4. ROLE AND REFERENCE GRAMMAR

4.1. PREAMBLE

4.1.1. Focus of this chapter

In the previous chapter, I discussed subjects, objects, and transitivity as defined in earlier approaches to grammar. I compared English with Korean and Chinese in order to see how well these basic concepts can account for predicate classification, grammatical relations, and reference-tracking in discourse. Several problem areas were pointed out. The conclusion was that these concepts are better suited for describing English than either of the two East-Asian languages.

In this chapter I examine Korean and Chinese texts using the theoretical model of Role and Reference Grammar (Van Valin and LaPolla 1997). I will attempt to devise a method for applying the theory in practice. Also, I will test how well an RRG approach can cope with the kinds of problems raised in chapter 3. When necessitated by findings in the data corpus, I propose some adaptations to the theoretical model or topics for future research. I hope this will be a step towards a model which would be particularly well-suited to the special needs of a field linguist who is investigating a perhaps little-known language in East-Asia. The focus is especially on the beginning phase of such a project. The aim is to find an efficient way of gaining a good initial understanding of how the target language works.

4.1.2. Summary of problems

First of all, let us summarize what the problems are. In earlier approaches, the classification of predicates is based on transitivity. Even in modern approaches, transitivity continues to be one of the features predicates are subcategorized for. A problem, however, is to find clear criteria on which to base one's decisions. Another problem is to explain what, if it is not transitivity, constrains predicates in their behavior and range of complements. Hence, one of the needs is an adequate basis and testable criteria for predicate classification.

An examination of grammatical relations showed that there are various problems related to the notions of subject and object. These are language-specific notions which conflate a different mixture of syntactic, semantic, and discourse notions in different languages. Therefore there is a need for a framework that does not assume a priori a particular blend. A related question is that of topics. Typical for East-Asian languages is a kind of topic-comment sentence where some traditional subject properties are manifested by topics. These have been problematic for earlier approaches. The aim is to find a satisfying way of accommodating them too in a grammatical framework.

On the discourse level, the question is reference tracking. As for English, earlier approaches suffice to provide the main concepts needed for explaining the basic system. The monitored concept is grammatical subject which coincides with topic. Also antecedent identification follows certain grammatical rules. In Korean and Chinese, the situation is more elusive. In Korean, it seems, the monitored concept is neither subject nor topic. Moreover, Korean and Chinese frequently rely on semantic and pragmatic inference instead of syntactic clues for antecedent identification. An ideal theoretical framework should be able to account for even systems like these.

4.1.3. Motivation for using RRG theory for problem solving

In a field situation, the goal is not just to describe a language with technical labels and syntactic rules but to understand how lower-level phenomena work as building blocks to communicate coherent messages. This is the reason why I have chosen a functional model as the theoretical framework for this study. Within the functional approach to linguistics, Role and Reference Grammar is one of the most comprehensives models (Foley and Van Valin 1984; Van Valin 1993 (ed.); Van Valin and LaPolla 1997). Included are all the components called for in the summary of problems. Starting from predicate semantics RRG extends to explain clause, sentence, and discourse-level phenomena. It incorporates theories of predicate semantics, grammatical relations, and reference-tracking systems. Moreover, included are also theories of the structure of the clause, juncture and nexus types, case marking, and information structure.

Another motivation for choosing RRG is its data-orientation. The model seeks to be applicable to all languages. During its development, a variety of languages have been considered, and the theory has been shaped accordingly. Besides common Indo-European languages the framework has been applied to American Indian, African, Asian, and Pacific languages.

One of the explicit goals of RRG is to present a framework field linguists could use for writing grammars. To my knowledge, however, nobody has presented a proposal on exactly how to begin investigating a little known language using RRG theory. To the uninitiated, the theory can seem rather complicated. Another thing is that applications of RRG have been written by people who already seem to have a good knowledge of their target language. Often it is their mother tongue and they are trying to find a good way to describe something they already know how to use. This is not the situation a field linguist faces. The corpus of the field linguist is likely to be texts rather than his or her own intuitive knowledge of the language. Judgements are reached through an interaction with mother-tongue speakers. The linguist has to work to discover the meaning of various marking patterns. There may be struggles in areas like how to prepare texts for analysis and where to posit clause breaks.

There are thus multiple reasons for choosing the RRG model as the framework for this study. The goals of the theory fit with those of a field linguist, the concepts of RRG seem to be universal in application, and there is not yet an explicit adaptation geared to the situation of doing initial linguistic analysis. In the present chapter I will suggest a practical method for using RRG in linguistic analysis to gain initial understanding of a language one is in the process of learning.

4.2. PREPARING TEXTS FOR ANALYSIS

4.2.1. Working with texts

In what follows it is assumed that the analysis is based on texts, since these provide the context needed for interpreting linguistic phenomena. I have applied the RRG framework to the same texts that were used in the comparisons between Korean and Chinese in Chapter 3. The procedure is demonstrated with one sample text from each language respectively. The results have been checked against the two other texts which are cited for further illustration when relevant. Examples from other sources are given when my data corpus does not provide a suitable illustration.

Depending on the type of research situation, texts may be collected orally from native speakers, or taken from written sources prepared by mother-tongue authors. If obtained directly from a speaker of the language, the texts should be taped, as intonation and pausing provide valuable information about the structure of the text. My texts are from written sources, but I have taped them as they were read by a speaker of Korean and a speaker of Chinese. Because of the importance of pho-

nology for the fieldworker I have wanted to include relevant phonological phenomena in the study of syntax.

4.2.2. Integrating syntax, semantics, discourse, and phonology

Grammatical analysis is concerned with the relationship between meaning and the linguistic form that is used to communicate it. By "form" we usually mean syntactic form. But there is also the aspect of phonological form, which often plays a crucial role in indicating meaning. Languages with a written tradition have developed systems of punctuation and indentation as a kind of visible expression of phonological form in order to compensate for the loss of information which occurs when speech is written down.

In some languages, phonology plays a particularly important role as a structuring device. Consider a humorous story that has been circulating in the Guangxi province in Southern China (Yang Huangdian, personal communication). According to the story, a person wanted to wish his neighbor happy New Year by giving him the following verses:

(151) Xīn nián hǎo / huìqì shǎo / bu dé dǎ guānsī
new year good / bad luck few / not need go to court
'May you have a good new year with little bad luck and no need to go to court'

zuò jiǔ gāng gāng chéng / cù suān
make wine jar jar succeed / vinegar sour
'when you make wine, every jar succeeds, your vinegar is sour'

yǎng zhū yǎng chéng xiàng / lǎoshǔ dōu sǐ guāng
raise pig raise become elephant / rat all die finished
'your pigs will grow big like elephants, and all the rats will die'

Unfortunately, the man did not use any punctuation marks in his poem. When the neighbor read the text, he made the pauses in wrong places. This is how he understood it:

(152) Xīn nián hǎo huìqì / shǎobudé dǎ guānsī
new year pretty unlucky / cannot be without go to court
'May your new year be pretty unlucky, you'll have to go to court'

zuò jiǔ gāng gāng chéng cù / suān
make wine jar jar become vinegar / sour
'You make wine and every jar turns vinegar, it's sour'

yǎng zhū yǎng chéng xiàng lǎoshǔ / dōu sǐ guāng.
raise pig raise become like rat / all die finished
'your pigs will become like rats, and they will all die'

Pausing and intonation indicate which elements belong together and changes in grouping patterns can have profound semantic consequences. The presence or absence of a pause may influence which part of speech an element is understood as representing. This in turn affects what it is taken to mean. As example (152) illustrates, sometimes the result can be an interpretation that is totally opposite to the one originally intended!

4.2.3. Identifying sentence and clause breaks

Having obtained texts, one of the first tasks is to prepare them for analysis. This involves breaking them into sentences and clauses. In its simplest form a sentence consists of only one clause. Frequently, however, sentences are made up of a cluster of clauses. What makes the cluster a sentence is that the clauses are integrated to form a meaningful whole. In one way or another, the cluster "communicates some logical relationship between the events represented by the clauses" (Peck 1984: 173). For example, *If you like it, I'll give you some more* is held together by a condition and a result that follows the condition when filled.

Phonologically, there is typically at least a slight pause after each sentence. Thanks to previous studies we know that "In nearly all languages the completion of a grammatical unit such as a normal sentence is signaled by a falling pitch" (Ladefoged (1975: 225, cited in Burquest 1998: 223). A notable exception to this is the near-universal tendency for *yes/no* questions to end in a final rising pitch (Bolinger 1978, cited in Burquest 1998: 232).

Some languages contain morphosyntactic indicators of sentence boundaries. There could be a set of sentence-level particles, such as markers of illocutionary force, i.e. indicative, interrogative, and imperative. Or, there could be a restriction that only one independent and fully inflected verb is permitted per sentence. But it is also possible that the language in question does not have clear indicators of sentence boundaries (Longacre 1996: 285-286). In that case, we may be able to identify nothing more than just some sentence introducers, such as *then, so, later, next, however,* etc. In summary, sentence breaks are typically established on the basis of the following criteria:

- The sequence of clauses communicates a meaningful whole.
- Pauses and falling intonation contours occur after breath groups.
- Sentence introducers, sentence-final particles, or special sentence-final verb forms occur.

When breaking complex sentences into clauses, we are looking for predications communicating various kinds of events. Phonologically, we can expect that clauses would exhibit some kind of phonological unity. It is typical in language for non-final clauses to exhibit relatively high pitch level and for final clauses to have a lower pitch level. Parallel clauses, on the other hand, are often spoken with parallel intonation contours and separated by slight pauses. An embedded clause typically does not receive a full intonation contour of its own but is incorporated into the intonation pattern of the clause it is embedded in. In the syntactic analysis, it is helpful to observe the form of the predicate, the form of the nominal arguments, and whether there are conjunctions. In summary, things to look for include:

- predications communicating an event
- changes in pitch level or parallel intonation contours followed by a slight pause
- forms of verbs and nouns, the presence of conjunctions.

There is, however, a potential complication. Languages possess looser and tighter means of integrating events together. The problem is in knowing when the integration is loose enough to warrant a clause break and when it is so tight that the result should be considered as a single clause. I illustrate this with an example from Givón (1993, II: 26). The following set of sentences, represents a scale of decreasing event integration.

(153)

	the 2nd predicate	**NP in the 2nd event**
a. She let-**go** of *him*	bare stem	accusative
b. She made *him* **leave**	bare stem	accusative
c. She had *him* **leave** the room	bare stem	accusative
d. She told *him* **to leave**	infinitive	accusative
e.She wished that *he* **would leave**	modal	nominative
f. She hoped that *he* **could have left**	modal + aspect	nominative
g. She knew that *he* **was leaving**	tense, restricted	nominative
h. She said: "*He* **is leaving**"	fully finite	nominative

The tightness of integration shows up in the form of the predicate (the integrated event is written in boldface) and the NP associated with it (written in italics). The closer to the top the sentence is, the more noun-like (non-finite) is the predicate, i.e. the coding of tense, aspect, and modality is restricted. At the same time, the NP in the second event is in accusative rather than in nominative form. Conversely, the looser the integration, the more likely the second predicate is to be truly verb-like and to appear in a finite form. The nominal argument in the more loosely integrated constructions is in nominative form.

When studying a little researched language, one of the difficulties is that we may not know how tight vs. loose integration is signaled. To illustrate the problem I will cite examples from the sample texts examining them without RRG theories.

4.2.4. Application without RRG theories

4.2.4.1. Korean

The Korean sample text is called The Beauty and the Monk. Below is an outline of the text (from Hwang 1987: 37):

(154)

Constituents		Contents
Opening:		In Chwungcheng Namto Province there stands a Brother-and-Sister Pagoda. About this pagoda there is a legend.
Body:	Pre-Peak Episode 1	A monk was looking after a temple alone. One night, he heard roaring outside. He went out and saw a big tiger roaring imploringly. Something was stuck in its throat. The monk pulled it out, and the tiger wagged its tail and disappeared. The thing pulled out was woman's silver hair rod. The monk thought that the tiger must have eaten a woman.
	Pre-Peak Episode 2	Several days later, a tiger's roaring was heard again. The monk went out and saw a big tiger carrying a woman. The tiger put the woman down and disap-

peared. The monk looked at the woman; she had fainted. He managed to awaken her. She was a beautiful girl, a daughter of a nobleman.

Peak: The monk advised the woman to go to home, but she refused. She wanted to spend her life together with the monk. The monk was embarrassed, because he could not marry. So he took the girl as his sister, cut her hair, and they devoted themselves to Buddhism together.

Closure: To commemorate this event, people erected a pagoda and called it the Brother-and-Sister Pagoda.

As my sample texts are from written sources the sentence breaks are already indicated in the texts. I accepted the sentence breaks as punctuated in the written texts because the breaks were clearly supported by both the phonology and in the syntax. There were clear breath groups characterized by a drop in intonation towards the end and a following short pause. In long sentences, the intonation curve stayed high until the final clause was reached.

Syntactically the delineation of clause and sentence boundaries is quite straightforward. Due to the word order constraints of Korean, every clause and every sentence ends in the predicate. In complex sentences, the main clause comes last and the final predicate can be recognized by its form which differs from the form of the non-final predicates. This is illustrated in the next sentence, which contains three predicates. The first two end in a non-final or connecting form (glossed as CON): *-ko* and *-mye*. The last predicate carries a sentence-final ending (glossed as FIN): *-ta*, and only this last predicate is inflected for tense.

(155) a. Khu-n holangi-ka ku khu-n akali-lul
big-MD tiger-NOM that big-MD mouth-ACC
pelli-**ko**
open-and(CON)
'A big tiger with its big mouth open,'

b. yecenhi wulpwucicu-**mye**
as.before roar-while(CON)
'roared as before'

c. mwuesinka-lul aywenha-nun tus hay-ss-**ta**.
something-ACC implore-MD as.if do-PAST-DEC(FIN)
'as if it was pleading.' (BM: 6)

Making clause breaks proved to be more problematic. In the Korean sample text, there are no graphic marks that indicate clause boundaries within sentences. Nor are there conjunctions occurring at clause boundaries. Instead, there is a variety of non-final verb endings some of which, no doubt, mark clause boundaries and others which perhaps mark units smaller than a clause. Consider, the sentence (155) again. How do we know whether there should be a clause break after the verb *polli-ko*? Are we dealing with rather tight integration as suggested by the English translation *a big tiger was roaring with its mouth open*? Or would a more appropriate translation be something like *a big tiger opened its mouth and roared*? A complicating factor is that the non-final ending *-ko* has more than one use. It can link clauses within a sentence as in (156a), it can link a verb to its auxiliary as in (156b), and it can connect something that looks like a phrases within a clause as in (156c):

(156) a. John-un tosekwan-ey ka-**ko** na-nun cip-ey
John-TOP library-to go-CON I-TOP home-to
ka-ss-ta.
go-PAST-DEC(FIN)
'John went to the library, and I went home.'

b. Na-nun kongpwuha-**ko** iss-ta.
I-TOP study-CON exist-DEC(FIN)
'I'm studying.'

c. Pesu-ka menci-lul nay-ko talli-n-ta
bus-NOM dust-ACC stir.up-CON run-PRES-DEC
'A bus is running stirring up the dust.'
(adapted from Yang 1994: 182)

At an early stage of analysis, it is difficult to determine what exactly is the syntactic and semantic effect of an ending. At any rate, I tentatively identified the following endings as potential clause connectors: *-ko* 'and', *-ase/ese/yese* 'and', 'so', *-mye* 'while', *-taka* 'while', *-ko-nun* 'and-TOP', *-una/na* 'but', *-uca/ca* 'as soon as'. A phonological analysis showed that stretches carrying these endings usually exhibited an identifiable intonation pattern of its own. Typically, such a stretch ends

in a slight pause and a rather high pitch which then turns downwards in the final clause. This suggests that we are dealing with phonological clauses. There were, however, instances where it was not clear how to interpret the data. The most problematic endings in the sample texts are *-ko* (see sentences 5, 6, 7, 10, 16, 18), *-a/e/ye*, (see sentences 1, 16, 28), and *-ase/ese/yese* (see sentences 7, 9, 15, 18, 22).

Problematic were also various classes of dependent predications. The examples below illustrate a causative construction (BM: 21) and a nominalization (BM: 5). The places for potential clause breaks are written in boldface.

(157) Sunim-un yein-eykey kot sangkyengha-**tolok**
monk-TOP girl-DAT immediately go Seoul-to
kwenkohay-ess-ta
advise-PAST-DEC
'The monk advised the woman to go to Seoul immediately.'

(158) a. Hato kwusengci-ko sulphukey wul-**ki-ey**
very plaintive-and sadly crying-NML-LOC
'Since (it) was crying so plaintively and sadly'

b. hwayspwul-ul tul-ko na.ka-po-ass-ta.
torch-ACC hold-and go.out see
'(the monk) took/held a torch and went out.'

In summary, making clause breaks was difficult mainly in instances involving the endings *-ko* and *-ase/ese/yese* as well as in clauses containing various kinds of embeddings and nominalizations. A nagging problem was the lack of other criteria in situations where the phonology did not give clear enough indications and the significance of a syntactic construction was not obvious. In a real field type situation, the problems would have been worse.

4.2.4.2. Chinese

The Chinese sample text is called "The Double Nine" and tells the story about the origin of climbing high on the Ninth Day of the Ninth Month. The contents are outlined below:

(159)

Constituents		Contents
Opening:	Aperture	A long time ago, a plague occurred in the Runan area. People said it was caused by a goblin in the river.
	Stage	There was a young man called Huanjing who decided to kill the goblin but he failed.
Body:	Pre-Peak episode 1	Huanjing heard that in Nanshan there lived a celestial being with great skills. The celestial being agreed to teach Huanjing and gave him a double-edged sword.
	Pre-Peak episode 2	In the second year, the celestial being said, "On September the ninth, the goblin will come out again. Go and destroy the evil." He gave Huanjing some leaves of medicinal cornel and a bottle of chrysanthemum wine.
	Pre-Peak episode 3	When Huanjing went back to the village, he told what the celestial being had said. He led the people to a high mountain and gave everybody a cornel leaf and some wine. Then he returned alone to the village.
	Pre-Peak episode 4	The goblin came to the village, but all the people were gone. When the goblin came to the foot of the mountain, the vapor of the wine and the smell of the cornel scared him away.
	Peak	When the goblin returned to the village, he encountered Huanjing who killed him.
Closure:		Since then, there has been have been no plagues in Runan. Every year on September the ninth, the people take chrysanthemum wine, put cornel leaves on their heads, and go out to climb high.

Like the Korean text, the Chinese text was already punctuated. There are, however, several places where it could be parsed differently. For example, the following stretch is treated as one sentence in the sample text:

(160) a. Yǒu rén shuō: Rǔ-hé li yǒu ge yāoguài,
exist person say Ru-river inside exist CL goblin
'Some people said: There is a goblin in the Ru river,'

b. méi nián jiǔ yuè jiǔ rì dōu chū lái,
every year nine month nine day all exit come
'he comes out on the Ninth Day of the Ninth Month every year,'

c. tā zǒu dào nǎr,
it go to where
'wherever he goes,

d. jiù bǎ wēnyì dài dào nǎr,
then BA plague take to where
'he takes the plague there,'

e. rén-men zhēn shì hèn tòu le
person-PLUR really be hate through PFV
zhè ge yāoguài.
this CL goblin
'the people really hate this goblin.'

Semantically speaking, one can argue that there is a sentence break between (160b) and (160c) and another between (160d) and (160e). However, making judgements on the basis of semantics is problematic in Chinese. In other languages the semantic interpretation relies heavily on various kinds of connectors. In Chinese, however, overt markers of the semantic relationship between successive clauses are often absent. Therefore, the relationship must be inferred from context, albeit phonology helps to disambiguate. Still more than one relationship can often be inferred. Fu (1996) illustrates this with the following example:

(161) a. Tā qù, wǒ bu qù.
3sg go, I not go
'If he goes, I don't.'

b. Tā qù. Wǒ bu qù.
3sg go. I not go
'He goes. I don't go.'

If a sequence like the one in (161a) is spoken with a single intonation contour, it indicates a conditional relationship between the two clauses. If, however, it is spoken with two separate intonation contours as in (161b), the relationship between the clauses becomes much more vague.

In Chinese we need phonology to interpret the semantics and, conversely, with a certain phonology it is possible to force a certain semantic reading. At any rate, in my interpretation, each clause which does not have clear syntactic or semantic ties with an adjacent clause was treated as a sentence of its own if this is supported by the phonology. As a result, I got 6 sentences more than what the punctuation indicates in the sample text.

The basic phonological pattern associated with sentences was a pause coupled with falling intonation at the end of a breath group. In the syntactic analysis, the major cues to sentence breaks were various kinds of modal and temporal adverbial elements which occurred at the beginning of sentences. They include: *chuánshuō* 'according to a legend', *kěxī* 'unfortunately', *cóngcǐ* 'from there on', *ránhòu* 'then', *yúshì* 'so', *còuqiǎo* 'luckily', and *dǎ zhèr yǐhòu* 'since then'. Chinese does have a set of particles that occur in sentence-final position, namely *le, ne, ba, ou, a/ya/na, ma*. They are common especially in spoken language and in written quotations recounting conversations (Li and Thompson 1989: 238). In written texts, however, they are used more sparingly. In the sample text, there are no occurrences of these and in the whole corpus of data just a few (e.g. LG: 3, 21).

As with Korean, the greatest difficulties in determining boundaries were on the clause level. Typically, there are no formal markers of clause boundaries. Phrases and clauses are simply juxtaposed to each other and the analyst has to interpret what their logical relationship is. The following example is from Li and Thompson (1989: 596):

(162) Hē diǎn jiǔ zhuàng-zhuang dǎnzi.
drink a.little wine strengthen-strengthen gall.bladder.
a. 'Drink a little wine, and it will give you courage.'
b. 'Drink a little wine to give yourself courage.'
c. 'Get some courage by drinking a little wine.'

Frequently, the different possible interpretations yield different numbers of clause breaks. Consider the following example from the sample text. The free translation (163a) reflects an interpretation that would yield as many four clause breaks, whereas the interpretation (163b) views everything as packed into one sentence:

(163) Huánjǐng juéxīn dēng mén qiú shī.
Huanjing decide climb door ask teacher

a. 'He decided / that he will climb there /and ask the celestial being to become his teacher.'
b. 'He decided to climb there to ask the celestial being to become his teacher.'

Based on the phonological features when this passage was read, I would be inclined to join rather than to split. This highlights a methodological problem. In Chinese, it can be difficult to keep the semantic interpretation and the phonological analysis separate from each other. Intonation is needed as a clue to the meaning. And yet, it does not necessarily indicate what the correct solution is but only restricts the number of choices.

In Chinese, phonology can contribute to decision making but it is not a straightforward indicator of clause breaks. As my sample text was taped, the reader also used pausing to separate phrases within clauses. The beginning of the example text was read with five clear pauses, as illustrated below:

(164) Chuánshuō gǔ shíhou / Rǔnán yīdài de xiāngcūn /
legend old time / Runan area ASSOC village /
'According to a legend, a long time ago / in a village in the Runan area' /

fāshēng le wēnyì / sǐ de rén /
happen PFV plague / die NML person /
'there was a plague / people who died' /

duō de dōu méi rén mái le. /
many CSC all not.exist person bury PFV /
'were so many that there were not enough people to bury them.' /

Turning to the syntactic analysis, the results were meager. Conjunctions and other formal markers of clause boundaries are scarce but not totally absent. The sample text contains one occurrence each of *jiù* 'then' and *bīngqiě* 'and, in addition', as well as two occurrences of *yòu* 'again, also'. Because Chinese does not have

morphological case-marking, the form of the NPs does not provide information about event integration.

Compared to Korean, embedding and nominalization are less prevalent in Chinese. Instead, modifying clauses were problematic:

(165) a. zhāi le xiē zhūyú yèzi
pick PFV some medicinal.cornel leaf
'(he) picked some leaves of medicinal cornel'

b. sòng gěi tā
present give he
'and gave them to Huanjing '

Of course we here face the same problem as earlier that the relationship between the parts (165a) and (165b) could be interpreted in more than one way. A possible reading would be 'he picked some leaves of medicinal cornel **in order to** give them to Huanjing' which would make it more like a complex clause rather than two clauses. However, in the actual context, the clause (165b) occurs in a list of successive actions, which makes the reading given in the free translation the more likely interpretation.

A special case of modifying clauses are those where the verb *yǒu* is used to introduce a new participant in the discourse. These could be viewed as a way of making the participant indefinite, as preverbal NPs are usually interpreted as definite. Or, we could treat them as minimal clauses.

(166) Yǒu rén shuō
exist person say
'There were people who said...' or: 'Some people said...'

In Chinese the lack of good formal criteria for establishing clause breaks is even more problematic than in Korean. The fact that the same sequence of words can be understood in more than one way is a challenge in a field situation where the interpretation of the context can be imprecise and subject to a similar uncertainty about the exact meaning. Phonology can provide valuable clues but often does not suffice in itself to resolve problematic cases.

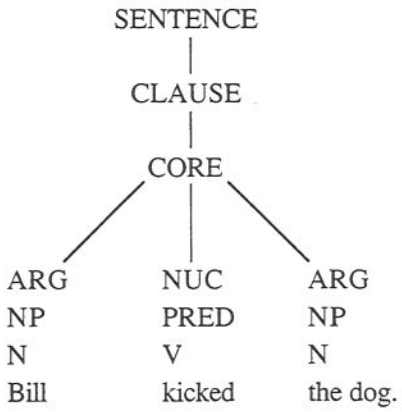
4.2.5. Application using RRG theories

Making clause breaks proved to be difficult both in Korean and in Chinese. The RRG model encompasses theories that can help to solve these problems. First, however, it is necessary to look at the theory of the layered structure of the clause and the theory of juncture.

4.2.5.1. The layered structure of the clause

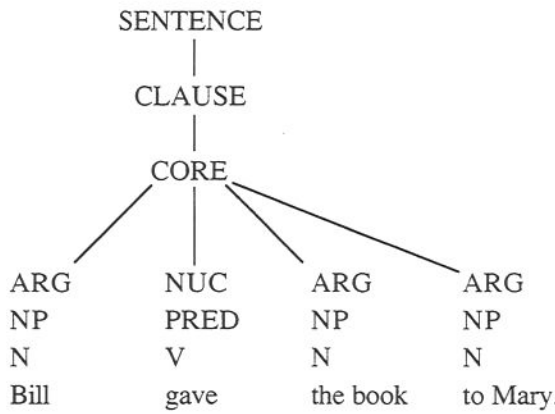
According to RRG, the main constituents of a clause are: nucleus, core, and periphery. The nucleus consists of the predicating element. This is typically a verb, but in some languages the nucleus can also be an adjective or a noun too. The clausal core consists of the nucleus plus the core arguments of the predicate. These arguments are typically nouns but may also be adjectives, verbs or whole clauses. (Van Valin and LaPolla 1997: 31-35.)

(167)



The core arguments of the verb *kick* are the NPs *Bill* and *the dog*. The concept of argument is strictly semantic. It is therefore independent of the actual surface coding attached to the NPs. Consider the following example:

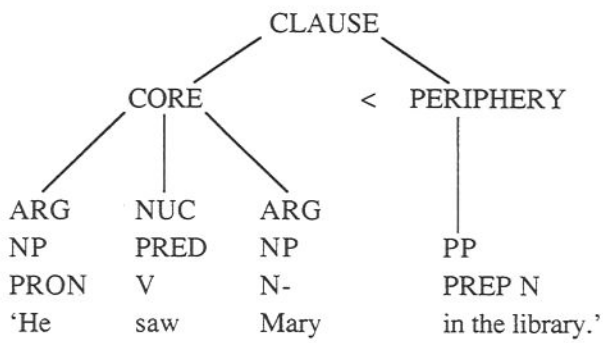
(168)



The verb *give* has three arguments. We can notice that there is a difference in the marking of them. *Bill* and *the book* are unmarked, while the third argument, *to Mary*, is marked adpositionally. According to the RRG terminology, the former are **direct** core arguments whereas the latter is an **oblique** core argument. Had the clause been *Bill gave Mary the book,* then all three NPs would have been treated as direct core arguments. In summary, arguments are defined semantically. They arise from the meaning of the predicate. Only arguments can occur in the core of the clause. When they do, syntactically, they may be treated either as direct or as oblique core arguments. (Van Valin and LaPolla 1997: 29.)

Besides nucleus and core, clauses frequently contain a periphery. The elements in the periphery are further specifications that can be added to the clause; they are not deducible from the meaning of the predicate. For example, almost any action can be specified as happening in a certain location or a certain time: *He sneezed/sat/read books* ***in the library.*** *We studied/sang/celebrated* ***yesterday***.

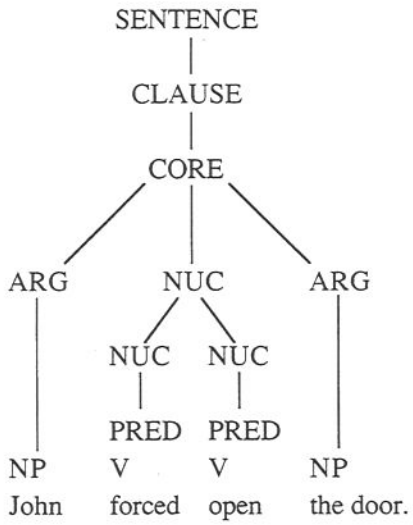
(169)



4.2.5.2. Different types of juncture

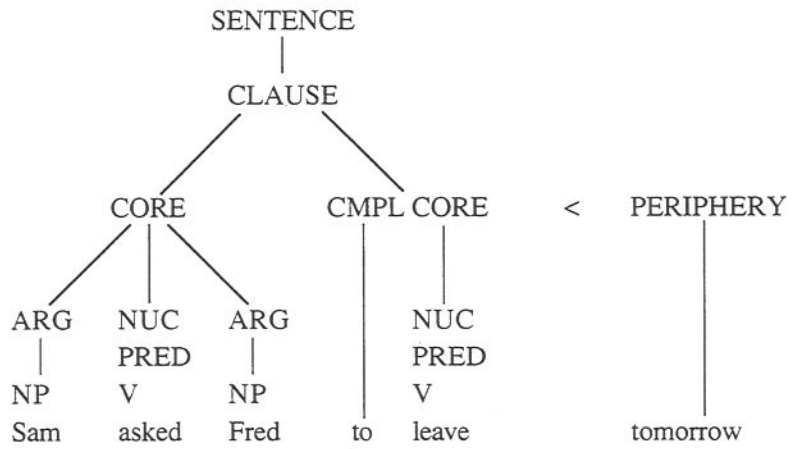
In the previous section, each nucleus, core, and clause was simple. They can, however, also be complex (see Van Valin and LaPolla 1997: 442-448). In the RRG theory, such complex units are called junctures. When two nuclei are combined to form a complex nucleus, we are dealing with a nuclear juncture. This is a very tight type of syntactic linkage and requires that all the arguments are shared by the combined nucleus:

(170)



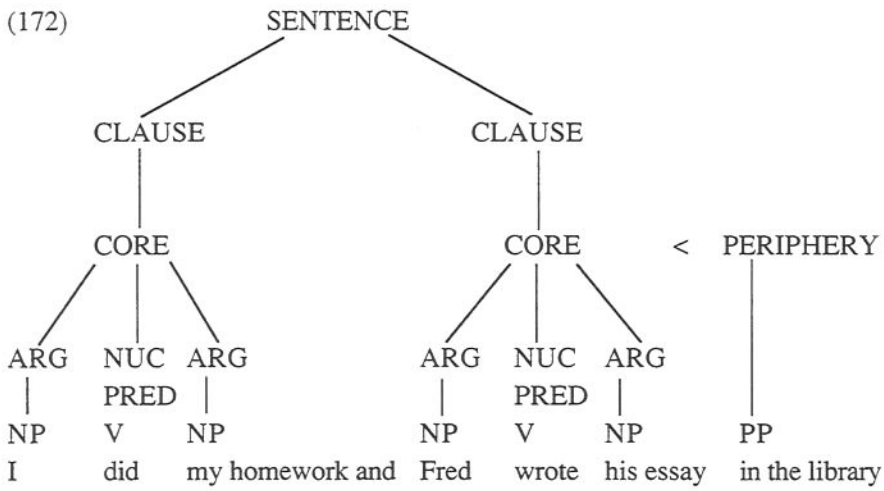
In a core juncture the clause contains two or more cores, each with its own nucleus, but at least one of the arguments is shared. In addition there can be language specific differences between nuclear and core juncture. In English, for example, core junctures permit a complementizer, whereas nuclear junctures do not allow one. In the example below the shared argument is *Fred* and the complementizer is *to* (Van Valin and LaPolla 1997: 447). Observe that the peripheral element is not shared but modifies *leave* only.

(171)



The loosest type of juncture is clausal juncture. When two clauses are linked with a clausal juncture, there are two predicates which each select their own core and their own nominal arguments. The clauses may, however, share a common periphery. In the next example, the periphery *in the library* could modify both *do* and *write*.

(172)



Sometimes in clausal junctures an argument is deleted because it is coreferential with an argument in the previous clause. This does not mean that it would be shared. For example, in *John called her and apologized,* the second clause does not have an overt NP because the referent is the same as in the first clause, i.e. *John*. The crucial point is that the choice of the arguments happens independently for each verb. This kind of missing argument should be indicated. The situation is different when an argument does not show up because it is shared by a juncture. In the latter

case, the juncture forms a complex whole that selects one or all the arguments together as a unit.

4.2.5.3. Clause breaks revisited

The practical application of this theoretical material on types of junctures is that clause breaks occur where there is a clausal juncture. Core junctures and nuclear junctures do not warrant a clause break. In the process of determining the level of juncture, we are likely to find that there are more than one type of nuclear, core, and clausal juncture. The differences between linkage types on the same level can be accounted for by the RRG theory of nexus. However, the various types of nexus, namely coordination, subordination, and cosubordination, are outside the scope of this study.[23] For my purposes here it suffices to be able to make the clause breaks and to chart the texts.

4.2.5.3.1. The Korean example text: The Beauty and the Monk

The Korean example text is from Hwang (1987: 156-160). In the analysis below, the sentences are indicated with numbers and the clauses within a sentence with letters.

1. *Chwungcheng Nam-to Tonghak-sa twi-ey*
   Chwungcheng south-province Tonghak-temple behind-at
   'In Chwungcheng Namto behind the Tonghak Temple'

   *o-nwui thap-I cikwum-to wuttuk **se**-iss-ta.* *se-iss-*
   brother-sister pagoda-NOM now-also oftily stand-exist-DEC nuclear juncture:
   'there is a Brother-and-Sister Pagoda still standing tall to this day.' resultative

2. *I thap-ey-nun*
   this pagoda-at-TOP
   'About this pagoda'

   [nangman-kwa kongpho-ka selye-iss]-nun censel-I iss-ta.
   romance-and horror-NOM bear-exist-MD legend-NOM exist-DEC
   'there is a legend which tells of romance and horror.'

3a. *Etten sunim-I honcase cel-ul **cikhi-mye*** *-(u)mye*
   certain monk-NOM alone temple-ACC look.after-while clausal juncture:
   'A monk was taking care of the temple alone' simultaneous events

 b. *yelsimhi pwulkong-ul **tuli-ko-iss-ess-ta.*** *-ko iss-*
   earnestly Buddhist.mass-ACC hold-CON-exist-PAST-DEC nuclear juncture:
   'and performing the Buddhist masses devotedly.' progressive aspect

4. *Enu nal kiph-un pam pakk-eyse*
certain day deep-MD night outside-from
'Once in the middle of the night,'

holangi wulpwucic-nun soli-ka tul-li-ess-ta.
tiger roar-MD sound-NOM hear-PASS-PAST-DEC
'a tiger's roar was heard from outside.'

5a. *Hato kwusengci-ko sulphu-key* ***wul-ki-ey***		*-(u)l ki-ey*
very plaintive-and sad-ly cry-NML-LOC		clausal juncture:
'Since it was crying so plaintively and sadly,'		reason
hwayspwul-ul ***tul-ko***		*-ko*
torch-ACC hold-and		clausal juncture:
'the monk, holding a torch,'		simultaneous/ sequential events
b. ***naka-po-ass-ta.***		*-a/e/ye po-*
go.out-see-PAST-D		nuclear juncture:
'went out to see.'		aspect 'try'
6a. *Kwayen khu-n holangi-ka ku khu-n akali-lul* ***pelli-ko***		*-ko*
as.expected big-MD tiger-NOM that big-MD mouth-ACC		open-and clausal:
'Sure enough, a big tiger with his big mouth open,'		simultaneous/ sequential events
b. *yecenhi* ***wulpwucicu-mye***		*-(u)mye*
as.before roar-while		clausal juncture:
'was roaring as before,'		simultaneous events
c. *mwuesinka-lul aywenha-nun tus hay-ss-ta.*		
something-ACC implore-MD as.if do-PAST-DEC		
'as if it was pleading.'		
7a. *Sunim-un [caki-lul haychi-ci anh-ulye-nun] cwul* ***al-ko***		*-ko*
monk-TOP self-ACC harm-NML not-INTENT-MD way know-and		clausal juncture:
'The monk knew that it was not going to harm him,'		temporally unordered'
b. *kakkai* ***ka-se***		*-ase/ese/yese*
close go-and		clausal juncture:
'so he went close'		sequential events
c. *hwayspwul-lo ku ip-an-ul* ***tuleta-po-ass-ta.***		*tuleta-po-*
torch-with that mouth-inside-ACC look.into-see-PAST-DEC		nuclear juncture:
'and looked into its mouth with the torch.'		directional

8. *Mok-ey mwuesinka kitala-n kes-i*
throat-in something long-MD thing-NOM
'Something long'

kel-li.e-iss-ess-ta.
stick-PASS-exist-PAST-DEC
'was stuck in the throat.'

-e iss-
nuclear juncture:
resultative

9a. *I kes ttaymwuney kule-nun kes-ilako* ***cikkamha-ko***
this thing because do.so-MD fact-QUOT perceive-and
'Realizing that it was because of this
that the tiger was acting the way it was'

-ko
clausal:
temporally
unordered

b. *sunim-un son-ul* ***neh-ese***
monk-TOP hand-ACC put.into-and
'the monk put his hand into its throat'

-ase/ese/yese
clausal:
sequential events

c. *ku kes-ul* ***ppop-a.cwu-ess-ta.***
that thing-ACC pull.out-give-PAST-DEC
'and pulled out the thing.'

-a/e/ye cwu-
core juncture:
benefactive

10a. *Holangi-nun pilose wulum-ul* ***memchwu-ko***
tiger-TOP finally cry-ACC stop-and
'The tiger finally stopped roaring'

-ko
clausal juncture:
simultaneous/
sequential events

b. *kamsaha-ta-nun tusi kkoli-lul* ***hwiceu-mye***
thankful-DEC-MD as.if tail-ACC wag-while
'and wagging its tail as if it was thankful,'

-(u)mye
clausal juncture:
simultaneous
events

c. ***salacye-pelye-ss-ta.***
disappear-throw-PAST-DEC
'it disappeared.'

-a/e/ye peli-
nuclear juncture:
completive
aspect

11. *[Mok-eyse ppay.nay]-n kes-un un pinye i-ess-ta.*
throat-from pull.out-MD thing-TOP silver hair.rod be-PAST-DEC
'The thing that was pulled out of the tiger's throat was a silver hairpin.'

12. *[Etten yein-ul capa-mek-taka kel-li-n kes-i]* ***lako***
certain woman-ACC catch-eat-while stick-PASS-MD thing-be-QUOT
'[It must have stuck there when the tiger had caught and
eaten a woman]'

-ko
clausal juncture:
quotative

sunim-un sayngkakhay-ss-ta.
monk-TOP think-PAST-DEC
'the monk thought.'

13. *[I il-I iss-unci myechil hwu-]uy*
this event-NOM exist-MD-after several.days after-GEN

saypyek i-ess-ta.
Dawn be-PAST-DEC
'It was dawn several days after this event took place.'

14. *Pakk-eyse tto holangi-uy phohyo-ka tul-li-ess-ta.*
outside-from again tiger-GEN roar-NOM hear-PASS-PAST-DEC
'Again a tiger's roar was heard from outside.'

15a. *Sunim-un tto [mwusun il-I iss]-**na-hay-se***
monk-TOP again what event-NOM exist-Q-think-so
'The monk wondered what was going on'

-na ha-
clausal juncture: indirect question
-a/e/yese
clausal juncture: temporally unordered

b. ***naka-po-ass-ta.***
go.out-see-PAST-DEC
'and went out to see.'

-a/e/ye po-
nuclear juncture: aspect 'try'

16a. *Khu-n holangi-ka etten yein-ul **ep-ko o-ase***
big-MD tiger-NOM certain woman-ACC carry-and come-and
'A big tiger came carrying a woman'

-ko o-
core juncture: directional
-ase/ese/yese
clausal juncture: simultaneous/ sequential events

b. ***wul-ko-iss-taka***
cry-CON-exist-while
'and whining'

-ko iss-
nuclear progressive aspect
-taka
clausal juncture: simultaneous events

c. *[sunim-I nao-nun kes]-ul **po-ca***
monk-NOM come.out-MD fact-ACC see-as.soon.as
'then as soon as it saw the monk coming out'

-ca
clausal juncture: 'as soon as'

d. *ku yein-ul ttang-ey **naylye-noh-ko-nun***
that woman-ACC ground-to descend-put-TOP
'it put the woman on the ground'

-e noh-
nuclear juncture: directional
-ko-nun
clausal juncture: sequential events

e. *esulleng.esulleng **salaci-e.peli-ess-ta**.*
(manner of walking) disappear-throw-PAST-DEC
'and disappeared slowly.'

-a/e/ye peli-
nuclear juncture: completive aspect

17a. *Sunim-un kuphi yein-ul **po-ass-una***
monk-TOP quickly woman-ACC see-PAST-but
'The monk looked at the woman quickly,'

-(u)na
clausal juncture: 'but'

b. *imi* ***kicelha-ye.iss-ess-ta.*** — *-a/e/ye iss-*
already faint-exist-PAST-DEC — nuclear juncture: resultative
'but she had already fainted.'

18a. *Cha-n mwul-ul* ***phe.pwus-ko*** — *phe-pwus-*
cold-MD water-ACC pour.down-and — core juncture: manner-action
'He poured cold water on her and' — *-ko*
clausal juncture: sequential events

b. ***mwuncilu-ko*** — *-ko*
rub-and — clausal juncture: simultaneous events
'and rubbed her'

ha-yese — *-ase/ese/yese*
do-so — clausal juncture: sequential events
'by doing so'

c. *kyewu ku yein-ul tasi* ***kkayena-key.hay-ss-ta.*** — *-key ha-*
barely that woman-ACC again wake.up-CAUS-PAST-DEC — core juncture: indirect causation
'he barely managed to awaken her.'

19. *[Myolyeng-uy alumtaw]-un chenye i-ess-ta.*
young.age-GEN beautiful-MD girl be-PAST-DEC
'She was a beautiful young girl.'

20. *[Sewul sa-nun mo taykam tayk-uy kwiyew]-un*
Seoul live-MD certain nobleman house-GEN precious-MD
tta-nim i-ess-ta.
daughter-HT be-PAST-DEC
'She was a precious daughter of a nobleman living in Seoul.'

21. *Sunim-un yein-eykey*
Monk-TOP woman-DAT
'The monk advised the woman'

[kot sangkyengha-tolok] ***kwenkohay-ss-ta.*** — *-tolok kwenko ha-*
immediately go.to.Seoul-to advise-PAST-DEC — core juncture: jussive
'to go to Seoul immediately.'

22. *[(Cip-eyse-nun holangi-eykey cap-hye-ka-se cwuk-ess-uli)*
home-at-TOP tiger-DAT catch-PASS-go-so die-PAST-PRESUM-
-lako kekcengha-ko-iss-keyss]-ki ttaymwun i-ta.
QUOT worry-CON-exist-PRESUM-NML reason be-DEC
'The reason was that [her people at home would be worried that she had died, being captured and taken by a tiger].'

23. *Kulena ku chenye-nun i-lul kecelhay-ss-ta.*
but that girl-TOP this-ACC refuse-PAST-DEC
'However, the girl refused to do so.'

24. *[(Caki-uy sayngmyeng-ul kwuhay-cwu-si-n sunim)-kwa*
self-GEN life-ACC save-give-HON-MD monk-with
phyengsayng-ul hamkkey cinay-ya-keyss-ta]-nun kes i-ta.
lifetime-ACC together spend-OBLIG-VOLIT-MD fact be-DEC
'She wanted to spend her life together with the monk
[who had saved her life].'

25. *Sunim-un tanghwanghay-ss-ta.*
monk-TOP embarrassed-PAST-DEC
'The monk was embarrassed.'

26. *[([Swutoha]-nun mom-ulo*
practice.ascetism-MD body-as
'Because, as a practicing ascetic,'
kyelhonha)-l swu-ka ep]-ki ttaymwun i-ta.
marry-MD way-NOM not.exist-NML reason be-DEC
'he could not marry her.'

27a. *Kulihaye ku chenye-lul nwui-lo* ***sam-ko***
therefore that girl-ACC sister-as set.up-and
'Therefore, the monk took the girl as his sister,'

-ko
clausal juncture:
temporally unordered

b. *meli-lul* ***kkakka-cwu-ko***
hair-ACC cut-give-and
'cut her hair,'

-a/e/ye cwu-
core juncture:
benefactive
-ko
clausal juncture:
sequential events

c. *hamkkey pwulto-ey cengcinha-yess-ta.*
together Buddhism-to devote-PAST-DEC
'and together they devoted themselves to Buddhism.'

28a. *Twis salam-tul-i*
later person-PLUR-NOM
'Later people'
[i kicek-kwa kath-un o-nwui-uy
this miracle-with same-MD brother-sister-GEN
'[in order to commemorate the miracle-like'
sangpong-kwa ku kyalukha-n cengseng-ul
meeting-and that commendable-MD sincerity-ACC
kinyemha] ***-ki.wihayse***
commemorate-in.order
'meeting of this brother and sister and their commendable sincerity],'

-ki wihayse
core juncture:
purposive

b. *thap-ul* ***sew-e***		*-a/e/ye*
pagoda-ACC erect-and		core juncture:
'erected a pagoda'		successive-action
c. *ilum-ul* *[o-nwui* *thap-i]-**lako*** *hay-ss-ta.*		*-lako*
name-ACC brother-sister pagoda-QUOT do-PAST-DEC		clausal juncture:
'and called it the Brother-and-Sister Pagoda.'		quotative

My analysis of different types of juncture in Korean follows closely the suggestions presented in Yang (1994: 163). For a juncture to be nuclear it must share all the arguments and the combined nucleus has to work like a single unit. He suggests that nuclear juncture is used to express aspect, direction (directional verb + main verb), and direct causation in Korean. All these different types are present in my examples texts.

In core junctures one core argument is obligatorily shared. The sample text provides examples of core junctures involving benefactive constructions, direction (main verb + directional verb: *-ko o-*), manner-action, indirect causation, jussive construction, and purposive construction.

At a first sight, some core junctures may resemble nuclear junctures. One of these is the *-a/e/ye* serialization. To test the level of juncture we can try whether an argument can be inserted between the two juncts. If this is possible the juncture cannot be nuclear. For example:

(173) Etten yein-ul **cap-a** (ku meli-lul) **mek-taka**
certain woman-ACC catch-CON (that head-ACC) eat-while
'(The tiger) had caught a woman and eaten her (head)' (BM: 12)

As we can see, the combined predicates do not function as a single unit. Instead, each nucleus is a predicate on its own right; they maintain their full meaning and it is possible to insert an argument between the two juncts. Similarly, we can test other constructions like the purposive construction *-ki wihayse* and the benefactive construction *-a/e/ye cwu-*. In sentence 28, the verb 'commemorate' alone takes the object 'this sincerity' whereas the verb 'build' has the NP 'pagoda' as its object. In sentence 27, the complex core is the part 'cut her hair' which in Korean is expressed '(he) cut-hair-give(her)'. The shared argument is 'the monk', while the verb 'cut' takes an object and the verb 'give' has an indirect object, both of which are unrealized on the surface. As all these constructions are core junctures they do not warrant a clause break.

Sometimes in Korean, it is difficult to know whether an argument is absent because it is shared by the juncture, or because it is coreferential with another argument. Yang (1994) takes the position that only when it is impossible to add an overt argument to a construction can we say that the argument is shared. This sounds like a good methodological principle. In practice, however, this leads to some strange situations. Consider the *-myense* construction:

(174) a. Cyon-un nolay-lul pwulu-meynse il-ul hay-ss-ta
John-TOP song-ACC sing-while work-ACC do-PAST-DEC
'John was singing and working.' Or: 'John was singing while working.'

b. Pi-ka o-myense, palam-i pwu-nta
rain-NOM come-while wind-NOM blow-DEC
'It rains and is windy.'

When the subject is animate it cannot be repeated in the second junct in a sentence like (174a). Therefore, it seems to be obligatorily shared. When the subject is inanimate, on the other hand, this restriction ceases as illustrated in (174b). According to Yang (1994), instances like (174a) involve a core juncture, whereas (174b) represents a clausal juncture. To me this solution is not satisfactory because in all other respects, the structures in the two sentences appear to be the same. Consider also the ending *-ase/ese/yese*. Here too, whether the subject of the second junct is expressed or not is related to the animacy of the subject. Animacy thus yields different effects in what appears to be the same construction. My position is that if a construction at all allows a core argument to be expressed, then the core argument is not obligatorily absent. The *-(u)myense* and the *-ase/ese/yese* constructions are analyzed as clausal junctures in this dissertation.

Besides these two endings, the most problematic is the *-ko* construction. In clauses 3b, 5b, 10c, 15b, and 16e, we saw it in a nuclear juncture expressing aspect. It can also be used to link clauses. Yang (1994) lists the sequential, contrastive, and additive uses of the *-ko* construction as clausal junctures. However, simultaneous events expressed with *-ko* he analyzes as core juncture. For example, according to Yang, the following example contains a core juncture:

(175) Pesu-ka menci-lul **nay-ko** talli-n-ta
bus-NOM dust-ACC stir.up-CON run-PRES-DEC
'A bus is running stirring up the dust.'
(adapted from Yang 1994: 182)

If, if fact, simultaneous events are represented by a core juncture in Korean, then sentences like the ones numbered as 5 and 6 in my data could be analyzed as not having a clause break after *-ko*. It is, however, not always easy to know whether the events are simultaneous or sequential. It is also difficult to test whether it is acceptable to insert a core argument between the two juncts. In the contrastive use of *-ko* the subject in each junct is overtly expressed. In other uses of *-ko*, on the other hand, repeating of the argument does not result in natural Korean. But the reason could be discourse-pragmatic rather than characteristics of the construction per se. Compare the contrastive use of *-ko* (176a) with the additive use (176b):

(176) a. John-un tosekwan-ey ka-**ko** na-nun cip-ey
John-TOP library-to go-CON I-TOP home-to
ka-ss-ta.
go-PAST-DEC(FIN)
'John went to the library and I went home.'

b. Wenswungi-tul-un moca-to cwu-ci.anh-**ko** amwu
monkey-PLUR-TOP hat-also give-not-and any
mal-to eps-ess-upnita.
word-also not.exist-PAST-DEF
'The monkeys neither gave the hats nor did they said anything.'

Despite of a couple of problems like these, the excercise of applying the RRG theory to the Korean text demonstrated that the concept of juncture provides a useful tool that helps one to find criteria for clause breaks. Without such a theory problems are multiple.

4.2.5.3.2. The Chinese example text: Origin of the Double Nine

The Chinese text is from *Zhŏngjí Hànyŭ jiàochéng* (1995: 143) and I have posited the clause breaks as follows:

1. *Chuánshuō gŭ shíhou,*
legend old time
'According to a legend, a long time ago'
Rŭnán yīdài de xiāngcūn ***fāshēng le wēnyì*** __, __ juxtaposed
Runan area ASSOC village happen PFV plague clausal juncture:
'there was a plague in a village in the Runan area,' temporally
unordered

sī de rén ***duō de*** *dōu méi rén mái le.* die NML person many CSC all not.exist person bury PFV 'and so many people died that there were not enough people to bury them.'	*de* construction core juncture: complement of degree
2. *Yǒu rén* __ exist person 'There were people'	__ juxtaposed clausal juncture: modifying clause
shuō __*:* say 'who said:'	__ juxtaposed clausal juncture: direct quotation
Rǔ-hé li yǒu ge yāoguài __ Ru-river inside exist CL goblin "There is a goblin in the Ru river."	__ juxtaposed clausal juncture: modifying clause
méi nián jiǔ yuè jiǔ rì dōu ***chū lái*** __,. every year nine month nine day all exit come "He comes out on the Ninth Day of the Ninth Month every year."	*chū lái* core juncture: directional __ juxtaposed clausal juncture temporally unordered
tā ***zǒu dào*** *nǎr* __, it go to where "Wherever he goes,"	*zǒu dào* nuclear juncture: complement of result __ juxtaposed clausal juncture: simultaneous events
jiù bǎ wēnyì ***dài dào*** *nǎr* __, then BA plague take to where "he takes the plague there."	*dài dào* nuclear juncture: complement of result __ juxtaposed clausal juncture: temporally unordered
rén-men zhēn shì ***hèn tòu*** *le zhè ge yāoguài.* person-PLUR really be hate through PFV this CL goblin "The people really hate this goblin."	*hèn tòu* nuclear juncture: complement of result
3. *Yǒu ge jiào Huánjǐng de qīngnián* __, exist CL call Huanjing NML youg man 'There was a young man called Huanjing'	__ juxtaposed clausal juncture: modifying clause

juéxīn __ decide 'who decided'	__ juxtaposed clausal juncture: psych-action
shā sǐ *yāoguài* kill die goblin 'he would kill the goblin'	*shā sǐ* nuclear juncture: complement of result
wèi *jiāxiāng de rénmín chúhài.* for villagers ASSOC people get rid of evil 'and get rid of the evil for the sake of the villagers.'	*wèi* core juncture: purposive
4a. *Kěxī yāoguài de běnlǐng tài dà* __, pity goblin GEN skill too big 'But unfortunately the goblin was very skillful'	__ juxtaposed clausal juncture: temporally unordered
b. *Huánjǐng* ***dǎ bù guò*** *tā.* Huanjing beat not surpass it 'and Huanjing failed to beat him.'	*dǎ bù guò* nuclear juncture: potential complement
5a. ***tīng shuō*** __ hear say 'When he heard'	*tīng... shuō* core juncture: manner-action __ juxtaposed clausal juncture: indirect quotation
b. *Nánshān li zhù* ***zhe*** *yī wèi shénxian* __, Nan-mountain inside live PFV one CL celestial being 'in Nanshan mountain there lived a celestial being'	__ juxtaposed clausal juncture: modifying clause
c. *běnlǐng hěn dà* __, skill very big 'who had great skills,'	__ juxtaposed clausal juncture: temporally unordered
d. *Huánjǐng juéxīn* __ Huanjing decide 'he decided'	__ juxtaposed clausal juncture: psych-action
e. *dēng mén* __ climb door 'he will climb there'	__ juxtaposed clausal juncture: sequential events
qiú shī. ask teacher 'and ask the celestial being to become his teacher.'	

6a. *Tā fān guò jǐ zuò gāo shān* __,
he cross pass several CL high mountain
'He crossed several high mountains'

fān guò
nuclear juncture:
complement
of result
__ juxtaposed
clausal juncture:
sequential events

b. *zhōngyú zài sōng bǎi shēn chù de yī zuò gǔ*
finally at pine cypress deep place CSC one CL old
miào li ***zhǎo dào*** *le nà wèi xiánren.*
temple in search find PFV that CL celestial being
'and finally, in an old temple surrounded by a thick forest of pine and cypress trees, he found the celestial being.'

zhǎodào
nuclear juncture:
complement
of result

7a. *Xiánren zǎo yǐ* ***tīng shuō*** *Rǔnán de wēnyì,*
celestial being early already hear-say Runan GEN plague
'Already long before, the celestial being had heard about the plague in Runan,'

tīng... shuō
core juncture:
manner-action

b. *zìrán lèyì jiāo tā,*
naturally be.willing teach him
'so of course he was willing to to teach Huanjing.'

c. *bìngqiě hái gěi le tā yī bǎ bǎojiàn.*
and also give PFV he one CL double-edged sword
'He also gave him a double-edged sword.'

bìngqiě
clausal juncture:
additive

8. *Cóngcǐ, Huánjǐng méi tiān* ***gēn*** *zhe xiánren*
from.that.on Huanjing every day follow DUR celestial being
'From that day on, Huanjing was every day'
kèkǔ ***xuéxí*** *běnlǐng.*
assiduously study skill
'assiduously practicing skills with the celestial being.'

gēn... xuéxi
core juncture:
manner-action

9a. *Dào le dì-èr nián jiǔ yuè* __,
arrive PFV second year nine month
'Then came the Ninth Day of the Ninth Month of the second year'

__ juxtaposed
clausal juncture:
sequential events

b. *xiánren duì Huánjǐng shuō* __:
celestial.being to Huanjing say
'the celestial being said to Huanjing:'

__ juxtaposed
clausal juncture:
direct quotation

c. *"Jiǔ yuè jiǔ rì*
nine month nine day
"On the Ninth Day of the Ninth Month,"

Rǔ-hé de yāoguài yòu yào ***chū lái*** *le"*
Ru-river GEN goblin again will exit come CRS
"the goblin will again come out."

chū lái
core juncture
directional

d. *"nǐ gǎnkuài **huí qù**"* you quickly return go "Go back quickly"	*huí qù* core juncture: directional
e. *"**wèi** rénmín chúhài ba."* for people destroy evil IF "and destroy the evil for the sake of the people."	*wèi* core juncture: purposive
10a. ***Shuō wán*** __ say finish 'Having said that,'	*shuō wán* nuclear juncture: complement of result __ juxtaposed clausal juncture: sequential events
b. *zhāi le xiē zhūyú yèzi* __ pick PFV some medicinal.cornel leaf 'he picked some leaves of medicinal cornel'	__ juxtaposed clausal juncture: modifying clause
c. ***sòng gěi*** *tā* give give he 'and gave them to Huanjing.'	*sòng... gěi* core juncture: benefactive
d. ***yòu*** *gěi le he yī píng júhuā jiǔ* __, again give PFV he one bottle chrysanthemum wine 'He also gave him a bottle of chrysanthemum wine'	*yòu* clausal juncture: additive *gěi... hē* core juncture: purposive __ juxtaposed clausal juncture: temporally unordered
e. *shuō __:* say 'and said:'	__ juxtaposed clausal juncture: direct quotation
f. *zhèxiē dōngxi kěyǐ bì yāo* __ these things can repel gobling "These can repel goblins"	__ juxtaposed clausal juncture additive
fáng bìng. prevent illness "and prevent illness."	
11a. *Huánjǐng **húi dào** le jiāxiāng* __, Huanjing return arrive PFV village 'Huanjing went back to the village'	*huí dào* nuclear juncture: complement of result

__ juxtaposed clausal juncture: sequential events

b. *bǎ xiánren de huà gàosu le dàjiā.*
BA celestial.being GEN words tell PFV everybody
'and told everybody what the celestial being had said.'

12a. *Jiǔ yuè jiǔ rì nà tiān,*
nine month nine day that day,
'On the Ninth Day of the Ninth Month,'

tā ***dàilǐng*** *rén-men* ***dēnggāo*** ***shàng*** *le*
he lead person-PLUR climb.high up PFV
'he led the people'

dàilǐng...
... dēnggāo
core juncture: manner-action
dēnggāo-shàng
nuclear juncture complement of result

fùjìn de yī zuò gāo shān __
nearby CSC one CL high mountain
'to the top of a high mountain in the vicinity.'

__ juxtaposed clausal juncture: sequential events

b. *bǎ zhūyú yèzi fēn gěi méi rén yī piàn,*
BA cornel leaf distribute give every person one CL
'he gave everybody one cornel leaf'

fēn.... gěi
core juncture: benefactive

c. ***dài*** ***zài*** *tóu shang* __,
put be-at head top
'to put on his head,'

dài zài
nuclear juncture: complement of result
__ juxtaposed clausal juncture: sequential events

d. *yòu bǎ júhuā jiǔ*
also BA chrysanthemum wine

gěi *méi rén* ***hē*** *le yī kǒu.*
give every person drink PFV one CL
'and gave everybody a mouthful of the chrysanthemum wine.'

gěi... hē
core juncture: purposive

13a. *Ránhòu* ***dài*** *zhe bǎojiàn,*
then carry PFV double-edged sword
'Then carrying the double-edged sword,'

dài... huí
core juncture: manner-action

dúge ***húi*** *cūn le.*
alone return village PFV/CRS
'he returned alone to the village.'

14a. *Yāoguài* ***lái*** ***dào*** *cūnzi* *li* __,
goblin come arrive village in
'The goblin came to the village'

lái dào
nuclear juncture:
complement of
result
__ juxtaposed
clausal juncture:
sequential events

b. ***kàn*** ***bù*** ***jiàn*** *yī* *ge* *rén* __,
look not see one CL person
'(but) didn't see anybody.'

kàn bu jiàn
nuclear juncture:
complement of
result
__ juxtaposed
clausal juncture:

c. *tái* *tóu*
raise head
'Raising his head'

yī *kàn* __,
one look
'he looked'

__ juxtaposed
clausal juncture:
cognition

d. *rén-mín* *dōu* ***dēng*** ***shàng*** *le* *gāo* *shān.*
person-PLUR all climb go.up PFV high mountain
'all the people had climbed the mountain'

dēng shàng
nuclear juncture:
complement of
result

15a. *Tā* ***lái*** ***dào*** *shān* *xià* __
it come arrive mountain below
'(When) he came to the foot of the mountain'

lái dào
nuclear juncture:
complement of
result
__ juxtaposed
clausal juncture
sequential events

b. *zhǐ* *juéde* __
only feel
'he felt'

__ juxtaposed
clausal juncture:
perception

c. *jiǔ* *qì* *cì* *bí* __
wine vapor pierce nose
'the vapor of the wine piercing his nose'

__ juxtaposed
clausal juncture:
additive

d. *nóngnóng* *de* *zhūyú* *xiāngwèi* ***shǐ***
heavy CSC cornel smell make
'(and) the heavy smell of themedicinal cornel made'

shǐ
clausal juncture:
indirect causation

tā *bù* *gǎn* ***kào*** ***jìn.***
it not dare get.near close
'him afraid of going close.'

kāo-jìn
nuclear juncture:
complement of
result

16. *Yúshì yòu* ***húi dào*** *cūn li.*
so again return arrive village in
'So he returned to the village.'

huí dào
nuclear juncture:
complement of
result

17a. *Còuqiāo* ***pèng shàng*** *le Huánjǐng* __,
luckily run.into PFV Huanjing
'(But) luckily he encountered Huanjing'

pèng shàng
nuclear juncture:
complement of
result
__ juxtaposed
clausal juncture:
sequential events

b. *bèi Huánjǐng* ***shā sǐ*** *le.*
PASS Huanjing kill-die PFV
'(and) was killed by Huanjing.'

shā sǐ
nuclear juncture:
complement of
result

18. *Cóngcǐ, Rǔnán zài yě méi yǒu wēnyì le.*
since Runan again also not exist plague CRS
'Since then, there has been no plague in Runan.'

19a. *Dǎ zhè yǐhòu, méi nián jiǔ yuè jiǔ rì,*
reach here after every year nine month nine day
'From then on, every year on Ninth Day of the Ninth month'

rén-men jiù ***dài shàng*** *júhuā jiǔ* __,
person-PLUR all.along take with chrysanthemum wine
'people take chrysanthemum wine'

dài shàng
nuclear juncture:
complement of
result
__ juxtaposed
clausal juncture:
additive

b. *tóu chā zhūyú yè,*
head put.on cornel leaf
'put cornel leaves on their heads,'

c. *wài chū dēnggāo.*
outside go.out climb.high
'(and) go out to climb high.'

Nuclear junctures seem to be a prevalent phenomenon in Chinese. There are eighteen of them in the sample text alone expressing either result or potentiality. Traditionally these constructions are known as the complement of result and the potential complement. Using the RRG framework we can notice that they are formed with two verbs that together share all their arguments:

(177) a. (tā) zhōngyú **zhǎo dào** le nà wèi xiánren
3sg finally search reach PFV that CL celestial being
'He finally found the celestial being.' **complement of result**

b. Huánjǐng **dǎ bu guò** tā
Huanjing beat-not-surpass it
'Huanjing could not beat him.' **potential complement**

The fact that these are tight linkages can be seen from the way these constructions behave like one unit in various syntactic processes. For example, the whole nuclear juncture is required to answer an A-not-A type of question:

(178) a. Nǐ **zhǎo dào** le nà běn shū méi yǒu? **Zhǎo dào** le.
You search arrive PFV that CL book not have search arrive PFV
'Did you find that book (or not)? (I) found (it).'

b. Tā **dǎ de guò dǎ bu guò** nà ge yāoguài? **Dǎ bu guò.**
he hit get surpass hit not surpass that CL gobling hit not surpass
'Could he beat the goblin? No, he couldn't.'

Unlike Korean, Chinese does not use nuclear junctures to mark aspect. The Chinese aspect markers *le, zhe,* and *guo*, even though originally verbs, have been fully grammaticalized and now work as purely formal markers (cf. Fu 1996).

Core junctures in the sample text represent a variety of different situations. One of them is, what has traditionally been known as the complement of degree:

(179) [Xiǎo bìhǔ] **gāoxing de** jiào-qǐlai
little gecko glad CSC shout-begin
'the little gecko was so glad he started to shout' **complement of degree**

Fu (1996), in her RRG analysis of Mandarin linkage types, has compared this construction with the potential complement pointing out several differences between the two. In the complement of degree, an adverb like *hěn* 'very' can be inserted between the two juncts as illustrated below in (180a). When forming A-not-A questions only the second junct is repeated, and when answering such a question the second junct can stand alone, both shown in (180b):

(180) a. Tā **pǎo de hěn kuài**
3sg run CSC very quick
'He runs very quickly.'

b. Tā pǎo de **kuài bu kuài**? **Hěn kuài**.
3sg run CSC quick not quick very quick
'Does he run quickly? Yes, very quickly.'

Another type of core juncture is used to introduce further arguments into the predication. This is commonly known as the serial verb construction. Below, in (181a), the first junct 'I use sword' adds an instrument to the other core 'cut down your head'. In (181b), the first junct 'he distributes the cornel leaves' gets a recipient added in the second junct 'gives one to everybody':

(181) a. wǒ yòng zhè bǎ dāo bǎ nǐ de tóu gē xià lái.
I use this CL sword BA you GEN head cut descend come
'I'll cut your head with my sword.'

b. (tā) bǎ zhūyú yèzi **fēn gěi** méi rén yī piàn
(3sg) BA cornel leaf distribute give every person one CL
'he gave everybody one cornel leaf '

A couple of linkages expressing direction may, at first glance, seem to be nuclear junctures. A closer examination, however, reveals that other items can be inserted between the juncts. Compare example (236a) from the text with (236b), where a locative NP has been added between the predicates:

(182) a. nǐ gǎnkuài **huí qù**
you quickly return go
'go quickly back'

b. Tā huí jiā qù le.
3sg return home go CRS
'He went back home.'

Another type of core juncture is the pivotal constructions, where the shared argument is the object. Not found in my data, I illustrate this juncture type with an example adapted from Hansell (1993: 200):

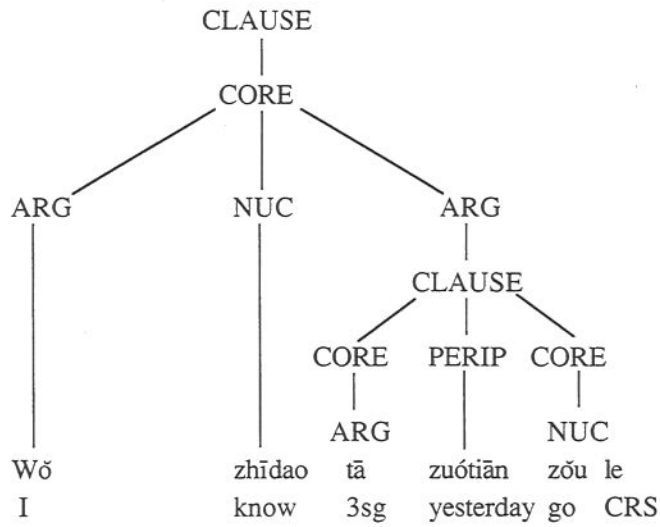
(183) Tā jiāo wǒ xiě zì
3sg teach I write character
'He teaches me to write.'

So far, the discussion has focused on nuclear and core junctures which both represent packaging of information into one and the same clause. My analysis of these basically accords with that of Fu (1996). There is one major exception though. This is the treatment of sentences like the one below, which Fu takes to be an instance of core juncture:

(184) Wǒ zhīdao tā zuótiān zǒu le
I know 3sg yesterday go CRS
'I know that he left yesterday.'

According to Fu (1996), the part 'he left yesterday' is embedded under a core argument. In other words, the object slot is filled by a whole clause and the structure of the sentence would be something like the diagram below:

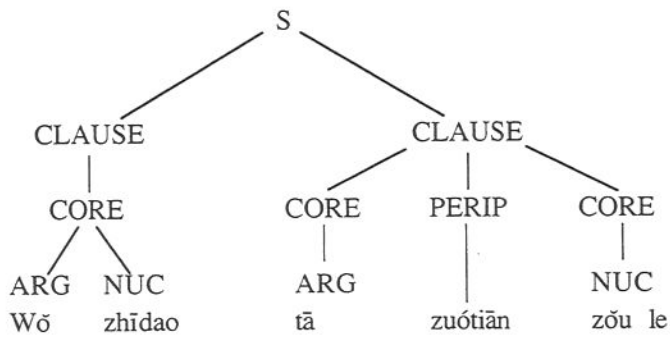
(185)



The main reason why Fu analyzes this sentence as having a complex core is that the clause 'he left yesterday' appears to fill an argument position as an embedded structure. At the same time, however, she finds evidence that points to full-clause analysis. Syntactically, the "embedded" junct is free to specify independent tense, it can be independently negated, and it can take its own peripheral argument. Moreover, phonologically, there sometimes exists a short pause between the juncts. To my

opinion, these features are symptomatic and the juncture should be analyzed as clausal:

(186)



Verbs of cognition do not require that all the arguments are specified on the surface. It is possible to say *zhīdao* '(I) know' and consider it a complete clause. With some verbs the situation is different. The verb *shǐ*, in its causative sense, assumes a whole clause as its object, as in sentence 15. An analysis analogous to (186) seems to leave the first junct rather incomplete. However, the crucial question when determining level of juncture is whether there are shared arguments. In sentence 15 there are none. Therefore the verb *shǐ* has been analyzed as having a clause break after it.

Finally, let us consider a sentence where both the subject and the object position appear to be filled with a whole clause. This is how I have analyzed sentences like the one below (from LG: 3):

(187)

CLAUSE-1			CLAUSE-2		
Méi	yǒu	wěiba	duǒ	nán-kàn	na!
not	have	tail	how	ugly	PRT

a. 'Oh, how ugly I am when I don't have a tail!'
b. 'Oh, how ugly I am without a tail!'
c. 'Oh, it looks so ugly not to have a tail!'

A sentence like this could be translated in various ways depending on what we think has been left unspecified. In practical fieldwork, I think we should take the loosest alternative as basic, unless predicate semantics, consistent phonological patterns, or identifiable syntactic behavior point to a tighter linkage type.

My conclusion is that applying RRG concepts is useful when elements are simply juxtaposed to each other without formal markers. The theory of linkage types helps to narrow down the number of ambiguous constructions and provides criteria for testing one's decisions. More research, however, is called for in the area

of further developing procedures for applying the RRG theories in practical tasks like positing clause breaks.

4.3. CLASSIFICATION OF PREDICATES

When we talk about something, we use sentences to represent different types of states of affairs (see Van Valin and LaPolla 1997: 82-89). States of affairs are expressed using verbs that take various numbers of nominal arguments. The verbs differ in what kind of temporal properties they encode. Some entail change over time; others do not. Some code punctual changes; others changes that occur over a more extended period of time. There are verbs with an inherent endpoint and those that lack such an endpoint. Some verbs entail causation while others are non-causative. These differences are the basis for predicate classification in RRG (Van Valin and LaPolla 1997: 91-102).

4.3.1. Aktionsart classes

The different predicate classes are called Aktionsart. The system adopted in RRG was originally proposed by Vendler (1967). According to Vendler predicates fall into four broad classes: states of affairs expressed by predicates fall into broad classes: states, achievements, accomplishments, and activities. The different categories are illustrated below:

(188) a. **States** are static and temporally unbounded:
be sick, be tall, be dead, love, know, believe, have.

b. **Activities** are dynamic and temporally unbounded:
march, walk, roll (the intransitive versions);
swim, think, rain, read, eat.

c. **Accomplishments** are temporally extended changes of state that lead to a terminal point:
melt, freeze, dry (the intransitive versions);
recover from illness, learn.

d. **Achievements** code instantaneous change; they have inherent terminal point:
pop, explode, collapse, shatter (all intransitive).

States and activities are considered the most fundamental categories. They differ from each other only by one being static and the other dynamic. Accomplishments are semantically more complex as they involve a terminal point. Achievements not only have a terminal point but are also punctual. The features of the four categories are summarized below:

(189)	State	[+static],	[-telic],	[-punctual]
	Activity	[-static],	[-telic],	[-punctual]
	Accomplishment	[-static],	[+telic],	[-punctual]
	Achievement	[-static],	[+telic],	[+punctual]

Verbs from the same Aktionsart class exhibit similar morphosyntactic behavior. Below are some examples (adapted from Dowty 1979: 55-62; cf. Van Valin 1997: 94-97.) Only non-statives occur in the progressive, or with such adverbs that code dynamic action:

(190) a. *John is knowing the answer. **stative**
b. John is running **non-stative**

(191) a. *John vigorously knew the answer. **stative**
b. John ran vigorously. **non-stative**

Achievements are generally strange with a *for* phrase but activities may take this adverbial:

(192) a. ??John noticed the painting for a few minutes. **achievement**
b. John walked for an hour. **activity**

Accomplishments can occur with a temporal adverbial like *in an hour*, while activities cannot.

(193) a. John painted a picture in an hour. **accomplishment**
b. *John walked in an hour.

The common temporal properties entailed by the predicates of a particular group explain why adverbs and constructions dealing with aspectual meanings are not freely compatible with all types of predicates. The progressive form in English is used to express the on-goingness of situations which are not inherently on-going. Hence, it is not surprising that there are restrictions on its use with static verbs, since they already include that semantic component. The acceptability of adverbs like *vigorously* is related to inherent dynamicity. The adverbial *in an hour* describes

situations reaching their endpoint (bounded events). It may occur with accomplishments, which entail such an endpoint, but not with activities, because they do not have an inherent endpoint. Finally, there is the instantaneous vs. more gradual change. The English prepositions *for* and *in* are sensitive to these differences, as well as differences in boundedness.

Vendler arguments for these predicate classes were based solely on English. Interestingly, however, these distinctions appear to be relevant cross-linguistically. Evidence for their relevance has been found in many unrelated languages including: Bongi, Barai, French, Georgian, Italian, Japanese, Lakhota, Russian, Tepehua, Yagua (Van Valin and LaPolla 1997: 98-99, 103, 109).

Vendler's system was further developed by Dowty (1979) and adopted, with some modifications, by Van Valin and LaPolla (1997). Each of these basic types of predicates have a causative counterpart where the state or activity is induced by a participants. These are illustrated below:

(194)

	basic	**causative counterpart**
a. State	*The boy is afraid*	*The dog frightens/ scares the boy.*
b. Achievement	*The balloon popped*	*The cat popped the balloon.*
c. Accomplishment	*The ice melted.*	*The hot water melted the ice.*
d. Activity	*The ball bounced around the room*	*The girl bounced the ball around the room*

One more distinction is made in Van Valin and LaPolla (1997: 101-102): accomplishment predicates can go back either to a state or to an activity.

(195)

a_1. simple state:	*The ice is melted.*
a_2. accomplishment:	*The ice melted.*
	melted = **melt'** + change + terminal point
b_1. simple activity:	*The dog walked.*
b_2. active accomplishment:	*The dog walked to the park.*
	walked = **walk'** + a terminal point

Both of these classes have their causative counterparts. By adding the feature [+causation] *The ice melted becomes* a causative accomplishment *The hot water melted the ice.* This was already illustrated in (194c). A causative active accomplishment corresponding to (195b_2) would be *Sam walked the dog to the park.* This gives us altogether 10 different types of predicates. Vendler's four-way classification forms the basis. One more class comes from the distinction between two

types of accomplishments, and the rest are causative counterparts of the five more simple types.

There are languages in which several of these categories are directly coded in the verbal morphology (e.g. Finnish). Others are not so iconic. The interesting thing, however, is that even if a language does not visibly code the Aktionsart in the verb form, the verbs belonging to a certain Aktionsart category typically will demonstrate their category membership by some sort of distinctive morphosyntactic behavior.

The Aktionsart distinctions are considered universal but the ways in which different languages manifest these distinctions vary. The distinctions can (but need not) show up in the morphological form of the predicate. They may be indicated by the form of the nominal arguments. In either case, the Aktionsart typically constrains what kind of nominal arguments, adverbial elements, and constructions are compatible with the predicate. Therefore, when analyzing the predicates, we need to consider both the predicate itself and its nominal arguments.

4.3.2. Testing the predicates

There are thus altogether ten classes of predicates. Which category a particular predicate belongs to is determined by a set of tests. The basic classes can be identified by applying the following criteria (see Van Valin and LaPolla 1997: 94, 101):

	States	Achievements	Accomplishments	Activities
1. Occurs with progressive	No	No	Yes	Yes
2. Occurs with adverbs like *vigorously, actively*, etc.	No	No	No	Yes
3. Occurs with adverbs like *quickly, slowly*, etc.	No	No*	Yes	Yes
4. Occurs with *X for an hour, spend an hour Xing*	Yes*	No	Irrelevant	Yes
5. Occurs with *X in an hour*	No	No*	Yes	No

Table IX. Basic tests for predicate classification

The linguistic expressions are considered in the context they occur in. Let us take a sentence like *Yesterday, Anna was sick.* The predicate and the NP with which it is associated are *Anna was sick.* When we apply the above tests to this expression, they yield the following results: No - No - No - Yes - No; **Anna was being sick,*

**Anna was sick vigorously/actively,* and **Anna was sick quickly/slowly* are all unacceptable. *Anna was sick for an hour* is possible but *Anna was sick in an hour* is again ungrammatical. The conclusion thus is that *Anna was sick* must be a state.

In this manner we can use the table substituting with any given predicate and its arguments for X. An asterisk after Yes or No indicates that with some predicates the test is problematic. The *for* phrase, for example, is odd with *Anna was fat for an hour*. The purpose of this test, however, is to show whether a predicate has duration, which those representing permanent situations of course have. Similarly, the No for tests 3 and 5 in the achievement column is not always absolute.

In Table IX, the answers for the accomplishment class hold for predicates that go back to an underlying state. In the case of an active accomplishment, Test 2 yields Yes. No additional tests are needed to distinguish the two types of accomplishments from each other.

Only one more test is needed for distinguishing the causative classes from the basic ones. If the predicate is causative, then it is possible to create a causative paraphrase for it. *The sun melted the ice* can be paraphrased as *The sun caused the ice to melt*. Similarly, *John broke the vase* can be expressed as *John caused the vase to break*. A revised table for all the ten classes is presented below (see Van Valin and LaPolla 1997: 94, 101).

	Test 1 Occurs with progressive	**Test 2** Occurs with adverbs like *vigorously, actively*, etc.	**Test 3** Occurs with adverbs like *quickly, slowly*, etc	**Test 4** Occurs with *X for an hour, spend an hour Xing*	**Test 5** Occurs with *X in an hour*	**Test 6** Has a causative paraphrase
State	No	No	No	Yes*	No	No
Activity	Yes	Yes	Yes	Yes	No	No
Achievement	No	No	No*	No	No*	No
Accompl.	Yes	No	Yes	Irrelevant	Yes	No
Act. accom	Yes	Yes	Yes	Irrelevant	Yes	No
Caus. state	Yes*	Yes*	No	Yes	No	Yes
Caus. activ	Yes	Yes	Yes	Yes	No	Yes
Caus. achiev	No	Yes*	No*	No	No*	Yes
Caus. accom	Yes	Yes*	Yes	Irrelevant	Yes	Yes
Caus. activ. accom.	Yes	Yes	Yes	Irrelevant	Yes	Yes

Table X. A complete set of tests for predicate classification

These tests are meant to have cross-linguistic validity, albeit with some qualifications. The first test aims at capturing whether a verb is static or not. Languages having a progressive aspect can conduct the test with the progressive form. In other languages it may be necessary to find a construction that would be semantically equivalent to an expression like 'be in the middle of V-ing'. If such an expression can collocate with apparent activities but is not acceptable with apparent states, it is a good candidate for a testing instrument.

The Test 2 is designed to reveal whether an action is dynamic. The adverbs *vigorously, dynamically*, and *actively*, are compatible with predicates expressing dynamic actions, whereas non-dynamic predicates do not collocate with them. When selecting words for this test, it is best to avoid adverbs that imply a controlling subject, such as *carefully* and *deliberately*. These do not go together with verbs that are dynamic but refer to involuntary actions: *The dog shivered violently/*carefully in the cold.*

The third test distinguishes punctual verbs from non-punctual ones. The adverbs used in this test should indicate relatively slow processes. *Quickly, rapidly, slowly*, or *gradually* are acceptable but not *instantly*.

The fourth test indicates whether or not a verb is durative. For this test it is necessary to find an expression that indicates duration, such as 'for an hour' or 'during one hour'. Punctual verbs should not be compatible with these expressions.

The fifth test indicates whether or not a predicate is telic. This can be tested with expressions that indicate completion, such as 'in an hour', 'within an hour' that assume that a terminal point has been reached within a certain time limit. When designing a test it is good to use phrases that involve relatively long periods of time. This excludes achievements, which are punctual, but could occur *in the blink of an eye* or *in a fraction of a second.*

Finally, when testing causation, the point to observe is that the predicate to be tested and its causative paraphrase must have the same number of nominal arguments. This is true in a sentence like *Sam caused the book to be on the table* which paraphrases *Sam put the book on the table*. In contrast, *Sam caused himself to roll on the floor* is not a valid paraphrase for *Sam rolled on the floor* because it adds one more argument to the sentence.

Testing predicates is important. It is not valid to reason that a verb like *possess* must be static because no action is involved. This would be referring to the State of affairs (i.e. to what happens in the real world), which easily leads to arbitrary judgements. The decisions must be based on linguistic evidence which, in different languages, can yield different answers for a given predicate. The English verb *die* is durative (*He is dying/He died slowly*). In another language the corresponding verb

may be punctual and does not accept progressive aspect or adverbials indicating temporal duration. (Van Valin and LaPolla 1997: 106.)

4.3.3. Logical structures

The various types of Aktionsart distinctions can be formalized in what are known as logical structures (Van Valin and LaPolla 1997: 102-122). This type of formalization was developed by Dowty (1979) who, drawing upon Vendler (1967), proposed that all predicates could be described in terms of a basic meaning plus possibly one or more modifiers. State predicates are assumed to represent the basic meaning directly, e.g. *see, be dead.* These can be formally described as **see'** (x, y) and **be dead'** (x). Achievements involve an instantaneous change. This is indicated with the modifier INGR. When this modifier is added to the basic meaning of *see* the result is *glimpse*. The logical structure of it is INGR **see'** (x, y). The English verb *die* is an accomplishment predicate. In this class, the change has temporal duration; the marker of that is BECOME. The verb *die* is thus represented as BECOME **dead'** (x). Dowty (1979) assumed that activities too would be composed of more than one component but he had difficulties in finding state predicates that could underlie them. In the latest version of RRG, activities are considered to be basic. Their logical structure differs from the state predicates by the marker **do'**. This is a generalized activity predicate, not a modifier that would be added upon the meaning of another, more basic, predicate.[24] Hence, activities like *cry* and *eat fish* are presented as **do'** (x, [**cry'** (x)]) and **do'** (x, [**eat'** (x, y)]).

In this semantic metalanguage, the predicates, are conventionally written in boldface followed by a prime. This is meant to indicate that the words describe the meaning of the predicate in a formal way rather than represent an actual lexical item in some human language. The modifiers are written in capital letters. The variables are filled in with actual lexical items written in normal typeface. The example below illustrates the formal representations for the predicate 'be sick' in English and in Korean:

(196)	a. The dog became sick	BECOME **sick'** (dog)
	b. Kay-nun pyeng-i nass-ta	BECOME **sick'** (kay)

Examples of some English verbs with their logical structures are given below (Van Valin and LaPolla 1997: 105):

(197) a. **States**

Leon is a fool.	**be'** (Leon, [fool])
The window is shattered.	**shattered'** (window)
Fred is at the house	**be-at** (house, Fred)
John saw the picture.	**see'** (John, picture)

b. **Activities**

The children cried	**do'** (children [**cry'** (children)])
The wheel squeaks	**do'** (wheel, [**squeak'** (wheel)])
John ate fish.	**do'** (John, [**eat'** (fish)])

c. **Achievements**

The window shattered.	INGR **shattered'** (window)
The balloon popped.	INGR **popped'** (balloon)
John glimpsed the picture	INGR **see'** (John, picture)

d. **Accomplishments**

The snow melted.	BECOME **melted'** (snow)
The sky reddened.	BECOME **red'** (sky)
Mary learned French	BECOME **know'** (Mary, French)

A point to notice is that state predicates, even when they do not take any further modifiers, are not a single, homogenous group. In a number of languages, inherent states and result states behave differently. Therefore they each need their own logical structure. The simple **predicate'** (x) or **predicate'** (x, y) is used for result states, such as **broken'** (x), **hear'** (x, y). Identificational and attributive constructions are represented as **be'** (x [**predicate'**]): e.g. **be'** (Mary, [**teacher'**]) and **be'** (John, [**tall'**]). A similar logical structure is used also for internal sensations. *She feels hot* has the logical structure **feel'** (she, [**hot'**]).

The causative counterparts of the basic classes are all formed with the modifier CAUSE. The generalized logical structure is α CAUSE β, where the first argument α is the causer and the second argument β is the logical structure of the basic predicate. For example:

(198) a. The boy is afraid — **basic state**
feel' (boy, [**afraid'**])

b. The dog frightens the boy. — **causative state**
[dog] CAUSE [**feel'** (boy, [**afraid'**])]

(199) a. The balloon popped. **basic achievement**
INGR **popped'** (balloon)

b. The cat popped the balloon. **causative achievement**
[cat] CAUSE [INGR **popped'** (balloon)]

It is also possible that a state of affairs rather than a living being brings about another state of affairs. In that case the first argument of the CAUSE modifier is filled by the logical structure representing the causing state, activity, achievement or accomplishment.

(200) The balloon's popping startled the baby.
[INGR **popped'** (balloon)] CAUSE [INGR **startled'** (baby)]

If the cause is an unspecified action, the first argument in the logical structure is **do'** (x, 0). For example, Max could have broken the window, but the sentence does not tell us what exactly he did that had this result. This is illustrated below:

(201) Max broke the window.
[**do'** (Max, 0) CAUSE [BECOME **broken'** (window)]

Agentivity is indicated in the logical structure only when it is an obligatory part of the verb meaning. This can be tested with adverbs like *unintentionally* and *inadvertently*. If the addition of such adverbs results in a semantically odd sentence, then the verb in question is inherently agentive. In English, the verb *kill* does not lexicalize agentivity and, hence, it is possible to say *He unintentionally killed the chicken.* Moreover, it appears with inanimate subjects which cannot be willful agents: *Malaria killed many people in that area.* The verb *murder*, in contrast, is not compatible with anything that cancels its inherent agentivity: **He unintentionally murdered his enemy.* **Malaria murdered many people in that area.* Agentivity is only an issue for those verbs having an activity logical structure. Verbs in this category which are always interpreted as agentive have semantic representations containing the modifier DO.[25] This yields logical structures that begin DO (x, [**do'**...

(202) The man murdered his enemy.
DO (man, [**do'** (man, 0)]) CAUSE [BECOME **dead'** (enemy)]

A couple of additional logical structure elements that need to be included are & and NOT. The element & means 'and then'. It is used to express the successive states

of affairs following a motion, transfer of possession, creation, or consumption. For example, in the accomplishment uses of verbs like *run* and *write,* the resulting states of affairs is indicated with &:

(203)	**activity**	**accomplishment**
a.	Tim ran **do'** (Tim, [**run'** (Tim)])	Tim ran to the store. **do'** (Tim, [**run'** (Tim)] & BECOME **be-at'** (Tim, store)
b.	Tim wrote. **do'** (Tim, [**write'** (Tim)])	Tim wrote a poem. **do'** (Tim, [**write'** (Tim)] & BECOME **exist'** (poem)

The element NOT is needed to describe verbs like *remove*, *drain,* and *take* as illustrated below:

(204) Tom took the knife from the prisoner
[**do'** (Tom, 0) CAUSE [BECOME NOT **have'** (prisoner, knife)]

Simultaneous changes can be indicated with ∧. This is relevant with verbs of transformation like *carve*:

(205) The man carved the log into a canoe.
[**do'** (man, [**carve'** (man, log)]) CAUSE [BECOME NOT **exist'** (log) ∧ BECOME **exist'** (canoe)]

It is also used in logical structures representing activities that include the use of an instrument:[26]

(206) Mary wrote the characters with a brush.
do' (Mary, [**write'** (Mary, characters)] ∧ **use'** (Mary, brush)])

We can now summarize the basic principles for writing logical structures. Ascertain the Aktionsart class of the verb in the given context. Then assign the logical structure associated with that class. The basic set of logical structures is given below, followed by examples of some subclasses within them (adapted from Van Valin and LaPolla 1997: 109, 115, 117-122).

Verb class	Logical structure
State	**predicate'** (x) or (x, y)
Activity	**do'** (x, [**predicate'** (x) or (x, y)])
Achievement	INGR **predicate'** (x) or (x, y), *or* INGR **do'** (x, [**predicate'** (x) or (x, y)])
Accomplishment	BECOME **predicate'** (x) or (x, y), *or* BECOME **do'** (x, [**predicate'** (x) or (x, y)])
Active accomplishment	**do'** (x, [**predicate$_1$'** (x, (y))] & BECOME **predicate$_2$'** (z, x) or (y)
Causative	α CAUSE β, where α, β are logical structures of any type

Table XI. The basic set of logical structures

Examples of subclasses:

States:

State or condition	**broken'** (x)	It is broken
Existence	**exist'** (x)	There is an old story.
Identificational	**be'** (x, y)	He is my son.
Attributive	**be'** (x [**attribute'**])	He is big.
Pure location	**be-LOC'** (x, y)	It is on the table.
Perception	**hear'** (x, y)	He heard the noise.
Internal feeling	**feel'** (x, y)	I fear dogs.

Activities:

inherently agentive verbs	DO (x, [**do'**
verbs of removal and the like	NOT
successive states	&
simultaneous change, use of instruments	$\wedge$

Table XII. Logical structures for subclasses of states and activities

4.3.4. Transitivity

Transitivity in RRG is characterized in terms of semantic macroroles. A transitive verb takes two macroroles, actor and undergoer. Actor is the participant which performs, effects, instigates, or controls the situation, while the undergoer is a participant which does not perform, initiate, or control the situation but is somehow affected by it (Foley and Van Valin 1984: 29). The following example sentences all contain two macroroles and, hence, the predicates in them are transitive.

(207) a. John(A) ate a bag of popcorn(U).
b. Pat(A) saw Mary(U).
c. Peter(A) has a cat(U).

The notions actor and undergoer do not have an exact semantic content. They refer to the opposition of two entities (Van Valin and LaPolla 1997: 139-147). The macroroles encompass several more specific semantic relations depending on the type of the predicate. An actor can be agent, experiencer, possessor, etc. and an undergoer can be patient, sensation, possessed, etc. With this approach we can avoid the kind of problems that were discussed in Chapter 3 concerning direct objects and whether or not they are really affected. Another problem that gets solved is the assignment of thematic relations. In Case Grammar they are arbitrarily assigned. In RRG, the specific semantic relations are derived from logical structures (Van Valin and LaPolla 1997: 127):

Arg. of	1st arg. of	1st arg. of	2nd arg. of	Arg. of state
DO	do' (x...	pred' (x, y)	pred' (x, y)	pred' (x)

Table XIII. Thematic relations continuum

Only the arguments in the logical structure can be macroroles. A further requirement is that macroroles must be realized as direct arguments (i.e. as subject or direct object) except in voice constructions. Hence, peripheral arguments or NPs realized as oblique arguments (e.g. indirect object) do not yield any macroroles. Verbs with only one macrorole are intransitive. For example:

(208) a. **Susan** ran.
b. **Pat** cried.
c. **Peter** slept in the garden.

A point to note is that some verbs may have variable transitivity. The verb *eat* in its two-argument form can be either an activity or an active accomplishment. Only the latter yields two macroroles. Besides an actor, its semantic representation also contains a participant which is affected in the state of affairs. In contrast, the activity predicate has a non-referential second argument and therefore cannot yield an undergoer:

(209) a. Anna (A) ate a bowl of spaghetti (U). transitive
b. Anna (A) was eating spaghetti. intransitive

Verbs which do not have any arguments in their logical structure cannot yield macroroles. They are called atransitive. The Finnish verb *sataa* is atransitive:

(210) Sataa.
rains
'It rains.'

Transitivity defined in terms of macroroles is called M-transitivity in RRG. The possibilities thus are:

number of macroroles	**M-transitivity**	
abbreviation		
no macroroles	atransitive	MR0
one macrorole	intransitive	MR1
two macroroles	transitive	MR2

Table XIV. M-transitivity

4.3.5. Lexical entries for verbs

The lexicon in RRG contains the lexical entries and their logical structures. The logical structures account for the syntactic behavior of lexical items. Only information that is relevant but does not follow from the logical structure needs to be specified separately. Transitivity, in most cases, can be seen directly from the logical structure of the verb. It is equal to or less than the number of arguments in the logical structure:

(211)	a. run	**do'** (x) [**run'** (x)]	1 argument in LS	M-intransitive
	b. see	**see'** (x, y)	2 arguments in LS	M-transitive
	c. watch	**do'** (x) [**see'** (x, y)]	2 arguments in LS	M-transitive

It is of course not necessary for all the arguments to be coded in the surface structure. Hence, *watch* is a transitive verb but it can appear in clauses like *I am watching* where one of the arguments is left unspecified. Verbs of transfer often have three semantic core arguments, e.g. *give, put*, etc. However, the maximum number of macroroles is two. These verbs are transitive; there is no such a concept as ditransitivity in RRG.

In all the above situations, there is no need to indicate the transitivity in the lexical entry. Only if the verb is irregular in its M-transitivity must this be specified. An example of such a verb is *belong to*. The logical structure contains two arguments but one of them is always realized as an oblique argument and therefore does not qualify as a macrorole: *That book belongs* ***to Sue.*** The verb is thus intransitive and the lexical entry would be: **have'** (x, y) [MR1]. Another verb with irregular M-transitivity is *seem*. The logical structure has two arguments but one of them, if present, is realized as a prepositional phrase, while the other is an extraposed clause: *It seems to me that...* This leaves *seem* without macroroles and atransitive. The lexical entry would be **seem'** (x, y) [MR0].

Many verbs have different Aktionsart interpretations depending on the context in which they occur. In English a common pattern is that a verb has an activity interpretation when it occurs with a bare plural or mass noun but becomes an accomplishment when there is a specific object. In a fieldwork type of situation it may be best to list every occurrence of a given verb and, initially, make a separate entry for each Aktionsart interpretation. If it becomes clear that the alteration between Aktionsart classes is a productive phenomenon, then one can write a lexical rule and just state the exceptions. True polysemy, on the other hand, always warrants separate lexical entries. For example, the English verb *take* would have one entry for the sense 'seize', 'grab' and another for the sense 'choose', 'select'.'

4.3.6. Application

In fieldwork, the first step is to adapt the set of tests as necessitated by the language in question. Then, starting from simple clauses, one proceeds in the following order:

- Ascertain the states of affairs.
- Test the predicate to determine the Aktionsart.
- Write the logical structure.
- Determine the number of macroroles.
- Write the lexical entry.

4.3.6.1. Korean

For Korean, the tests have been adapted by Yang (1994). As he uses an earlier version of the RRG theory (Foley and Van Valin 1984; Van Valin ed. 1993), I have modified the tests slightly to include the developments in Van Valin and LaPolla (1997) by adding the third criterion and the causative test. Also, I have omitted some tests which were used in Yang (1994) to give further support for the classification but which did not add any new distinctions. The modified set of tests are as follows.

1. Occurs with progressive form *(u)n cwung-ita*
2. Occurs with adverbs like *paklyekisskey, himchakey, hwaltongcekulo, hwalpalhi* 'vigorously', *swutasulepkey*
3. Occurs with adverbs like *ppalli* 'quickly' and *cencenhi* 'slowly'
4. Occurs with *han sikan tongan* 'for an hour'
5. Occurs with *han sikan-man-ey, han sikan an-ey* 'in an hour'
6. Has a causative paraphrase

Table XV. Tests for predicate classification in Korean

Yang (1994) suggests that the test aimed at discovering whether or not a verb is static should be conducted using the form *-(u)n cwung-i-ta*. This form is compatible with dynamic verbs but not with states. The examples below are from Yang (1994):

(212)

a. Chelswu-nun cikum wuntongcang-eyse twi-nun.cwung.i-ta **activity**
Chelswu-TOP now playground-LOC run-PROG-DEC
'Chelswu is now running in the playground.'

b. *Chelswu-nun acik-to ku sasil-ul a-nun.cwung.i-ta. **state**
Chelswu-TOP still that fact-ACC know-PROG-DEC
'Chelswu still knows that fact.'

c. *Chelswu-nun acik-to ku chayk-ul kaci-nun.cwung.i-ta **state**
Chelswu-TOP still that book-ACC have-PROG-DEC
'Chelswu still has the book.'

Earlier studies on Korean have assumed that the progressive marker in Korean would be the form *-ko issta*. However, citing Ko (1982) and Suh (1976), Yang (1994) shows that *-ko issta* can occur with certain static expressions, i.e. those which do not involve adjectives, existential verbs, or the copula:

(213) a. Chelswu-nun acik-to ku sasil-ul al-ko iss-ta.
Chelswu-TOP still that fact-ACC know-CON exist-DEC
'Chelswu still knows the fact.'

b. Chelswu-nun acik-to ku chayk-ul kaci-ko iss-ta.
Chelswu-TOP still that book-ACC have-CON exist-DEC
'Chelswu still has the book.'

A more reliable testing instrument, Yang (1994) suggests, is the form *-(u)n cwung-ita*. This is not compatible with the verbs *alta* 'know' and *kacita* 'have', nor can it be used with other static expressions. I have adopted Yang's position and, based on the criteria in Table XV, analyzed the main predicate in each clause of the sample text.[27]

Altogether 52 predicates were tested. Of them 15 occurred more than once in one and the same sense. Of the remaining 37 predicates, 19 yielded what seemed like reasonably reliable test results. These predicates are listed below:

1. *thap-i* *cikwum-to se-iss-ta.* active accomplishment
pagoda-NOM now-also stand-exist-DEC LS: **do'** (x, [**stand up'** (x))]
'a pagoda is standing' & BECOME **be-up'** (y)

2. *censel-i* *iss-ta* state
legend-NOM exist-DEC LS: *iss-* **exist'** (censel)
'there is a legend'

3b. *yelsimhi pwulkong-ul tuli-ko-iss-ess-ta.* earnestly Buddhist.mass-ACC hold-CON-exist-PAST-DEC '(he) was performing the Buddhist services devotedly'	activity LS: **do'** (x, [hold' (x, y)])
5a. *Hato kwusengci-ko sulphu-key wul-ki-ey* very plaintive-and sad-ly cry-NML-LOC 'since is was crying so plaintively'	activity LS: **do'** (x, [**cry'** (x)])
6a. *holangi-ka ku akali-lul pelli-ko* tiger-NOM that mouth-ACC open-and 'a tiger had its mouth open'	active accomplishment LS: **do'** (x [**open'** (x, y)]) BECOME **open'** (y)
b. *yecenhi wulpwucicu-mye* as.before roar-while '(it) was roaring as before'	activity LS: **do'** (x, [**roar'** (x)])
c. *(holangi-ka) (..-nun). tus hay-ss-ta.* (tiger-NOM) (CLAUSE-MD) as.if do-PAST-DEC '(the tiger) did so as if...'	activity LS: **do'** (x, [**do'** (x)])
9b. *sunim-un son-ul neh-ese* monk-TOP hand-ACC put.into-and 'the monk put his hand into its throat'	active accomplishment LS: **do'** (x, [**put'** (x, y)])) & BECOME **be-at'** (x, y)
9c. *ku kes-ul ppop-a.cwu-ess-ta.* that thing-ACC pull.out-give-PAST-DEC 'and pulled out the thing.'	causative active accomplishment LS: **do'** (x, 0 [**pull'** (x, y)]) CAUSE BECOME [NOT **be-in'** (x, y)
10a. *Holangi-nun pilose wulum-ul memchwu-ko* tiger-TOP finally cry-ACC stop-and 'The tiger finally stopped roaring and'	accomplishment ???
b. *kkoli-lul hwiceu-mye* tail-ACC wag-while 'wagging its tail,'	activity LS: **do'** (x, [**wag'** (x, y)])
c. *salacye-pelye-ss-ta.* disappear-throw-PAST-DEC 'it disappeared.'	active accomplishment LS: **do'** (x, [**vanish'** (x) & BECOME NOT **be-at'** (x, y)
11. *[...]-n kes-un un pinye i-ess-ta.* (CLAUSE)-MD thing-TOP silver hair.rod be-PAST-DEC 'The thing was a silver hairpin.'	state LS: **be'** (x, [**hairpin'**)])
16d. *ku yein-ul ttang-ey naylye-noh-ko-nun* that woman-ACC ground-to descend-put-TOP 'he put the woman on the ground and'	causative active accomplishment LS: **do'** (x, [**put'** (x, y)]) CAUSE BECOME **be-on'** (z, y)

18. *Cha-n* *mwul-ul* *phe-pwus-ko*		both verbs activities
cold-MD water-ACC scoop-pour-and		LS: **do'** (x, [**scoop'** / **pour'** (x, y)])
'He poured cold water on her and'		
b. *mwuncilu-ko*		activity
rub-and		LS: **do'** (x, [**rub'** (x, y)])
'rubbed her and'		
c. *kyewu ku* *yein-ul* *tasi kkayena-key.hay-ss-ta.*		causative active accomplishment
barely that woman-ACC again wake.up-CAUS-PAST-DEC		LS: **do'** (x, [**wake up'** (x, y)])
'he barely managed to awaken her.'		CAUSE BECOME **awake'** (y)
b. *meli-lul* *kkakka-cwu-ko*		causative active accomplishment
hair-ACC cut-give-and		LS: **do'** (x, [**cut'** (x, y)]) CAUSE BECOME NOT **have'** (z, y)
'cut her hair,'		
28a. *salam-tul-i* *thap-ul* *sew-e*		causative active accomplishment
person-PLUR-NOM pagoda-ACC erect-and		LS: **do'** (x, 0) CAUSE BECOME **stand'** (y)
'People erected a pagoda'		

There were two predicates which yielded answers that do not seem to fit their meaning. They were the following:

5c. *naka-po-ass-ta.*	accomplishment ???
go.out-see-PAST-D	LS: BECOME **be out'** (x)
'(the monk) went out'	
27a. *ku chenye-lul* *nwui-lo* *sam-ko*	state ???
that girl-ACC sister-as set.up-and	LS: **adopt'** (x, y)
'the monk took the girl as his sister,'	

Almost half of the predicates, 18 altogether, were difficult to classify because the tests did not produce a set of answers associated with any of the Aktionsart categories. For example, *al-* 'know', which has been classified as a state predicate by Yang (1994), yielded No - No - No - No - Yes - No. The expected set would have been No - No - No Yes - No - No. It seems to me that one of the crucial questions is to find good testing instruments. The test most frequently causing hesitant answers were the first and the second test.

Let us now turn to questions that were discussed in Chapter 3. In what ways does RRG provide better tools for verb classification in Korean, albeit with a need for more work on the testing instruments? An important contribution are the criteria that can be tested. A given state of affairs is no guarantee of how a language is

going to represent it. It is, for example, odd to say somebody 'is dying' or 'died quickly' in Korean, whereas it is not odd in English. The Korean verbs below are classified as punctual by Yang (1994):

(213) *cwuk-* 'die'
khye- 'turn on'
ttena- 'leave'
tochak-ha- 'arrive'
sicak-ha- 'begin'

Another advantage is that the system of lexical decomposition makes it possible to handle, one at a time, those components of meaning which have morphosyntactic consequences. E.g.

(214) *po-* 'see' LS: **see'** (x, y)
po- 'watch' LS: **do'** [**see'**, x (y)]
po-i- 'show' LS: **do'** [(x, 0) CAUSE BECOME (**see'** (x, y)])
po-i- 'be visible' LS: **be'** ([[**do'** (0, 0)] CAUSE [BECOME **see'** (y)]]

Furthermore, understanding verbal behavior is facilitated by the fact that it is possible to make finely-graded distinctions in verb classification. Take the Korean plain declarative ending for example. According to H. B. Lee (1989), descriptive verbs take the ending *-ta*, whereas process verbs appear in the form *-nunta/nta*. The difficulty here is that the concepts *descriptive verb* and *processive verb* are not independently defined. As a non-native speaker, I have sometimes been left to reason in circles trying to find out what the ending should be in order to know whether a verb is descriptive or processive. Consider the examples below. Those in the group (215a) behave differently from those in the group (215b):

(215) a. *iss-* 'exist' *iss-**ta***
yeyppu- 'be pretty' *yeyppu-**ta***
sokha- 'belong to' *sokha-**ta***

b. *al-* 'know' *a-**nta***
kaci- 'have' *kaci-**nta***
tulli- 'be audible' *tulli-**nta***

These verbs are commonly classified as stative. Using RRG we can make further distinctions within the states. In my data, the stative predicates which take *-ta* exhibit the following types of logical structures:

(216) a. single-argument states:
iss- 'exist' LS: **exist'** (x)
phikonha- 'tired' LS: **tired'** (x)

b. two-argument states representing pure location:
iss- 'be somewhere' **be-LOC'** (x, y)

c. two-argument states which take only one macrorole:
i- 'be' LS: **be'** (x, y) [MR1]

It seems clear that Korean predicates are sensitive to differences in logical structure. Consider the following examples. The (a) examples are simple states, whereas the (b) examples are logically more complex. When the simple state predicate assumes another sense with a more complex logical structure this is reflected in the verb ending.

(217) a. Yengswu-nun chincelha-ta. — state: **be'** [(**kind'** (x)]
Yengswu-TOP kind-DEC
'Yengswu is kind.'

b. Wuli-to chincelhay-ya.ha-nta — activity:
we-also kind-must.be-DEC — **do'** [(x) [**be.kind'**] (x)])]
'We too must be kind.'

(218) a. Nal-i palk-ta. — state: **be'** [(**bright'** (x)]
day-NOM bright-DEC
'The day is bright.'

b. Nal-i palk-nunta. — accomplishment:
day-NOM bright-DEC — BECOME **bright'** (x)
'It is dawning.' 'The day gets bright.'

On the other hand, when a complex predicate is stativized with the verb *issta* this, too, shows up in the verb form:

(219) a. Ku-nun theylleypi-lul po-**nta**.
he-TOP television-ACC watch-DEC
'He watches the television.'

b. Ku-nun theylleypi-lul po-ko.iss-**ta.**
he-TOP television-ACC see-PROG-DEC
'He is watching the television.'

Based on this limited data, my hypothesis is that the ending *-ta* is used with simple states that are M-intransitive. Verbs with complex logical structures get this ending when they enter a nuclear juncture with the verb *iss-*. To further investigate these endings is out of the scope of this study. The point, however, is that the tools in RRG allow a deeper analysis of the problem. More work, however, is needed to develop practical guidelines how to adapt the tests to new languages.

4.3.6.2. Chinese

The RRG approach to Chinese predicates has been discussed by Fu (1996). The tests below are hers, with some changes and additions prompted by the latest version of the theory (Van Valin and LaPolla 1997):

1. Occurs with progressive marker *zài*
2. Occurs with adverbs like *qiángliè de* 'vigorously', *měngliè de* 'fiercely', *jījí de* 'actively', etc.
3. Occurs with *X de màn* 'slowly' and *X de kuài* 'quickly'
4. Occurs with *yī xiǎoshí* 'one hour', or *huā* 'spend'
5. Occurs with *yī xiǎoshí nèi* 'in an hour'
6. Has a causative paraphrase

Table XVI. Tests for predicate classification in Chinese

When applying these criteria to the Chinese sample text, my success rate was approximately the same as with the Korean predicates. Altogether 64 predicates were tested. Of them 14 occurred more than once in the same sense. Of the remaining 50 predicates, half were classified and half presented some kind of problem.

1. *fāshēng le wēnyì*	accomplishment
happen PFV plague	LS: BECOME **exist'** (x).
'there occurred a plague in an area,'	
méi rén	state
not.exist person	LS: NOT **exist'** (x)
'there were not enough people'	

mái le bury PFV 'to bury them.'	activity LS: **do'** (x, [**bury'** (x, y)])
2. *Yǒu rén* exist person 'There were people'	state LS: **exist'** (x)
shuō say 'who said:'	activity LS: **do'** (x, [**express'** (x, y)]) [MR-1]
Rǔ-hé li yǒu ge yāoguài Ru-river inside exist CL goblin 'There is a goblin in the Ru river.'	state LS: **be-at'** (x, y)
juéxīn decide 'who decided'	achievement LS: INGR **do'** (x, [**decided'** (x, y)]) [MR1]
chúhài. remove evil 'get rid of the evil'	causative active accomplishment LS: [**do'** (x, 0) CAUSE [BECOME NOT **exist'** (y)]
4a. *běnlǐng tài dà* skill big 'the skills were great'	state LS: **great'** (x)
qiú shī. pursue teacher 'and ask (the celestial being) to become his teacher.'	activity LS: **do'** (x, [**pursue'** (x, y)])
7c. *gěi le tā yī bǎ bǎojiàn* Give PFV he one CL double-edged sword 'He gave him a double-edged sword.'	causative accomplishment. LS: [**do'** (x, 0) CAUSE [BECOME **have'** (z, y)
kèkū xuéxí běnlǐng. assiduously study skill 'assiduously practice skills'	activity LS: **do'** (x, [**study'** (x, y)])
9a. *Dào le dì-èr nián jiǔ yuè* arrive PFV second year nine month 'Then came the Ninth Day of the Ninth Month of the second year'	accomplishment LS: BECOME **be-at'** (x)
b. *xiánren duì Huánjǐng shuō* celestial.being to Huanjing say 'the celestial being said to Huanjing,'	activity LS: **do'** (x, [**express'** (x, y)]) & **hear'** (x, y) [MR-1]
10b. *zhāi le xiē zhūyú yèzi* pick PFV some medicinal.cornel leaf 'he picked some leaves of medicinal cornel'	causative accomplishment LS: [**do'** (x, [**pick'**]) CAUSE [BECOME **have'** (x, y)

d. *gěi le yī píng júhuā jiǔ,* give PFV he one bottle chrysanthemum wine 'He also gave him a bottle of chrysanthemum wine'	causative accomplishment LS: [**do'** (x, 0) CAUSE [BECOME **have'** (x, y)
fáng bìng. prevent illness 'and prevent illness.'	causative accomplishment LS: [**do'** (x, 0) CAUSE [BECOME NOT **exist'** (x, y)
11b. *bǎ xiánren de huà* BA celestial.being GEN words '(he) told everybody'	causative accomplishment LS: [**do'** (x, [**express'** (α)**.to.** (β) (x, y)]) CAUSE [BECOME aware.of' (y, z) where y = β, z = α
gàosu le dàjiā. tell PFV everybody 'what the celestial being had said.'	
12b. *bǎ zhūyú yèzi fēn gěi méi rén yī piàn,* BA cornel leaf distribute give every person one CL 'he gave everybody one cornel leaf'	causative accomplishment LS: [**do'** (x, [**distribute'** (x, y)]) CAUSE [BECOME **have'** (x, y)]
15c. *jiǔ qì cì bí* wine vapor pierce nose 'the vapor of the wine piercing his nose'	causative achievement LS: **do'** (x, 0) CAUSE [INGR **pierced'** (y)
d. *nóngnóng de zhūyú xiāngwèi* ***shǐ*** heavy CSC cornel smell make '(and) the heavy smell of themedicinal cornel made'	causative accomplishment LS: **do'** (x, 0) CAUSE [BECOME **afraid'** (x,) & NOT **do'** (x, [**approach'** (x)]) &
tā bù gǎn kào jìn. it not dare get.near close 'him afraid of going close.'	BECOME **close'** (x)])]
19b. *tóu chā zhūyú yè,* head put.on cornel leaf 'put cornel leaves on their heads,'	causative accomplishment LS: [**do'** (x, 0) CAUSE [BECOME **be-on'** (x, y)]
c. *dēnggāo* climb.high 'they climb high.'	active accomplishment. LS: **do'** (x, [**climb'** (x)]) & BECOME **high'** (x)

When testing the predicates, my main problem was testing what appears to be accomplishments. Accomplishments are supposed to be compatible with the progressive form but many of the so-called resultative compounds are ungrammatical when the marker *zài* is added to them. For example:

(220) a. Tā fān-guò jǐ zuò gāo shān
he cross-pass several CL high mountain
'He crossed several high mountains'

b. *Tā zài fān-guò jǐ zuò gāo shān
he PROG cross-pass several CL high mountain
'He crossed several high mountains'

According to some scholars, there is no such class as accomplishments in Chinese. For example, Tai (1984, cited in Fu 1996) bases his view on two facts: the use of two verbs to convey the process-endpoint semantics, and the ungrammaticality of *zài* in these compounds. Fu (1996) rejects this view and argues that resultative compounds do represent accomplishments. The first verb in the compound expresses an activity, whereas the second verb conveys the outcome. It is this latter component that is incompatible with *zài*. In the 1997 version of the RRG theory, some further decomposition of accomplishments has taken place. Now causation is not necessarily part of accomplishment semantics (Van Valin and LaPolla 1997). As my data illustrates, accomplishments can be expressed without combining two verbs. Let us, however, consider some resultative compounds:

(221)
xué-hǎo lit. 'study-good' = 'learn', 'master'

In this compound, the first verb describes an ongoing situation. The endpoint that is necessary for accomplishments, is provided by the second verb. As this verb describes a state, it is incompatible with *zài*. The compound as a whole, however, describes a complex process, not an unchanging state:

(222) Tā yǐjīng xué hǎo kèwén le
he already study good text PFV/CRS
'He has already mastered the text'
do' (x, [**study'** (x, y)]) BECOME **good'** (y)

There is also another type of resultative compound that, besides not accepting *zài*, also presents a further problem. In this kind of a compound, the second verb is a punctual achievement:

(223)
bìng sǐ lit. 'sick-die' = 'die of sickness'

As Van Valin and LaPolla (1997: 106) mention, a verb that in one language is durative may be punctual in another. The English verb *die* is durative, while the Chinese equivalent is punctual. This fact has consequences for the analysis of resultative compounds. Not all of them are accomplishments, as Fu (1996) seems to assume. Instead, a subcategory of them fits the achievements class:

(224) a. Tā bìng-sǐ le **achievement**
'he sick-die PFV
'He died of sickness.'
[**sick'** (x)] & INGR **die'** (x)

b. shā-sǐ yāoguài **causative active achievement**
kill-die goblin
'kill the goblin'
[**do'** (x, 0)] CAUSE INGR **dead'** (y)]

Observe that the achievement in (224a) goes back to a state, whereas the one in (224b) goes back to an activity. The present version of RRG does not explicitly posit such a distinction. However, the Mandarin data at hand suggests that distinguishing these two types of achievements is motivated. They could be called achievement and active achievement to show the parallelism with accomplishments that similarly fall into two basic types.

It is not surprising if similar phenomena will be attested in other East-Asian languages. Verb compounding is a common phenomenon in them. At the same time, states of affairs that typically are coded as non-punctual in English, are often punctual in them. In section 4.3.6.1. we saw some examples of such verbs in Korean (see also Yang 1994). Similar findings are reported for Mandarin (Fu 1996) and Japanese (Hasegawa 1992; 1996, cited in Van Valin and LaPolla 1997: 106).

The procedure of analyzing predicates with the help of a language consultant, illustrated a couple of points worth mentioning. When testing the predicates, the native speaker may hesitate over what the result of a particular test should be. Sometimes my language consultant first gave me one answer but then, after a moment's thinking and slight rephrasing, changed his judgement and gave another answer. For example, with the verb *fāshēng* 'occur', the answer to the test 4, was first No but became Yes after he thought of adding the word *yǐjīng* 'already':

(225) Zhè ge wēnyì yǐjīng fāshēng le sān ge yuè
this CL plague already occurring PFV three CL month
'This plague has been occurring already for three months.'

Sometimes the language consultant accepted several clauses as grammatical without mentioning that the sense was not the same through the whole set of tests. Problems like these illustrate the kind of difficulties there may be when beginning fieldwork in a new language.

Analyzing a language that one is in the process of learning and relying on a mother-tongue speaker's intuition has its complications. On top of that, there are questions dealing with methods and procedures such as: 1) Can arguments be moved to another position? 2) What kind of items can be legitimately added to make a test clause sound acceptable? 3) How can we make sure that the meaning of the verb in the manipulated clause stays the same through the whole series of tests? As example (225) reveals, I have accepted some changes in the test clauses: a postverbal NP can move to a preverbal position, an adverb like 'already' can be added to the clause, and a time expression may be changed so that it describes a longer period of time than 'one hour'. More work on methodological issues would facilitate the application of the theory on little known languages.

Research is also called for in the area of language-specific adaptations of the tests. The whole area of resultative compounds was rather complex because the test results were not always consistent. The tests should encompass the possibility of there being two different types of achievement predicates in a language, those with an underlying state and those with an underlying activity. My hope is that further research can propose a set of alternative tests to be applied in cases when the progressive marker fails.

The system of lexical decomposition provides a sophisticated tool for analyzing predicate meaning even in cases where the meaning turns out to be made of components not usually assumed to occur together. The syntactic tests are valuable in a language like Chinese where changes in meaning can occur without visible signals in the surface form. The exercise of applying the tests to Chinese demonstrates that the theory is applicable also to the isolating languages of East Asia. However, more work on developing guidelines for applying it in practical fieldwork situations is needed. When adapting the tests and applying them with a native speaker there were frequent occasions when it was not obvious what kind of modifications can or should be made.

4.4. GRAMMATICAL RELATIONS

The RRG approach to grammatical relations is quite different from the approaches discussed in Chapter 3. Grammatical relations are not taken to be linguistic primitives. They can be manifested in different ways in different languages. Moreover, there may even be languages without grammatical relations. To investigate grammatical relations in a given language it is necessary to recognize what other relations need to be considered in an analysis. A language may have:

(226)	grammatical relations	like subject and object
	semantic relations	like agent and patient
	pragmatic relations.	like topic and focus

It is assumed that every language has at least semantic relations. We will therefore start by having a look at this common basis.

4.4.1 Actor and undergoer

In section 4.3.3. dealing with transitivity, we saw that RRG operates with two generalized semantic relations, actor and undergoer. These are derived from logical structures and subsume several more specific relations. (Van Valin and LaPolla 1997: 139-147.) A question that was not addressed in that context was how these macroroles are determined. Consider the following examples:

(227)	a. Sam (U) was happy.	LS: **be happy'** (Sam)
	b. The house (U) burned.	LS: **burn'** (house)
	c. The door (A) squeaks.	LS: **do'** (x) [**squeak'** (door)]
	d. Mary (A) is dancing.	LS: **do'** (x) [**dance'** (Mary)]

The single argument of an intransitive verb can be either actor or undergoer. The macrorole that is assigned to it can be deduced from the logical structure of the predicate. A predicate which contains **do'** (x... in its logical structure has actor as the macrorole. Others take an undergoer as the macrorole.

With transitive verbs, one of the arguments becomes the actor whereas another is assigned the undergoer role. The choice is not at random but can be presented as a hierarchy:

ACTOR				UNDERGOER
---------->				
		<----------		
Arg. of DO do' (x...	1st arg. of pred' (x, y)	1st arg. of pred' (x, y)	2nd arg. of pred' (x)	Arg. of state

Table XVII. Actor-Undergoer Hierarchy

The x argument always has priority over the y argument for actorhood. For undergoers, the primary choice is the single argument of a state predicate, or the y argument of a two-argument predicate. The arrows indicate increasing markedness of realization of an argument as macrorole. (Van Valin and LaPolla 1997: 127, 144-146.)

What about verbs that are called ditransitive in other theories? They can have three arguments in their logical structure: e.g. *give* **do'** (x, 0) CAUSE [BECOME **have'** (y, z)]. In section 4.3.4., we saw that the maximum number of macroroles is two. The choice of actor does not present a problem. There are simply never two possible candidates for the actor role simultaneously present in the logical structure. With the undergoer the situation is different. Both the y and the z argument may potentially become a macrorole:

(228) a. Mary gave the book to Pat. undergoer = y argument *the book*
b. Mary gave Pat the book. undergoer = z argument *Pat*

The RRG position is that semantically there are only two macroroles. The undergoer is the most affected entity. The example (228a) represents the default choice with the y argument as the undergoer. In (228b), we have the marked choice z argument appearing as the undergoer. If the language or the verb in question allows this kind of variation, it is up to the speaker to choose which participant to present as the most affected by the action. In (228a), the non non-macrorole core argument (i.e. *Pat*) is coded as an oblique core argument. This is the unmarked choice. The example (228b) represents the marked choice; both *Pat* (macrorole) and *the book* (non-macrorole core argument) are treated as direct core arguments.

4.4.2. Neutralization of semantic relations

When studying grammatical processes, we will basically find three different types of situations. One possibility is that a construction is open for *any* semantic argument. That means that the language has an unrestricted neutralization of semantic relations in that construction. Alternatively, it could be that one type of semantic argument alone is acceptable in a construction. In that case there is a restriction but no neutralization. Both of these situations can be accounted for in semantic terms. Only if a language has *restricted* neutralization for syntactic purposes is it necessary to postulate grammatical relations to account for the phenomenon. Van Valin and LaPolla (1997: 250-252) illustrate this using English subject-verb agreement.

(229) a. The cat (A) runs. 3rd person singular
b. The cats (A) run. 3rd person plural

This pair of clauses does not reveal what exactly prompts the agreement between the verb and the NP. It could be that the verb agrees with what is commonly called the subject of the clause. Or, it might be that the agreement is triggered by the semantic role of the NP, which in both clauses is an actor. To exclude the latter possibility, it is necessary to find an example where the subject is not an actor and see what happens.

(230) a. The dog (U) dies.
b. The dogs (U) die.

Here the subject of both clauses is an undergoer and, yet, the verb still agrees with it. Now it is clear that the phenomenon is not sensitive to a certain semantic relation. It is, however, necessary to exclude one more possibility: the crucial relation could be pragmatic. The subject in English normally coincides with the topic. In each of the examples so far the subject has simultaneously been the topic of the sentence. To demonstrate that agreement is not associated with topichood, an example is needed where the subject is not the topic but the verb still agrees with it. This requirement is satisfied below:

(231) a. Who is winning the ball game?
b. **The Giants** are (*is) winning.

We can conclude that predicate agreement is based neither on semantic nor pragmatic roles, but on the syntactic notion of subject. Most languages have grammatical relations, English being one of them. In some languages, however, it appears that there is no motivation for postulating grammatical relations. Examples mentioned in Van Valin and LaPolla (1997: 260) include Archi, Acehnese, Kannada, Manipuri, and Classical Tibetan.

4.4.3. Cross-linguistic diversity

It is possible that two languages have grammatical relations but the neutralizations in them are not the same. Let us distinguish the single argument of an intransitive verb (S), the actor of a transitive verb (A), and the undergoer of a transitive verb (U). Grammatical relations correspond to various combinations of these functions. In accusative languages like English, the difference between S and A has been neutralized, and the relation is called 'subject'. The U, on the other hand, constitutes the grammatical relation 'direct object'. In so-called accusative languages this shows up in the nominative marking of S/A and the accusative marking of U. In ergative language, the grouping is different. S and U are marked with absolutive case, while A receives ergative marking.

Besides this fundamental distinction, a closer examination may reveal further differences. The single argument of an intransitive verb can be either A or U, e.g. *Mary* (A) *danced* vs. *Mary* (U) *was sick*. This difference is neutralized in the function commonly called subject. In addition, the English subject neutralizes the A/U opposition for transitive verbs in the passive voice. This is not possible in Enga (a Papuan language) or Warlpiri (a language of Australia), even though they both have an S/A subject like English. In them, the neutralization applies to intransitive verbs alone; a transitive clause must always have the actor argument as the subject. Hence, two languages which both have a syntactic subject may differ in the kind(s) of neutralization this notion encompasses.

4.4.4. Controllers and pivots

In section 4.4.2. we saw that verb agreement in English is syntactically controlled by the argument bearing the subject grammatical relation. A similar procedure could be conducted when examining cross-referencing or simple reflexivization. These are core-internal phenomena and if a language has any of them, there will be a controller for them. The basic options for different types of controllers are summarized below:

If there is	**the agreement has**
Neutralization of semantic roles + restrictions	syntactic controller
Restrictions on semantic roles but no neutralization	semantic controller
Restrictions on pragmatic relations	pragmatic controller

Table XVIII. Controllers: different possibilities

Similar principles apply also to complex constructions involving multiple cores or clauses. In them, the question is what explains which argument is omitted: semantic relation, syntactic relations, or are there no restrictions? The coreferential argument that gets deleted in a complex construction is called the pivot of the construction. Consider the example below (adapted from Van Valin and LaPolla 1997: 252).

(232) a. Susan wants _A_ to run.
b. Susan wants _A_ to eat a hamburger.
c. Susan wants _U_ to be taller.
d. *Susan doesn't want the police to arrest _U_
e. Susan doesn't want _U_ to be arrested by the police.

These sentences could be paraphrased as 'Susan wants + Susan runs in the park', etc. In each example, the second *Susan* is omitted from the dependent part of the sentence. Semantically, the omitted argument can be either actor or undergoer. This shows that there is no constraint on the semantic role of the pivot. At the same time, there is a restriction: it is not grammatical to omit the undergoer in sentence (232d). That the restriction is syntactic can be seen from (232e): an NP can be omitted if it is the syntactic subject. The sentence (232d) is incorrect because the omitted argument is an object. Hence, what is wrong is not the semantic role of the omitted argument but its syntactic relationship. This shows that the English *want* construction has a syntactic pivot.

If the omitted argument must represent a certain semantic relation, then we are dealing with a semantic pivot. Finally, a construction may have a neutralization of semantic relations but no restrictions. In that case, there is no pivot. According to Van Valin and LaPolla (1997: 293), WH-questions and topicalization are pivotless in English. The situation with pivots is summarized below:

If a construction has	**then there is**
Neutralization of semantic roles + restrictions	syntactic pivot
Restrictions but no neutralization	semantic pivot
Neutralization of semantic roles but no restrictions	no pivot

Table XIX. Pivots: different possibilities

It is important to notice that controllers and pivots are construction specific. A language may have a semantic pivot for one construction, a syntactic pivot for another, and no pivot for a third construction. Moreover, a complex construction may have both a controller and a pivot. The controller is the matrix core argument which is interpreted as being coreferential with the missing syntactic argument (= the pivot) in the linked core. An English construction that has a syntactic pivot and a semantic controller is the *want* construction. As we saw in (232), the missing argument in the dependent core must be a syntactic subject. This is the pivot of the construction. At the same time, the identification of this argument is bound by the actor argument in the matrix core. The pivot must refer to the same entity as the A in the matrix core. No undergoers or other arguments are allowed in the matrix core Thus, unlike the pivot, the controller for this construction is semantically motivated. (Van Valin and LaPolla 1997: 277-278.)

(233)

MATRIX CORE		DEPENDENT CORE
Susan	*wants to*	_____ *run/be taller/see/be seen.*
controller		**pivot**
(always A)		(always subject)
(identifies the pivot)		(receives its referential interpretation from the controller)

4.4.5. Comparison of traditional and RRG notions

In the RRG approach, the notions *subject* and *object* do not have any theoretical status. They are used in this dissertation because I am comparing RRG with other approaches. It is, however, important to remember that, in each language, subject and object can potentially encompass different blends of semantic, syntactic, and discourse functions. In traditional approaches there is no clear recognition of the diversity of situations that has been subsumed under the terms *subject* and *object*.

Moreover, traditional approaches, structuralist, and generative approaches have taken them to be universal syntactic categories that are assumed to exist in every language.

To deal with cross-linguistic diversity, RRG has decomposed the functions commonly associated with subjects and objects into more primitive concepts. Therefore the theory makes reference to concepts like core and non-core arguments, direct vs. oblique core arguments, actor and undergoer, controller and pivot, privileged syntactic argument, and topic. The notion of *core argument* accounts for which arguments are required by the meaning of the verb. The terms *direct* vs. *oblique* core argument refer to the surface marking of the arguments. The semantic macroroles, *actor* and *undergoer*, capture the opposition of two entities. *Controller* is what triggers agreement or cross-referencing phenomena and binds the identification of omitted arguments. *Pivot* is the omitted argument in complex constructions. The *privileged syntactic argument* is a cover term for syntactic controllers and pivots. Finally, the term *topic* is used to refer to pragmatic relations. Traditional grammar tries to handle all of this by speaking of "subject" and "object".

4.4.6. Application

4.4.6.1. Korean

Let us start by using RRG tools to examine whether there is a grammatical relation that could be identified as 'the subject' in Korean. The texts give evidence that there is a neutralization of semantic roles that includes both intransitive and transitive verbs. For example:

(234)

a. celmuni han **salam-i** keleka-ko.iss-ess-ta **S (=A) yields NOM**
young.man one person-NOM walk-PROG-PAST-DEC
'a young man was walking'

b. **censel-i** iss-ta **S (=U) yields NOM**
legend-NOM exist-DEC
'there is a legend.'

c. etten **sunim-i** pwulkong-ul tuli-ko.iss-ess-ta **A yields NOM**
certain monk-NOM Buddhist mass-ACC hold-PROG-PAST-DEC
'a monk was holding Buddhist masses'

d. **soli-ka** tul-li-ess-ta - **U yields NOM**
sound-NOM hear-PASS-PAST-DEC
'a sound was heard'

The first core argument in these clauses is marked with the nominative particle *-i/ka*. There are good grounds to assume that this neutralization is restricted; no other types of relations were found to carry the nominative marker. It is also clear that nominative marking is not triggered by discourse pragmatics because none of the NPs is used to continue an already established topic. On the contrary, they all introduce a new participant or entity to the discourse. As there is a restricted neutralization of semantic roles, I will conclude that there is evidence for the grammatical relation which would be called 'subject' in other theories.

What other theories mean with 'direct object' corresponds to an undergoer argument of a transitive verb in RRG. It is this macrorole status that explains the behavior of 'real direct objects' in various kinds of grammatical processes in contrast to other NPs that may look the same but do not behave the same way. In the example texts, every undergoer of a transitive verb is marked accusatively (unless the sentence is in passive voice or the undergoer is topicalized). This will therefore be considered the default marking of an undergoer. There are, however, also NPs which are marked the same way but which are not undergoers. For them, we would need to seek explanation from other kinds of semantic factors as well as pragmatic conditioning. Below is an example of a sentence with a 'real direct object', i.e. an undergoer argument:

(235) [holangi-ka] ku **yein-ul** ttang-ey naylye.nohko-nun
[tiger-NOM] that woman-ACC ground-at put.down-and
'(the tiger) put the woman on the ground and...'

Let us now turn to honorific agreement in Korean. What is it that controls the honorific suffix *-(u)si* that is attached to predicate verbs or adjectives? Earlier literature often used the term subject honorific suffix because it was assumed that it is the grammatical subject that determines when this suffix is used. With limited data this may seem feasible. In my texts there are no instances that would conflict with this assumption. For example, in the following sentence the predicate 'save' appears to agree with the subject 'Buddha':

(236) **Pwuche-nim-i** sal-lye-cwu-**si**-ess-ulkka?
Buddha-HT-NOM live-CAUSE-BENEF-HON-PAST-Q
'Is it Buddha who saved [me]?'

Elsewhere, however, we can find uses of this suffix which do not fit the common characterization (e.g. Sohn 1994: 371). The following example is from Yang (1994):

(237) **Kim-sensayng-nim-i/eykey** Cyon-i mwusewu-**si**-ta.
Kim-teacher-HT-NOM/DAT John-NOM fear-HON-DEC
'Teacher Kim fears John.'

Here it is not the subject 'John' which makes the honorific suffix to appear in the predicate but it is the experiencer 'teacher Kim' at the beginning of the sentence. Yang (1994) and Park (1995) have analyzed Korean honorific agreement from an RRG point of view and come to the conclusion that the agreement is semantically conditioned. The predicate agrees with the highest ranking semantic role in the actor end of the Actor-Undergoer Hierarchy. 'Teacher Kim' as an experiencer ranks higher than 'John', a theme, and thus becomes the target of agreement.[28] We have restrictions on semantic roles but no neutralization. Consequently, there is a semantic controller of the honorific suffix in Korean.

It has been claimed that the situation with reflexivization is similar to honorific agreement. Both Yang (1994) and Park (1995) suggest that it, too, is triggered by the highest ranking case holder with respect to the Actor end of the hierarchy. The example below seems to accord with this characterization (adapted from Yang 1994):

(238) John-i/-eykey Mary–ka
Cyon-NOM/-DAT Meyli-NOM
[caki$_i$-uy nwui tongsayng-pota] mwusep-ta
self -GEN younger.sister –than fear-DEC
'John fears Mary more than his younger sister.'
* 'John fears Mary more than her younger sister.'

In my data, there are five examples of reflexivization. In each of them, the antecedent is an actor. Sohn (1994: 151-152), however, provides a set of examples that do not wholly conform to the pattern:

(239) a. Yongho-nun Minca-eyke caki chayk-ul ponay-ss-ta.
Yongho-TOP Minca-DAT self book-ACC send-PAST-DEC
i. 'Yongho sent Minca Yongho's book.' (primary meaning)
ii. 'Yongho sent Minca Minca's book.' (secondary meaning)

b. Yongho-nun Ilmin-ul caki pang-eyse ttayli-ess-ta
Yongho-TOP Ilmin-ACC self room-at hit-PAST-DEC
i. 'Yongho hit Ilmin in Yongho's room.' (primary meaning)
ii. 'Yongho hit Ilmin in Ilmin's room.' (secondary meaning)

These examples can be interpreted in two ways. The primary reading is to have the actor as the antecedent of the reflexive, but an alternative interpretation is also possible. This is not quite the same thing as neutralization of semantic roles. Rather, it seems that there is a restriction of semantic roles, but it is preferred rather than absolute.

Next, let us consider a cross-clausal construction and examine the dependent clause ending *-mye*. The first question is: What is the omitted argument, i.e. the pivot, in this constructions? There are 9 occurrences of *-mye* in my data. The missing argument occurs in the matrix core, i.e. in the final clause. In each case it is a semantic actor. For example:

(240) a. Etten sunim-i honcase cel-ul cikhi-**mye**
certain monk-NOM alone temple keep-while
'A monk was keeping the temple alone'

b. _A_ yelsimhi pwulkong-ul tuli-ko.iss-ess-ta
earnestly Buddhist mass-ACC hold-PROG-PAST-DEC
'and holding the Buddhist masses earnestly.'

In the light of my limited data, it looks like the omitted argument must be an actor. If this proves to be the case more generally, then there is no neutralization, only a restriction. In that case, the pivot of the *-mye* construction is semantic in nature. Furthermore, both clauses must refer to the same referent which, at least in my data, is also an actor. That would mean that the pivot is bound by the actor argument in the previous clause and there is a semantic controller in this construction.

Some constructions in Korean appear to be pivotless. One of them is relativization. In my data, I have examples involving relativization on actor, undergoer, instrument, and reason. Sohn (1994: 67-68) and Bak (1981: 390) give further examples involving relative clauses where the head is goal, location, or source.

(241) a. [caki-uy sayngmyeng-ul kwuhay-cwu-si-n] sunim **A**
self-GEN life-ACC save-BEN-HON-MD monk
'the monk who saved her life'

b. [mok-eyse ppaynay-n] kes **U**
throat-from pull.out-MD thing
'the thing that was pulled out from its throat'

c. [nay-ka tani-nun] kyohoy **goal**
I-NOM go-MD church
'the church I go to'

d. [nay-ka kongpwuha-nun] tosekwan **location**
I-NOM study-MD library
'the library where I study'

e. [Nami-ka kimchi-lul sse-n] khal **instrument**
Nami-NOM pickle-ACC cut-MD knife
'the knife with which Nami cut the pickle'

e. [Cyon-I casalha-n] ku iyu **reason**
John-NOM commit suicide that reason
'the reason why John committed suicide'

f. [Cyon-I ton-ul pilli-n] i unhayng **source**
John-NOM money-ACC borrowMD this bank
'this bank from which John borrowed money'

My conclusion is that the RRG concepts seem to account well for grammatical and other relations in Korean. The findings based on my data, which are of course only tentative, are summarized below:

- **subject**: the restricted neutralization involves S/A and U in the passive construction
- **the honorific suffix -si-**: semantic controller
- **the -mye construction**: semantic pivot and semantic controller
- **relativization**: pivotless

4.4.6.2. Chinese

In Chinese, it is difficult to find evidence which would support the postulation of grammatical relations. Let us consider subjects first. The following sentences illustrate the actor and the undergoer arguments in intransitive and transitive constructions.

(242)

a. **tā** lái le **A of intr. clause**
3sg come CRS
'the goblin will again come out'

b. **tā** sǐ le **U of intr. clause**
3sg die PFV
'this tree is going to fall'

c. **yī tiáo shé** yǎo zhù le tā de wěiba **A of tr. clause**
one CL snake bite block ASP he GEN tail
'a snake bit its tail' (LG: 1b)

d. wǒ de cōngmíng dǒu fàng zài yī ge dàizi li, **U of a tr. clause**
I GEN intelligence all put be-at one CL bag inside
'my intelligence is all in a bag'
lit. 'my intelligence is all put in a bag' (IB: 9a)

There does not seem to be any difference in morphosyntactic coding based on what kind of argument the clause has been built around. Intransitive or transitive, built around the actor or the undergoer, the subject candidate looks the same. Notice also that the verb in (242d) is not in the passive form though the literal translation may give that impression. Mandarin does not need a passive construction to let the undergoer to appear at the beginning of the clause. Compare:

(243) a. wǒ dài lái le nà de dàizi
I bring come ASP that GEN bag
'I brought that bag.'

b. nà ge dàizi jīntiān méi yǒu dài lái.
that CL bag today not have bring come
'that bag is not with me today' (IB: 9b)

Also further neutralizations are possible. Besides the examples already cited, the texts indicate that clauses can be built around a recipient or a location NP:

(244) a. Wǒ zhǎng chū yī tiáo xīn wěiba la! **recipient**
I grow come.out one CL new tail PRT
'I have grown a new tail.' (LG: 21d)

b. Rǔnán yīdài de xiāngcūn fāshēng le wēnyì **location**
Runan area ASSOC village occcur PFV plague
'there was a plague in the Runan area' (OD: 1)

If we were to postulate a subject in Chinese, we could not appeal to any kind of special marking of it, nor could we define a distinctive set of semantic relations that only the subject can have. Mandarin also lacks verbal agreement morphology, where such a notion could potentially play a role.

The situation is similar with direct objects. No special marking phenomena are associated with undergoer arguments but a variety of NPs can appear after the predicate without any kind of adpositions. This was illustrated in Chapter 3. The behavioral differences these complements manifest can be accounted for with the RRG notions core vs. non-core argument and macrorole (i.e. undergoer) vs. non-macrorole status. These are, of course, semantic rather than syntactic, notions.

We will therefore turn to referential properties, starting with conjoined active voice transitive clauses. What constrains the occurrence of zero pronouns in them? In English, only coreferential actors can be deleted. No such constraint is found in Chinese, however. Instead, any argument of a conjoined structure can be omitted, regardless of its semantic role. The example below is from Van Valin and LaPolla (1997: 260):

(245)

a. Xiǎo gǒu zǒu dào shān dìxià, nèi ge rén jiù kànjiàn le _U_.
little dog walk to mountain bottom that CL person then saw
'The little dog went downhill and was seen by the man.'

b. Nèi ge rén zǒu dào shān dìxià, jiù _A_ kànjiàn le xiǎo gǒu.
that CL person walk to mountain bottom then saw PFV little dog
'The man went downhill and saw the little dog.'

There are many similar examples in my data which give further support to the generalization that there is unrestricted neutralization of semantic roles in cross-clause coreference:

(246) a. Tā dàilǐng rénmen _A_ dēng-shàng le fùjìn de
he lead person-PLUR climb-ascend PFV nearby ASSOC
'He led the people (and) climbed'

yī zuò gāo shān.
one CL high mountain
'to the top of a high mountain in the vicinity.'

b. sǐ de rén duō de dōu méi rén mái _U_ le.
die NML person many CSC all not.exist person bury PFV
'so many people died that there were not enough people to bury them'

The situation is similar with relativization. It seems that relativization is open for any semantic role and hence there is no pivot for this construction in Mandarin. In my data, all the examples are on relativized undergoers, but it is also possible to relativize on an actor, a locative, a goal, a benefactive, an instrument, and a possessor, as the following data from Li and Thompson (1989: 581-583) illustrate:

(247)

a. (tā) bǎ [jiè wěiba de] shì gàosu le māma **Undergoer**
3sg BA borrow tail REL affair tell PFV mother
'(he) told Mother about borrowing a tail' (LG: 19)

b. [jīntiān yíng de] rén **Actor**
today win REL person
'the people who won today'

c. xiūlǐ shuǐ guǎnzi de jùzi **Instrument**
repair water pipe REL saw
'the saw with which to repair the water pipe'

d. Zhāngsān huà huàr de fángjiān **Location**
Zhangsan paint painting REL room
'the room where Zhangsan does his painting'

e. lián zúqiú de jìjié **Time**
practice soccer REL season
the season when one practices soccer

f. wǒ lái zhèr de yuángù **Reason**
I come here REL reason
'the reason why I came here'

Also matrix coding is free of restrictions in Mandarin. Van Valin and LaPolla (1997: 262):

(248) a. Hǎoxiàng Lǐsì mǎi le chēzi.
seem Lisi buy PFV vehicle
'It seems Lisi bought the car'.

b. Lǐsì hǎoxiàng mǎi le chēzi.
Lisi seem buy PFV vehicle
'Lisi seems to have bought the car'.

c. Chēzi hǎoxiàng Lǐsì mǎi le.
vehicle seem Lisi buy PFV
'The car seems Lisi to have bought'.

According to Van Valin and LaPolla (1997: 263) no construction has been found in Mandarin that exhibits restricted neutralization of semantic roles for syntactic purposes. LaPolla (1995, cited in Van Valin and LaPolla 1997: 260) argues that the relevant relations in Mandarin Chinese are pragmatic (topic - comment) rather than syntactic or semantic. My data supports these claims. It seems that Chinese can be added to the list of languages which do not require the postulation of grammatical relations.

4.5. BASIC REFERENCE TRACKING

Syntactic, semantic, and pragmatic relations are relevant also in reference tracking. In this section, I will investigate them by looking at topic chains. A topic chain is a set of clauses referring to a topical participant. A usual way languages indicate a topic chain is to introduce the topical participant at the beginning of the chain and then refer back to it by means of pronouns or zero. In some languages, chains of zero pronouns are restricted and occur only within sentence boundaries. In others, chains of zero pronouns may extend over long stretches of text.

Section 3.2.4.1. demonstrated that English, Korean, and Chinese differ considerably in the area of participant reference. Of the three languages, Korean appeared to be the most difficult to account for using earlier approaches to grammar. In this section I will apply RRG concepts to the Chinese and Korean stories. The focus is on determining the basic system of reference tracking.

4.5.1. Various types of reference-tracking systems

We are thus concerned with participant reference across clauses. According to Van Valin and LaPolla (1997: 285-290), there appear to be certain basic systems languages use to monitor coreference in discourse. These are switch function, switch reference, and the use of multiple distinct third-person referring expressions. A given language may make use of one or more of these systems. In addition, inference has been mentioned as a system that would be typical for languages in Southeast and East Asia (Foley and Van Valin 1984: 322-324). As Korean and Chinese have both been claimed to rely on inference in their reference tracking, this deserves some special attention in my study.

In switch function systems reference tracking happens through a variable syntactic pivot. Constructions can be built either around the actor or around the undergoer and tracing back in discourse goes from one pivot to another. This is the system English uses. The subject is the pivot around which clauses are built and antecedents are traced from subject to subject. When the actor is the pivot, the predicate is in active voice. If the undergoer is the pivot, this is signaled by the passive form of the predicate. (Foley and Van Valin 1984: 108-124, Van Valin and LaPolla 1997: 285-287.) Consider the example below (adapted from Brown and Yule 1986: 130):

(249)

a. **The prime minister** stepped off the plane. PIVOT = actor
b. **She** was immediately surrounded by journalists. PIVOT = undergoer

Observe how the passive form allows the NP *prime minister* to stay topical in clause (249b). An active clause, on the other hand, would have interrupted the topic chain raising the expectation that the new topic is going to be *the journalists*. E.g.

(250) a. **The prime minister** stepped down from the plane.
b. **Journalists** immediately surrounded her.
c. **They** wanted to know...

The second system, switch reference, is found mainly in verb-final languages. In this strategy, the verbal morphology indicates whether the subject (pivot) in two subsequent clauses are the same or different. Van Valin and LaPolla (1997: 287) illustrate this with an example from Zuni. In the sentence below, the verb ending

-nan signals that the pivot in the following clause is going to be the same as in the present clause, whereas the suffix *-p* shows that the pivot is going to be different:

(251) An lelo-nal kwin __ 1 te'ci-**nan** lelo-nan 0 1 kwato-**p** 0 2
his box-at arrive-**SAME** box-inside enter-**DIFF**

an-alt-u-**nan** 0 2 iteh-k'aia-kae.
indirective-be.closed-CAUSE-**SAME** throw-rive-PAST

'He$_1$ came to where the box was lying; he$_1$ entered the box and he$_2$ (the other) closed it for him$_1$ and 0 2 threw it into the river.'

In some languages the strategy is to use multiple distinctions among third-person referring expressions. One possibility is to rank the third person referents according to their topicality. This is known as proximate vs. obviate marking. The most topical participant is marked differently from all the others. Another possibility is that reference works through inherent properties of the referents. In Indo-European languages NPs are typically classified according to animacy or sex. In others, such as the Bantu languages, the classification is more complicated and has nothing to do with gender or sex. English uses a simple version of noun classification besides its primary system. Noun classification in English is typically used to code non-pivot coreference. Elements of the same class can be interpreted as coreferential.

(252) John decided to talk to Mary about her dog because he was tired of seeing **it** in **his** garden.

Finally, it has been claimed that in some languages reference tracking is based on inference. In many of the languages of Southeast and East Asia it seems that coreference is not directly deducible from the linguistic form (Foley and Van Valin 1984; Huang 1994; Yang 1994). In them, zero pronouns are a prevalent phenomenon. To identify the correct antecedent of omitted NPs speakers use semantic information and their cultural and real-world knowledge, or other indirect means. When examining the example texts, I have attempted to see how much can be explained with the RRG concepts, whether syntactic, semantic, or pragmatic. Only those instances which cannot be accounted for with them are considered as potentially belonging to the realms of inference.

4.5.2. Application

4.5.2.1. Korean

In the Korean texts the use of pronouns, especially those referring to the third person, is scarce. In the three example texts the only instances are the four occurrences of the reflexive pronoun *caki* 'self'. Apart from that, reference is done by full NPs, zero pronouns, or by other means. A primary device to show coherence is by zero anaphora; chains of zero pronouns can extend over several sentences. A crucial question is therefore the correct identification of the antecedent. Section 3.2.4.2. touched on the problem demonstrating how the Korean system is different from the English switch-function system. In this section, I will demonstrate that reference-tracking in Korean bears, at least partially, characteristics of a switch-function system. Certain clause-linking endings indicate whether the omitted argument in a subsequent clause is going to be the same or different. One of these is the ending *-myense* 'while'. For example:

(253)

a.	0 $_1$	sapang-ul	tola-po-myense	0 $_1$ chaca-po-ass-upnita.
		four.directions-ACC	turn.around-see-while	look.for-try-PAST-DEF

[the hat seller] 'looking all around tried to look for them.'

The discourse context shows that the first zero pronoun in (253) refers to the NP 'hat seller'. That binds the identification of the second zero pronoun; it must refer to the 'hat seller' too. If the referent of the subsequent clause is not the same as in the *-myense* clause, then another construction, *-nun tongan-ey*, must be used (Park 1984: 387).

In Korean, a switch reference type of mechanism thus appears to be one of the systems contributing to antecedent identification. Certain endings behave differently depending on the type of predicate they are attached to. The ending *-ase/ese/yese* indicating successive action must be followed by a clause with the same referent if the predicate is *kata* 'go' or *ota* 'come'. This is illustrated below in (254a). With adjectival predicates the meaning is 'so' and the restriction ceases, as shown with the (b) example (from Park 1984: 269):

(254)

a. 0 1 kakkai ka-se 0 1 hwayspwul-lo ku ip-an-ul tulyeta-po-ass-ta.
close go-and torch-with that mouth-inside -ACC look.into-PAST-D
'(**the monk**) went close and (**the monk**) looked into the mouth with a torch'

b. 0 1 Etwuw-ese, 0 2 po-i-ci anh-ayo.
dark-so see-PASS-NML not-POL
'**It** is dark, so **I** cannot see it.'

Similarly, the ending *-(u)nikka*, when it means 'when' is used only with action verbs and must be followed by a clause with different subject. When it has the meaning 'because' there are no restrictions like these (Park 1984: 299-300). Some endings, on the other hand, seem to be rather free in this respect. The ending *-myen* 'if' can be followed by the same (as in 255a) or different referent (as in 255b) in the subsequent clause:

(255)

a. Cwumu-si-ko-man 0 1 ka-si-keyss-ta-myen 0 1 tule-o-sey-yo.
sleep-HON-and-only ___ go-HON-VOLIT-DEC-if ___ enter-come-HON-POL
'If [you] only sleep and then **you** go, please (**you**) come in.'

b. 0 1 Ceypal moksum-man sal-lye-cwu-si-myen,
please life-only live-CAUSE-give-HON-if
'If only **you** spare my life,'

0 2 unhey-nun ic-ci anh-keyss-upnita.
debt-TOP forget-NML not-VOLIT-DEF
'**I** will never forget your kindness.'

With some endings variation regarding the referent seems to be related to discourse pragmatics. The ending *-ko* in its unmarked use links clauses with the same referent. This is illustrated in (256a) with an example from the sample text. When the referents are different, they are usually contrasted (Park 1984: 236, 259). Therefore, the two NPs are also overtly stated and typically marked with the contrastive particle *-un/nun*. As there are no examples of such a use in the data, I illustrate this latter possibility with a sentence from Park (1984: 236):

(256)

a. Ku chenye-lul nwui-lo sam-ko ___ meli-lul kkakka-cwu-ko
that girl-ACC sister-as set.up-and hair-ACC cut-give-and
'(He) took the girl as a sister, cut (her) hair,

hamkkey pwulto-ey cengcinhay-ess-ta.
together Buddhism-to devote-PAST-DEC
and devoted (himself) to Buddhism together (with her).'

b. Ikes-un coh-ko, kukes-un napp-ayo.
this-TOP good-and that-TOP bad-POL
'This is good and that is bad.'

As we can see verb endings play a role but do not account for all disambiguation in Korean reference tracking. Another device that helps in antecedent identification is the honorific agreement. One of the three texts has dialogues that provide an illustration. The honorific suffix *-si-* refers only to second or third person. In the sentence below, therefore, the first person referent in clause (a) is easily distinguished from the second person referent in clauses (b-d):

(257) a. Taycepha-l umsik-un eps-upnita-man
serve-MD food-TOP not.exist-but
'(I) don't have food to serve,'

b. cwumwu-**si**-ko-man
sleep-HON-and-only
'but if (you) only intend to sleep'

c. ka-**si**-keyss-ta-myen
go-HON-VOLIT-DEC-if
'and then (you) go,'

d. tule-o-**si**-eyo.
come.in-HON-POL
'please (you) come in.'

There are, however, also some examples that, at a first sight, appear to provide evidence that participant reference can be a matter of inference. Let us consider the sentences 17-19 of the example text. The passage describes the situation where the tiger, as a token of gratitude, brings a beautiful young woman to the monk who has earlier saved its life.

(258) a. Sunim-un kuphi yein-ul po-ass-una
monk-TOP quickly woman-ACC look-PAST-but

b. ___ imi kicelhay-iss-ess-ta.
already faint-RESULT-PAST-DEC

c. ___ chan mwul-ul phe-pus-ko
cold water-ACC draw-pour-and

d. ___ mwuncilu-ko hay-se
rub-and do-so

e. ___ kyewu ku yein-ul tasi kkayena-key hay-ss-ta.
barely that woman-ACC again wake.up-CAUSE do-PAST-DEC

f. ___ Myolyeng-uy alumtawu-n chenye i-ess-ta.
young.age-GEN beautiful-MD girl be-PAST-DEC

a. 'The monk-TOP quickly looked at the woman but
b. [she] had already fainted.
c. [He] poured cold water [on the woman] and
d. [he] rubbed [her]; thus
e. [he] awakened the woman again.
f. [She] was a beautiful young girl.'

The topic of this passage is the monk. The second participant, the woman appears as an object in the first clause. In the subsequent clauses neither one is mentioned again with a full NP but all the references back to them are made with zero anaphora. Interestingly, the zero pronoun in some clauses refers to the monk, while in others it refers to the woman. In the free translation, the pronouns within brackets indicate where an NP has been ellipted in Korean.

In this passage, clues provided by verb endings are scarce. The suffix *-(u)na* in (258a) does not indicate whether the subject in the subsequent clause will be the same. Between clauses (b-c) and (e-f), there is a sentence break so we do not have clause-linking clues here either. Notice that in some clauses the zero pronoun is used to refer to a subject (258b, f), while in others it goes back to an object (258d). Consequently the monitored element cannot be defined in grammatical terms as it is neither the subject nor the object. Pragmatic relations are likewise excluded; in (258c, d, e) the omitted NP is coreferential with the topic, whereas in (258b) it refers to a non-topical participant. Hence it may appear that the only way to recover the intended antecedents is to employ reasoning based on real-world knowledge.

A person who looks at or acts upon another person is not likely to be the one who has fainted. Similarly we know that the expression 'young girl' cannot be used about a monk, so the word has to refer back to 'the woman'. Not surprisingly then, Korean has been mentioned together with Chinese as an example of 'pragmatic' languages (e.g. Huang 1994: xiv) or a language that uses an inference system for its reference tracking (Yang 1994). I will, however, also suggest another possibility. It could be that what is monitored here are the semantic roles.

An examination of semantic roles was complicated by the difficulties in predicate analysis. I present below, however, the reasonable interpretations of my data and the tests that were conducted. In the first sentence, the monk has the role of an actor and the woman appears as an undergoer. In subsequent sentences every time an NP referring to the monk is omitted, this NP represents a semantic actor. Similarly, every time a missing NP refers back to the woman the role of the NP is that of an undergoer or at least a non-actor. In other words, every time an actor NP is missing, it refers to the monk, while a missing undergoer refers to the woman. This is shown in the arrangement below:

(259)

	actor	**undergoer**	**other non-actor**	**predicate**
a.	Monk-TOP	woman-ACC		looked at but
b.		0		had fainted.
c.	0	cold water-ACC	(on the woman)	poured down and
d.	0	0		rubbed and thus
e.	0	the woman-ACC		awakened.
f.		0	young beautiful girl	was.

As far as the participants retain the roles they have assumed, the correct identification of the antecedent is not endangered. If, however, the roles are switched, it would be logical to expect that the presence of a full NP becomes necessary. This is what happens a couple of sentences later, when the girl for the first time is pictured as an initiative-taker and when the monk soon thereafter appears as a Non-Actor. In sentences 21-25, the story goes on:

(260) a. Sunim-un yein-eykey kot
monk-TOP woman-DAT immediately
sangkyengha-tolok kwenkohay-ss-ta.
go.to.Seoul-to advise-PAST-DEC

b. Cip-eyse-nun holangi-eykey cap-hi-e.ka-se
home-at-TOP tiger-DAT catch-PASS-go-so
cwuk-ess-ulila-ko
die-PAST-PRESUM-QUOT
kekcengha-ko.iss-keyss-ki ttaymwun-i-ta.
worry-PROG-PRESUM-NML reason be-DEC

c. Kulena ku chennye-nun i-lul kecelhay-ss-ta.
but that girl-TOP this-ACC refuse-PAST-DEC

d. Caki-uy sayngmyeng-ul kwuhay-cwu-si-n sunim-kwa
self-GEN life-ACC save-give-HON-MD monk-with
phyengsayng-ul hamkkey cinay-ya-keyss-ta-nun
lifetime-ACC together spend-OBLIG-VOLIT-DEC-MD
kes-i-ta.
thing-be-DEC

e. Sunim-un tanghwanghay-ss-ta.
monk-TOP embarrassed-PAST-DEC

a. The monk advised the woman to go to Seoul immediately.
b. The reason is that (people) at home would be worried that (she) must have died (her) being captured and (her being) taken away by a tiger.
c. However, the girl refused.
d. The fact is that (she) wants to spend (her) life with the monk who saved her life.
e. The monk was embarrassed.

Arranged according to the (tentative) semantic roles, the passage looks like this:

(261)

actor	**non-actor**	**predicate**
a. Monk-TOP	woman-DAT	advised.
b.	<embedded clause> the reason	is.
c. The girl-TOP	this-ACC	refused.
d.	<embedded clause> the fact	is.
e.	The monk-TOP	was embarrassed.

The role switches occur when the girl takes the actor role (261c) and when the monk becomes an undergoer (non-actor) in (261e). A full NP is used in both instances. The sentences (261b) and (261d) do not advance the story but just provide further explanation to the situation.

These mechanisms, the constraints imposed by verb endings, the honorific agreement and, in the absence of such constraints, the retention of semantic macro-roles suffice to explain the data. For a further example, consider the sentences 8-9 in the story about the hat seller.

(262) a. Moca cangsa-nun hancham ca-ko
hat seller-TOP for.a.while sleep-and

b. ___ ilena-se
get.up-and

c. ___ moca kwak-ul kaci-ko kalyeko.ha-nuntey
hat box-ACC have-and go-intend-while

d. ___ ku kwak-ey moca-ka manh-ci anh-un
that box-in hat-NOM many-NML not-MD
kes-ul po-ko
thing-ACC see-and

e. ___ kkamccak nolla-ss-upnita.
very surprise-PAST-DEC

a. 'The hat seller, after sleeping for a while,
b. (he) got up
c. and (he) was about to go with the hat box;
d. but (he) saw that not many hats were in the box and
e. (he) was very surprised.'

In this sentence all the clauses refer to the hat seller in the first clause. Most of the verb endings assume the same referent in the subsequent clause. The predicate in clause (c) is an exception but the correct identification of the missing NP in (d) is not endangered. In (262d), I argue, the antecedent is traced with the help of the semantic macroroles. As all the missing NPs in the stretch (a-d) are actors, it is natural to interpret the actor realized by a zero in clause (d) as coreferential with them. In the last clause the omitted argument is interpreted as being the same as the one in the previous clause because of the ending *-ko*. This is an instance of the default use of the *-ko* construction.

My conclusion after examining the data is that the role of inference is probably smaller than earlier assumed. The reference tracking system in Korean has at least two important components: verb endings that monitor the sameness of the referent and honorific agreement that restricts the number of potential referents. Possibly, semantic macroroles can also be monitored directly. More research is needed to verify or refute the last component. Also, more detailed studies should be conducted to examine the switch-reference system. The main point, however, was to demonstrate that the RRG concepts can account for a reference-tracking system like the one in Korean that was difficult to pin down with a more traditional approach to grammar.

4.5.2.2. Chinese

Chinese makes frequent use of zero pronouns as an anaphoric device. A difference compared to Korean is that the use of the third person pronoun is fairly common. All the texts in this study provide several examples of the pronoun *tā* 'he', 'she', 'it'. In modern written Chinese, there is even a distinction between masculine, feminine, and inanimate referents as different characters are used to write them. The plural ending *-mén,* attached to pronouns or animate NPs, further helps to clarify the reference.

In Chinese, syntactic notions like subject or pivot do not seem to play a role in reference tracking (Li and Thompson 1989: 15-16; Van Valin and LaPolla 1997: 261-264). For example, in the following passage, the antecedent in clauses (263e-h) is the topic 'celestial being' at the beginning of the sentence despite of the interrupting subjects in clauses (b-d):

(263) a. Xiánren duì Huánjǐng shuō:
celestial being to Huanjing say
'The celestial being said to Huanjing,'

b. "Jiǔ yuè jiǔ rì Rǔ-hé de yāoguài
nine month nine day Ru-river GEN goblin
yòu yào chū lái le."
again will exit come PRT
"On the Ninth Day of the Ninth Month, the goblin will again come out."

c. "Nǐ gǎnkuài huí qù"
you quickly return go
"Go back quickly"

d. "wèi rénmín chú-hài ba."
for people destroy-evil PRT
"and destroy evil for the sake of the people."

e. ___ Shuō wán
say finish
'After (he) had said that,'

f. ___ zhāi le xiē zhūyú yèzi
pick PFV some medicinal.cornel leaf
'(he) picked some leaves of medicinal cornel'

g. ___ sòng gěi tā,
give give he
'and (he) gave them to Huanjing '

h. ___ yòu gěi le he yī píng júhuā jiǔ,
again give PFV he one bottle chrysanthemum wine
'(He) also gave him a bottle of chrysanthemum wine'

i. ___ shuō: : [QUOTATION]
say
'and (he) said:' : [QUOTATION]

Nor do I find evidence of the relevant concepts being semantic. In the example below the antecedent is the NP 'goblin', an undergoer in clause (264a) and an actor in (264b-d):

(264) a. Yǒu rén shuō:
exist person say
'Some people said:'

b. Rǔ-hé li yǒu ge yāoguài (U),
Ru-river inside exist CL goblin
'There is a goblin in the Ru river.'

c. ___ (A) méi nián jiǔ yuè jiǔ rì dōu chū lái,[29]
every year nine month nine day all exit come
'(He) comes out on the Ninth Day of the Ninth Month every year.'

d. tā (A) zǒu dào nǎr,
it go to where
'Wherever he goes,'

e. ___ (A) jiǔ bǎ wēnyì dài dào nǎr.
then BA plague take arrive where
'(he) takes the plague there.'

Instead it appears that the relevant concepts are pragmatic. A common situation is that reference tracking goes back to a topic. This is the case in the passage illustrated in (263), the antecedent being 'the celestial being'. The interrupting pronouns in (263b-d) are neither topical nor focused and, therefore, are not good candidates for antecedents. For a further illustration of NPs being traced back to a topic, consider the following example:

(265) a. Tā (TOP) jiàn
3sg see
'He saw'

b. Bālāgēncāng (SUB) zhèng kào zhe yī kē dà shù
Balagencang ASP lean DUR one CL big tree
'that Balagencang was leaning on a big tree'

c. ___ (SUB) chōu yān
inhale smoke
'and (he was) smoking'

d. ___ (TOP) lián mǎ yě méi xià,
even horse also not dismount
'(He) didn't even dismount from his horse'

e. ___ (TOP) jiù shuō:
already say
'before (he) said:'

In this example the pronoun *tā* is the topic of the sentence and the antecedent of the missing NPs in clauses (265c) and (265d). The subject Balagencang in the clause (265b) is the antecedent only within that restricted domain.

Another common pattern seems to be that the missing NPs are traced back to a focused NP in a presentative construction. One such instance was already illustrated in (264). The default position for an x argument is to appear before the verb. In presentative constructions, however, the x argument is in postverbal position. This makes it focused (Van Valin and LaPolla 1997: 211), as the function of the construction is to draw attention to the new participant to be introduced in it. In the sample text, there are four examples of an element in a presentative construction

being the target of the missing NPs in subsequent clauses. For another example, consider the passage below:

(266) a. Yǒu ge qīngnián
exist CL young.man
'There was a young man'

b. ___ juéxīn
decide
'(who) decided'

c. ___ shā-sǐ yāoguài
kill-die goblin
'(he would) kill the goblin'

d. ___ wèi rénmín chú-hài.
for people get.rid.of-evil
'and (he would) get rid of evil for the sake of the people.'

It thus appears that what Chinese tracks is topics and focused NPs. Recall the discussion on participant reference in chapter 3. We can now better explain the mechanism of reference tracking in passages like the one in example (123) from *Chūjí Hànyǔ kèběn* (1980: 55-56), which is repeated below:

(267) a. Yǒu yī tiān
exist one day
'One day'

b. tā hūrán xiǎng chū ge "hǎo" bànfǎ,
he suddenly think come.out CL good method
'he suddenly came to think of a "good" method'

c. jiù jíjímángmáng pǎo dào tián li
then hastily run arrive field in
'he hastily ran to the field'

d. bǎ méi kē miáo dōu wǎng shang bá le bá.
BA every CL plant all toward up pull PFV pull
'and pulled every plant upward.'

e. Huí guo tóu
turn around head
'When he turned his head'

f. lái kàn kan miáo,
come look look plant
'and looked at the plants'

g. dìquè bǐ yuánlái gāo le bu shǎo,
indeed compared.to original high CRS not little
'they had indeed grown quite a bit'

h. xīn li shífen gāoxing.
heart in very glad
'and he felt very glad.'

i. huí dào jiā li,
return arrive home in
'He returned home'

j. tā duì jiā li rén shuō: ...
3sg to home in person say
'and said to his family: ...'

The chart that followed the example showed the function of the NPs in the Chinese text. A revised chart is given below. As can be seen from the chart, NPs in Chinese seem to be traced back either to a preceding topic, as in clauses (c-f) and (h-j), or to an NP in focus position as in (g) where the omitted NP refers back to *miáo* 'plant'. The pattern is attested several times in the example texts:

(268)

	topic	**subject**	**preposed**	**predicate**	**focus**
a.				existed	one day
b.	he			came to think	of a good idea
c.	0			ran	to the field
d.	0		every plant	pulled upward	
e.	0			turned	his head
f.	0			looked	at the plants
g.		0		had grown	
h.	0	heart inside		very glad	
i.	0			returned	home
j.	0			said	

In conclusion, reference tracking in Chinese seems to be based on pragmatic relations. Special representative constructions are used to alert the hearer/reader on

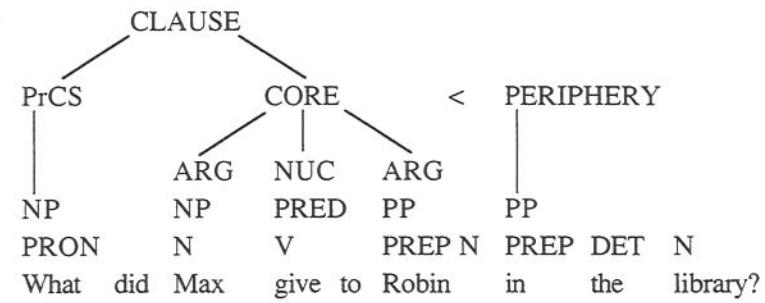
focused NPs. These can be targets of missing arguments. Otherwise, the default is to trace back to the closest topic. Minor side lines may be tracked to a previous non-topical subject, but once back on the theme line the antecedent is again the topic. The use of singular and plural pronouns is an additional device that serves to disambiguate the reference. In the light of the present data inference does not appear to play a major role in Chinese reference tracking, at least not in third person narratives and traditional stories. More research into the relationship between information structure and surface structuring would shed more light on this.

4.6. ACCOMMODATING TOPICS

4.6.1. More on clause structure

To study topics, we need to discuss clause structure some more. According to RRG, nucleus, core, and periphery, are universal distinctions. They are semantically motivated and are defined irrespective of linear order. In addition, languages may exhibit non-universal distinctions which seem to be pragmatically motivated or conditioned. In them, linear order is relevant. (See Van Valin and LaPolla 1997: 31-40.) In English, there is a special precore slot (PrCS). This is the place where wh-question words occur:

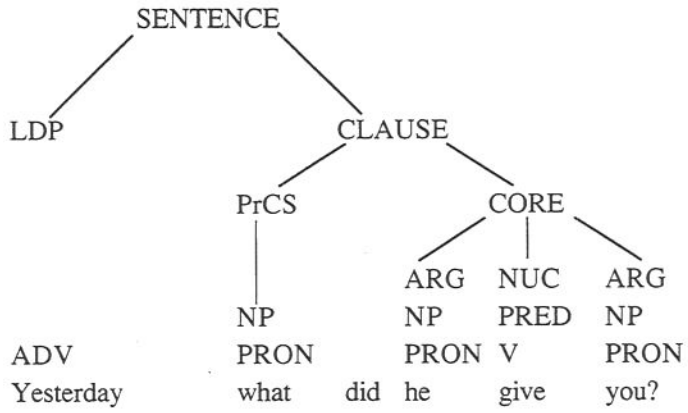
(269)



Besides question words, the precore slot may contain various types of focused elements: ***This picture*** *I like*. ***To Jack*** *we are not going to tell anything*. This slot is part of the clause but outside of the core.

Another extra slot English has is the left-detached position (LDP). This slot contains an initial phrase, as in ***Yesterday***, *what did he say to you?* ***As for my plans***, *they are still rather unclear*. The left-detached position is outside the clause but within the sentence.

(270)



The left-detached position and the precore slot differ from each other in various respects. Phonologically, the LDP, is typically marked with a break in intonation. The PrCS, on the other hand is within the clause and, hence, one would not expect a pause between it and the rest of the clause. Syntactically, it could be that one or both of these slots are associated with different particles or other outward markers. In English, only the LDP can be marked with *as for: **As for Max**, we don't know what he is thinking*. A further syntactic difference in English, is that an argument in the LDP triggers a pronominal copy while an argument in the precore slot does not. For example:

(271) a. **This**, I don't want like **it**. *this* in the LDP
b. **This** I don't like. *this* in the PrCS

Extra slots can also occur at the end of the clause. Some languages have a postcore slot. According to Shimojo (1995, cited in LaPolla and Van Valin 1997: 37), Japanese is such a language. Like the precore slot, this is within the clause. It falls under the same intonation pattern as the rest of the clause and is not separated from it by a pause. The following example (adapted from LaPolla and Van Valin 1997: 37), illustrates first the neutral word order (in a) and then different permutations (in b-c) with a constituent in the postcore slot:

(272)

a. Hanako ga toshokan de Ken ni hon o age-ta yo.
Hanako NOM library in Ken DAT book ACC give-PAST PRT
'Hanako gave a book to Ken in the library.'

b. Hanako ga toshokan de Ken ni age-ta yo **hon o.**
Hanako NOM library in Ken DAT give-PAST PRT book ACC

c. Hanako ga toshokan de hon o age-ta yo **Ken ni.**
Hanako NOM library in book ACC give-PAST PRT Ken DAT

d. Hanako ga Ken ni hon o age-ta yo **toshokan de.**
Hanako NOM Ken DAT book ACC give-PAST PRT library in

A detached phrase, when it occurs after the clause, is called right-detached position. Like the left-detached position, this slot too is within the sentence but outside the clause: e.g. *Did you bring it,* ***the book?***

The extra slots can contain both semantic core arguments as well as additional specifications. This contrasts with the core of the clause, where only those elements arising from the meaning of the verb can occur. Example (272) illustrates both possibilities. The situation expressed by the verb *ageru* 'give' is one involving three participants. In (282a) the arguments encoding these participants all occur in the normal position in the core of the clause. In (272b) and (272c) one of them is placed in the postcore slot. The element in the postcore slot in (272d) is not an inherent aspect of the situation encoded by the verb. The situation is similar with the extra slots that occur on the left side. In (270), the time adverbial *yesterday* in the LDP is not required by the verbal semantics, whereas *this* in (271a-b) is a semantic core argument even though it is placed in the PrCS and LDP respectively.

4.6.2. Application

4.6.2.1. Korean

In this section we are concerned with clause structure. When studying Korean clauses, I have made an effort to identify what the unmarked patterns are for basic clause types. This was done by charting the clauses. Clauses having one, two, and three argument predicates were each charted separately. In addition, I also created separate charts for clauses containing topicalized or focused material. This was because discourse-pragmatic considerations typically affect word order. Clauses where the first argument is marked with the nominative case particle *-i/ka* and not with the topic particle *-un/nun*, were used to determine the basic word-order patterns in different clause types. The results were compared with clauses where the first argument is the topic. The patterns turned out to be identical except for clauses

introducing new participants. The basic word-order patterns attested in the texts are summarized below:

(273) one argument verbs: ARG + PERIPHERY + NUC
two argument verbs: ARG-1+ PERIPHERY + ARG-2 + NUC
three argument verbs: a) ARG-1 + ARG-2 + ARG–3 + NUC
locative transfer
b) ARG-1 + ARG-3 + ARG-2 + NUC
human recipient

The next question was whether there is a motivation to posit a special precore slot. Question words in Korean do not occur at the front of the clause, but there are other arguments that are found in the position immediately before the core. The following example is adapted from Sohn (1994: 209-210):

(274)

a. ARG-1	ARG-3	PERIPHERY		ARG-2	NUC
Enni-ka	na-eykey	onul	kil-eyse	ton-ul	cwu-ess-ta.
sister-NOM	I-DAT	today	road-at	money-ACC	give-PAST-DEC

'My older sister gave me money today on the street.'

b. Na-eykey	ton-ul	onul	kil-eyse	enni-ka	cwu-ess-ta.
I-DAT	money-ACC	today	road-at	sister-NOM	give-PAST-DEC

c. Ton-ul	na-eykey	enni-ka	kil-eyse	onul	cwu-ess-ta.
money-ACC	I-DAT	sister-NOM	road-at	today	give-PAST-DEC

I have analyzed the position right before the first core argument as the precore slot. Fronted elements in it, even though outside the core, still take part in clause syntax, as can be seen from the fact that they retain case marking. Phonologically, they are included under the same intonation contour. An interesting observation is that there was no pause between a fronted periphery and the rest of the clause even when the NP in question was marked with the topic particle *-un/nun*. For example, the following sentences were spoken without a pause or phonological break:

(275)

a. **Ku namwu-wi-ey-nun**	wenswungi	yel	mali-ka	iss-ess-upnita.
that tree-top-at-TOP	monkey	ten	CL-NOM	exist-PAST-DEF

'On the tree there were ten monkeys.'

b. **Noptala-n** **congkak-ey-nun** cong-man tenguleni
high-MD belfry-at-TOP bell-only lonesomely
maytal-lye-iss-ess-eyo.
hang-PASS-be-PAST-POL
'On the high belfry the bell was hanging there alone.'

My analysis contrasts with earlier accounts conducted within the RRG framework. Both Yang (1994) and Park (1995) analyze neutral topics as being in the LDP, whereas contrasted or focused NPs would be in the PrCS. The examples below show Park's analysis (1995: 63-65):

(276)

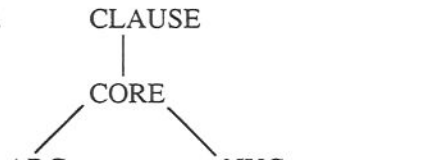
a. What happened to your car?

LDP CLAUSE
|
CORE
nay cha-nun kocangna-ss-ta.
I car-TOP break-PAST-DEC
'My car **broke down.**' neutral topic *-nun*, predicate focus

b.
CLAUSE
/ \
PrCS CORE
nay cha-nun kocangna-ss-ta.
my car-TOP break-PAST-DEC
'**My car** broke down.' contrastive topic *-nun*

c.
CLAUSE
/ \
PCS CORE
nay cha-ka kocangna-ss-ta.
my car-NOM break-PAST-DEC
'**My car** broke down' contrastive focus *-ka*

d.

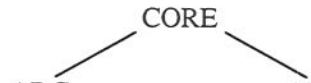


nay	cha-ka	kocangna-ss-ta.
my	car-NOM	break-PAST-DEC

'My car broke down.' neutral descriptive *-ka* sentence focus

I do not find evidence of NPs moving between the LDP, PrCS, and the first argument position the way Yang (1994) and Park (1995) suggest. First, an examination of the taped texts revealed that, as for phonological breaks, topic marked NPs do not seem to be significantly different from nominatively marked NPs. In the taped texts, there is usually no pause between the topic and the rest of sentence. Of those few occasions when there is an identifiable break, two of these are associated with non-topical NPs carrying a nominative marker. The following example (from HS: 16) was spoken with a single intonation contour.

(277) PrCS



NP			ARG		NUC
I	moca	cangsa-nun	talun	sayngkak-i	nass-upnita.
this	hat	seller-TOP	other	thought-NOM	occur-DEF

'The hat seller got another thought.'

Second, I do not find any evidence that constituents would be positioned based on the kind of marking attached to them. On the contrary, there is actually evidence that topic-marked NPs do not always move to the front of the clause. Recall the example (11), part of which is repeated here, illustrating different word-order possibilities in Korean.

(278) a. Cyon-un tosekwan-eyse swukcey-lul ha-nta.
John-TOP library-in homework-ACC do-DEC
'John is in the library doing homework.'

b. Homework-ACC **John-TOP** library-in do-DEC
c. Homework-ACC library-in **John-TOP** do-DEC
e. Library-in homework-ACC **John-TOP** do-DEC

From this example as well as from example (274), I conclude that fronting can be done without topic marking. In Korean, it seems to me, the pragmatic roles topic and focus are primarily signaled by particles. Consider the analysis below.

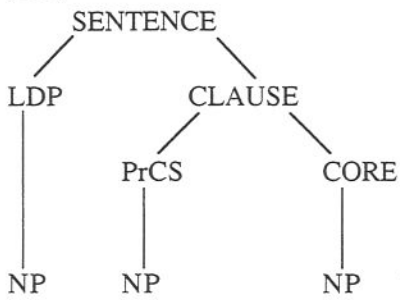
(279)

PrCS			CORE		
NP			ARG		NUC
I	moca	cangsa-**nun/-ka**	talun	sayngkak-i	nass-upnita.
this	hat	seller-TOP/-NOM	other	thought-NOM	occur-DEF

'The hat seller got another thought.'

By changing the marking of the noun phrase from *-un/nun* to *-i/ka*, the first NP becomes focused. I do not, however, agree with the view that it moves from one slot to another for that. Now, let us turn to sentences where both the LDP and the PrCS are occupied:

(280)



Yes	nal	etten	kos-ey	moca	cangsa	han	salam-i	iss-ess-upnita.
old	day	certain	place-in	hat	seller	one	person-NOM	exist-PAST-DEF

'Once upon a time at a certain place there was a hat seller.'

The NP in the LDP position appears to contrast with the one in the PrCS in at least two ways. First, there is no case marking on it. Second, as this sentence was read, there was a slight pause and lengthening of the vowel in the word *nal* 'day'. Similar phenomena are attested in the following sentences:

(281)

a. LDP

Onu nal kiphun pam pakk-eyse soli-ka tul-lye-ss-ta.
one day deep night outside-from sound-NOM hear-PASS-PAST-DEC
'One day in the middle of night, a sound was heard from outside.'

b. LDP

Etten yelum nal i moca cangsa-nun moca-lul khun kwak-ey nehe.kaci-ko
one summer day this hat seller-TOP hat-ACC big box-in put.take-and
'One summer day, this hat seller put many hats in a big box'

Returning to the question of double-subject constructions, phonologically and syntactically, the first NP in them fills the criteria for a PrCS rather than those for an LDP. I thus analyze them as occurring in the precore slot. Compare the examples below involving a topic, a fronted element, and a topicalized fronted element:

(282) PrCS CORE

a. Na-nun kay-ka mwusep-ta.
I-TOP dog-NOM afraid-DEC
'I am afraid of dogs.'

b. Na-eykey kay-ka mwusep-ta.
I-DAT dog-NOM afraid-DEC
'I am afraid of dogs.'

c. Na-eykey-nun kay-ka mwusep-ta.
I-(DAT)-NUN dog-NOM afraid-DEC
'I am afraid of dogs.'

A benefit of this analysis is that we do not need to posit movements between the PrCS and the LDP. All the clauses can be explained as having basically the same structure, just like any other clause pair where the only difference is the marking of the first NP. Granted, there are differences in focus and topicality associated with the *-un/nun* versus *-i/ka* or *-ey(key)* versus *-ey(key)nun* marking, but the coding *per se* does not warrant an analysis that a constituent has moved. To claim that, we would need some kind of independent evidence. Compare this situation with

English, where focal stress can fall on different constituents without any change in word order (from Van Valin and LaPolla 1997: 209):

(283) a. Chris gave the book to PAT yesterday.
b. Chris gave the book to Pat YESTERDAY.
c. Chris gave THE BOOK to Pat yesterday.
d. Chris GAVE the book to Pat yesterday.
e. CHRIS gave the book to Pat yesterday.

When examining the Korean texts, I have tried to base my conclusions on instances where the evidence is clearest. If the ARG-1 position is already occupied, then a constituent on the left hand side should be either in the PrCS or in the LDP. To distinguish between the two, I analyzed the instances where both of these slots are occupied, such as in (201) and (202). Then, I tentatively assumed that the characteristics associated with the two slots might apply to other sentences too. No conflicting observations were made. Consequently, I suggest that:

1. The position immediately before the ARG-1 position is the precore slot. This slot is phonologically incorporated into the clause. The focus or topic status of the NP in this slot, as in other slots, varies and is reflected in the morphosyntactic and/or phonological marking attached to it. The elements in the PrCS are fronted core arguments, fronted peripheral constituents, or arguments in the double-nominative constructions. 2. The left-most position in the sentence is the left-detached position. This is outside the clause, which is evidenced by the phonological break that typically occurs between the LDP and the rest of the sentence. Typically, the NPs in this slot are peripheral and do not carry case marking. In my data, the motivation for placing constituents in this slot seems to be a new beginning in the discourse, such as a new episode.

As my conclusions are drawn from only three texts, they should be considered as tentative. However, the analysis presented here is what seems to best account for the facts, whereas assuming that topic-NPs move to the LDP proved to be untenable. If that were the case, further extra slots would need to be postulated on the left side of the LDP.

4.6.2.2. Chinese

The Chinese texts were analyzed using basically the same methodology as the Korean ones. The clauses were first divided according to the number of core arguments and charted. Presentative constructions were separated from those which contained topical NPs. The patterns were:

(284)

one argument verbs: ARG + PERIPHERY + NUC
two argument verbs: ARG-1 + PERIPHERY + NUC + ARG-2
three argument verbs: a) ARG-1 + PERI + NUC + ARG-3 + ARG-2
human recipient
b) ARG-1 + ARG-2 + NUC + ARG-3
locative transfer

It is worth noticing that the position of a locative phrase which belongs to the periphery is different from the position of locative NPs that function as arguments of the verb. Compare the following pair of clauses (from Li and Thompson 1989: 399):

(285) a. Tā **zài zhuōzi shang** tiào. ARG-1 + PERIPHERY + NUC
3sg at table on jump LP in the periphery
'S/he is on the table jumping.'

b. Tā tiào **zài zhuōzi shang.** ARG NUC ARG
3sg jump at table on LP an argument of the verb
'S/he jumped onto the table.'

As the order of core arguments has been determined, we are now ready to consider the extra-core slots. Chinese, like Korean, does not employ a special slot for question words. Other elements, however, are frequently fronted. In the following examples, a peripheral element is placed in front of the core. This position I analyze as the precore slot:

(286)

PrCS	CORE	
	ARG	NUC

a. Jīntiān zánmen yídìng yào bǐ.
today we absolutely must contest
'We have to have the contest today.'

b. Zhèr lí wǒ jiā tài yuǎn.
here from my home too far
'This place is too far from my home.'

Besides peripheral elements, core arguments too can occur in this position. For example:

(287)

PrCS

CORE	PERI	CORE	
ARG-1		NUC	ARG-2

a. Wǒ de cōngmíng dōu fàng zài yi ge dàizi li.
I GEN intelligence all put at one CL bag in
'My intelligence is all in a bag.'

b. Nà ge dàizi jīntiān méi dài lái.
that CL bag today not take come
'(I) didn't take that bag with me today.'

Now, it would of course be possible to argue that these preposed elements are not in the precore slot but in the left-detached position. It has been claimed (Yang 1994; Park 1995) that the LDP is the slot where neutral topics occur, and these are instances of neutral topics. The problem is that such an analysis is not compatible with my data. Take, for example, the following sentence, which contains both slots. As the LDP is occupied by an element providing the temporal setting for the story, the topic must occur in the PrCS unless we assume that a slot can contain multiple elements simultaneously:

(288)

LDP	PrCS	CORE: NUC	ARG

Gǔ shíhòu Rǔnán yīdài de xiāngcūn fāshēng le wēnyì.
old time Runan area ASSOC village happen PFV plague
'A long time ago there was a plague in a village in the Runan area.'

But suppose that the NP *gǔ shíhòu* 'in ancient times' did not occur in front of the PrCS. In such a situation, how can we tell whether a fronted element is in the PrCS or in the LDP? After examining my texts and some additional data, I am inclined to conclude that the most sensible way to chart the texts is to assume that an element is preposed only if it does not occur in its ordinary position. This can be seen from the relative position of the other arguments. The fronted element is assumed to be in the PrCS unless there is clear evidence of it being in the LDP. Such evidence would include: 1) a better candidate for the PrCS that is simultaneously present in the sentence, or 2) a clear marking device that can is restricted to the LDP only.

My texts do not seem to contain any special marking devices that unquestionably would help to distinguish between the LDP and the PrCS. A phonological examination indicated that the LDP is typically followed by a pause. This, however,

was not exclusively the characteristic of the LDP. Pauses were common after the periphery. Phonology, besides marking LDPs, is also used to clarify boundaries for some slots within the clause.

I also conducted a discourse-pragmatic study of the positions which, according to the criteria stated previously, were analyzed as being the LDP or the PrCS. A hypothesis that emerged was that the LDP typically contains what could be called discourse topic or point of departure (Dooley and Levinsohn 1999: 33-34). In the PrCS, on the other hand, we find topical items that have been preposed from the periphery or the CORE-ARG-2 position. The first or only argument of a verb does not need to be fronted as the core-initial position in itself is associated with topicality. This interpretation of the PrCS and LDP allows us to account for the different word order options illustrated by Li and Thompson (1989: 21):

(289)

LDP	PrCS	CORE ARG-1	PERIPHERY	CORE	
				NUC	ARG-2
a.		Wǒ I		zài mǎi DUR buy	shū le. book CRS
b.		Wǒ	bǎ shū	mǎi le.	
c.	Shū	wǒ		mǎi le.	
d. Wô	shū			mǎi le.	

The sentence (289a) is presentative: 'I am buying a book'. In such sentences the focus falls on the postverbal NP. The next sentence, (289b), is translated as 'I bought *the book*' by Li and Thompson. This gives the impression that the word 'book' would be somehow emphasized. However, according to Li and Thompson, the function of the *bǎ* construction is to express what happens to an object. The object is usually definite and highly prominent. In other words, it is presupposed. The nature of the action tends to be elaborated e.g. by adding directional or resultative elements. (Li and Thompson 1989: 483-491). This makes me think that the function of the *bǎ* construction is to let the focus fall on the predicate part: What did you do with that book? I *bought* it. Observe that *bǎ* originally is a verb meaning 'take' and in the construction *Wǒ bǎ shū* 'I take a/the book', the prominence naturally falls on the word 'book'. But when incorporated into the matrix sentence and placed in a preverbal position, the NP 'book' becomes presupposed and, thus, the focus falls on the predicate. In (289c) the object appears in the precore: '*The book*,

I bought it'. Now it has been topicalized. Depending on the phonology and the discourse environment, the topic can be either neutral or contrastive. Finally, in (289d) the topic is contrasted: 'I bought *the book*.' The pronoun in the LDP provides the point of departure.

As Chinese does not operate with case and topic markers like Korean, the position of items provides a way of conveying differences in topicality and focus. The difference between the LDP and the PrCS becomes more evident when both are present simultaneously. When a sentence has only one of them, the difference between the two is maybe not so crucial. A topic is a kind of point of departure too, even though on a sentence rather than a paragraph level in discourse. Consider the last sentence of the story about the little gecko:

(290)

PrCS	CORE	
	NUC	ARG-1

Wǒ	zhǎng	chū	le	yī	tiáo	xīn	wěiba	la.
I	grow	come.out	PFV	one	CL	new	tail	CRS

'I have grown a new tail!'

In the recording, there is no pause after the pronoun. In the syntax, there is no indication that the slot preceding the core would be outside the clause. According to Li and Thompson (1989: 86-87), this is a common situation in Mandarin speech; formal topic markers like the particles *gou/a/me/ne* and pauses are not commonly used at all. In contrast, a sentence like the one below (here repeated from (55) in Chapter 3), would have been analyzed as having an LDP on the left:

(291) Nèi zhī gǒu a/me/ne, wǒ yǐjing kàn guo le.
that CL dog PRT I already see EXP CRS
'That dog, I have already seen it.'

Interestingly, these particles are found at the end of sentences too. There are some examples of both *a* and *ne* in the texts. In both uses, the particles mark a sentence boundary, whether this boundary is the closure of a whole sentence or the end of that part of a sentence that is outside the clause.

At any rate, I prefer to posit an LDP only when there is reasonably clear evidence for it. Phonology is important, but it needs syntactic support such as a marking device associated with LDPs but not with precore slots, occupancy of all other slots, or pronominal copying. The sentence below contains two pieces of

evidence suggesting that the left-most position does not participate in the clause syntax: a phonological break and a pronoun in the core referring to the same entity as the one in the LDP.

(291) a.

LDP	CLAUSE CORE

Shǎ háizi, nǐ zhuǎn guò shēnzi kàn kan.
foolish child you turn around body look look
'You foolish child, turn around and have a look.'

According to these two criteria, the left-most constituent in a double-subject construction like the following belongs to the precore slot rather than to the LDP:

(292)

PrCS	CORE

Tā běnlǐng hěn dà.
he skill very big
'He has great skills.'

The analysis presented here can accommodate all the findings in the data. For example, NPs that have been elided, need a slot where they could appear, had they been realized on the surface. Consider the last paragraph of the sample text that states that, every year on the Ninth Day of the Ninth Month, people take chrysanthemum wine, put cornel leaves on their heads, and go out to climb high. The end of the final sentence is charted below:

(293)

LDP	CLAUSE			
	PrCS	CORE		
		ARG	NUC	ARG

a. tóu chā zhūyú yè
on the head insert cornel leaves

b. wài chū dēnggāo
outside go climb high

'On their heads the put cornel leaves and go outside to climb high.'

Without the RRG concepts, the word order in this sentence would be peculiar and it would not be clear how to chart a sentence like this. On the other hand, applying the RRG theory to an East-Asian language is not without its practical problems. As my discussion in this section has suggested, criteria for positing the left-detached position and the precore slot warrant more research.

4.7. NOTES ON JAPANESE

Japanese is in many respects similar to Korean. It is an agglutinative SOV language with a variety of suffixes which can be attached to predicates. Some suffixes derive other senses from a basic sense, others connect phrases and clauses, and yet others show distinctions in aspect, tense, mode, evidentiality, or illocutionary force. Verb serialization and pronominal ellipsis are common. Full NPs are marked with case particles in a way that resembles Korean. There is also a system of honorifics and different polite levels of speech.

Analyses of Japanese using the RRG framework include studies by Hasegawa (1992; 1995; 1996) and Shimojo (1995). The former is often quoted by Yang (1994). It appears that many of Yang's decisions concerning Korean closely follow those Hasegawa made for Japanese. If my analysis of East-Asian languages had included both languages, the approach would probably have been similar in them. When making clause breaks, it would have been necessary to determine which non-final verb endings constitute a clause break and which ones are used to connect phrases within a clause. Some endings have multiple uses and the type of juncture they indicate has to be determined in each context. For example, problems *with* the Japanese ending -te would be similar to those with the Korean -ko.

(294)

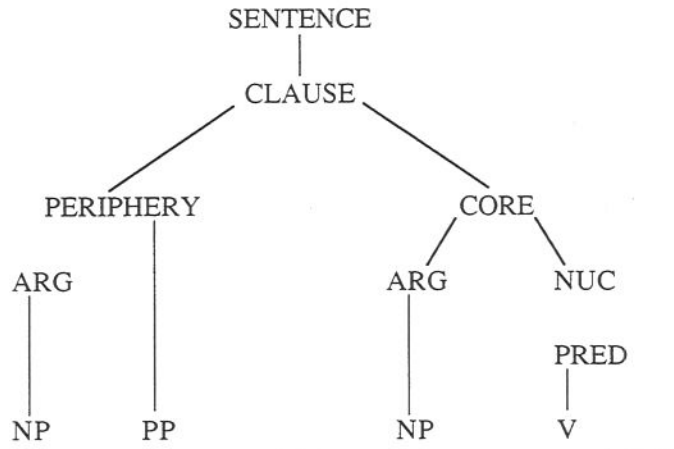
a. Dare ga kompyūtā o tsukat-**te** imas-u ka? — nuclear juncture
who NOM computer ACC use-TE PROG-TNS Q
'Who is using the computer?'

b. jidōsha ni not-**te** iku — core/clausal?? juncture
car in ride-TE go
'go by car'

c. Hayaku shigoto o sumase-**te** uchi ni kaeri-nasai. — clausal juncture
quickly work ACC finish-TE home LOC return-IMP
'Finish your work quickly, and go home!'
(Hasegawa 1992: 193.)

Clause and sentence structure can be described in basically the same way as in Korean. The example below (from Van Valin and LaPolla 1997: 32) illustrates the basic order of the elements in the core as well as the position of the periphery:

(295)



'Did Taro read a/the book at Kazue's house?'

Three extra core slots have been found in Japanese. There is even a postcore slot as was illustrated by example (272) from Shimojo (1995). The left-detached position and the precore slot are exemplified below in (296a) and (296b) respectively with sentences taken from Japanese teaching materials:

(296)

a. LDP

Aru hi,	Saru	ga	Kani	no	uchi	e	asobi	ni	ki-te
One day	monkey	NOM	crab	GEN	house	to	play	to	come-and

'One day, Monkey came to Crab's house to play...'
(Vaccari 1972: 461)

b. PrCS

Piano wa	shōgakusei	no	toki	kara	narai-hajime-mashi-ta.	
Piano TOP	primary.school. student	GEN	time	from	learn-start-POL-PAST	

'(S/he) has been taking piano lessons since s/he was in primary school.'
(adapted from *Japanese for today* 1980: 168)

In 4.2.4.2. I argued against an analysis that neutral topics would move to the LDP, while contrasted topics would occur in the precore slot. I claimed that there is not enough evidence for such moving between slots depending on the marking of the NP. Here I am suggesting the same in Japanese. In order to compare Japanese with Korean, I examined a couple of narrative stories from Vaccari's Japanese Reader. The result was that there was further support for the kind of analysis I suggested for Korean. Consider the following sentence from the story about an old man (*Hanasakajijii)* and his dog. The old man has buried his dog and planted a tree on that place. Soon the tree has grown big. The story goes on as follows (from Vaccari 1972: 141):

(297) Aru hi, **yoi ojiisan wa** kono ki o kit-te
one day good old.man TOP this tree ACC cut-TE
'One day, the good old man cut this tree'

sore de usu o tsukuri-mashi-ta
that with mortar ACC make-POL-PAST
'and made a mortar out of it.'

In this sentence the left-detached position is filled with *aru hi* 'one day'. The topic 'old man' appears to occur in its ordinary position, i.e. the position for the first core argument. That is the case also in the next pair of sentences taken from two other stories in the same reader (Vaccari 1972: 209, 229). In both sentences, there appear to be two slots before the first core argument. Observe that the structure in them is the same even though one of them has a topic marked NP while the other has a nominatively marked NP:

(298)

a. Soshite, yūgata **kame wa** yama no ue ni tsuki-mashi-ta.
then evening tortoise TOP mountain GEN top at arrive-POL-PAST
'Then, in the evening, the tortoise arrived on the top of the mountain'

b. Sono toki, doko kara ka **kin-iro no tobi ga** to-nde ki-mashi-ta.
that time where from Q gold-color GEN kite NOM fly-TE come-POL-PAST
'That moment, from somewhere, a golden kite came flying'

Topics in topic-comment constructions seem to fit in the precore slot as was suggested in the Korean section. Consider the continuation of the story in (298b) which goes on as in (299a-d) The clause (299c) with a double-nominative construc-

tion deserves attention. As the context shows, the left-most NP 'enemy' does not seem to be a topic in the LDP. However, it could well be an element in the precore slot:

(299)

a. soshite ___ Tennō no o-yumi no saki ni tomari-mashi-ta.
then Emperor GEN HON-bow GEN top at stop-POL-PAST
'and alighted on the top of the Emperor's bow.'

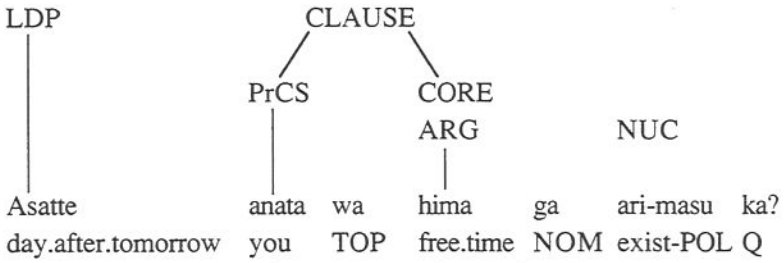
b. Sono tobi ga chōdo inazuma no yō-ni tsuyoku kagayaki-mashi-ta node
that kite NOM just lightning GEN like strongly glitter-POL-PAST so
'As the kite glittered just as strongly as lightning'

c. **teki wa** mina me ga kurashi-masi-ta,
enemy TOP all eye NOM dazzle-POL-PAST
'all the enemy were dazzled'

d. soshite kōsan-shi-mashi-ta.
then surrender-POL-PAST
'and surrendered.'

In the light of this data, it seems feasible to analyze double-nominative constructions as follows:

(300)



'Are you free the day after tomorrow, Sunday?
(adapted from *Japanese for today* 1980: 180)

My application of RRG differs from Hasegawa (1992) and Yang (1994). If my analysis is accepted we avoid two problems: i) that elements would move from one slot to another depending on the marker attached to them, and ii) that we run out of slots when the LDP and PrCS seem to be occupied in a sentence that simultaneously has a topic-marked NP.

Finally, let us have a brief look at predicates. Kuno (1973: 136) mentions that all Japanese predicative adjectives are inherently states. As in Korean, an RRG account allows for further subcategorization between states, like attributive states, locative states, states expressing feelings, etc., which all yield different logical structures. In addition, the system of predicate classification can also describe various types of derived meanings. The example below shows a derivation from a state in (301a) to an activity (301b) by attaching *garu* to it and a further derivation with a causative morpheme (301c):

(301)	a. *kowa-i*	'fearful', 'dreadful'
	b. *kowa-garu*	'fear', 'dread'
	c. *kowa-gara-su*	'frighten', 'scare'

Lexicalization patterns in Japanese and Korean show several similarities. In both languages inanimate subjects are incompatible with certain types of transitive verbs. In Japanese, the verb *korosu* seems to require an agent, not just an inanimate effector. In English, on the other hand, few verbs seem to have obligatory agents. (Hasegawa 1992; 1995; 1996; Van Valin and LaPolla 1997.) Compare the verb *kill* with its Japanese counterpart (from Hasegawa, cited in Van Valin and LaPolla 1997: 120):

(302)	*Sensō	ga	ōkuno	heishi	o	koroshi-ta.
	war	NOM	many	soldier	ACC	kill-PAST
	'The war killed many soldiers.'					

In this dissertation, SOV languages of East-Asia have been illustrated mainly by Korean. Basically the approach, however, seems to be also applicable to Japanese, as illustrated by the examples in this section. The two languages, of course, also exhibit differences but further comparisons between them are out of the scope of this dissertation. I hope that more studies will be conducted on these problems using whole texts in the corpus.