of the conjoined sentences is interpreted as bound variables. This is because the second clause in (10a) cannot have the sloppy reading for the relevant pronoun, as indicated by (10b), while that in (11a) can have the relevant reading, as indicated by (11b). Hence, Chinese NOC sentences do not observe the locality effect, so Li reasons that they cannot be analyzed as the counterpart of VP-ellipsis in English.

- (10) a. Mary fed her child, and Susan thought that the nanny did, too.
- b #Susan thought that the nanny fed Susan's child.
- (11) a Mary wei-guo zijide haizi le, Susan yiwei Wu ma ye wei-guo le.
  feed-Exp self's child Prt think also feed-Exp Perf
  'Mary fed her (own) child, and Susan thought that the nanny *Wu ma* fed her child, too.'
  - b. Susan thought that the nanny *Wu ma* fed Susan's child.

Fourthly, following Hoji (1998), Li claims that the sloppy reading as seen in sentences like (1) is really a *sloppy-like reading*, as we can even see it in sentences that do not contain any pronoun, as exemplified by the contrast between the Chinese and English sentences in (12) and (13). Note that, when the first conjunct does not contain a personal pronoun, the second conjunct in the English sentence (12a) does not allow a sloppy reading (12b), while the Chinese sentence does. Since there is no possibility of a sloppy reading in the first conjunct, the availability of that reading in the second conjunct of the Chinese sentence in (13a) has to be explained by conditions that are different from those for English VP-ellipsis.

(12) a. John punished John's students, and Bill did, too.b. #Bill punished Bill's students.

<sup>&</sup>lt;sup>2</sup> Thanks to Liejiong Xu (p.c.) for pointing out this possibility to me.

# (13) a. Zhangsan chufa-le Zhangsande xuesheng, Lisi ye chufa-le. punish-Perf student also punish-Perf 'Zhangsan punished Zhangsan's student, and Lisi did, too.'

b. Lisi punished Lisi's students.

Finally, sentences like (14) argue against the V-to-INFL raising analysis, since the INFL position is occupied by an auxiliary *hui* 'will', and it thus prevents the verb *tuijian* 'recommend' from raising to INFL. Because the verb cannot be raised to INFL, the only possible analysis is to say that sentences like (14) have a null object construction, and only the object, i.e., not the VP is elided. Although there is no VP-ellipsis in (14), the sloppy reading is available for the second conjunct in (14). Hence, Li concludes that the NOC sentences in Chinese are different from those in English, and have to be analyzed as non-VP-ellipsis constructions, e.g. the null object construction or NOC.

(14) Zhangsan hui tujian zijide xuesheng, Lisi ye hui tuijian.
 will recommend self's student also will recommend
 'Zhangsan will recommend his own students, and Lisi will, too.'

## 2. Problems for Li (1998)

For (5a), Chinese reflexive *ta-ziji* differs from English *himself* in allowing long-distance antecedents in non-contrastive contexts, as exemplified in (15) (Pan 1997, 1998).

- (15) Zhangsan zhidao zheben shu hai le ta-ziji. know this-CL book hurt-Perf he-self
  'Zhangsan knew that this book hurt him.'
  (i) Know'(Zhangsan', λx[x hurt Zhangsan'](zheben-shu'))
  (ii) Know'(Zhangsan', λx[zheben-shu' hurt x])
  (iii) λx[x knew that zheben-shu' hurt x](Zhangsan')
  (16) Ni wen ta-ziji qu. you ask he-self go
- you ask he-self go 'Go ask HIMSELF.'

Even the first conjunct *Zhangsan piping-le ta-ziji* in (6) can have a reading that gives rise to the strict reading:  $\lambda x[x \text{ criticized Zhangsan'}](Zhangsan')$ .

Actually, English does allow strict readings for anaphors, as shown below:

(17) John<sub>i</sub> defended himself<sub>i</sub> against the accusation better than his<sub>i</sub> lawyer did.

For (5b), we think the relevant reading is possible. It will be much clearer if we change the VP into *zhidao bici de quedian* 'knew each other's flaws'.

(10') Meidui Zhongguo fufu zhidao bicide quedian, meidui Deguo fufu Every-CL China couple know each-other's weakness every-CL German couple ye zhidao.
also know
Possible: Every German couple knew each other's weakness.

For (5c), we don't think it is possible to violate the locality constraint. Even we accept the fact that Chinese NOC sentences do not exhibit the locality effect, as shown in (11), this does not necessarily constitute a problem to the VP-ellipsis analysis of NOC. This is because bare reflexive *ziji* 'self' can have long-distance antecedents and always induces a sloppy reading (Pan 1997, inter alia).

(18) Zhangsan renwei Lisi na-zou-le zijide fenshu, Wangwu ye zheyang renwei. think take-away-Perf self score also so think 'Zhangsan thinks that Lisi took away his score, and Wangwu does so, too.'

One possible reading for the first conjunct in (18) is  $\lambda x$  [x thinks that Lisi took away x's score](Zhangsan'), so the second conjunct in (18) will have a similar property applying to *Wangwu'*, i.e.  $\lambda x$  [x thinks that Lisi took away x's score] (Wangwu'). If we take the relevant property ' $\lambda x$  [x thinks that Lisi took away x's score]'' as derived from  $\lambda x P(x. x's score)$  using the higher order unification method (Pulman 1997), where P = thinks-that-Lisi-took-away'. Then for the first conjunct of (11), we have  $\lambda x P(x. x's child)$ , where P = feed'. If we say that Chinese allows the copied part from the first conjunct to be  $\lambda x P(x. x's child)$  rather than  $\lambda x P(x \text{ fed } x's child)$ , then by higher order unification, we can get P = think-that-Wu-ma-feed', namely that we have  $\lambda x [x thinks that Wu ma fed x's child] applied to$ *Susan'*. This is a sloppy reading that does not observe the locality effect, but it is compatible with the VP-ellipsis of NOC. Hence, sentences like (11) is not necessarily a counterexample to the VP-ellipsis of NOC.

For (5d), Li claims that one can get a sloppy-like reading. It seems to me that there is no way to get that reading semantically. If we take the empty object to be a pronominal, I see no way to get the claimed reading.

For (5e), sentences like (14) can only suggest that sloppy readings and V-to-INFL raising are not necessarily tied together, and they cannot argue against the VP-ellipsis of NOC. We can get the sloppy reading in (19) with the modal *hui* 'will', either taking a narrow or wide scope with respect to the lambda operator.

- (19) a.  $\lambda x$ [x recommend x's students](Zhangsan')
  - b. Zhangsan hui tujian zijide xuesheng, Lisi ye hui. will recommend self's student also will 'Zhangsan will recommend his own students and Lisi will too

'Zhangsan will recommend his own students, and Lisi will, too.'

Chinese has modals like *hui*, *xiang* 'want', *yao* 'want'. When they are followed by a verb as in (19), they are real auxiliary verbs. These verbs do show the interpretation patterns of VP-ellipsis. Hence, we conclude that the strong claim given below is not correct, but the modest claim given below can be upheld for Mandarin Chinese.

Strong Claim: All NOC sentences are analyzed as VP-ellipsis

<u>Modest Claim</u>: NOC sentences can be analyzed as VP-ellipsis if V-to-INFL raising occurs, otherwise, they are analyzed as sentences with an empty pronominal object.

# 3. Parallel vs. Non-parallel Distinction and Sentence Interpretation

Kehler (1993) proposes a uniform discourse processing architecture to handle VPellipsis by revising the dichotomy between *ellipsis* (surface anaphora) vs. *Model Interpretive Anaphora* (deep anaphora) given by Sag and Hankamer (1984). He tries to show that the distinction between parallel vs. non-parallel constructions plays a crucial role in the interpretation of VP-ellipsis. In a parallel construction (as exemplified by the sentential structure *A* and *B* too), there is only a syntactic (propositional) representation available, and the reconstruction of the elided VP in the second conjunct is subject to syntactic constraints such as Binding conditions A, C, etc. However, in non-parallel constructions such as *A* but *B*, *A* because *B*, *A* better than *B*, etc., neither a syntactic representation is necessary, nor do the syntactic constraints apply. Thus, parallel constructions are like ellipsis and can only access the propositional representation stored in the short-term memory, but the non-parallel ones are closer to the Model Interpretive Anaphora (MIA) and processed in the discourse model.

The crucial point of Kehler's proposal is as follows: only the propositional representation of the first conjunct in non-parallel constructions is integrated into the discourse model when the elided VP is reconstructed; and only the reconstruction in parallel constructions is subject to syntactic constraints.

With this proposal, Kehler can explain the following contrasts between the (a) and (b) sentences below:

- (20) a. This problem was to have been looked into, but obviously nobody did. [look into the problem] (Kehler's (3))
  - b. \*This agent retards embryonic development, and the growth cones were too. (Kehler's (7))
- (21) a. The lawyer defended Bill better than he could have.
  - b. \*The lawyer defended Bill and he did too. (Kehler's (39))
- (22) a. John defended himself against the accusation better than his lawyer did. [ defended John ] (Kehler's (14))
  - b. ??John defended himself, and Bob did too. [defended John ] (Kehler's (14))
- (23) a. First person pronouns aren't very shiftable, although the plural ones can be. (Kehler's (24))
  - b. \*First person pronouns aren't very shiftable, and the plural ones also don't. (Kehler's (25))
- (24) a. John read everything which Bill believes he did. (Kehler's (26))
  - b. \*John read everything which Bill believes the claim that he did. (Kehler's (27))
  - c. Which problem did you think John would solve because of the fact that Susan did. (Kehler's (29))

Sentences like (21b) and (22b) are ungrammatical or strange because of violations of Binding conditions C and A, respectively; this explanation holds only if we assume that the elided VPs are copied from the first conjuncts. Sentences (20b) and (23b) are ungrammatical because an appropriate syntactic VP cannot be reconstructed. The corresponding grammatical cases are non-parallel constructions. They are interpreted after the propositional representation of the first conjunct has been integrated into the discourse model, so they are not subject to the relevant syntactic constraints. Sentences (24a, b, c) are explained with the assumption that *which* does not specify an interclausal coherence link, so (24a, b) are parallel constructions while (24c) is not. Thus, the subjacency constraint does apply to (24a, b), but not to (24c). Since there is a subjacency violation in (24b), it is ungrammatical. Note that (24c) is grammatical, as subjacency does not apply to it.

Although Kehler's analysis seems promising and superior to Sag and Hankamer's in the sense that within the ellipsis (surface anaphora) domain, a further distinction must be made between parallel vs. non-parallel constructions. I will argue in this paper that the apparent parallel vs. non-parallel distinction is not correct and thus inadequate to handle all the cases of VP-ellipsis. Although I will not say anything about the cases in (24), I will show that the cases in (20) and (23) are not strict parallel constructions and their corresponding parallel constructions are grammatical if they observe the semantic and discourse constraints for parallel constructions with *too* in general (not just for VPellipsis), as proposed by Kaplan (1984). Furthermore, the ones in (21) and (22) can be explained with a discourse approach, the semantics of *too*, and the acknowledgement of the fact that bound variable and referential readings of pronouns are subject to different constraints; the former obeys a syntactic constraint like C-command (Reinhart 1976), but the latter is interpreted in the discourse model. Therefore, it is the semantic and discourse factors but not the parallel vs. non-parallel (syntactic and semantic) distinction that constraints the contrasts, as exemplified by the sentences in (20-23).

There are grammatical sentences similar to the ungrammatical ones in (20), (21), and (23).

- (20) b'. This agent retards embryonic development, and the growth cones do too.
- (21) b'. The lawyer defended  $\text{Bill}_i$  and  $\text{he}_i$  HIMSELF did, too.
  - b". The lawyer defended Bill<sub>i</sub> and HE<sub>i</sub> did, too.
- (23) b'. First person pronouns aren't very shiftable, and the plural ones are also not.

One may argue that sentences (20b') and (23b') are grammatical because the reconstructed VP in the second conjunct is the exact copy of the VP in the first conjunct, i.e. it is the syntactic parallelism that improves the grammaticality of these sentences. However, as discussed in Kaplan (1984), the constraint on the *and* ... *too* construction involves semantic and discourse factors and it does not only apply to VP-ellipsis.

Kaplan (1984) argues that *too*'s obligatoriness in discourse with one semantic difference between the conjuncts stems from its discourse function, which is to emphasize the similarity between the members of a pair of contrasting items. This applies to both VP-ellipsis and non-VP-ellipsis constructions as shown below:

- (25) Jo had fish and Mo had soup (\*too).
- (26) Jo had fish and Mo did \*(too).
- (27) Jo wrote the article to debunk Chomsky's claim, and she wrote it to to improve her tenure file \*(too).

Sentence (25) has two differences and *too* cannot occur with it, but sentences (26) and (27) have only one difference and *too* is obligatory. This contrast shows that in the sentential conjunction construction with *too*, only one semantic difference is allowed. Sentence (27) also indicates that the *and* ... *too* construction, i.e. Kehler's parallel construction, allows MIA, for both *she* and *it* in the second conjunct are MIA's, and their antecedents are both in the first conjunct.

This suggests that Kehler's claim is not correct in the sense that in parallel constructions the only available structure is the propositional representation and both conjuncts are integrated into the discourse model at the same time; this also implies that the first conjunct must be integrated into the discourse model before the second one is processed, so we cannot use syntactic constraints to explain the contrasts in (20), (21), and (23), as suggested by Kehler.

Another problem for Kehler is sentences (21b', b") which differ from (21b) only with an intensive *himself*. The insertion of *himself* should not change the parallel nature of the sentence, so according to Kehler, the elided VP must be the exact copy of the first VP. He would predict a binding condition C violation, but sentences (21b', b") are not ungrammatical. The grammaticality of (21b', b") can be easily explained if the reconstructed VP is interpreted in the discourse model, i.e. the first conjunct has already been integrated into the discourse model. As Baker (1995) shows, the head noun that the intensive *himself* is attached to must be the central role or character in the plot (discourse). In the situation specified by (21b'), the central character is *Bill*, thus, *he* should refer to it because of the intensive *himself*.

Thus sentences like (21b') and (27) suggest that the distinction between parallel and non-parallel constructions is not the right factor to explain the contrasts exemplified in (20), (21), and (23). It is the discourse and semantic factors, e.g. the discourse function of *too*, that play a crucial role in (20), (21), and (23).

The contrast in (22) cannot be explained simply with the discourse model. The two basic readings of pronouns must be recognized to explain the contrast. Pronouns have both bound variable and referential usage; the bound variable usage corresponds to the sloppy reading in VP-ellipsis. The strange reading in (22b) is the strict reading. The strangeness of (22b) can be explained as follows: in the first conjunct only the bound variable reading is possible because of reflexives which have the bound variable usage only, but the elided VP is interpreted as strict, i.e. the second conjunct is forced to be the referential reading. However, *too* only allows one semantic difference which is already been taken by the contrasted subjects. Since the two conjuncts are interpreted differently, as shown below, a second difference exists.

(28) a.  $\lambda x [x \text{ defended } x](John')$ 

b.  $\lambda x [x \text{ defended John}](Bob')$ 

(28) shows a bound variable interpretation for the reflexive *himself* in (22b), whereas (28) is a referential interpretation of the reflexive. In other words, (28) is the sloppy reading for the second clause in (22b), but (28) the strict reading. Since there are two semantic differences between (28a) and (28b): *John* vs. *Bob*, and *x defended x* vs. *x defended John*. Hence, (22) violates the one difference constraint of *too*. Note that (22b) is strange but not ungrammatical because pragmatics and the discourse are biased towards the intended reading, so the sentence is understandable, but does not obey the constraint of *too*. Also note that the Chinese counterparts allow the strict reading for the second conjunct because Chinese reflexive ta-ziji can be interpreted referentially, as pointed out earlier. Hence there will be only one difference in the Chinese case, namely the subject.

Sentences like (20) and (23) can be explained similarly by the semantic and discourse constraints of *too*.

Therefore, it is the semantic and discourse factors but not the parallel vs. nonparallel (syntactic and semantic) distinction that constrains the contrasts, as exemplified by sentences in (20-23). It is not the pure syntactic identity that is involved in VPellipsis.

To summarize, I have shown that Kehler's parallel vs non-parallel distinction is not correct and there are alternative ways to explain the contrasts pointed out by him. The contrasts in (20-23) are better explained in the discourse model (deep anaphora) as given in Sag and Hankamer.

#### 4. Conclusion

This paper has discussed the issues related to VP-Ellipsis and null object constructions in Mandarin Chinese. Pace Li (1998), but in consistence with Huang (1988a, b, 1991), I have argued that it is not true that no null object construction (NOC) sentences can be analyzed as VP-ellipsis in Mandarin Chinese, namely that some NOC sentences can be interpreted as VP-ellipsis, and others need to be interpreted as an empty pronoun, depending on whether the V-to-INFL raising occurs or not, and I have shown that the fact that the interpretation patterns of the relevant sentences deviate from those of their English counterparts is not because there is no VP-ellipsis in Chinese but because Chinese pronouns and reflexives exhibit some special properties. The different behavior of Chinese sentences is due to some special properties of Chinese pronouns and reflexives. I have also argued that the parallel vs. non-parallel distinction made by Kehler (1993) is not adequate to account for the VP-ellipsis sentences in English. The involved level must be the discourse model, not just the pure syntactic identity, as suggested in the literature. Hence, the coordination construction in neither English nor Chinese is constrained by the so-called syntactic condition which is based on the parallel vs. non-parallel distinction, as proposed in Kehler (1993), and discourse factors play a crucial role in the interpretation of coordination construction in the two languages concerned.

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# Typology of Yes-No Questions in Chinese and Tai Languages<sup>\*</sup>

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### Abstract

Although yes-no questions are one of the most basic sentence types of a language, their structure and interpretation in many Chinese languages as well as other languages of Southeast Asia is still very controversial. In this typological study we will use an analysis of the yes-no questions that builds on the grammar of focus in the spirit of Drubig (1998, 2000) and Kiss 1998). On the basis of an analysis of Mandarin question forms which we argued for in Chen & Schaffar (1998, 2000) we will analyse data from several other languages of the Chinese-Southeast Asian area. As a result of this study we will isolate two parameters that capture the variation of yes-no questions in the area and show that the different morphemes can be analysed as functional heads of two polarity phrases. Whereas in previous studies the connection of negation morphemes and question morphemes has already been documented we will show that one type of question constructions that is distributed over the whole area can systematically be traced back to affirmative polarity morphemes.

# **1. Introduction**

We will start our presentation with a morphological overview of different question types in Chinese languages and their treatment in previous typological and syntactic studies.

### 1.1. Morphological types of yes-no questions

For the purpose of our study we have to distinguish between different types of yes-no questions. We will start with a morphological definition of four types. In principal, all these four types can be used by speakers of Mandarin. The only exception may be type four which has a strong dialectal or sociolectal connotation.

<sup>&</sup>lt;sup>\*</sup> This paper is the written version of a talk given at ZAS, December 2000. The material and the idea how to analyze it was largely born in numerous discussions with my dear colleague Lansun Chen. Warmest thanks to Horst-Dieter Gasde for giving me the opportunity to present and discuss our material in his colloquium.

# Negation type

The first of our types is constructed with a repetition and negation of the verb. Within this type we can further distinguish between different subtypes. In (1), the whole verb phrase is repeated and optionally co-ordinated with *haishi* ('or'). In traditional Chinese linguistics this structure is often taken as the source for the other types which are derived by different deletion processes. In (2) and (3) the repetition and negation is situated at the end of the sentence which can be explained by a forward deletion of the second part of the co-ordinated structure in (1). The sentences in (3) and (4) on the other hand show a repetition and negation in the middle of the sentence which can be derived by a backward deletion process in the first part of the co-ordination.

# VO (or) neg VO

(1)	Ni	xihuan	zhe ł	oen sh	nu	(hais	hi)	bu	xihuan	zhe ben shu ?
	you	like	this b	ook		or		not	like	this book
	'Do y	ou like this	book	21						
	VO I	neg V								
(2)	Ni	xihuan	zhe l	ben	shu		bu	xihu	an ?	
(3)	Ni	xihuan	zhe ł	oen	shu		bu ?			
	you	like	this		book	not				
	'Do y	ou like this	book	<b>)</b> '						
	V ne	g VO								
(4)	Ni	xihuan	bu	xihu	an	zhe b	en	shu '	?	
(5)	Ni	xi	bu	xihu	an	zhe b	en	shu'	?	
	you	like	not	like		this		book		
	'Do y	ou like this	book	<b>)</b> '						

# Copula type

A second major type is constructed with the copula morpheme *shi*. Here it is the copula which is repeated and negated and not the main verb. Note that in this type the sequence *shi-bu-shi* can occur at different positions in the sentence including the beginning and the end.

(6a)	Shi bu shi	ni		xihuan	zhe ben shu ?	
(b)		Ni	shi bu shi	xihuan	zhe ben shu ?	
(c)		Ni		xihuan	zhe ben shu	shi bu shi ?
	C neg C	you	C neg C	like	this book	C neg C

'Do you like this book?'

### Sentence-final particle

The third type is constructed with a particle at the end of the sentence. In contrast to the first and second type this particle can not be traced back to a negation morpheme and is strictly fixed to the sentence final position.

(7) Ni xihuan zhe ben shu ma?you like this book Q'Do you like this book?'

# Ke-type

Whereas the first tree types are question forms of standard Mandarin Chinese, the last type is dialectally or sociolinguistically marked. It is formed with a morpheme in front of the main verb that we will provisionally call a modal verb.

(8) Ni ke xihuan zhe ben shu?you KE like this book'Do you like this book?'

# **1.2.** Former typological approaches

The analysis of the question types is one of the major topics in Chinese linguistics. We will first start with a quick summary of the major typological and syntactic theories.

### Huang (1991): Modular approach

Against the traditional view that the different subtypes of the negation type in (2)-(4) are derived from a common source in (1), Huang argued for a modular approach. He distinguished between disjunctive questions as in (1) or (2) and reduplicative questions as in (4) or (5). Whereas disjunctive questions have a co-ordinated bi-sentential structure, the structure of reduplicative questions is mono-sentential and involves operator movement. Note that this distinction coincides with the direction of the deletion process. In Mandarin only those questions forms that are derived by a backward deletion in the traditional model are mono-sentential questions forms according to Huang's analysis.

One of Huang's central arguments are sentences with yes-no questions as sentential subject. The contrast between (9) and (10) shows that only reduplicative questions are island sensitive. Although we found it difficult to get the same judgements from our informants, this test was also used by other studies.

Meiguo haishi qu] bijiao hao? (9) [Wo qu bu Ι go US or not go better 'Is it better that I go to America or that I do not go to America?' (10) \*[Wo Meiguo ] bijiao hao? bu qu qu

US

go

not

Besides this syntactic argument, Huang discusses typological data. In some dialects questions that involve the same kind of operator movement as the reduplicative form of Mandarin Chinese are constructed with a single preverbal question morpheme. According to Huang Taiwanese *ke*-type questions are the dialectal counterpart of Mandarin reduplicative questions and share the same syntactic properties as shown in (11).

better

(11) \*[I kam u lai] kha hou?he KE have come better(Lit.) 'That he has come is better?'

Ι

go

Huang's syntactic analysis of reduplicative or *ke*-type questions is shown in (12). In an underlying structure the INFL projection of these questions is marked with an abstract [+Q] feature and depending on the dialect this feature is realised either with a (phonological) reduplication and negation as in Mandarin or with a special question morpheme as in Taiwanese.



5

In order to defend this analysis, Huang refers to a typological study by Zhu (1985, 1990) where Zhu claims that *ke*-type questions and negation based questions are in complementary distribution among the dialects. Either a dialect realises the [+Q] INFL with the rule of repetition or with a special morpheme *ke*.

# Zhu (1985, 1990) Dialectal distribution of the forms

As a summary of his results Zhu gives a diagram as in (13). In this diagram only the left branches are typologically relevant. This means that as the most fundamental distinction, dialects can be characterised as *ke*-type dialects vs. negation type dialects. Within the negation type dialects there is a further distinction between a VO-neg-V type and a V-neg-VO type. This last distinction correlates with a geographical distribution. Whereas the V-neg-VO type is the prevailing form of southern dialects, the VO-neg-V type is more common in northern dialects.

The other question forms, i.e. the VP-neg and the VO-neg-VO questions, occur in various dialects and do not characterise a distinct language (dialect) type.



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Zhu does not discuss methodological problems of his typological survey. In particular, it is not clear how he decided whether a certain construction can be regarded a question form in a given dialect. Beside this methodological problem, his claim of a complementary distribution between the ke-type and negation type alone can not serve as a strong argument in favour of Huang's analysis.

# McCawley (1994) (contra Huang) approach of conventionalisation

A strong criticism against the approach of Huang was launched by McCawley (1994). I will come back to some of his data later and restrict myself to a theoretical summary of his central idea. McCawley argued in the spirit of the traditional Chinese view that the questions in (1)-(5) constitute a unitary paradigm. According to him, the only distinction between the forms in (1) though (5) is that the latter forms are more conventionalised disjunctive constructions. The structure in (5) is the question form which is fully grammaticalized into the function of an unmarked yes-no question in Mandarin and this is why only this form shows clear signs of syntactic operator movement.

### Cole & Lee (1997) (application of McCawley)

One application of this view is demonstrated by Cole & Lee (1997) in their treatment of Singapore Teochew. As a counter-argument to Huang (1991) and Zhu (1985, 1990) this dialect has both *ke*-type and negation type questions. However, only the *ke*-type appears to be fully grammaticalised into the function of a yes-no question (Cole & Lee 1997:198f). As a test Cole & Lee use data as in (14) and (15) where the question form occurs as the sentential subject along the lines of Huang's test for Mandarin.

(14) [Wa kih m kih Pakiah] you hor?I go not go Beijing better'Is it better for me to go to Beijing?'

(13)

(15) \*[Wa ka kih Pakiah] you hor? I Q go Beijing better

# 1.3. Former pragmatic and syntactic approaches for Mandarin

Apart from the syntactic properties that Huang used to distinguish between disjunctive and reduplicative questions, there are several attempts to give a pragmatic and syntactic characterisation of the different question forms. These accounts concentrated on the Mandarin forms alone and normally contrasted negation based forms with the particle question.

# Li & Thompson (1979) Pragmatics of reduplicative vs. particle questions

An early but still influential account is the study by Li & Thompson (1979). For their pragmatic characterisation of the different question forms they give the following context:

"Suppose you had always known that Wang did not eat apples. One day while having lunch with him, you were surprised that he had an apple for desert."

According to Li & Thompson this context demands a particle question as in (16). An V-neg-V question is not felicitous.

- (16) Ni chi pingguo ma? you eat apple Q
- (17) ?? Ni chi bu chi pingguo ?you eat not eat apples'Do you eat apples?'

Li & Thompson summarise that "The V-not-V question is used only in a neutral context whereas the particle question may be used in a neutral or non-neutral context" (Li&Thompson 1979:201f). As we will explain below, we interpret the term "neutral context" as a context where the question demands for information in the shape of a presentation focus. A "non-neutral context" as given above implies that the question asks for contrastive information.

# Li (1992), indefinite *wh*-words(Li 1992:127f).

A more syntactic property that differentiates V-neg-V and particle questions was discussed by Li (1992). It is well-known that *wh*-words in Mandarin can be interpreted as indefinite pronouns if they are bound by a negative morpheme under c-command. This is shown with

the subject-object asymmetry in (18)-(21). In an affirmative sentence like in (18) or (20) neither the *wh*-word in object position nor the one in subject position can be interpreted as an indefinite pronoun. With a sentential negation, however, a *wh*-word in object position as in (19) can be bound whereas the *wh*-word in (21) cannot be bound as an indefinite pronoun.

- (18) \*Ta xihuan shenme.he like what'He likes something / anything.'
- (19) Ta bu xihuan shenme.he not like what'He doesn't like anything.'
- (20) \*Shenme ren xihuan ta. what man like him 'Someone / Anyone likes him.'
- (21) \*Shenme ren bu xihuan ta.what man not like him'No one / Anyone doesn't like him.'

The same holds for the binding of wh-words by question operators of a V-neg-V question. In (22) a wh-word in object position can be bound whereas in (22) with a wh-word in subject position, the sentence is ungrammatical.

- (22) Ta xi bu xihuan shenme ?he like not like what'Does he like something / anything?'
- (23) \*Shenme ren xi bu xihuan ta ?what man like not like him'Does someone / anyone like him?'

Whereas the V-neg-V question form patterns with the sentential negation, the particle question does not show the same asymmetry. As shown in (24) and (25) both the *wh*-word in object position and in subject position can be bound by the question operator.

- (24) Ta xihuan shenme ma?he like what Q'Does he like something / anything?'
- (25) Shenme ren xihuan ta ma?what man like him Q'Does someone / anyone like him.'

### McCawley (1994), scope interaction with quantification

A rather subtle syntactic property is discussed in McCawly (1994). Towards the end of the argumentation for his idea of increasingly conventionalised question forms, he notes that although the V-neg-V form is fully conventionalised, the structure conserved different scope properties from particle questions.

These scope properties, McCawley demonstrates with elliptical negative answers to questions that contain an universal quantifier as in (26) and (27). An elliptical negative answer to a V-neg-V question takes narrow scope with respect to the universal quantifier, which can be paraphrased as in (26b) with the expression in brackets. An elliptical answer to a particle question, on the other hand, takes wide scope over the universal quantifier. This interpretation is demonstrated in (27) and can be paraphrased as in the bracketed expression in (27b).

- (26) A: Tamen dou xi bu xihuan kai che?they all like not like drive car'Do they all like to drive?'
- (b) B: Bu. (Dou bu xihuan kai che)'No.' (None of them likes to drive.)
- (27) A: Tamen dou xihuan kai che ma?they all like drive car Q'Do they all like to drive?'
- (b) B: Bu. (Bu dou xihuan kai che)'No.' (Not all of them like to drive.)

# **1.4.** Summary of the introduction and open questions

Syntactic and pragmatic analyses of Mandarin question forms (mostly) deal with the difference between particle questions and negation based questions.

### Particle question ↔ Negation type

The *ke*-type is not taken into account since it is not a standard question form of Mandarin. If the copula question is mentioned at all, it is either treated as a subtype of the V-neg-V form or it is treated as a periphrastic tag question without specific syntactic properties.

Typological analyses (mostly) deal with different kinds of the negation type construction or the difference between negation type and *ke*-type constructions. To our knowledge, the copula type question has never been studied typologically.

Negation type	$\leftrightarrow$	<i>ke</i> -type
V neg VO	$\leftrightarrow$	VO neg V

This brief overview shows that there is a systematic gap between the (synchronic formalist) syntactic studies of Mandarin question forms and the typological studies of questions forms in different dialects. The crucial point of our criticism is that most of the Chinese dialects, like Teochew, Xiang, Kunming and Taiwanese do not have a particle question form. This leads into severe theoretical problems. Pragmatic studies showed that the V-neg-V form in Mandarin is functionally marked and restricted to neutral contexts. At the same time, typological studies claim that the *ke*-type question is the functional equivalent to the V-neg-V question in other dialects. If *ke*-type questions in Taiwanese and Teochew are the functional equivalent to A-not-A questions in Mandarin, and if there are no particle questions in these dialects, how do speakers of Taiwanese or Teochew ask a non-neutral question?

The next problem is more typological one. Without any further justification, the typological studies restrict the sample to Chinese languages. This leads to a simplified view that the *ke* morpheme in *ke*-type questions and the reduplicative negation based question forms are idiosyncratic features of Chinese. But as a superficial look at neighbouring language families already shows, the same question types also occur throughout the languages of the entire Southeast Asian area (Clark 1989:209ff).

Li (Kadai, Hainan, 820000 speaker) (Ôno 1987:304) Negation type

In Li, a Tai language that is spoken on the island of Hainan, we find negation based questions of the VO-neg form. The negation morpheme  $ta^{1}$  that occurs in unmarked negative sentences as in (28) can also be used to construct a yes-no question if it is attached at the sentence final position as in (29). This negation based question form contrasts with other particle questions that are constructed with sentence final particles which can not be traced back to a negation morpheme as e.g.  $Ojo^{3}$  in (30). Note that all these morphemes are different from the Chinese morphemes. This means that if these constructions are borrowings from Chinese, it can only be a syntactic borrowing.

- (28) **Ta<sup>1</sup>** pu::n<sup>1</sup> NEG come '(S)he doesn't come.'
- (29) Tsho:m<sup>1</sup> nei<sup>2</sup> lo:p<sup>9</sup> la<sup>2</sup> ta<sup>1</sup>?
  fruit this can eat Q
  'Can you eat this fruit?'

Particle question

(30)	Na1	ta1	pu:n1	?jo3 ?
	he	NEG	come	Q
	'Does	sn't he come	.'	

Vietnamese (Austroasiatic, Vietnam, 57 mil speaker) (Clark1989:212) Negation type

Vietnamese is yet another example of the same construction principle. Here it is the negative morpheme  $kh\hat{o}ng$  which forms either a yes-no question if it is attached at a sentence final position as in (31) or it forms a negative answer if it occurs pre-verbally as in (32).

(31) Chị biết đường đó không ?
 sister know road that not
 'Do you know that road?'

(32) Biết. (Không) biết know not know 'Yes, I know it.' 'No I don't.'

**Hmong** (Hmong-Mien, Burma, Thailand, Vietnam, China, 5-8 mil. speaker) (Clark 1989:209) Negation type

In Hmong we find a negation based question type with a repetition of the verb just as in Mandarin Chinese, but again with etymologically independent morphemes. The negative morpheme *tsis* occurs between the two verbs in the question form in (33). In (34) the same morpheme is used as a sentential negation.

(33) Koj mus tsis mus? you go not go 'Are you going?'

(34)	Mus	(nawb).	Tsis	mus.
	go	sure	not	go
	'Yes,	sure.'	'No.'	

# ke-type

What is interesting about Hmong is the fact that we also find a *ke*-type question form. The morpheme involved is *puas* and Clark (1989) glosses it with 'whether'. Since this word occurs in the same position as modal verbs and since it can not be traced back to negation morphemes, it fulfils the definition of a *ke*-type form that I gave in connection with the morphological discussion of the Chinese forms. Sentence (35) is a simple yes-no question of the *ke*-type. In (36) we find the *ke* morpheme in the matrix sentence alongside with the V-neg-V question form in the embedded sentence.

(35)	Tus txiv neeg ntawd	nws	puas	haus	yeeb?
	that man	he	whether	imbibe	opium
	'That man, does he smo	oke op	ium?'		

(36) Neb puas peb cov paj-ntaub (lawm) tau muag tag needlework finished you whether got sell we group already or not got tsis tau. los

'Have you been able to sell all our needlework (yet)?'

In our discussion we will proceed as follows. First we will summarise a syntactic account of focus phenomena along the lines of Drubig (1998, 2000) and Kiss (1998) and introduce the difference between presentational information focus and contrastive operator focus. On the basis of this syntactic account I will proceed with an introduction to the semantic implications of such a model and a revised version of a relational theory of focus (von Stechow 1985, Jacobs 1985, Moser 1993).

The notion of information focus and contrastive focus and its syntactic properties will serve as a frame for the analysis of Mandarin question forms. This analysis will provide us with a set of tests for the investigation of other Chinese dialects and languages. We will use the difference between presentational and contrastive focus as tertium comparationis in our typological study and isolate the parameters that are involved in the variation between the Chinese dialects as well as between other languages of the Southeast Asian area.

# 2. A syntactic theory of focus

The syntactic theory of focus that we will use for the typological comparison builds consists of two main ideas. Firstly the distinction between information focus and contrastive focus (Drubig 1994, Kiss 1995, Kiss 1998, Kenesei 1998) and secondly the idea that focus is relational (von Stechow 1984, Jacobs 1985, Moser 1993).

**2.1. Information focus vs. contrastive focus** (quantificational focus, operator focus, identificational focus)

From a syntactic perspective it is clear that two types of focus have to be distinguished. Incremental information focus and quantificational contrastive focus are syntactically distinct (Drubig 1994, Kiss 1995, Kiss 1998, Kenesei 1998).

For this presentation I use sentences by Moser (1993), although not exactly with her interpretation. Sentence (37) with an accent on the direct object is an example for a presentational information focus reading. This sentence is ambiguous between different focus readings (focus projection) and can be uttered as an answer to the global question in (37b). In

isolation it can be used to present information out of the blue, without any preconception about the situation on the side of the hearer.

In contrast to this, sentence (38) with an accent on the indirect object can only be understood as an identificational or contrastive focus. In this case the focused constituent *Beth* is interpreted on the background of a set of alternatives. This interpretation is captured by the formula in (38b).

- (37) [ $_{\rm F}$  Sheila [ $_{\rm F}$  gave [ $_{\rm F}$  the HAMMER] to Beth ]].
- (b) What happened?
- (38) Sheila gave the hammer [F to BETH]. (and not to PAT)
- (b)  $[rel, \in]$  [foc. Beth ]  $[backgr, \lambda x$  (Sheila gave the hammer to x)]

Whereas the difference between information and contrastive focus seems to be an effect of accentuation in English, in Hungarian we see that it is also syntactically relevant. According to Kiss (1998) an information focus as in (37) is expressed with a sentences like (39) where all arguments of the verb stay inside the VP. If one argument is contrastively focused, however, it has to be moved to the front and this movement triggers a specific V2 effect as in (40). The syntactic analysis of these sentences are given in (41) and (42) respectively.

(39)	Tegnap este	be	[F mutattam	Pétert	Marinak ].
	last night	PERF	introduced	Peter-ACC	Mary-DAT
	'Last night I intro	oduced Peter	r to Mary.'		

(40) Tegnap este [F MARINAK] mutattam be Petert.
last night Mary-DAT introduced PERF Peter-ACC
'Last night I introduced Peter TO MARY.'
'It was to Mary that I introduced Peter last night.'



In (41) the structure shows that the information focus comprises the VP (We are neglecting the effects of de-accentuation for the time being). In (41) the focus is restricted to the phrase that was moved into the specifier position of a functional category. Kiss's analysis served as the source for many other generative models among which Brody's (1990) FP (focus phrase) approach has reached a certain popularity.

## 2.2. Focus is relational

Apart from the distinction between information and contrastive focus, it has been noted that the focus of a sentence can associate with different focus sensitive particles, operators or with the negation. We will claim, slightly in contradiction to the approach of Jacobs (1985) and

Moser (1993), that the distinction between information focus and contrastive focus is orthogonal to the different relations that are expressed by the negation, particles or the question operator. That means that we will distinguish between presentational negation, presentational 'only' and presentational question operators at the one hand and contrastive negation, 'only' and contrastive questions on the other.

Sentence (43) is an example of an information focus that is associated with the particle 'only'. In (44) the same particle is associated with a contrastive focus. Note that in this case 'only' does not necessarily has to be adjacent to the contrastive focus. A so called Association with Focus construction like (44b) is also possible.

Information focus associated with *only* (43) [F Sheila **only** [F gave [F the HAMMER] to Beth ]].

Contrastive focus associated with only

- (44) Sheila gave the hammer only [F to BETH]. (and not to Pat.)
- (b) Sheila only gave the hammer only [F to BETH]. (and not to Pat.)

In Hungarian the difference between information and contrastive focus is mirrored in the position of 'only' as well. In a sentence where 'only' associates with an information focus, it occurs in preverbal position immediately preceding the VP. In (46) with a contrastive focus, it can either occur adjacent to the focus or in an AwF construction as in (46b).

- (45) János semmit szinte sem csinált egész nap, John practically nothing not did whole day, csak [F le vitte a kutyát sétálni ]. down took the dog to-walk only 'John did practically nothing the whole day, he only took the dog for a walk.' (Kiss 1998:265)
- (46) János csak [F Marit] hívta meg.
  John only Mary invited PERF
  'John invited only Mary.'
- (b) János [F Marit] hívta csak meg.
   John Mary invited only PERF
   'John invited only Mary.' (Kiss 1998:265)

Focus associated with negation

In the same way a focus can be associated with a negation morpheme or with a question operator. Sentence (47) is an example of an information focus associated with the sentence negation, and (48) an example of a negated contrastive focus which parallels exactly (44) and (45). Example (49) and (50) show the same pattern with yes-no questions.

Information focus

(47) [F Sheila didn't [F give [F the HAMMER] to Beth ]].

Contrastive focus

- (48) Sheila gave the hammer **not** [F to BETH]. (but to Pat.)
- (b) Sheila did**n't** give the hammer [F to BETH]. (but to Pat.)

Focus associated with a yes-no question operator

Information focus

(49) [F Did Sheila [F give [F the HAMMER] to Beth ]]?

Contrastive focus

(50) Did Sheila give the hammer [ $_{\rm F}$  to BETH]?

To cover both the distinction between information focus and contrastive focus and the fact that focus is relational in the sense of Jacobs and Moser, we adopt a structure like in (51) proposed by Drubig (1994). The central idea behind this model is the analysis of two polarity phrases. One polarity phrase Pol1 which is situated immediately above the VP in the area of the INFL layer licenses the information focus. The other polarity phrase Pol2 is part of the COMP layer and is the equivalent of what became to be called FP in approaches following Brody (1990). In order to cover the cases of associated foci, the head of these categories can host either a negation morpheme in the case of negated sentences, an abstract affirmative morpheme in the case of affirmative sentences or an abstract question morpheme. This is why we reject the name FP and prefer the term polarity phrase (PolP).



In English it is only the negation that is morphologically distinct between a Pol1 form for sentential negation and a Pol2 form for constituent negation. The other potential heads of the polarity phrases are the same in both positions. Mandarin Chinese, by contrast, has different Pol1 and Pol2 forms for all morphemes, the negation, 'only', the question morpheme and, as we will show in this typological paper, for affirmative morphemes as well.

# (52) $\begin{array}{c|c} Pol_2P \\ Pol_2P \\ \hline Pol_1P \\ VP \\ \hline Shi bu shi \\ shi bu shi \\ \hline VP \\ \hline W bu / mei \\ Zhi \\ V bu / mei V \end{array}$

3. Mandarin Chinese syntax of focus:

In Chen & Schaffar (1998, 2000) we have argued in detail how the different morphemes for the negation and for 'only' can be captured with the model of two polarity phrases. This analysis is not entirely new and should not be controversial since some details are already well accepted in the literature. Lü (1985) showed the systematic difference between morphemes that involve the copula *shi* and those without. Several other papers treated *shi* as the head of a focus phrase along the lines of Brody (1990). What is important for our investigation of the question forms is that Huang already argued that the V-neg-V question morphology is situated in the INFL layer.

In this presentation we will restrict ourselves to the treatment of the question forms. The central claim is that the V-neg-V question form is a functional head in the INFL layer and the C-neg-C question form a functional head in the COMP layer. In Chen & Schaffar we also argued for an analysis for the particle question. We have shown that the particle *ma* is not a functional head of any polarity phrase. Since the main aim of the presentation is a typological analysis, and since in most other Chinese dialects we do not find particle questions with *ma*, we will neglect this type for the time being. Differently from our previous papers, however, we will give a detailed analysis of the *ke*-type of question forms.

In what follows I will summarise our main arguments for the analysis of the V-neg-V question form as a head in INFL and for the C-neg-C question form as a head in COMP. These arguments will serve as syntactic tests for the treatment of the other dialects and the isolation of the parameters that differentiate the different dialects.

### **3.1. Syntactic evidence**

### **Focus reading**

The first piece of evidence is the focus readings. The following examples show that the Vneg-V question is restricted to yes-no questions with the interpretation of an information focus (presentational focus). Li & Thompson (1979) give the following context in which they claim that V-neg-V questions like (53) are felicitous. Li & Thompson do not differentiate between V-neg-V questions and C-neg-C questions. Whereas we agree with them that (53) is felicitous in the given contexts, we insist on the fact that C-neg-C questions have to be treated as a separate form. Whereas particle questions, which we will not discuss here, are possible in the same context, the C-neg-C question form in (54) is not.

# **Information focus**

Context: Before preparing dinner for a guest, you wish to find out whether he drinks wine or not (Li&Thompson 1979:202).

(53)	Ni	he bu he	jiu ?	
	you 'Do y	drink not drink you drink wine?'	wine	
(54)	??Ni	shi bu shi	he	jiu ?
	you	COP not COP	drink	wine
	'Do y	you drink wine?'		

### Contrastive focus

In a context where one constituent of the same question is contrastively focused, however, only the C-neg-C and not the V-neg-V question is possible. In (55) and (56) the emphatic accent on the adverb demands a contrastive reading of the question. As the examples clearly show, only the C-neg-C form in (56) is possible. The same is true for questions like (56b) with a contrastive reading on the subject, in (56c) with a contrastive reading on the object, or in (57a) - (c) which are cited in Zhang (1997).

(55)	??Ni	zuotian		he mei he		jiu ?			
	you	yesterday		drink not d	lrink	wine			
	'Was	it yesterday	y that y	ou drank w	vine?'				
(56)	Ni	zuotian	shi b	u shi	he		le		jiu ?
	you	yesterday	COP	neg COP	drink	2	PERI	Ĩ	wine
	'Was	it yesterday	y that y	ou drank w	vine?'				
(b)	Ni	zuotian	shi b	u shi	he		le		jiu ?
	'Was	it you that o	drank	wine yester	day?'				
(c)	Ni	zuotian	shi b	u shi	he		le	zhez	zhong jiu ?
	'Was	it this kind	of win	ne that you o	drank y	yester	day?'		
(57)	Та	shi bu shi		mingtian		lai ?	(Zhai	ng 199	97)
	he	COP neg C	COP	tomorrow		come	•		
	'Is it	tomorrow th	hat he	will come?'					
(b)	Та	shi bu shi		mingtian		lai ?			
	'Is it	he who will	come	tomorrow?	•				
(c)	Та	shi bu shi	ming	gtian	lai ?				

'Is it true that he will come tomorrow?'

### wh-binding

Example (58)-(63) show data on the property of *wh*-binding. We already discussed examples like (58) and (59) which show that the sentence negation can only bind an *wh*-word in object position. Sentences (60) and (61) show that the same asymmetry can be found with the V-neg-V question form. The C-neg-C question form, however, behaves differently. As demonstrated in (62) and (63), there is no asymmetry and the *wh*-word in subject position can also be bound as an indefinite pronoun. We take this data as evidence for the position of the C-neg-C head. If we analyse this head as a head in the COMP layer it naturally follows that it can bind a *wh*-word in the subject position under c-command.

(58) Ta bu xihuan shenme.he not like what'He doesn't like anything.'

- (59) \*Shenme ren bu xihuan ta.what man not like him'No one / Anyone doesn't like him.'
- (60) Ta xi bu xihuan shenme ?he like not like what 'Does he like something / anything.'
- (61) \*Shenme ren xi bu xihuan ta ?what man like not like him'Does someone / anyone like him.'
- (62) Ta shi bu shi xihuan shenme?he C NEG C like what'Does he like something / anything.'
- (63) Shenme ren shi bu shi xihuan ta ?what man C NEG C like him'Does someone / anyone like him.'

Note that differently from what Li (1991) claims, it is not necessary that the C-neg-C morphology linearly precedes the *wh*-word in order to bind it. The same syntactic process that achieves the association between the contrastively focused subject and the C-neg-C question operator in (56b) and (57b) is at work here as well.

### Scope interaction with universal quantifier

Another test for the position of the two question operators can be constructed on the basis of McCawley's (1994) discussion. There he noticed that the V-neg-V question operator only takes narrow scope in respect to the universal quantifier in sentences like (64). He demonstrated this scope with the help of elliptical negative answers which in the case of V-neg-V questions can only be paraphrased as in the brackets in (64b).

(64) A: Tamen dou xi bu xihuan kai che ?they all like not like drive car'Do they all like to drive?'

(b) B: Bu. (=Dou bu xihuan kai che)'No.' (None of them likes to drive.)

As most of the other syntactical studies of Mandarin question forms, McCawley only contrasted the V-neg-V type with the particle question. According to our informants, however, a much clearer scope contrast holds between the V-neg-V and the C-neg-C type. As demonstrated in (65) a C-neg-C question always takes wide scope. This scope reading can be shown in the same way as in (64) as here the elliptical negative answer can only be paraphrased with the expression in (65b).

(65)	A:	Tamen	dou	xihuan	kai che	shi bu shi ?
		they	all	like	drive car	C NEG C
		'Do they al	l like	to drive?'		
(b)	B:	Bu.	(=Bu	ı dou xihua	n kai che)	
		'No.'	(Not	all of them	like to drive	.)

### **Further evidence**

In Chen & Schaffar (2000) we have collected some further evidence for the analysis of the Mandarin question forms. This evidence comprises the complementary distribution among the Pol1 heads, the distribution between Pol1 and Pol2 heads as well as the question scope with regard to different adverbials. Since we do not want to go into detail in the analysis of the Chinese dialects, we will skip this data.

### 3.2. Summary: Mandarin focus constructions

There is a syntactic difference between negation type and copula type questions that can be explained in the frame of a syntactic theory of focus where we analyse the negation type morphemes as heads in Pol1 and the copula type morphemes as heads in Pol2. The difference is fundamental and independently (universally) motivated as the difference between information focus and contrastive focus. Out of this we expect to find the same distinction throughout different dialects and languages. The distinction itself should not be affected by parametric variation. By investigating what morphological forms are connected with Pol1-and Pol2-questions in a given dialect we will isolate the parameters of typological variation.

# 4. Typological variation of yes-no questions

# 4.1. Isolation of the parameters of variation

We have shown that the distinction between information focus and contrastive focus is independently motivated. This means that it is not restricted to the readings of yes-no questions and not restricted to any specific language like Mandarin Chinese. In the following typological overview we will use this distinction as a tertium comparationis for the analysis of the question forms of other Chinese languages and other Southeast Asian languages. On the basis of this comparison we will isolate the parameter that distinguish the different languages.

The presentation of the data follows the following pattern. First we present the question forms that occur in the specific language and show with the test of Huang that the form in question is fully grammaticalised / conventionalised as a yes-no question form. In the next step we investigate the focus readings of the forms and analyse the syntactic behaviour of the form according to the tests that we have established for Mandarin Chinese above.

### 4.2. Parameter I V-not-VO vs. VO-not (-V)

**Xiang** (Southern Chinese, Hunan, 45,6 million) **Question forms**: Type VO-not (-V), no particle question, no *ke*-type

In Xiang we find a negation type question form with the morphology VO-neg. This form is a parallel construction to the forms in Vietnamese, Li and many other languages of the Southeast Asian area. Sentence (66) shows that the form respects island constraints which means in the sense of McCawley (1994) and Cole & Li 1997) that it is fully grammaticalised. There is no particle question and no *ke*-type question in Xiang. The negation type, however, occurs in two variants. Beside the form in (67) where a negation morpheme is attached to the end of the sentence, there is another form as in (68), where the negation morpheme occurs together with the copula st.

(66) \*[Wo qu Beijing bo] bijiao hao?
I go Beijing not better
'Is it better for me to go to Beijing?'

(67) Ni xihõ ge ben su **bo**?

(68) Ni xihõ ge ben su si bo ?
you like this book (COP) not
'Do you like this book?'

We analyse (67) as a question form for presentational focus, i.e. as Pol1 question. The form in (68), however, we analyse as the Xiang variant of the copula type question of Mandarin. This question is a Pol2 question form. This analysis is supported by the following pragmatic and syntactic tests.

### **Focus readings**

As shown in (69)-(71) only the negation type question form can be used in questions with an presentational information focus. In questions with a contrastive focus reading on one constituent as in (70) and (71) only the copula type question is possible.

(69)	Та	zuotian	zuo le		suxi	<b>bo</b> ?
	he	yesterday	make PER	F	sushi	not
	'Did I	he make sus	shi yesterday	v?'		
(70)	??Ta	zuotian	zuo le	suxi	bo?	
(71)	Та	zuotian	zuo le	suxi	si bo ?	

'Was it yesterday that he made sushi?'

# *wh*-binding

The two different forms also correspond to the V-neg-V and the C-neg-C form of Mandarin with respect to *wh*-binding properties. As (72) and (73) demonstrate, only the copula type can bind a *wh*-word in subject position.

(72)	*Nage	xihõ	ta	bo ?
	who	like	he	not
(73)	Nage	xihõ	ta	si bo ?
	who	like	he	COP not
	'Does anyb	ody li	ke hin	n?'

# Scope interaction with universal quantifier

The data on the scope interaction with the universal quantifier also exactly parallels the behaviour of the corresponding Mandarin forms. An elliptical negative answer to a negation

type question in (74) can only be interpreted with narrow scope. In the case of the copula type question, the negative answer in (75b) shows that this question type has wide scope over the quantifier.

(74)	A:	Tamen	(ha)	dou	xihõ	kai	tsə	bo?
		they	all	all	like	drive	car	not
		'Do they al	l like 1	to driv	re?'			
(b)	B:	Mao lɛ	(=	Ha	bo xi	hõ	nɛ)	
		no PRT		all	not	like	PRT	
		'No.		(Non	e of th	em lik	xes to	drive.)'
(75)	A:	Tamen	(ha)	dou	xihõ	kai	tsə	si bo ?
		they	all	all	like	drive	car	C not
		'Do they al	l like 1	to driv	re?'			
(b)	B:	Mao le		(=	Bo si	ha	dou	xihõ.)
		'No. PRT		(Not	all of	them l	ike to	drive.)'

Central Thai (Southwestern Tai, Thailand, 55 million)

As we have already mentioned, the constructions in Xiang have a parallel structure to questions in other Southeast Asian languages which do not belong to the Chinese family. Our next examples are taken from Standard Thai. Here a yes-no question can be expressed with the morpheme  $m\dot{a}i$  which is attached at the sentence final position as in (76). Although the modern standard orthography uses different letters for the preverbal negation morpheme in (76b) and despite of the tone difference, Noss (1964) treats them as cognates. This means that in Thai we find the same negation based structure of yes-no questions as in Xiang, although with independent morphemes.

 (76) A: Phrûŋ nii khun cà pai duu năŋ mái ?
 tomorrow you will go see movie not 'Are you going to the cinema tomorrow?' (b) B: Cà **mâi** pai. will not go 'I am not going.'

Apart from the negation type as in (77), there is an alternative form as in (78) which is constructed as a combination of the negation based question morpheme together with the copula *châi*. We analyse this form as the Thai variant of the copula type question form of Mandarin or Xiang. The focus readings of the two forms support this analysis. Only a question with an presentational information focus can be constructed with the negation form. A question where one constituent is contrastively focused is infelicitous with the negation form and has to be constructed with the copula type.

?? Khun (77) A: cà pai duu năŋ phrûnnii mái? (78) A: Khun cà duu năŋ phrûŋnií **châi mái**? pai you will go see movie tomorrow (C) not 'Is it tomorrow that you're going to the cinema?'

(b) B: Mâi châi. Châi. not COP COP 'No.' 'Yes.'

Lao (Southwestern Tai, Laos, 4 million)

Standard Lao is another language of the Tai family. Here we find the same structure of question formation. The morphemes that are involved in the different types, however, go back to yet another source of negation and copula morphemes. The negation morpheme and the question morpheme is  $b2^2$ , which might be cognate with the Standard Thai negation *plàao*. The copula  $m\epsilon n^2$  is also different from the copula in the copula type question form of Standard Thai. The interpretation, however, shoes the same regularities as in Thai and Xiang. A question with an information focus as in (79) can only be expressed with the negation type form. If there is a contrastive focus on one constituent only the copula type question can be used as shown in (80) versus (81).

(79) A: Lao<sup>3</sup> si:<sup>2</sup> pai<sup>1</sup> Lua<sup>4</sup> Pha:<sup>2</sup>ba<sup>1</sup> bo<sup>2</sup>?
you will go Luang Phrabang not 'Are you going to Luang Phrabang?'

(b)	B:	Si:2 <b>bɔ</b> 2 pa	i <sup>1</sup> .		
		will not go			
		'I am not going	. '		
(80)	A:	?? Lao3 si:	<sup>2</sup> pai <sup>1</sup> Lua <sup>,</sup> 4 Pha	a:²ba·1	bɔ² ?
(81)	A:	Lao <sup>3</sup> si: <sup>2</sup>	<sup>2</sup> pai <sup>1</sup> Lua <sup>,4</sup> Pha	n:²ba·1	$m\epsilon n^2 b o^2$ ?
		'Is it to Luang	Phrabang that you a	are going?'	
(b)	B:	Men <sup>2</sup> leo <sup>5</sup> .	Bo <sup>2</sup>	mɛn².	
		COP PERF	not	COP	
		'Yes.'	'No.	,	

The data of Xiang, Standard Thai and Standard Lao reveal the first typological parameter. In all these languages we find the question morphology at the end of the sentence in contrast to the question morphology of Mandarin, which occurs in preverbal position. Apart from this difference in position, the distinction between negation type questions for presentational questions and copula type questions for contrastive questions are exactly parallel to Mandarin. In addition to the interpretation of the question types, the syntactic properties of Xiang question forms showed that even the subtle scope interactions support our syntactic analysis of the negation type as Pol1 head and of the copula type as Pol2 head.

# 4.3. Parameter II: negation type vs. ke-type

Kunming (Southwest Mandarin, Yunnan)

Question types: ke-type, no negation-based type, no particle question

What Mandarin, Xiang, Thai and Lao have in common is that question formation involves negation morphemes - only at different positions in the sentence. In Kunming, however, we find *ke*-type questions as the standard question form. The relevant morpheme is  $g_{\partial}$  which occurs in preverbal position. The example in (82) shows that this form is fully grammaticalised in the sense of McCawley (1994) and Cole & Li (1997).

(82) \*[Wo gə qu Beijing] bijiao hao?
I KE go Beijing better
'Is it better for me to go to Beijing?'

As with the negation based forms in the languages above, there is a alternative question form as given in (84). This form is constructed together with the morpheme  $g_{\partial}$  which we analyse as a copula morpheme.

(83) Ta gə xihuan zhe ben shu ?
(84) Ta gə fə xihuan zhe ben shu ?
you KE (C) like this book
'Do you like this book?'

Our tests show that these two variants correlate to the negation type versus copula type forms in the languages discussed above. The focus readings in (85) and (86) shows that only the form with the copula can be used in questions where one constituent is contrastively focused. The facts of *wh*-binding point into the same direction. Only the form in (88) with the copula the *wh*-word in subject position can be bound.

# **Focus readings**

(85)	?? Tə	ZOTIEN	gə	zo le	suxi?		
(86)	Tə	ZOTIEN	gə ∫ə	zo le	suxi?		
	he	yesterday	KE (COP)	make PERF	sushi		
	'Was it yesterday that he made sushi?'						

# wh-binding

(87)	*Nage	gə	xihuan	tə?
(88)	Nage	gə ∫ə	xihuan	tə?
	who	KE (COP)	like	he
	'Does anyb	ody like hin	n?'	

Even the data on scope interaction with universal quantifiers parallels this behaviour. An elliptical negative question to a simple *ke*-type question as in (89) can only be interpreted with narrow scope, whereas the same elliptical answer to a *ke*-copula question in (90) is interpreted with wide scope over the universal quantifier.

# **Scope interaction**

(89)	A:	Təmen	gə	bolien	(dou)		xihu	an	kai ts	se?
		they	KE	all	all		like		drive	car
		'Do they al	l like 1	to drive?'						
(b)	B:	Mru.	(=	bolien	(dou)		bu	xihua	nn.)	
		no		all	all		not	like		
		'No.	(Non	e of them li	kes to c	drive.	)'			
(90)	A:	Təmen	gə ∫ə	bolia	n	(dou	)	xihua	n	kai tse ?
		they	KE (	COP) all	;	all		like		drive car
		'Do they al	l like 1	to drive?'						
(b)	B:	Mru.	(=	Bu ∫ə	bolier	ı	xihu	an.)		
		no		not COP	all		like			
		'No. (Not	all of	them like to	drive.)	)				

Up to here we have isolated two parameters. One parameter specifies the position of the question morphemes in languages with negation based questions. The other parameter specifies the difference between languages with negation based question formation and *ke*-based question formation. Within the different types we have shown that the distinction between Pol1 and Pol2 questions are constructed with plain forms versus forms that involve a copula morpheme. The distinction between presentational and contrastive questions itself has proved independent of parametric variation.

The parameters of typological variation that we discussed so far are also covered by the tree diagram of Zhu (1985) which we cited as (15) in our introduction. The next language that we analyse, however, will show that the parameters have to be formulated in a more generalised way than in Zhu. Whereas Zhu assumes a hierarchical ordering of the parameters that yields only three types, we will show that both parameters are mutually independent and can be combined orthogonally to yield four different language types.

# 4.4. Combination of parameter I and II: ke-VO vs. VO ke

Kam mua<sup>•</sup> (Southwestern Tai, Northern Thailand) Question forms: *ke*-type, but sentence-final, VO *ke* 

In Kammua, the language of the formally independent kingdom of Lanna in Northern Thailand, we find questions types that are formed with an *ke* morpheme, but differently to the Kunming dialect of Chinese not in preverbal position but at the end of the sentence.

In a question with a presentational focus the morpheme  $k \mathfrak{D} \mathfrak{D}^2$  is attached at the sentence final position as in (91) and (92). Questions with contrastively focused constituents or questions that ask for an identification are constructed with the same question morpheme in combination with a copula morpheme. In our written sources that we collected, there are two types of copula morphemes. In the area of Chiangmai the copula  $m \mathfrak{e} \mathfrak{n}^6$  is used as shown in (93). This form can easily be traced back to a common source with the copula  $m \mathfrak{e} n^2$  in Standard Lao. In other areas of the former kingdom of Lanna we also find the copula  $cai^3$  which has a common source with Standard Thai  $ch\hat{a}i$  as in (94).

(91)	Aŋ¹ Lɔɔ¹	səəp3	kin <sup>5</sup>	then	npura	$k \mathfrak{I} \mathfrak{I}^2$ ?
	Ang Loo	like	eat	temp	ura	KE
	'Ang Loo,	do you like	tempu	ra?' (0	Okonogi	1995)
(92)	Dai <sup>3</sup>	khun <sup>3</sup>	pai1	Dɔɔi	<sup>1</sup> Suteep	$k_{3}$ $k_{3}$ ?
	PAST	climb	go	Doi S	Sutheep	KE
	'Have you	visited Doi 8	Suthee	ep alre	eady?' (O	konogi 1995)
(93)	Paa <sup>3</sup> mai <sup>2</sup>	Thai1	meer	n <sup>6</sup> kəz	2?	
	silk	Thai	COP	KE		
	'Is this Tha	i silk?' (Oko	onogi	1995)		
(94)	Can4 Taa <sup>1</sup>	pen <sup>5</sup>	5	mεε <sup>6</sup>	<sup>5</sup> niŋ <sup>1</sup> ca	ai <sup>3</sup> kəə²
	Can Taa	COP		wom	an C	OP KE
	'Is Can Taa	a woman?'	(Bons	sooth,	Chaimo	ngkol et al.)
(95)	Meen <sup>6</sup>	kaa²	Ba²,	/ b <b>ɔɔ</b> ²	<sup>2</sup> mɛɛn <sup>6</sup> .	
	COP	PRT	not	not	COP	
	'Yes.'		'No.'			

However, there is a problem with this analysis. In our morphological definition of question types in Mandarin at the very beginning of this presentation we have defined the *ke*-type as a type that is constructed with a preverbal modal auxiliary that is distinct from the negation morpheme. On the basis of our definitions it would be more plausible to call the questions type of Kammuan a particle question, since it occurs at the end of the sentence and is distinct from the negation.

There are two arguments how we can defend that this question type is in fact a construction which corresponds to the *ke*-type of Mandarin and that must be analysed as a sentence final *ke*-question. First, as we pointed out in our previous study in Chen & Schaffar (2000) that particle questions in Mandarin do not behave like functional heads of a polarity phrase. In contrast to the negation type and the copula type they are indifferent to focus readings as well as to other syntactic effects. The question with  $k D 2^2$  in Kammuan, however, is specified for a characteristic presentational focus reading. Secondly, there are also question particles in Thai that we discussed in our previous study. These particles, however, can not be combined with a copula to construct a complex question form. The paradigm that a simple question morpheme yields a presentational question, is a unique feature of the morpheme  $k D 2^2$ . In this property the morpheme  $k D 2^2$  patterns with the negation based questions morphemes of languages like Standard Thai, Lao or Xiang and not with the other question particles in Kammua<sup>\*</sup>.

Thirdly, in the following section we will show that just like the sentence final morpheme  $m\hat{a}i$  in Thai, or  $b2^{2}$  in Lao or *bo* in Xiang can be traced back to a preverbal negation morphemes, the question morpheme  $k22^{2}$  of Kammuan has a counterpart in the affirmative preverbal modal verb k of Thai which is etymologically related.

# 4.5. What is KE?

To find an answer to the question from what source the *ke* morphemes come from, let us have a look on some examples of Standard Thai where the cognate functional element  $k \partial$  appears in preverbal position. Note that Noss (1964) classifies this element as a modal and mentions that it is the most frequently used functional morpheme of Thai.

Sentences (97) and (98) are examples of complex sentences where in the second part  $\hat{k}$  occurs in preverbal position. Conditional sentences like (97) and sentences with a resultative sequence are commonly constructed in this way.

(97)	Thâa	khun	yàak	maa dûoi	kô	maa.
	if	you	want	come too	KE	come
	'If yo	u want to co	ome along, t	hen come.' (Haas	1964)	

(98) Sèt léεο kháo kô pai noon.
finishPERF he KE go sleep
'When it was finished, he went to bed.' (Noss 1964:181)

Example (99) shows a common idiomatic expression where in the first part the negation  $ma \square i$  is echoed by & in the second part. The morpheme & can also introduce a sentence that gives a reason or justification with the slight taste of reproach as in (100). Example (101) shows a very common construction where & in the repetition of the verb is translated as 'too' or 'also' or in a strong sense of co-ordination.

(99) mâi mâak kô nóoi
not much KE little
'whether many or few, if not a (whole) lot, then (at least) some'

(100) Kôo phòm khii kiàt thâonán nii.
KE I lazy only PRT
'Well, I am just lazy, that's all.' (Noss 1964:170)

(101) Khruu kô mii, nákrian kô mii teacher KE exist student KE exist 'There are both teachers and students.'

The most distinctive construction for the syntactic analysis of &, however, are examples like (102) and (103). Sentence (102) demonstrates a simple *wh*-question. Note that the question word remains in situ in the unmarked post-verbal position for objects. Example (103) is a possible answer to (102) and the Thai expression of universal quantification. In this construction & must occur pre-verbally and the *wh*-word is moved leftwards to a position immediately preceding &.

(102) Khun chôop arai?
you like what
'What do you like?'
(103) Phôm arai<sub>i</sub> kô chôop e<sub>i</sub>.
I what KE like
'I like everything.'

Similar constructions are documented in Mandarin Chinese in Association with Focus sentences as in (104)-(106). In (104) the constituent Li Si is associated with the focus sensitive particle *shenzhi* or *lian* 'even'. In this construction the particle is directly attached to the focused constituent, but the constituent itself has to be moved to a distinctive position preceding the verb and a characteristic morpheme *ye* or *dou* obligatorily occurs pre-verbally. The same kind of constructions are documented for a variety of AwF sentences by Hole (1999) as in (105) and (106).

(104)	Ta	[sher	nzhi / lian	Li Si	$]_i$	ye /	dou	rensł	ni	e <sub>i</sub> .
	he	even		Li Si		also		know	r	
	'He e	ven kr	nows LI SI.'	(Gasd	e 1998	8:65)				
(105)	Zhi y	vou	xingqitian		Laoli	i	*(cai)	)	gong	zuo.
	only		sunday		Laoli				work	
	'Laoli	i work	s only on S	unday	s.' (Ho	ole 19	99)			
(106)	(Zhi	yao)	wu ge ren		jiu	banc	ledon	g	le.	
	only	need	fife men			can n	nove		PERF	7
	'Only	with	fife men car	n you i	move	it.' (H	ole 19	99)		

Hypothesis: *ke* is an affirmative polarity head

The morpheme  $k\hat{\sigma}$  of Standard Thai belongs to the same class of functional elements as *ye*, *dou, cai* and *jiu* in Mandarin Chinese. A tentative syntactic analysis for sentence (103) is given in (107). Here we analyse  $k\hat{\sigma}$  as a functional head that projects a functional category in the INFL layer. The *wh*-word is hosted in the specifier position of this category. By this analysis we treat the universal quantification as an affirmative polarity construction. Note that this construction has the same structure as association with focus constructions in Mandarin.



# 4.6. Summary: Parameters of yes-no questions

The results of our investigation can be summarised as follows. The question forms of the different Chinese dialects and languages of Southeast Asia are specified by two parameters. One parameter specifies the position of the morphemes. The other parameter specifies whether the morphemes are based on negation morphemes or on affirmation morphemes. In every language, however, the question morphology is closely connected with polarity morphemes.

Parameter	negation type	affirmation type
pre VP	V-neg-VO	aff-VO
	Mandarin, Wu, Min	Kunming, Taiwanese,
		Teochew
sentence final	VO-neg (-V)	VO-aff
	Xiang, Thai, Lao,	Kammuaŋ
	Vietnamese	

Within the four different types the distinction between presentative Pol1 questions and contrastive Pol2 questions is invariantly constructed with the help of copula morphemes. The plain forms serve for the expression of presentational questions and the complex forms with the copula serve for the expression of contrastive questions.

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SZE-WING TANG

### 1. Introduction

In this paper, a novel way is proposed to define substantive categories and functional categories in natural languages. It will be argued that these two types of categories are derivative notions. A category is regarded as a 'substantive category' or a 'functional

inasmuch as it appears in a certain syntactic structure. The substantive category versus functional category distinction is relational instead of being based on properties inherent to them. Based on these assumptions, grammaticalization is analyzed as a process of deriving functional categories from substantive categories, which is a result of successive elimination of projections in bottom-up manner. The claim of structure elimination can be supported by evidence from the diachronic change of *de* in Chinese.

<sup>&</sup>lt;sup>\*</sup> Some ideas in this paper were originally presented at the 28<sup>th</sup> Annual Meeting of the Linguistic Association of the Southwest held at University of Texas at San Antonio (October 1999). I should thank the audiences for their input. Notice that the analyses are very preliminary. Comments and criticisms are appreciated.

### 2. Substantive vs. functional

Lexical items in natural languages can be divided into two major types, namely 'substantive' (or 'lexical') categories and 'functional' categories. It has been pointed out in the literature that a significant distinction between substantive categories and functional categories is that substantive categories have so-called 'descriptive content' that functional categories lack (Fukui 1986, Abney 1987). The so-called 'descriptive content' is a phrase's link to the world. Along these lines, substantive categories are supposed to constitute the basic units of expression and thought whereas the basic role of functional categories is to mark grammatical or relational features and to connect syntactic constituents via some purely syntactic relationship.

Under the Minimalist Program advocated by Chomsky (1995), features are primitive notions. A category is a collection of features, including categorial features, grammatical features, and semantic features. As for phonological features, I assume that they are not included in a category in the lexicon. They will be inserted at the terminal nodes in the phonological component, along the lines in Distributed Morphology (Halle and Marantz 1993).

What is important in the present discussion is that there are no additional features that label whether a category is substantive or functional.<sup>1</sup> I propose that the categorial status of lexical items is determined structurally. Under the theory of extended projection, Grimshaw (1991) points out that a category is functional by virtue of its relationship to a substantive category. Extended heads are substantive whereas extended projections are

<sup>&</sup>lt;sup>1</sup> Contrary to Fukui (1995), I assume that features that distinguish functional categories from lexical categories, such as  $[\pm F]$  and  $[\pm L]$ , do not exist.

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functional. Along these lines, I assume that a category is regarded as a 'substantive category' or a 'functional category' only in a certain structure in which it appears.<sup>2</sup> In other words, the 'substantive category' versus 'functional category' distinction is relational instead of being based on properties inherent to them.

Suppose that we have two categories X and Y, where X is the root. We can determine whether they are substantive or functional only when they are in a structure. Let us assume that Y is the extended projection of the extended head X in the configuration in (1). Y is not just a functional category; it is the functional category for X.

Under the present approach, the categorial status of lexical items is a relativized notion, which will be determined structurally. To define the categorial status of lexical items, let us take the statement in (2) to be correct.

 $<sup>^2</sup>$  According to Chomsky (2000), a language selects a subset [F] of a universal feature set F offered by Universal Grammar and assembles features from [F] into a lexicon Lex. I conjecture that Lex may have some structure, along the lines in Hale and Keyser (1993), and grammamticalization actually takes place in Lex.

#### (2) *Substantive categories vs. functional categories*

A category that is immediately dominated by less extended projections is more 'functional' than a category that is immediately dominated by more extended projections.

According to (2), whether a lexical item is substantive or functional depends on the structure it appears in. Under the present proposal, it will be hard to define the categorial status of a lexical item without a structure.

Let us consider the configuration in (1). As Y in (1) is not dominated by any projections in the structure, given the definition in (2), Y is regarded as a functional category for X.

Let us now consider the scenario in (3), in which both Y and Z are extended projections of X.

$$\begin{array}{cccc}
\begin{array}{cccc}
(3) & & & ZP \\ & & & Z & & YP \\ & & & & 2 & \\ & & & Y & & XP \\ & & & & 2 & \\ & & & & X & \end{array}$$

• • •

By definition, both Z and Y are functional categories. Are there any differences between them? The functional category Z in (3) is dominated by no extended projections whereas Y in (3) is dominated by an extended projection, namely Z. Z should be more

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functional than Y. If we compare the two different Y's in (1) and (3), we may say that Y in (1) should be more functional than that in (3), given the definition in (2).

In the next section, we will see how the ideas proposed here may shed some light on the theory of grammaticalization.

### **3.** Grammaticalization

What is 'grammaticalization'? Hopper and Traugott (1993) point out that grammaticalization focuses on how grammatical forms and constructions arise and the processes whereby items become more grammatical through time. Bybee, Perkins, and Pagliuca (1994) point out that grammaticalization is a process in which 'grammatical morphemes develop gradually out of lexical morphemes or combinations of exical morphemes with lexical or grammatical morphemes'. Lehmann (1995) points out that grammaticalization is a process in which 'something becomes or is made grammatical'. It may 'shift an item from a less grammatical to a more grammatical status'.

According to these linguists, grammaticalization is a process of forming 'grammatical items'. Using the distinction between substantive and functional categories, grammaticalization could be regarded as a process deriving functional categories from substantive categories (Roberts and Roussou 1999).

In terms of syntax, how can a substantive category undergo a historical change to a functional category? Based on the definition of substantive versus functional categories given in (2), I propose a theory of grammaticalization, as stated in (4). 'Elimination' described in (4) should be a diachronic process.<sup>3</sup>

### (4) *Grammaticalization as structure elimination*

Grammaticalization is a process in which projections are eliminated from the structure in bottom up manner.

In grammaticalization, it is more substantive or less functional elements that are removed. According to the statement in (2), categories immediately dominated by extended projections are always less functional than their extended projections. In other words, in grammaticalization, the dominated categories will have the 'first priority' to be removed in the structure. The elements at the bottom will be less stable. To see how (4) works, let us consider the derivation in (5).

Suppose that in (5) ZP is an extended projection of the extended head Y. After grammaticalization, the dominated projection, namely YP, is eliminated. Originally, Y was the root in (5a). After elimination, Z now becomes the root of the structure in (5b).

 $<sup>^{3}</sup>$  Why such an operation took place historically could be due to some extraneous factors. Do economy principles play a role in the process of elimination? Whether the language faculty is subject to some empirical conditions in language change is beyond the scope of this paper. See Chomsky (2000) for an interesting speculation on this issue.

(6) Ta de-le tou-jiang.he gain-Perf first-prize'He won the first prize.'

Such a usage of the verbal *de* can be traced back to archaic Chinese, which is documented in the oracle bone inscriptions and the bronze inscriptions, i.e. the eighth century B.C. or earlier. (7) is taken from the bronze inscriptions, in which *de* was used as a verb.

(7) Nai fu de.

so not acquire

'... therefore [someone] cannot gain [something].'

(Yue 1984)

In addition to the lexical meaning of de, it could be used as a functional category in archaic Chinese. It has been observed in the literature that de was used as a modal when it preceded a verb. (8) is an example from *Zuo Zhuan*, which was written during the period of Warring States from the fifth century B.C. to the third century B.C. In (8) dewas preceding the verb *you* 'have' and it was interpreted as a modal. According to the observation by Liu (1998), the modal usage of de first emerged during the period of Spring and Autumn, i.e. the eighth century B.C. Sun (1996) points out that about 31% of de's appeared in the 'de V' sequence and functioned as a modal auxiliary in *Mengzi* (300 B.C.).

(8) Jin, Chu wu xin. Wo yan de you xin?
Jin Chu not trust I how can have trust
'Since the two countries Jin and Chu have lost their credit, how can I keep my

(Liu 1998)

Although the modal interpretation of de was still preserved in the Eastern Han Dynasty, i.e. the first century A.D., the word order was different. For example, (9) is

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from a book called *Lun Heng* written in the Eastern Han Dynasty. The noticeable difference is that the modal *de* was following the main verb *ji* 'beat'.

(9) Yi ren ji de.one person beat can'One person can beat [the drum].'(Yue 1984)

Interestingly, the direct object may precede the modal de when de was negated. For example, in (10) *shou* 'hand' was the object of the verb *yao* 'move' and the modal de was negated by *bu* 'not'.

(10) ... shi qie yao shou bu de.
cause concubine move hand not can
'[Someone] caused his concubine not to be able to move her hand.'
(Yue 1984)

Since the Tang Dynasty, i.e. the seventh century, verbal and adjectival elements could follow the postverbal modal *de*, for instance, (11) which is from a Tang poem. Such a usage is still preserved in modern Chinese. (11) is still intelligible to speakers of modern Chinese.

(11) Wu ren hua de cheng.
no person draw can finish
'Nobody can finish drawing.'
(Yue 1984)

Yue (1984) observes that de was used to indicate the completion of the event in the Eastern Han Dynasty. For example, in (12) de indicated that the event of blossoming was done.

(12) ... kai de fang zhi bu shi hua.
blossom finish just know not be flower
'[The peony] was shown that it was not a flower after blossoming.'
(Yue 1984)

In modern Chinese de can function as a morpheme that introduces a resultative clause. Yue (1984) argues that such a usage developed from the meaning of completion of de, which emerged in the Northern and Southern Dynasties, i.e. the fifth century to sixth century, and was widely used in the Tang Dynasty. For example, (13) is fom a poem written in the Tang Dynasty, in which de indicated that the event of smelting was done.

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(13) Lian de li xin cheng si hui.
smelt result depart heart become dead ash
'To smelt oneself such that parted hearts become dead ash.'
(Yue 1984)

The counterpart of the Mandarin Chinese *de* in spoken Cantonese is *dak*. What is interesting is that *dak* in Cantonese has a focus reading that Mandarin lacks (Lee 1995, Tang 2002). For example, the postverbal *dak* in (14) denotes a focus reading, similar to the interpretation of *only* in English. The counterpart of (14) in Mandarin Chinese will be unacceptable, as shown in (15).

- (14) Keoi tai <u>dak</u> saam-bun syu. (Cantonese)
  he read only three-Cl book
  'He read only three books.'
- (15) \*Ta kan de san ben shu. (Mandarin) he read DE three-Cl book

I suspect that the focus element dak in Cantonese could have been derived from the de that had the meaning of completion. The supporting evidence comes from the distribution of the focus dak and its interpretations in modern Cantonese. Let us consider the following examples, in which dak apparently may follow the predicates that denote accomplishments (=(16)), achievements (=(17)), 'activities' (=(18)), and 'states' (=(19)).

- (16) Keoi se dak loeng-pin man. (accomplishments)
  he write only two-Cl article
  'He wrote only two articles.'
- (17) Ni ci zinzang sei dak loeng-go sibing. (achievements)
  this Cl war die only two-Cl soldier
  'Only two soldiers died in the war this time.'

(18) Go bibi haam dak bun fanzung. ('activities')Cl baby cry only half minute'The baby cried only for half a minute.'

(19) Do faa hung dak loeng jat. ('states')Cl flower red only two day'The flower was red only for two days.'

In principle, the verb *haam* 'cry' denotes activities. However, due to the presence of *dak*, sentence (18) seems to convey a meaning that the baby is no longer crying. The duration phrase *bun fanzung* 'half a minute' marks the boundary of the event of crying.

The existence of *dak* in (19) implies that the flower is no longer red and the duration phrase *loeng jat* 'two days' marks the boundary of the event. In Cantonese the degree word *hou* 'very' modifies only adjectives and stative predicates. As the adjectival

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predicate in (19) cannot be modified by *hou* 'very', as in (20), the adjectival predicate in (19) indicates a change of state and the eventuality should not be analyzed as a state. The generalization seems to be that the focus *dak* requires the predicate to indicate a change of state, more specifically, a bounded event. In other words, *dak* conveys a meaning of completion in Cantonese. On a par with the resultative marker, I assume that the focus element *dak* inherited the meaning of completion from *de* historically.

(20) \*Do faa hou hung dak loeng jat.Cl flower very red only two day'The flower was very red for two days.'

Our discussion of the various usages of *de* in Mandarin Chinese and its counterpart in Cantonese and the path of their historical change can be summarized in (21). Let us assume that the verbal usage of *de*, i.e. the one having the meaning of 'to acquire', was the original, from which various meanings were derived in grammaticalization. The meanings of 'modal' and 'result' are still preserved in modern Mandarin while the 'focus' usage of *de* can only be found in Cantonese.

(21) *Grammaticalization of* de *in Chinese* 



How to link up all these interpretations of *de* in Chinese? In the next section, I will argue that grammaticalization of *de* can be accounted for by the claim that gramaticalization is a process of eliminating syntactic projections.

## 5. Structure elimination

Let us assume with Cinque (1999) that some functional projections, such as Mood, Tense, Modality (Mod), and Aspect (Asp), exist in every full clause. All these functional categories are considered to be extended projections of verbs. (22) is a partial representation of a clause.



I have been assuming that the substantive vs. functional distinction is determined structurally. As it is dominated by at least four extended projections, the extended head in (22), i.e. V, should be less functional than all the categories in the structure, according to the definition in (2). If the root V in (22) is overtly realized as de (after assigning phonological features to the terminal node in the phonological component), de will be interpreted as a lexical verb meaning 'to acquire', as shown in (23).



Suppose that (24) is derived from (22) by eliminating two projections, i.e. AspP and VP that are dominated by ModP.<sup>4</sup> After grammaticalization, Mod became the root of the structure. If Mod in (24) is overtly realized as de, it should be interpreted as a modal. Changing from (22) to (24) took place in the fifth century B.C. to the third century B.C. in old Chinese.



Deriving the meaning of completion from the verbal de in the Eastern Han Dynasty could be regarded as a process in which one dominated projection was eliminated in the structure, i.e. that (25) was derived from (22). If Asp is overtly realized as de, it will denote the completive aspect.<sup>5</sup>

<sup>&</sup>lt;sup>4</sup> I assume that such elimination took place historically and its output is preserved in the lexicon. When the modal *de* is drawn from the lexicon in modern Mandarin, the AspP and VP that were originally dominated by ModP should not be there. <sup>5</sup> The postverbal focus *dak* in Cantonese may keep the completive meaning and some focus features are

<sup>&</sup>lt;sup>5</sup> The postverbal focus *dak* in Cantonese may keep the completive meaning and some focus features are added in the derivation.



According to Yue-Hashimoto (1971), Huang (1982) and C.-C. J. Tang (1990) the postverbal morpheme *de* in modern Chinese that introduces a resultative clause is regarded as a complementizer. In Cinque's story, the complementizer could be regarded as part of the mood system. Along these lines, I assume that the postverbal resultative marker *de* was derived by eliminating all the dominated projections, as in (26).



If Mood in (26) is realized as de, it is dominated by no extended projections. According to the definition given in (2), Mood in (26) should be the most functional

element among all the categories we have seen. It is not surprising to see that such a usage is almost the 'final' stage of grammaticalization of *de* in Chinese.

## 6. Concluding remarks

Following the spirit of the Minimalist Program, this paper assumes that categories such as substantive categories and functional categories are derivative notions. Substantive categories and functional categories should be defined structurally. It is suggested that a category that is dominated by less extended projections is more 'functional' than a category that is dominated by more extended projections. Along these lines, grammaticalization is regarded as a process in which projections are eliminated in bottom-up manner. Under the present proposal, grammaticalization of *de* in Chinese can be captured and its various interpretations can be correlated.

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### Island Effects and Episodic Eventualities in Chinese Topicalization<sup>1</sup>

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In this study note, I report two facts of Chinese syntax:

- (1) a. Island effects are present in topicalization of sentences that encode episodic eventualities;
  - b. The specificity of nominals can be syntactically represented by word order in Chinese.

Episodic eventualities are those that can be spatio-temporally defined. They are specific eventualities. The fact listed in (1a) indicates that topicalization in sentences that encode episodic eventualities is an operation of movement in Chinese. The fact listed in (1b) suggests that specificity is an issue of syntax. If we regard episodic eventualities as specific eventualities, we wonder whether there is any relation between the syntax of specificity in the two cases.

This study note is organized as follows. I present the first fact in section 1, and the second fact in section 2. We then discuss the implications of the second fact to the so-called Complex NP Constraint in section 3. Finally, in section 4, we both make a conclusion and pose questions.

## 1. Episodic eventualities and island effects in topicalization

It has been claimed by some authors that topicalization does not show any island effect in Chinese (Xu & Lagnendoen 1985, X&La hence, etc.). Based on this claim, these authors assume that topicalization in Chinese cannot be derived by movement. In 1.1 through 1.4 below, we examine the adjunct, complex NP, subject, and wh islands in topicalization, respectively. We will see that none of the widely cited data that are used to show that there is no island effect encodes episodic eventualities. If we consider episodic eventualities, all the types of island effects show up.<sup>2</sup>

Episodic eventualities are specific eventualities, in contrast to the comparatively more stable states (cf. individual-level predicates), habitual eventualities, and irrealis eventualities, including those denoted by the sentences that contain modal verbs and modal adverbials.

In all of the relevant data, the a-sentences are in the canonical order, where no topicalization occurs. The b-sentences and the c-sentences are topicalization examples, where the left-peripheral topic is related to a gap in the clause. Both a- and b-sentences are episodic eventuality sentences, whereas the c-sentences are not.

<sup>&</sup>lt;sup>1</sup> Topicalization in Chinese is intriguing. No wonder it has always been Dieter's favorite. Thank you, Dieter. When our "regular" theories are challenged in this area, your smiling and happy hunting of truths are encouraging to me. I also thank Daniel Hole for his comments on this paper.

 $<sup>^{2}</sup>$  Hu & Pan (2001) claim that "island constraints can be violated only if the topic NP moved out of the island is formally licensed by the verb in question or through predication." Empirically, however, their claim cannot cover the systematic contrasts with respect to episodic eventualities listed here. Theoretically, their assumption that secondary predicates must be controlled by the object of the matrix clause (p. 4) is not compatible with the following fact: subject-oriented secondary predicates and secondary predicates that have their independent subjects are observed in Chinese, as well as in other languages.

# 1.1 Episodic eventualities and the complex NP islands in topicalization

As mentioned, by X&La, most speakers find the following (2b) "quite unnatural." In this sentence, the clause-initial topic is related to a gap inside the complex NP of the clause. The marginal status of the sentence shows the Complex NP island effect. Similar to (2b), other b-sentences are all unacceptable. The c-sentences, however, are fine.

(2)	a.	(Wo xiang) du-guo zhe ben shu de ren lai le. I think read-EXP this CL book MOD person come PRT
		'(I think) The person who read this book has come.'
	b.	??Zhe ben shu, (wo xiang) du-guo de ren lai-le. (X&La (64)) this CL book I think read EXP MOD person come-PRF
		Intended: 'This book, I think the person who read came.'
	c.	Zhe ben shu, (wo renwei) du-guo de ren bu duo. (X&La (61a)
		this CL book I think read-EXP MOD person not many 'This book (I think) the persons who read are not many.'
(2)	0	We kenjien le hue zbovie hue de ren
(3)	a.	I see-PRF draw these picture MOD person
		'I saw the person who had drawn these pictures.'
	b.	*Zhexie hua, wo kanjian-le hua de ren.
	c.	Zhexie hua, wo dou mei jian-guo xihuan de ren. (Cheng 1991)
		these picture I even all see-EPR like MOD person
		'These pictures, I have not seen anyone who likes them.'
(4)	a.	Gangcai dasao zhe jian fangzi de ren zhengzai xiuxi.
		just.now clean this CL room MOD person PRG rest
		'The person who cleaned this room just now is taking a rest.'
	b.	*Zhe jian fangzi, gangcai dasao de ren zhengzai xiuxi.
		this CL room just.now clean MOD person PRG rest
	c.	Zhe jian fangzi dasao de ren yiding hen duo.
		This CL room clean MOD person must very many
		'This room, (the) persons who {cleaned/clean} it must be many.'
(5)	a.	Wo zhaodao-le shouyang zhege wanpi de haizi de ren.
		I find-PRF adopt this naughty MOD child MOD person
		'I have found a person who had adopted this naughty child.'
	b.	*{Zheme/Zhege} wanpi de haizi, wo zhaodao-le shouyang de ren.
		so/this naughty MOD child I find-PRF adopt MOD person
	c.	Zheme wanpi de haizi, wo zhao-bu-dao yuanyi shouyang de ren.
		so naughty MOD child I can't-find like adopt MOD person
		'Such a naughty child, I cannot find a person who is willing to adopt her/him.' (Xu&Liu: 47)
(6)	а	Na ben [Akiu: chuban e:] de shu: chu-le zhengzhi wenti
(0)		that CL Akiu publish MOD book show-PRF political problem
		'That book that Akiu published got into a political trouble '
	b	*Akiu: na ben [e: chuban e:] de shu: chu-le zhengzhi wenti
	0.	Akiu that CL publish MOD book show-PRF political problem
	c.	Akiu <sub>i</sub> , xuduo $[e_i \text{ chuban } e_i]$ de shu <sub>i</sub> dou mai-de bu-cuo. (Tsai 1997)
		Akiu many publish MOD book all sell-DE not-bad
		'Akiu, many books that (he) published sell well.'

1.2 Episodic eventualities and subject islands in topicalization

$\frac{1.2}{(7)}$	a.	Ta shuo-le zhexie shi rang wo dangshi hen chijing.
(.)		he say-pref these thing make I then very surprised
		'That he said these things made me very surprised at that time.'
	b.	*Zhexie shi, ta shuo-le rang wo dangshi hen chijing.
		these thing he say-PRF make I then very surprised
	c.	Zhexie shi, ta shuo bu heshi. (X&La (51))
		these things he say not appropriate
		'That he says these things is not appropriate.'
(8)	a.	Wo erzi xie-le na pian wenzhang rang wo gandao zihao.
		I son write-PRF that CL article make I feel pride
	1	That my son wrote that article made me feel pride.
	b.	*Na pian wenzhang wo erzi xie-le rang wo gandao zihao.
	_	that CL article I son write-PRF make I feel pride
	C.	that kind MOD article I can app write really make I feel pride
		'That kind of articles that my son can write them makes me really pride '
(9)	я	Baoyu zuotian tou-kan na ben huangse-yiaoshuo gihuai-le Daiyu
$(\mathcal{I})$	u.	Baoyu vesterday secretly read that CL vellow-novel anger-PRF Daiyu
		'That Baoyu read that porn novel secretly vesterday angered Daiyu '
	b.	*Na ben huangse-xiaoshuo, Baoyu zuotian tou-kan gi-huai-le Daiyu.
		that CL yellow-novel Baoyu yesterday secretly.read anger-PRF Daiyu
	c.	Na ben huangse-xiaoshuo, Baoyu zuotian tou-kann, yidianr ye
		that CL yellow-novel Baoyu yesterday secretly.read little even
		bu-qiguai.
		not-surprising
		'That porn-novel, that Baoyu read it secretly yesterday is not surprising at all.'

# 1.3 Episodic eventualities and WH islands in topicalization

It has been generally recognized that argument wh-phrases do not form either overt or covert movement chains in Chinese (esp. Tsai 1994). In contrast, adverbial wh-phrases do undergo covert movement in Chinese (Huang 1982, Tsai 1994, etc.). We thus consider only adverbial wh construction data.

(10)	a.	Lao Wang zuotian zenyang piping-le na ge xuesheng?
		Lao Wang yesterday how criticize-PRF that CL student
		'How did Lao Wang criticize that student yesterday?'
	b.	*Na ge xuesheng, Lao Wang zuotian zenyang piping-le?
		that CL student Lao Wang yesterday how criticize-PRF
	c.	Na ge xuesheng, Lao Wang meitian zenyang piping?
		that CL student Lao Wang everyday how criticize
		'How does Lao Wang criticize that student everyday?'
(11)	a.	Lao Wang zuotian weishenme chi-le na fu zhong-yao?
		Lao Wang yesterday why eat-PRF that CL Chinese-medicine
		'Why did Lao Want take that Chinese medicine yesterday?'
	b.	*Na fu zhong-yao, Lao Wang zuotian wieshenme chi-le?
		that CL Chinese-medicine Lao Wang yesterday why eat-PRF
	c.	Na fu zhongyao, Lao Wang weishenme yiding yao chi?
		that CL Chinese-medicine Lao Wang why definitely want eat
		'Why does Lao Wang definitely want to take that Chinese-medicine?'

- (12) a. Lao Li guancha-le Akiu ruhe banli zhe jian shi. Lao Li observe-PRF Akiu how handle this CL matter 'Lao Li observed how Akiu handled this matter.'
  - b. \*Lao Li guancha-le zhe jian shi Akiu ruhe banli. Lao Li observe-PRF this CL matter Akiu how handle
  - c. Lao Li bu zhidao zhe jian shi Akiu yinggai ruhe banli. Lao Li not know this CL matter Akiu should how handle 'Lao Li does not know how Akiu should handle this matter.'

1.4 Episodic eventualities and adjunct islands in topicalization

- (13) a. Ni xi zhe jian zang yifu de shihou, wo zhengzai mai xiyi-ji.
   you wash this CL dirty clothing MOD time I PRG buy washing-machine 'When you washed this dirty garment, I was buying a washing-machine.'
  - b. \*Zhe jian zang yifu, ni xi de shihou, wo zhengzai mai xiyi-ji. this CL dirty clothing you wash MOD time I PRG buy washing-machine
  - c. Zhe jian zang yifu, ni xi de shihou, kending yao hua bushao liqi. this CL dirty clothing you wash MOD time certainly must spend much energy 'This dirty garment, when you wash it you will certainly have to make a lot of effort.' (Gasde & Paul 1996: 279)
- (14) a. Wo yaoqing zhe wei zuojia de shihou, zheng huan ganmao.
   I invite this CL writer MOD time PRG suffer cold
   'When I invited this writer, I was (just) suffering from a cold.'
  - b. \*Zhe wei zuojia, wo yaoqing de shihou, zheng huan ganmao. this CL writer I invite MOD time PRG suffer cold
  - c. Zhe wei zuojia, wo yaoqing de shihou, shi-bu-shi yinggai shuo ji this CL writer I invite MOD time be-not-be should say several ju zanmei de hua? CL praise MOD word

'This writer, when I invite {him/her}, should I say a few praising words?'

- (15) a. (Zai) Ni mai zhe suo fangzi zhiqian, wo qu zhao-le yi ge gongzhengren.
   at you buy this CL house before I go seek-PRF one CL notary.public
   'Before you bought this house, I have consulted a notary public.'
  - b. \*Zhe suo fangzi (zai) ni mai zhiqian, wo qu zhao-le yi ge gongzhengren. this CL house at you buy before I go seek-PRF one CL notary.public
  - c. Zhe suo fangzi (zai) ni mai zhiqian, yinggai qu zhao yi ge gongzhengren. this CL house at you buy before should go seek one CL notary.public 'This house, before you buy it, you should consult a notary public.' (Gasde & Paul 1996: 279, 283)

Note, however, topic gaps in non-temporal adverbials seem hard to be licensed, regardless of whether the eventuality is episodic or not:

- (16) a. \*Xiaoshuo, yinwei wo xihuan, jingchang qu shudian. novel because I like often go bookstore Intended: 'Novels, since I like them, I often go to bookstores.'
  b. \*Na ben xiaoshuo, yinwei wo mai-le, wu-le huoche.
  - that CL novel because I buy-PRF miss-PRF train Intended: 'That novel, since I bought it, I missed the train.'

 c. \*Gao Qiang<sub>i</sub> na, Zhou Hua wei-le e<sub>i</sub> mei lai, zheng shengqi ne. Gao Qiang PRT Zhou Hua because not come just mad PRT Intended: 'As for Gao Qiang, Zhou Hua is being mad because he did not come.' (Shi 2000: 398)

In the intended readings, the eventuality expressed by (16a) is not an episodic one, whereas that by (16b) is. Neither is acceptable.

Like in English, parasitic gaps are fine:

(17) Na ben shu, yinwei wo xihuan t, zao jiu qu mai-le t. that CL book because I like early then buy-PRF 'That book, because I like, I bought long time ago.'

## 1.5 Conclusion: Move in episodic eventualities!

The following data in (18) show that extraction of an object (18a, b) or from a complement (18c) in the episodic contexts is fine. The launching sites of the extraction are not islands.

(18)	a. Zhe pian wenzhang, wo jintian zaoshang ka			
		this CL article I today morning read-PRF		
		'This article, I read this morning.'		
	b.	Na fu zhongyao, Lao Li gangcai chi-le.		

- that CL Chinese-medicine Lao Li just.now eat-PRF 'That Chinese medicine, Lao Li took just now.'
- c. Na fu zhongyao, wo kanjian Lao Li gangcai chi-le. that CL Chinese-medicine I see Lao Li just.now eat-PRF 'That Chinese medicine, I saw Lao Li take just now.'

The contrast between the b-sentences in (2) through (12) and (18) is that of the island effects, and the contrast between the b-sentences and the c-sentences in (2) through (12) indicates that the island effects are seen in episodic eventualities, but not elsewhere.

Considering the contrast between specific eventualities and other eventualities with respect to the complex NP, subject, and the wh island effects, we claim that topicalization in specific eventuality-denoting sentences are derived by movement. Our claim is compatible with Li's (1998, 2000) conclusion that topicalization can be derived by movement. She drew her conclusion from her studies of various reconstruction effects of binding, idiom chunks, and the topicalization of PPs, which have no corresponding (null) pro-forms, the island effects of the PP topics, etc. Note that she does not separate episodic sentences from other sentences, and her data include both types.

As we said before, episodic eventualities are specific eventualities. Why does specificity play a role in island effects? In the next subsection, we present another fact from Chinese: the specificity of nominals can be syntactically represented by word order in Chinese. This second fact suggests that specificity is an issue of syntax.

2. Indefinite nominals with Outer Modifiers are exclusively specific

# 2.1 Outer and Inner Modifiers

In Chinese, RCs, as well as other types of modifiers of nominals (APs, PPs, possessors), can occur at either a left-peripheral position (Outer Modifier) or a non-peripheral position (Inner

Modifier) of nominals. In the former case, the internal order of the nominals is Modifier-de-Numeral-Classifier-N, as in the a-sentences below, and in the latter case, the order is Numeral-Classifier-Modifier-N, as in the b-sentences below.<sup>3 4</sup>

(19)	a.	<u>dai yanjing de</u> san ge xuesheng	(Outer RC)
		wear glasses DE three CL student	
	b.	san ge <u>dai yanjing de</u> xuesheng	(Inner RC)
		both: 'three students who wear glasses'	
(20)	a.	zuixunxun de san ge xuesheng	(Outer AP)
		drunk DE three CL student	
	b.	san ge <u>zuixunxun de</u> xuesheng	(Inner AP)
		three CL drunk DE student	
		both: 'three drunk students'	
(21)	a.	<u>Li Jiaoshou de</u> san ge xuesheng	(Outer Possessor)
		Li professor DE three CL student	
	b.	san ge Li Jiaoshou de xuesheng	(Inner Possessor)
		three CL Li professor DE student	· · · · · · · · · · · · · · · · · · ·
		both: 'three students of Professor Li's'	

All types of modifiers can occur in the Inner position, whereas not all can occur in the Outer position. Material-denoting modifiers, for instance, cannot occur as Outer Modifiers:

(22)	a.	Akiu mai-le liang zhang <u>boli (de)</u> zhuozi.
		Akiu buy-PRF two CL glass DE table
		'Akiu bought two glass tables.'
	b.	*Akiu mai-le <u>boli (de)</u> liang zhang zhuozi.
(23)	a.	Akiu mai-le wu shuang <u>buxiu-gang (de)</u> kuaizi.
		Akiu buy-PRF five pair stainless-steel DE chopstick
		'Akiu bought five pairs of stainless-steel chopsticks.'

b. \*Akiu mai-le <u>buxiu-gang (de)</u> wu shuang kuaizi.

## 2.2 The exclusive specific reading of indefinites with Outer Modifiers

The semantic effect of this ordering difference is that an indefinite with an Outer modifier takes on a 'specific' and/or 'presuppositional' reading, exclusively. This is shown in the following four aspects.

Firstly, indefinites with an Inner modifier or without any modifier cannot (24b), whereas indefinites with an Outer modifier can (24a), occur as preverbal subjects, which cannot be nonspecific in Chinese generally (Chao 1968, Tsai 2001a, among others).

(i) a. <u>Xue wuli de</u> na san ge xuesheng lai-le. study physics DE that three CL student come-PRF 'Those three student who study physics have come.'
b. Na san ge <u>xue wuli</u> de xuesheng lai-le.

that three CL study physics DE student come-PRF 'Those three student who study physics have come.'

<sup>&</sup>lt;sup>3</sup> In Chinese, if a demonstrative or a universal quantifier occurs with a modifier, the modifier can also occur in either the left-peripheral position of the nominal, as in (i-a), or an internal position, as in (i-b).

There is a rich literature on the two orders (Chao 1968, Huang 1982, Tsao 1986, Hou & Kitagawa 1987, Li 1998: 226, among many others). Since the nominals in either order are presupposed, their difference, if there is any, is not that of specificity. We do not discuss such data in this paper.

<sup>&</sup>lt;sup>4</sup> In order to focus on the general specificity effect of nominal-internal word-order, we avoid using the data where the numeral is yi 'one' in this paper. Like *ein* in German and *un* in French, yi has properties of an indefinite determiner, and interacts with relatives.

(24)	a.	[dai yanjing de (na) san ge xuesheng] dao le	(Outer RC)
		wear glasses DE that three CL student come PRF	
		'(the) three students who wear glasses came.'	
	b. *	[san ge ( <u>dai yanjing de</u> ) xuesheng] dao le	(Inner RC)

Secondly, indefinites with an Inner modifier or without any modifier cannot (25b), whereas indefinites with an Outer modifier can (25a), occur as shifted object, which cannot be nonspecific in Chinese generally (Liu et al 1983: 270, Qu 1994, among others).

(25)	a.	Akiu [Daiyu mai de (na) san ben shu] du-guo-le.	(Outer RC)
		Akiu Daiyu buy DE that three CL book read-EXP-PRF	
		'Akiu has read (the) three books which Daiyu bought.'	
	b. *	Akiu [san ben (Daiyu mai de) shu] du-guo-le.	(Inner RC)

Thirdly, the argument position following a (dis)appearance verb, which is a 'weak' position according to Huang (1987), is available to indefinites with an Inner modifier or without a modifier (26a), but not available to indefinite nominals with an Outer modifier (26b).

(26)	a.	Jie-shang lai-le [san ge ( <u>dai yanjing de</u> ) xuesheng] (Inner RC)
		street-on come-PRF three CL (wear glasses DE) student
		'On the street came three students who wear glasses.'
	b. *	Jie-shang lai-le [dai yanjing de san ge xuesheng] (Outer RC)

Fourth, indefinites with Outer modifiers cannot occur as objects of verbs of creation.

- (27) a. Daiyu ming-nian gei wo zhi san shuang ta ziji sheji de mao-wazi. (Inner RC) Daiyu next-year for I knit three pair she self design DE wool-sock
   'Daiyu will knit me three pairs of woolen socks which she designs herself.'
  - b. \*Daiyu ming-nian gei wo zhi <u>ta ziji sheji de</u> san shuang mao-wazi. (Outer RC)

According to Diesing (1992: 111), indefinite objects of verbs of creation must have a nonspecific reading. The object of the following sentence is not presupposed.

(28) I usually write a book about slugs.

Nominals with an Outer modifier have been assumed to be definite in Chinese and other languages (Chesterman 1991, Halliday 1985, Kölver 1978, McCawley 1988, Seiter 1978, Wu 1996). However, such nominals are not definite in Chinese for at least three reasons. First, unlike definite nominals, which allow the demonstrative *na* 'that,' such nominals cannot occur as equivative predicates, indicating that they are intrinsically individual-denoting and non-predicative, as shown in (29):

- (29) a. Baoyu he Daiyu jiu shi **na** liang ge <u>wo tidao de</u> nianqing-ren. Baoyu and Daiyu exactly be that two CL I mention DE young-person 'Baoyu and Daiyu are the two young persons I mentioned.'
  - b. Baoyu he Daiyu jiu shi <u>wo tidao de</u> **na** liang ge nianqing-ren.
  - c. \*Baoyu he Daiyu jiu shi <u>wo tidao de</u> liang ge nianqing-ren. (Outer RC)

Second, such nominals cannot occur as objects of verbs of creation, as seen in (27) above, whereas no such constraint is seen on definite nominals. More data are listed below:

- (30) a. Baoyu meitian yao xie san fen <u>guanyu shichang-jingji de</u> baogao. (PP) Baoyu everyday must write three CL about market-economy DE report 'Baoyu must write three reports on market economy everyday.'
  - b. \*Baoyu meitian yao xie <u>guanyu shichang-jingji de</u> san fen baogao.
  - c. Baoyu meitian yao xie **ta de na** ben guanyu shang-ren de xiaoshuo. Baoyu everyday must write he DE that CL about business-men DE novel 'Baoyu must write his novel about business-men every day.'
- (31) a. Daiyu jingchang zai zhuo-shang hua liang zhi <u>hen ke'ai de</u> xiaomao. (AP) Daiyu often at table-on draw two CL very lovely DE kitten
   'Daiyu often draws two very lovely kittens on the table.'
  - b. \*Daiyu jingchang zai zhuo-shang hua <u>hen ke'ai de</u> liang zhi xiaomao.
  - c. Daiyu jingchang zai jia-li hua **ta de** hua.
    - Daiyu often at home-in paint she de picture 'Daiyu often paints her pictures at home.'

If demonstrativeless nominals with an Outer modifier are indefinite, and are presupposed indefinite (specific), we see a new type of presentation of specificity in nominals. In languages such as Turkish (Enc 1991, Diesing 1992, et al), Finnish (Kiparsky 1998), Hindi (Butt 1993), and Hebrew (Siloni 1997), specificity of nominals can be marked by morphological case. In Chinese, a case-less language, specificity of nominals can be affected by the position of nominal-internal modifiers.

Specificity has been represented nominal-internally in the literature. De Jong (1987) proposes that the features of D vary, corresponding to both the definiteness and Milsark's strong-weak contrast of indefinites. Milsark (1974) assumes that weak determiners, which give nonspecific readings, are structurally akin to adjectives, in contrast to strong determiners, which give specific readings. Developing Milsark's theory, Zamparelli (1996 [2000]) argues for a split DP hypothesis: the higher DP hosts determiners of nominals which have a specific reading, whereas the lower DP hosts determiners of nominals which have a nonspecific reading. In Zamparelli's approach, an exclusive specific reading of a nominal is related to a higher position of the determiner. Moreover, Zamparelli claims that "in some cases, an abstract functional head can be licensed if a modifier of the appropriate type is generated or moved into its specifier" (1996: v). Crisma (1991) and Cinque (1992) have proposed that modifiers of nominals such as adjectives are hosted in the specifiers of multiple functional projections.

The correlation between the Chinese nominal-peripheral position of Outer modifiers and their exclusive specific reading directly supports Zamparelli's nominal-internal structure approach to specificity.

## 3. Specificity and CNPC in general

In this section I link the correlation between nominals with a peripheral modifier and their exclusive specific/presupposed reading in Chinese to the so-called the Complex NP Constraint (CNPC) (Ross 1967). I will claim that the selective effect of Complex NP Constraint is the blocking effect of elements at a Specificity Operator position, and the correlation we revealed provides syntactic evidence for the existence of the operator position.

The so-called CNPC covers the contrast like the following:

- (32) a. Who did Poirot claim [that he saw \_ last week]?
  - b. \*Who did Poirot make [the claim [that he saw \_ last week]]?
  - c. \*This kid, I must call [the teacher [who punished \_ ]]

In the well-formed (32a), *who* is extracted from a complement clause of the verb *claim*. In the unacceptable (32b), *who* is extracted from a complement clause of the noun *claim*. In (32c), *this kid* is extracted from a relative clause (RC). Ross proposes that movement out of a complex NP is blocked, and Complex NPs are islands for movement.

However, it has been found that CNPC does not apply to nonspecific nominals: arguments can be extracted out of nonspecific nominals (See Szabolcsi & den Dikken 1999 for a review). In (33a) and (33b), the wh-arguments are extracted from the nonspecific DPs, but not definite and strong indefinite DPs (Fiengo & Higginbotham 1981, Manzini 1992, 1998, Diesing 1992). In (33c), the wh-argument is extracted from the complement clause of the nonspecific DP, but not that of the definite DP (Rothstein 1988).

- (33) a. Which man did you discover [{\*Mary's/??the/a} poem about \_]?
  - b. Who did you see [ $\{*these/*every/\emptyset\}$  pictures of \_]?
  - c. Which man did they consider [ $\{*the/?\emptyset\}$  rumors [that Bob would betray \_]]?

Pollard and Sag (1994: 206) (see also Postal 1998: 167) present the following data, where wh-arguments are extracted from indefinite DPs:<sup>5</sup>

- (34) a. Which rebel leader would you favor a proposal that the CIA assassinate t?
  - b. Which Middle East country did you hear rumors that we had infiltrated t?

The data in (33) and (34) are similar to Diesing's (1992: 115) data in (35). In (35a), the object of the verb of creation *write* has an exclusive nonspecific reading, and the extraction from the object is fine. In (35b), the object of the experiencer verb *like* has an exclusive generic reading, which is not nonspecific, and the extraction from the object is not allowed.

(35)	a.	What do you usually write a book about?	(nonspecific)
	b.	*What do you usually like a picture of?	(not nonspecific)

Diesing (p.133) accounts for this contrast by the assumption that specific nominals adjoin to IP at LF, then a further extraction from the nominals violates the Constraint on Extraction Domain, which does not allow extraction from adjuncts (Huang 1982). In her account, the correspondence between the extractability and the specificity is represented by the structural position of the relevant nominals, rather than the internal structures of the nominals. Diesing's nominal-external mapping approach offers no account for the correlation between nominal-internal orders and specificity reading in Chinese. On the other hand, as noted by Hans-Martin Gärtner (p.c.), it is not clear how to deal with embeddings like (36), where the whole nominal is specific and the embedded one, *detective novels*, is not. At LF, the whole nominal should adjoin to IP, whereas the embedded one should not.

<sup>&</sup>lt;sup>5</sup> Extraction of non-referential elements from complex NPs, however, is impossible.

<sup>(</sup>i) \*How long would you favor a proposal that the CIA keep him out of sight t.

See Heycock (1995), Cinque (1990), Postal (1998: 167), etc. Since such an extraction is not relevant to topicalization, we will not elaborate on it here.

(36) a (certain) writer of detective novels

We claim that the selective blocking effect of CNPC comes from the presence of a Presupposition Operator at the Spec of the upper DP, adopting the Split DP hypothesis of Zamparelli (1996 [2000]). The occurrence of this operator makes any A-bar movement out of the DP impossible. We thus propose an intervening A'-Specifier account. The syntactic evidence of this operator comes from nominal structures in Chinese.

If specificity is represented nominal-internally, as proposed by the Split DP hypothesis, problems like (36) are avoided. Eventually, specificity effects of nominals on clause-structures (Diesing 1992, De Hoop 1992, Ruys 2001) should be related to the internal structures of the nominals.

Based on the fact that the occurrence of an Outer modifier gives rise to an exclusive specific or presupposed reading, and the fact that such a modifier blocks extraction, we assume that the high position of the modifier is an operator position, it is at Spec of the upper DP, and the modifier there functions as a Presupposition Operator. We also assume that for definite nominals, an overt (such as a demonstrative) or null Presupposition Operator occurs.<sup>6</sup> Such an operator naturally blocks any phrase from moving out of the nominal. In contrast, if the Spec of the upper DP is not filled by the operator, as in the case of indefinites with an Inner modifier, extraction from the indefinites is possible. This accounts for the presence of CNPC effects in the definite and specific nominals, and their absence in nonspecific nominals. Thus, CNPC effects are reduced to the typical case of an intervening A'-specifier.

So far we have tried to explain why definite complex nominals cannot be extracted from. We have proposed that Complex NP Islands are in fact specificity islands. The nominalinternal orders in Chinese give syntactic evidence for the existence of a Presupposition Operator. The occurrence of the operator in definite and specific DPs blocks an A'-movement out of the DPs and thus makes the DPs islands.

## 4. From the specificity of nominals to the specificity of eventualities?

This study shows that specificity of nominals can be syntactically encoded. If so, the specificity of eventualities might also be syntactically encoded. Then the interactions between episodic eventualities and the island effects exhibited in Chinese topicalization should not be surprising. It is not clear to us at this stage, however, how the interactions are computed.

I conclude that topicalization in sentences that encode episodic eventualities is an operation of movement in Chinese. It remains to be found out whether like the specificity of nominals, the specificity of clauses that encode episodic eventualities is also syntactically encoded, and how to account for the observed contrasts in the island effects.

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<sup>&</sup>lt;sup>6</sup> It is also possible that an Outer modifier is followed by a demonstrative, to signal a definite nominal, as in (29b) and (i) of footnote 3, assuming that multiple Specs of the upper D is allowed. Alternatively, one can assume that the RC there has moved further away from the upper DP, and the demonstrative is at the single Spec of the upper DP. I leave the issue for further research.

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