

References

- Benmamoun, E. (2000). *The feature structure of functional categories: a comparative study of Arabic dialects*. Oxford: OUP.
- Chomsky, N. (1995). *The minimalist program*. Massachusetts: MIT.
- Cinque, G. (1997). *Adverbs and functional heads: a cross-linguistics perspective*. Oxford: OUP.
- Fassi Fehri, A. (1993). *Issues in the structure of Arabic clauses and words*. Dordrecht: Kluwer.
- Haegeman, L. (1995). *The syntax of negation*. Cambridge: CUP.
- Holes, C. (1995). *Modern Arabic: Structures, Functions and Varieties*. London: Longman.
- Ingham, B. (1997). *Arabian Diversions*. Ithaca Press: Reading, UK.
- Jelinek, E. (1981). *On defining categories: aux and predicate in colloquial Arabic*. PhD thesis, University of Arizona, Tuscon.
- Ouhalla, J. (1990). 'Sentential negation, relativized minimality and aspectual status of auxiliaries.' *Linguistic Review* 7:183-231.
- Ouhalla, J. (1991). *Functional categories and parametric variation*. London: Routledge.
- Ouhalla, J. (1993). 'Negation, focus and tense: the Arabic *maa* and *laa*.' *Rivista di Linguistica* 5.2: 275-300.
- Ouhalla, J. (1994). 'Verb movement and word order in Arabic.' In Lightfoot, D., and Hornstein, N. (eds.) *Verb Movement*. pp. 41-72. Cambridge: CUP.
- Ouhalla, J. (1997). 'Remarks on Focus in Standard Arabic.' in Eid, M., and Ratcliffe, R., eds., *Perspectives on Arabic Linguistics X*: 9-45. Amsterdam: John Benjamins.
- Ouhalla, J. (1997) The structure and logical form of negative sentences.' *Linguistic Analysis* :??-??.
- Qafisheh, H. (1992). *Yemeni Reference Grammar*. Kensington MD: Dunwoody Press.
- Ritter, E. (1995). 'On the syntactic category of pronouns and agreement.' *Natural Language and Linguistic Theory* 13:405-443.
- Shlonsky, U. (1997). *Clause structure and word order in Hebrew and Arabic: an essay in comparative syntax*. Oxford: OUP.
- Simeone-Senelle, M-C. (1996). 'Negation in some Arabic dialects of the Tihaamah of the Yemen' in Eid, M., and Parkinson, D. (eds.) *Perspectives on Arabic Linguistics IX*: 195-206. Amsterdam: John Benjamins.
- Vanhove, M. (1996). 'The negation *maašii* in a Yaafi 'i' dialect' in Eid, M and Parkinson, D. (eds.) *Perspectives on Arabic Linguistics IX*: 195-206. Amsterdam: John Benjamins.
- Watson, J.C.E. (1993). *A syntax of San'aanii Arabic*. Wiesbaden: Harrassowitz.
- Zanuttini, R. (1997). *Negation and clause structure: a comparative study of Romance languages*. OUP: Oxford.

"Japanese-style" languages and adjective ordering restrictions

Gary-John Scott

gs31@soas.ac.uk

1.0 Introduction

The aim of this paper, a version of Scott 2002c and Chapter 5 of Scott 2002b, is basically to provide a first attempt at answering the question of why some languages display adjective ordering restrictions (henceforth AOR) and others do not.

In joint work (Chao, Mui & Scott, in preparation) I have argued that we only see "direct" modification structures (in terms of Sproat & Shih, 1998 and 1991) within hierarchical configurations — i.e., when the adjective occupies either a head or Spec position of an AOR-related functional projection (see Scott, 2002a). In Chao, Mui & Scott (in preparation) we suggest that indirect modifiers are "real" adjuncts (however these are to be represented: e.g., as adjoined phrases or as specifiers of DP-related projections) and we posit a direct link between overt modification patterns in Chinese and Tenny's (2000) notion of Semantic Zones. Thus, the restriction found in Chinese against two directly modifying adjectives of the same degree of absoluteness can be restated, we argue, as a restriction on the number of heads that can be instantiated in the nominal functional projection: adjectives that S&S characterise as *absolute* (colour, shape, material), are those definitely linked to the *inner core* projections. A relative adjective like *hao* ('good') instantiating Quality or Subjective Comment is clearly linked to the outer core projections.

We also argue (following ideas originally outlined in Scott, 2002c) that natural language displays two types of modification pattern: "hierarchical" and "lexical" or, the "Cinquean" and the "Fukuian" respectively (originating from Fukui & Speas, 1986 and developed in Fukui, 1995: henceforth called "Fukuian" style projections for short). I shall present a very brief and basic outline of our research project later in this paper.

In this paper, I take that research program further. I argue that it is simply not the case that all natural languages have the fixed schemata whereby lexical projections are projected above functional (hierarchical) projections (which is what we argue in Chao, Mui & Scott, in preparation). Instead, I propose the *The Semantic Zones Hypothesis*. This basically states that the (DP-internal) functional hierarchy — the hierarchical field of Semantic Zones — is capable of being completely suppressed in some languages (i.e., Japanese), resulting in only lexical projections — la Fukui for those languages; certain other languages (such as English) are incapable of suppressing the functional hierarchy and display the full array of functional projections at all times, resulting in only "Cinquean" style projections. Other languages (for example, Chinese and Greek) display mixed systems and have the option of suppressing or not suppressing the Semantic Zones hierarchy.

One consequence of this hypothesis is that, in the case of Japanese, it lends direct support to Fukui's (1995) "N" analysis for the Japanese "DP" (which I reanalyse in terms of ModP in the sense of Rubin, 1994 and 2002). I also claim that when a language suppresses the functional Semantic Zones hierarchy, the functional system collapses, triggering the use of ModP. A consequence of this use of ModP is that modification "linkers" (overt and morphological) must be used to signal modification structures. In this respect, *The Semantic Zones Hypothesis* is able to account for why we find two classes of adjective in Japanese. Lastly, one further, and

major, consequence of *The Semantic Zones Hypothesis* is that it predicts and is able to account for why some languages display fixed patterns of AOR and others do not.

I begin this paper by discussing adjectival modification and AOR in Japanese, a language that I claim is able to suppress, via *The Semantic Zones Hypothesis*, the Semantic Zone hierarchy.

2.0 Adjectives in Japanese¹

Japanese poses an interesting challenge when it comes to developing an integrated theory of adjectival syntax and semantics. To begin with, it has been argued that Japanese is one of the (many) languages in which the syntactic category "adjective" does not exist: the fact that adjectives exhibit tense morphology and are arguably strongly verbal in nature has led many writers to the conclusion that, as far as Japanese is concerned, what passes for adjectives are in fact actually verbs (see Bhatt, 1994; Dixon, 1982:38 amongst many others; see however Backhouse, 1984, for arguments that the category "adjective" in Japanese constitutes a large, productive and open part of speech). Second, of those writers who do admit to a separate syntactic category "adjective" in Japanese, most seem to view Japanese A+N constructions as reduced relative clauses (Martin, 1975; Nishiyama, 1999). In this paper, however, I will argue, following Yamakido (2000), that Japanese adjectives are not relative clauses but will also argue, *contra* Yamakido, that the final adjectival suffix marker *-i* and the morpheme *na* are not case markers. Furthermore, I will show that Japanese also poses interesting challenges to the AOR hierarchy outlined in Scott (2002a). I shall not be entering into the debate about whether Japanese does or does not have a separate syntactic category "adjective" but for the purposes of this paper will merely be assuming that it does.

2.1 Japanese adjective classes

Adjectives are only found prenominal in Japanese and are almost universally considered to be relatives. Japanese adjectives (like, for the most part, Japanese nouns) do not express agreement features; there is no number or gender, for example. As is well known, Japanese has two morphologically distinct classes of word which correspond semantically to the English syntactic category "Adjective." These have been discussed extensively in the literature (so see, amongst many, many others, Ikeda 1997 (especially section 2.2.2); Nishiyama, 1999; Backhouse, 1983; Miyagawa, 1987; and lastly Sugawara, 1989 for exposition within the traditional Japanese approach to grammatical analysis).

¹ I should like to thank the following Japanese native speakers for help with grammaticality judgements: Hiroto Hoshi, Miwako Kashiwagi, Toshihiko Kitagawa, Sachiko Kurihara and Hisayoshi ("Charlie") Ono. Note that, for some sources (i.e., Yamakido, 2000), I have changed the romanisation system so that the system used in this paper is unified.

The chief characteristics of the two classes are:

<u>Class A:</u>	these adjectives all end in the suffix <i>-i</i> and are morphologically and syntactically similar to verbs; henceforth called 'verbal adjectives' (VAs);
<u>Class B:</u>	these adjectives, when used attributively, have a reduced/attributive form of the copula <i>na</i> (see Miyagawa, 1987 — 'na' derives from the Classical Japanese form of the copula <i>nari</i>) ² to link the adjective to the modified noun and are morphologically and syntactically similar to nominals; henceforth called 'nominal adjectives' (NAs; see Kuno, 1973)

Traditionally, Japanese adjectives have been analysed as relative clauses:

Japanese relative clauses:

- 1a) Nihongo ga wakar-u gaikokujin
 Japanese nom understand-PRES foreigner
 'A foreigner who can understand Japanese'
- 1b) Nihongo ga waka-tta gaikokujin
 Japanese nom understand-PAST foreigner
 'A foreigner who understood Japanese'

Verbal Adjectives (VAs)

- 2a) utsukushi-i tori 'a beautiful bird (a bird which is beautiful)
 beautiful-PRES bird
- 2b) utsukushi-katta tori 'a beautiful bird (a bird which was beautiful)
 beautiful-PAST bird

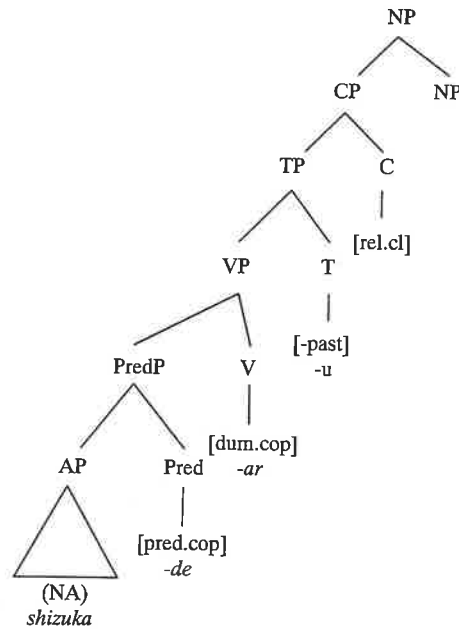
Nominal Adjectives (NAs)

- 3a) shizuka de-arui tori 'a quiet bird (a bird which is quiet)
 quiet COP-PRES bird
- 3b) shizuka de-atta tori 'a quiet bird (a bird which was quiet)
 quiet COP-PAST bird
- 3c) shizuka na tori 'a quiet bird (a bird which is quiet)
 quiet NA bird

Both classes of Japanese adjective show the complete morphology available to verbs (i.e., negative and conditional suffixation, etc.). According to Nishiyama (1999), working in a Distributed Morphology framework, the internal structure of NAs is as follows (see Nishiyama for argumentation):

² Which I shall gloss simply as "*na*."

4)



shizuka dearu NP = 'an NP which is quiet'
quiet COP

(Nishiyama 1999:197)

Nishiyama basically assigns the same internal structure to VAs as he does to NAs (though there are very slight differences; see Nishiyama (1999:189-193); thus, the past tense of the VA *taka-i* 'is tall/expensive' is *takakatta* ('was tall/expensive') and Nishiyama assigns it the following structure:

5) *taka - k - -ar- -ta*
AP pred.cop dum.cop past

And, for the present tense *utsukushi-i tori* 'beautiful bird', the structure (repeated in Yamakido, 2000:590) is as follows:

6) [NP [CP [TP [VP [PredP [AP *utsukushi*] [Pred \emptyset]]] [V \emptyset]]] [T *i*]] [C \emptyset]] [NP *tori*]]

For a full discussion of the various syntactic/semantic similarities and differences between the two sets of adjective, see (again, amongst many others) Backhouse, 1984; Miyagawa, 1987; Nishiyama, 1999; Shibatani, 1990; and Martin, 1975. Nishiyama's structure above shows that he treats both classes of adjective as relative clauses. In the first section of this paper, I shall present the arguments given by Yamakido (2000) to support her contention that Japanese adjectives show semantics which indicate that the relative clause analysis is the wrong one for Japanese.

2.1.1 Are Japanese attributive adjectives relative clauses?

It has been standard practice in the literature as well as in traditional grammatical analyses of Japanese to consider attributive adjectives (both VAs and NAs) as simply copula relative clauses (see *inter alia* Kuno (1972), Whitman (1981), Ikeda (1997) and Nishiyama (1999)):

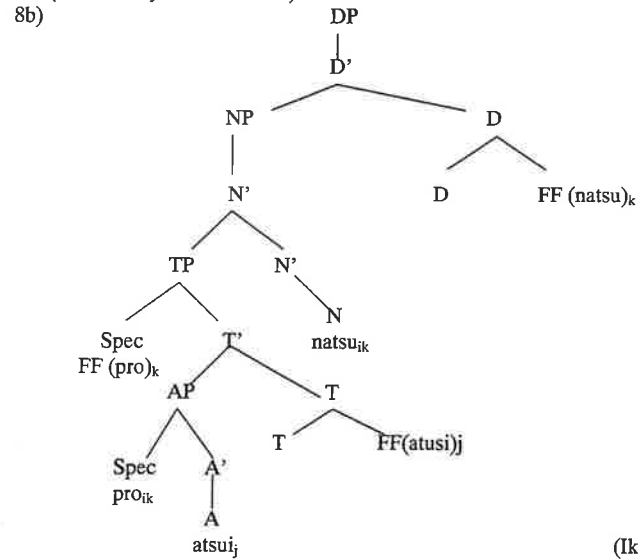
- 7a) *maru-i teeburu* round table (literally 'a table which is round')
- 7b) *genki na kodomo* healthy child (literally 'a child who is healthy')

As we have seen, morphologically and syntactically, the parallels between these adjectives and relative clauses are striking. Furthermore, the semantics of attributive adjective modification is identical to that of relative clause modification (attributive adjective constructions have often been related to their relative clause counterparts; viz, the approach taken in early transformational grammar and in Kayne, 1994) — as seen by the English translations of the examples in 7. This, naturally, has led researchers to posit that Japanese adjectives are merely types of relative clause. Thus, depending on whether one considers Japanese to possess complementisers or not (see Fukui, 1995), Japanese attributive adjectives may have either one of the following two structures:

Either (for a CP analysis):

- 8a) *Taroo-ga [CP...utsukushii...] tori -o mita*
Taroo-NOM beautiful bird-ACC saw
'Taroo saw a beautiful bird/a bird which was beautiful' (Yamakido, 2000:589)

Or: (for an analysis without CP)



atsui natsu 'hot summer'
hot summer

(Ikeda, 1997:69)

Note for the Ikeda tree, that it has often been argued that Japanese relatives do not involve operator movement — the “gap” in Japanese relative clauses can be analysed as a base-generated small *pro* (see Kuno, 1973; Saito, 1985; Kuroda, 1992; although see Murasugi, 1991 for a contrasting view). Note, incidentally, the complicated structure which, under this analysis, must now be assigned to simple one-adjective, non-negative, attributive modifiers if we consider them to be relative clauses.

A consequence of the relative clause analysis is that, 1) if Japanese adjectives are indeed attributive relative clauses, and 2) if we assume a rich Cinquean style functional hierarchy as in Scott (2002a), we predict that when stacked, Japanese attributive adjectives will not display AOR since relative clauses are not ordered according to any functional hierarchy. And, as we shall see below, the relative clause analysis here predicts the correct results. Japanese stacked adjective combinations do not appear to respect AOR.

Yamakido (2000) argues, convincingly I feel, that attributive adjectives in Japanese cannot in fact (all) be relative clauses: here I use brackets around the word ‘all’, a convention Yamakido herself uses in the title of her paper, since, as far as I can tell, she does not explicitly tell us at any point whether she considers it the case that no instance of attributive adjectival modification in Japanese is relative clause modification, or whether it is the case that only some (or most) attributives are not relatives. In any case, Yamakido presents the following arguments against the relative clause view: “the analysis of Japanese attributive adjectives as copular relatives makes two simple semantic predictions. First, it predicts that attributive adjectives, like relatives, will always receive an intersective interpretation. Second, it predicts that the temporal relations between an attributive adjective and its containing clause be analogous to that found with relatives. As I show...both predictions are false (Yamakido, 2000:590).” The ideas behind Yamakido’s work owe much to Larson (1999) who in turn bases his work on insights found in Bolinger (1967). So just as *a complete fool* is not “complete” and “a fool” (an intersective reading) so Yamakido shows that the same type of facts hold for Japanese (I have changed the glosses and translations slightly):

9a) Olwen-ga furui tomodachi da
Olwen-NOM old friend COP
‘Olwen is an old/long-standing friend’

9b) Gary-ga kanzen na baka da
Gary-NOM complete NA fool COP
‘Gary is complete fool’ (Yamakido, 2000:593)

As Yamakido notes, the relative semantics of the two examples shows that the respective adjectives cannot be contained in copula relative clauses: Olwen is not ‘old’ and ‘a friend’, just as Gary is not ‘complete’ and ‘a fool.’

The second type of evidence Yamakido presents is the fact that, as the data below show, if, in English you have a present tense relative clause embedded under a matrix future clause, its tense is limited to either the speech time (the present) or the event time (the future) (see Yamakido, 2000:593-598):

10a) [The entry that is best] will win
Speech time: ‘The entry that is best *now* will win at future time’
Event time: ‘The entry that is best *at a future time* will win *at that future time*’

10b) ?*[The entry that is best in the previous year] will win
(intermediate time reference)

By adding a temporal adverb, as in 10b, one is forced to construe the tense of the relative as neither the speech time nor the event time and the sentence is ungrammatical.

According to Yamakido, present tense relative clauses embedded within matrix future tenses can only refer to either the speech time or the event time and cannot pick out any intermediate time occurrences in between the two. Such a constraint is not found with attributive adjectives:

10c) [the previous year’s best entry] will win

Yamakido writes (2000:594): “plainly there is no unacceptability in this example, nor any difficulty giving it [an] intermediate reading....That is, *the previous year’s best entry* clearly can refer to an entry that is best at some future time lying in the year prior to the time that it wins. Thus, multiple options are open for temporal reference with an attributive A”.

Using this difference in temporal semantics between present tense relatives and (present tense) adjectives, Yamakido shows that Japanese pronominal adjectives are not embedded within a relative clause — thus they cannot be relative clauses. As can be seen from the examples below, Japanese displays the same temporal semantics as English (due to pressures of space, I have omitted the full paradigm of examples which Yamakido presents):

11) *Taroo-wa [eki-de kinoo nai-te i-ru otoko] -o ototoi mise-de mi-ta
T-TOP station-at yester. cry-PROG-PRES man -ACC day-before store-at see-PAST
‘The day before yesterday Taroo saw at the store the man who was [literally ‘is’] crying at the station yesterday.’

11 above shows that, just as in English, Japanese present tense relative clauses are not acceptable with an intermediate reading. Present tense attributive adjectives, on the other hand, can refer to the matrix event time (12a), the speech time (12b) or an intermediate time (12c):

12a) Taroo-wa [taka-i e] -o ka-tta
T-TOP expensive-PRES painting-ACC buy-PAST
‘Taroo bought an expensive painting/ a painting that is/was expensive.’

12b) Taroo-wa [ima-wa totemo taka-i e] -o 10-nen mae ka-tta
T-TOP now-TOP very expensive-PRES painting-ACC 10-year-ago buy-PAST
‘10 years ago Taroo bought a painting which is very expensive now.’

12c) [Kinoo-no subarashi-i konsaato] -wa sakunen NY-de dai-ninki da-tta
yesterday-GEN terrific concert -TOP last year NY-in very-popular COP-PST
‘Yesterday’s terrific concert was very popular in New York a year ago.’

Yamakido writes (2000:597): “*subarashi-i* ‘terrific’ holds yesterday, a time intermediate between one year ago, the time of the matrix predicate *dai-ninki* ‘very popular’, and now, the speech time.” Yamakido does not develop a proposed syntactic

analysis for attributive adjectives in Japanese; she simply concludes that a copular relative clause analysis for Japanese attributive adjectives cannot be correct and that "once again we see that A-N modifying relation appears to be semantically "richer" — temporally less restricted — than the CP-N modifying relation (Yamakido, 2000:598)."

If Japanese adjectives are not relative clauses but 'normal' attributive modifiers, then, within the research program I have been carrying out over the last few years, it makes sense, initially at least, to think of them as being just like adjectives in languages such as English and Chinese: i.e., as participating in the *Universal AP-related Functional Hierarchy*. This hypothesis runs into a problem, however: according to Fukui (1995), Japanese may lack functional projections entirely. If Fukui is correct and Japanese does indeed lack a functional hierarchy (and bearing in mind the precept that overall language variation be restricted to the functional domain of the lexicon), then we predict one consequence of importance for this thesis — Japanese must also lack AOR.

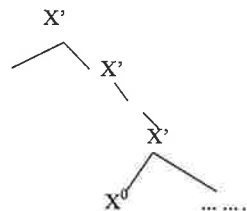
2.1.2 On the nature of adjectival modification in Japanese

In Chao, Mui & Scott (2002), we argue that "Fukuian" style lexical projections appear above "Cinquean"-style functional projections. Abstracting away from this specific hypothesis, which was developed to account for the two types of modification pattern we find in Chinese, the "Fukuian" and "Cinquean" versions of clausal structure provide us with two ways of looking at syntactic structure: the former, essentially lexically driven; the latter, functionally driven.

Fukui (1995) has argued that a Fukui & Speas-style (1986) syntactic structure is the correct one for describing modification in Japanese. Later in this paper, I shall propose the *The Semantic Zones Hypothesis*. I argue that one consequence of this hypothesis is that, for Japanese, it lends direct support to Fukui's (1995) "N" analysis for the Japanese "DP" (which I reanalyse in terms of ModP in the sense of Rubín, 1994 and 2002). In this section, therefore, I introduce Fukui (1995), as his general framework is important for the argumentation that I shall be developing later.

In his version of X-bar Theory (originally developed in Fukui & Speas, 1986), Fukui distinguishes two types of category: functional projections, which have a unique specifier position, a single complement position and project (in certain circumstances) up to XP level; and lexical projections, which are freely iterable (freely iterable items include adjectives and pre-verbal 'auxiliary' elements; iteration being constrained in the grammar by the Projection Principle), but which only ever project up to the X' level. According to Fukui's thesis, Functional Projections follow the 'standard' X-bar schemata, while Lexical Projections appear as follows:

Lexical Projections:
13)



Within FPs, the relation between the specifier position and its head is in terms of "Spec-Head" agreement. Fukui is quite specific in his definition of the term "specifier": a specifier refers to an element that "closes off" its category. Therefore, the XP level is a "closed" category level and only functional projections have specifiers. Fukui posits *The Functional Projection Theorem*: "that a Functional head projects up either to a single-bar level or to a double-bar level depending on the presence/absence of Kase to be discharged to its specifier position (Fukui, 1995:88)." If a functional projection is able to assign Kase (whereby "Kase" means both Case in the standard sense and functional features such as nominative, genitive and +WH), then a specifier position appears; otherwise FPs stop at the single bar level (for example, elements that do not assign F-features include items such *that*, *to* and *the*). While I shall not be discussing the technicalities of Fukui's hypothesis in any further detail (I will not be discussing *The Saturation Principle*, for example), a basic critique of some of the problems associated with his approach can be found in Ikeda (1997:101-106).

Of direct relevance to this thesis is the fact that Fukui claims 1) that Japanese lacks a functional category D and 2) that Japanese determiners do not bear the characteristics of functional categories. Given this fact and given Fukui's framework, it follows that Japanese "NPs" are never closed off (there is no DP to close them off) and so are, in fact, projections of N'. Furthermore, Fukui claims that Japanese has a defective INFL category that does not project to IP (so I' can never be closed off) and that Japanese lacks complementisers completely (see Fukui, 1995:Chapter 4). Fukui's conclusion is that Japanese is a "SPECless" language (in the sense of specifier as defined in Fukui, 1995) in that it lacks elements that close off (functional) category projections. As is pointed out in Ikeda (1997:102), this is not the same as saying that Japanese lacks functional projections entirely³, but rather that the projections only project as far as the X' level. However, within his system, the "defective I" category is an anomaly. Therefore, I think it is true to say that Fukui would prefer to claim that Japanese lacks FPs entirely (see also Kuroda, 1988): "the overwhelming superficial differences between English and Japanese can basically be reduced to the fact that English has a rich set of Functional Categories with agreement features, whereas Japanese lacks such syntactic categories; Japanese either totally lacks Functional Categories (if the existence of 'very defective I' can somehow be eliminated), or, even if it has one of them, namely, I, this category does not have any agreement features, unlike the corresponding Functional category in English (Fukui, 1995:133)."

Fukui's framework has a number of consequences for adjectives and their linear ordering. However, one "big" consequence with respect to the research program outlined in Scott (2002a), is the following: if we assume the Cinquean premiss that the ordering of adjectives and adverbs is licensed by a rigidly fixed functional hierarchy, we would expect that, if Japanese lacks such a hierarchy, it will not then exhibit adjectival or adverbial ordering restrictions. And this is exactly what we find:

- | | | |
|-------------------------------|-------------------------|------------------|
| 14a) ookii shikakuu akai hako | (size > shape > colour) | |
| big square red box | | |
| 14b) ookii akai shikakuu hako | (size > colour > shape) | |
| 14c) shikakuu ookii akai hako | (shape > size > colour) | |
| 14d) shikakuu akai ookii hako | (shape > colour > size) | |
| 14e) akai ookii shikakuu hako | (colour > size > shape) | |
| 14f) akai shikakuu ookii hako | (colour > shape > size) | (Ikeda, 1997:51) |

³ In fact, to be specific, Fukui's claim is that Japanese lacks FPs with f-features (Fukui, 1995:Ch. 4).

The data that Ikeda gives here only includes VAs, but note that any combination (in any order) of NAs and VAs together (or NAs modifying other NAs) is also possible. To my knowledge, the only work to examine adjective ordering in any detail in Japanese is Ikeda (1997). She states (and this is, apparently, also mentioned elsewhere in the literature although I am unable to find any sources) that AOR in Japanese do not exist. So, for example, we see from Ikeda that the adjectival hierarchy SIZE > SHAPE > COLOUR does not seem to hold for Japanese. She writes; "there are some differences with respect to the degree of naturalness. For instance, the most natural one might be (e). However, we could say that (a) – (f) are all equally acceptable, and this shows serialisation does not seem to hold among *i-* and *na-* adjectives (Ikeda, 1997:51-52)." In fact, the native speakers I interviewed found all of the above examples equally acceptable. Conflicting data is found in Hetzron (1978), who considers Japanese to be a language that displays AOR, but one which he classifies (along with Spanish) as one of his "*Big*"-fronting languages: i.e., a member of the set of those languages which regularly front the size adjective (usually *big*) to first position in the adjectival series:

- 15) ookii kirei na akai booru
big pretty red ball

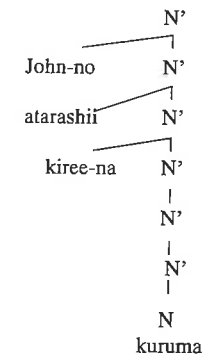
(Hetzron, 1978:172)

Again, according to my native speaker informants, all of the above orderings are acceptable and none is "marked" in any way.

There is a paradox here, since it has been claimed elsewhere in the literature that ordering restrictions *do* occur for AdvPs in Japanese. Pozzobon (2001) applies Cinque's adverbial hierarchy to Japanese and shows that, by and large, it adheres to his universal ordering restraints (suggesting, of course, that adverb-related functional projections are indeed present). She shows that there are some small, even negligible, differences between Cinque's hierarchy and the one she proposes: for instance, she tentatively concludes 1) that Japanese has a second epistemic which may be Mood_{irrealis} found after the "subject oriented" projections Mod_{Necessity} and Mod_{Possibility}; and 2) that VoiceP is found quite low down in the hierarchy. However, as I have said, these differences are, at best, minimal. Likewise Korean, a language whose syntax is closely related to that of Japanese, has been shown by Lee (1999) to have lower and higher AdvPs which follow precisely Cinque's (1999) hierarchy. Thus, this research at least, points to the fact that Japanese has adverbial-related functional projections, in which case we would expect it to also have adjectival functional projections. And, of course, if Japanese has adjectival functional projections, it should also display AOR. But it seems that it does not. Thus, Japanese displays functional hierarchy in the verbal domain but not in the DP domain. A similar paradox is found in Chinese: Chao & Mui (1999; 2000) argue that Cantonese displays the full hierarchy of clausal functional projections in the verbal domain but Chao, Mui & Scott (2002) show that this is not (necessarily) the case with the nominal domain in Chinese. Within a strict Cinquean-style framework, it is theoretically undesirable to claim that one set of phenomena applies in one domain but not in another, related one. For the moment, I shall leave this paradox (but I shall return to it in my conclusion) and describe one other feature of Japanese adjectives.

In the following two trees and glosses, note the Fukui-style X' bar structure with respect to the trees and the English translation with respect to the glosses (both trees and their respective glosses are from Ikeda, 1997:103):

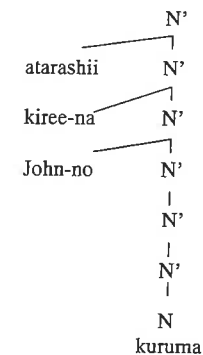
16a)



John-no atarshi-i kiree na kuruma
J- GEN new-PRES pretty NA car

'John's beautiful new car'
(or, 'a beautiful new car, which is John's')

16b)



'John's car, which is new, and which is beautiful'

This data shows that Japanese allows adjectives to be preposed before possessor genitive phrases. In fact, "stacked" adjectives, too, may also be preposed (Ikeda, 1997:94):

- 17a) genki-na shiroi Jiroo no koinu
lively white Jiroo-GEN puppy
'Jiroo's puppy, which is lively, and which is white'

- 17b) akai kiree-na Mary no kasa
red pretty Mary-GEN umbrella
'Mary's umbrella, which is red, and which is pretty'

What Ikeda does not tell us is whether these stacked examples are ambiguous: in other words, whether in 17b, one can apply *kiree na* 'pretty' to Mary for example, and *akai* 'red' to 'umbrella', to give: *Pretty Mary's red umbrella*.⁴

Ikeda's English translations of the examples where adjective phrases come before possessor genitives indicate non-restrictive modification. At first glance, this seems to constitute evidence that the Japanese adjectives here are modifying indirectly (I shall have more to say about this below). The judgements here are subtle and I cannot claim to be correct about this, but my native speakers (once I'd pointed out the difference between restrictive and nonrestrictive interpretations) didn't detect any difference in restrictiveness between the two examples. Now, this may indicate that "normal" pronominal adjectival modification in Japanese (as exemplified in tree 16a) is in fact nonrestrictive and hence all adjectival modification in Japanese is (nonrestrictive) indirect modification. This is what is claimed in Sproat & Shih (1998 & 1991).

As I mentioned in Scott (1998 a/b), indirect modification is a term first introduced by Sproat & Shih (1998; 1991). In both papers, S&S discuss AOR (with particular reference to English and Mandarin). While acknowledging that restrictions occur in English, they state that, at first sight, that no such restrictions are evident in Mandarin:

- 18a) English: nice round plate *round nice plate
18b) Mandarin: hao-de yuan-de pan-zi yuan-de hao-de pan-zi
 good-DE round-DE plateround-DE good-DE plate

(S&S, 1988:46466)

Yet, in the Chinese examples above, the adjectives are modified by the particle *DE* which is obligatorily used to mark possessives and relative clauses (thus the Chinese examples could be paraphrased as *a plate which is good, which is round*). When the *DE* disappears, Mandarin displays the same ordering restrictions as English:

- 18c) Mandarin: hao yuan pan-zi *yuan hao pan-zi
 good round plate **round good plate*

(S&S, 1988: 466)

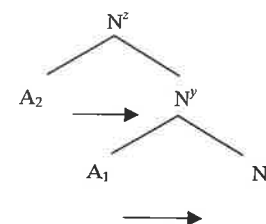
S&S call the first type of modification *indirect* and the second type *direct*. In their 1991 paper, they note (pp.567-568) that an adjective which *directly* modifies its head noun assigns its θ -role(s) directly to its sister (the head noun itself) in two ways: through either a parallel or hierarchical structure. Hierarchical direct modification is illustrated below (arrows indicate θ -role assignment):

⁴ According to my native speaker informants, both of these structures are indeed ambiguous. I explain the nature of this ambiguity in Scott (2002c). Note that, in addition to attributive adjectives, what Ikeda terms descriptive genitive phrases (in bold below), may also either precede or follow possessor genitive phrases in Japanese (Ikeda, 1997:1):

Mary no **kinu no** sukaafu vs. **kinu no** Mary no sukaafu both = 'Mary's silk scarf'
M-GEN silk-GEN scarf

kinu no Mary no sukaafu both = 'Mary's silk scarf'

19)

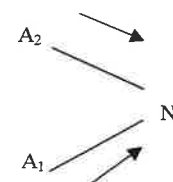


(S&S, 1991:568)

As can be seen, each adjective assigns a θ -role directly to its sister and the whole structure is hierarchical; the "first" adjective (the one closest to the head noun) having direct scope over the noun, and the "second" adjective (the one further away from the head noun) having scope over both the modified head noun and the first adjective which modifies it.

With parallel direct modification, adjectives still assign their θ -roles directly to the head, but each adjective assigns its role independently of the other, both having simultaneous and equal scope over the head noun:⁵

20)



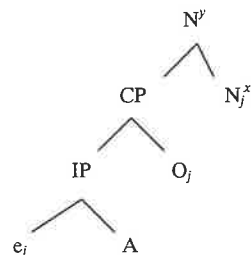
(S&S, 1991: 568)

An example of parallel direct modification in English would be something like *a luxurious, hot, steaming bath* or *a sexy, translucent, plastic box*. According to S&S, languages which only display direct modification include English, Dutch, Kannada and Mokilese. S&S argue that whereas direct modification in Mandarin and English is nearly always hierarchical, French seems to exclusively display parallel direct modification (although as I show in Scott 2002b, this is probably not the case).

With indirect modification, S&S state that "the adjective's θ -role(s) are associated with that of its modifiee indirectly by coindexation. In the case of the *de*-modifiers in Mandarin, we shall argue that the modifier is a relative clause, this variable being bound by an operator which is coindexed with the head of the entire noun phrase (S&S, 1991:567)." S&S argue that Japanese, Thai and Arabic are languages that typically modify only indirectly. Unlike direct modification, S&S show (among other things) that 1) indirect modifiers, like parallel direct modifiers, are not subject to AOR and that 2) there is often evidence to suggest that indirect modifiers are behaving syntactically as relative clauses or appositives. S&S propose the following structure for indirect modification:

⁵ S&S use the tree notation developed by Goodall (1987) for parallel structures.

21)



(S&S, 1991:567)

Mandarin Chinese, then, is a language that displays both indirect and direct types of modification pattern.

S&S's central claim is that cross-linguistic adjectival modification is not a unitary phenomenon, and that AOR only obtain "iff the adjectives involved are hierarchical direct modifiers (S&S, 1991:568)." Even though they do not mention this, I interpret S&S's two main syntactic types of modification structure as follows: both direct modification structures may result in either restrictive or non-restrictive modification; indirect modification structures may only result in non-restrictive interpretations. Although S&S's work (in particular their data) has been criticised (see Scott 1998a and Paul, 2002), nevertheless if we use their insights, it seems (as they themselves state) that Japanese adjectives are prime candidates for indirect modifiers:

- 1) they do not conform to AOR patterns (and in fact can even modify the head nominal "across" its possessor genitive phrase)
- 2) they have generally been analysed in the literature as relative clauses;
- 3) and semantically, at least according to Ikeda's (1997) English translation, they result in non-restrictive interpretations.

One further piece of evidence that Japanese attributive adjectives are indirect modifiers is that, unlike in English and many other languages (Jackendoff, 1977; Chomsky, 1977) Japanese non-restrictive relatives can actually stack:

- 22a) People who go to MIT who like math will get the job
 *John, who goes to MIT, who likes math, will get the job
 (Chomsky, 1977:66., cited in Fukui, 1995:125)
- 22b) [NP [S Osaka-(de)-no kokusai-kaigi-ni sanku-suru koto-ni-natte-iru] [S Amerika-kara kaette-kita bakari]- no John]- wa ima Tokyo-no hoteru-ni tomatte-imasu
 Lit. 'John, who is supposed to attend the international conference in Osaka, who just returned from America, is now staying at a hotel in Tokyo'

So we cannot use stacking as an argument against the indirect modification view. However, I wish to argue for two reasons that Japanese cannot display indirect modification. Firstly, as we have seen, Yamakido (2000) has shown that Japanese attributive adjectives do *not* display the characteristics we associate with relative clauses and indirect modifiers: indirect modification predicts non-restrictive and,

importantly, intersective interpretations. Thus, the fact that nonrestrictive relative clauses in Japanese can be stacked is, I feel, a red herring.

Second, note the following Larsonian-style data mentioned in Nishiyama (1999:219. fn. 25):

- 23a) A beautiful dancer = someone who is beautiful and a dancer (intersective)
 = someone who dances beautifully (non-intersective)

- 23b) A dancer who is beautiful
 = someone who is beautiful and who is a dancer (intersective)

Modifiers are ambiguous between intersective and non-intersective readings whereas relative clauses are always unambiguously interpreted as intersective. If Japanese adjectives are relative clauses and/or are only indirect modifiers, we expect them to be unambiguous. Nishiyama notes in a footnote (1999:219. fn. 25) that, while the judgement itself is a subtle one, the Japanese equivalent of a *beautiful dancer* does seem to admit ambiguity; certainly none of the native speakers that I questioned could get the internal adverbial reading. Many of them said that this was due to the semantics of *utsukushi-i* (in Larson's 1999 terms, this would be an "A"-analysis!!): this adjective can only be used for externally beautiful things. However, my native speaker informants provided me with the following example:

- 24) hanayaka na dansaa 'a spectacular/"showy" dancer'
 spectacular NA dancer

The adjective *hanayaka* may modify either the way the dancer looks (his/her clothes are spectacular or "showy") or the manner in which the dancer dances. The fact that the "internal" non-intersective readings are available show that Japanese adjectival modification is not indirect (and also not like relative clause modification).

Third, from my interviews with these native speakers, it seems that Japanese stacked adjectives are invariably interpreted as follows (even if AOR and focus phenomena do not seem to apply):

- 25a) kono [aka-i [ooki-i basu]] = this [red [big bus]]
 25b) kono [ooki-i [aka-i basu]] = this [big [red bus]]

Example (a) is interpreted as meaning 'that out of the set of big buses, we want the red big one'; while the (b) example means that 'out of the set of red buses, we want the big one'. In other words, this is direct modification — in fact it is *hierarchical direct modification*. I take this data to provide evidence:

- 1) not only against S&S's indirect modification analysis for Japanese but
- 2) also against the hypothesis (Gil, 1987) that Japanese has a non-configurational DP structure.

Thus, we conclude that Japanese D+A+N combinations at least⁶ are direct modification structures. The paradox here is that S&S's thesis would then predict

⁶ Note that I am not considering A+Possessor Genitive+N combinations.

Japanese to possess strict AOR since AOR only obtain "iff the adjectives involved are hierarchical direct modifiers (S&S, 1991:568)."

Finally, with respect to the question of whether Japanese possesses functional projections, and in particular, DP-internal functional projections, I will assume that the Japanese DP is not defective in any sense and that Japanese does have a functional hierarchy: even though the Japanese DP lacks overt manifestation of number (although, for example, Classifiers have been argued to head NumP), Japanese is a Classifier-type language and classifiers are archetypal (DP-internal) functional elements. Similarly, the fact that Pozzobon (2001) has shown that the adverbial/clausal functional projections are present means that, by Uniformity, we should extrapolate that DP-internal functional projections are also fully present. Moreover, there is ample evidence from the literature that Japanese displays the full array of FPs (see Takezawa & Whitman, 1998; Koizumi, 1995; Tateishi, 1989). I therefore conclude that the Japanese DP possesses the full array of functional hierarchy.

Let us, at this point, summarise:

The standard literature:

1. Japanese A+N combinations are merely relative clauses
2. Japanese A+N combinations display indirect modification, hence we predict no AOR
3. Japanese does not possess a functional hierarchy (or else the functional hierarchy is defective); hence we predict no AOR

My claims:

1. There is evidence from the semantics that Japanese A+N combinations are not relative clauses
2. There is evidence from the syntax and semantics that Japanese D+A+N combinations are direct hierarchical modifiers — predicting that Japanese should display AOR (it does not)
3. Japanese possesses the full array of functional projections — predicting that Japanese should display AOR (it does not)

2.1.3 Restrictive and nonrestrictive modification in Japanese

In the last section, we saw that Japanese can prepose adjectives in front of possessor genitives. Whitman (1981) presents evidence which, at first sight, may lead us to suppose that *only* possessor genitives allow adjective preposing:

- 26a) *san-biki⁷-no ko-no inu 'these three dogs'
 3 Q GEN this-GEN dog

⁷ Whitman considers *biki* to be a Quantifier. Normally, however, it is considered to be a Classifier — I leave open the question of its status as this is unimportant for my analysis.

- 26b) *kuro-i ko-no inu 'this/these black dog(s)'
 black this-GEN dog
- 26c) *kuro-i san-biki-no inu 'three black dogs'
 black 3 Q GEN dog

It seems that neither adjectives nor classifiers can be preposed before demonstratives and that adjectives cannot be preposed before classifiers. But this is not the case (note, however, that we do not find instances of the ordering [QP Det N]):

- 27a) [ao-i ano me-o] omoidasu dake-de-mo, kyuu-ni ai-ta-ku naru.
 blue that eye-ACC remember just-even immed. see-want start
 'Just remembering those blue eyes, (I) immediately start wanting to see
 (him/her).'
- 27b) [huto-i ni hon-no asi-ga] sukaato-kara hamide -te i -ta
 fat 2 Q GEN leg NOM skirt from protrude ing be PAST
 'Two fat legs were protruding from the skirt.'

(Whitman, 1981:412)

The difference, Whitman claims, between the examples in 26 and 27 is that the examples in 26 are naturally interpreted as restrictive and the examples in 27 as non-restrictive. He provides the following set of minimal pairs:

- 27c) a-no aka-i mi -wa doku da 'Those red berries are poison'
 that red berry TOP poison be
- 27d) *aka-i a-no mi-wa doku da
- 27e) a-no aka-i kuchibiru-wa doku da 'Those red lips are poison'
 that red lips TOP poison be
- 27f) aka-i a-no kuchibiru -wa doku da

Whitman writes (1981:416) that "all modifiers of NP which precede determiners must be interpreted non-restrictively. For sentential modifiers (including complex adjectival phrases in Japanese), this will be the unmarked case. But for simple adjectives...the non-restrictive interpretation is marked...and possible only in [certain] contexts." In the set of "all modifiers", Whitman also includes relative clauses and possessive genitives. Furthermore, he states that his observation (i.e., that what I paraphrase roughly as, *pre-determiner modifiers receive nonrestrictive interpretations and post-determiner modifiers receive restrictive interpretations*) can be extended to cover modification facts across all SOV languages.

Note that it is not clear by any means that Whitman is correct in his assumption that pre-determiner positioning equates with nonrestrictive readings and post-determiner positioning with restrictive readings: Tateishi (1988) agrees with Whitman's "intuitions" but Ikeda (1997) and all my native speaker informants felt that adjectives in both positionings could receive both interpretations (and in particular that pre-determiner adjectives could be restrictive; see Ikeda, 1997:Section

2.3.3).⁸ Nevertheless, I shall follow Whitman's intuitions in this paper with the proviso that they may eventually turn out to be wrong.

Whitman states that restrictive adjectival modification is found when the adjective functions as part of the identification of the NP referent. Here, in example 27c, the adjective is not the only means of identifying the referent (as it is in focussed or contrastive interpretations) but rather the predicating of the adjective 'red' to 'berries' "does not involve a separate assertion by the speaker. The speaker ... is not asserting that the berries in question are [red]; he assumes this fact has already been established by prior discourse or the circumstances of deixis (Whitman, 1981:412)." With the non-restrictive examples, the adjective does not serve to identify the referent at all since "it is difficult in general to identify lips by calling them red (Whitman, 1981:413)" — the speaker is merely adding extra information about the lips (as if to say: *And in addition, those lips are red*), and it does not matter whether the hearer is aware of the fact the lips were red or not. Whitman shows (1981:413) that nonrestrictive interpretations are constrained by the extent to which they can be associated with a speaker's subjective judgement: if an adjective expresses the speaker's subjective judgement, it "is difficult to interpret [it] as other than restrictive (Whitman, 1981:413)."

Whitman's observation, I argue, provides a simple yet elegant account for the following data. In Tateishi (1989), Tateishi shows that adjectives are not allowed to be preposed across a WH word (the orderings *John's red shirt* and *red John's shirt* are, of course, both acceptable in Japanese):

28a) [dare-no akai shatsu-o] John-ga nusun-da-no?
 who-GEN red shirt-ACC John-NOM steal-PAST-Q
 'Whose red shirt did John steal?'

28b) *[akai dare-no shatsu-o] John-ga nusun-da-no?

Tateishi (1988; cited in Ikeda, 1997:106-110)⁹ analyses these facts as involving adjective movement which he subsumes as part of a general phenomenon of DP-scrambling, and he argues 28b is ungrammatical because NP/DP is a barrier to movement. Not only does this data provide further evidence against the hypothesis (Gil, 1987) that Japanese has a non-configurational DP structure, it also shows, according to Tateishi, that Japanese has a SpecD position: i.e., the landing site for the adjective (*contra* Fukui (1995) who argues that Japanese has no determiners and so therefore the lexical projection N' consequently has no Spec position). Whatever the correct position for the landing site of the adjective, Tateishi's observation regarding adjective movement across a WH-phrase can be accounted for in a simple way if we apply Whitman's observations with respect to adjectives and the restrictive/nonrestrictive dichotomy: WH-words force a restrictive interpretation and

⁸ In addition, Whitman shows that modifiers which follow determiners are interpreted restrictively, but note that he does not state whether they *must* be interpreted restrictively (in other words, whether they only allow restrictive readings). My feeling is that they are probably ambiguous between the restrictive and nonrestrictive readings (just like *The philosophical Greeks* is ambiguous in English). I leave this question open for future research. Note in this respect, however, that I have claimed that Japanese displays direct modification and NOT indirect modification: direct modification allows both restrictive and nonrestrictive readings (again like the English *The philosophical Greeks*) so the hypothesis that Japanese pronominal adjectives are ambiguous with respect to (non)restrictive readings does not conflict with the direct modification analysis.

⁹ I have been unable to obtain this manuscript.

cannot be interpreted nonrestrictively, hence *akai* 'red', a modifying part of the complement of the WH-word *dare-no* 'whose', cannot under any circumstances receive a nonrestrictive interpretation (and still be construed as the complement of the WH-word).

Finally, I should like to add that Whitman's observation that D+A+N combinations are interpreted restrictively provides further evidence that D+A+N combinations in Japanese are examples of hierarchical direct modification structures: to repeat, if D+A+N combinations were indirect modification structures, as is claimed by S&S, we predict the adjective to be interpreted as non-restrictive. A+D+N combinations could either be indirect modification structures or parallel direct modification structures — both structures are non-hierarchical and may be interpreted nonrestrictively — but I leave this here as a question for further research.

Thus we see the following:

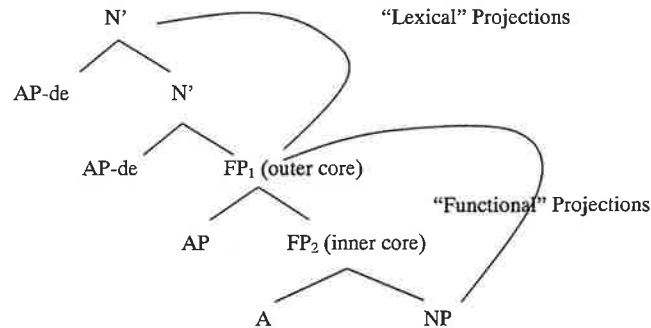
Japanese D+A+N Combinations:

1. There is evidence from the semantics that Japanese A+N combinations are not relative clauses
2. There is evidence from the syntax and semantics that Japanese D+A+N combinations are direct hierarchical modifiers — predicting that Japanese should display AOR (it does not)
3. Japanese possesses the full array of functional projections — predicting that Japanese should display AOR (it does not)
4. There is evidence that, in Japanese D+A+N combinations, the adjective is interpreted as restrictive (hence these structures are direct modification structures); and in Japanese A+D+N combinations, the adjective is interpreted as nonrestrictive (hence these structures are either indirect modification structures or parallel direct modification structures)

2.1.4 Extending the Research Program in Chao, Mui & Scott (2002)

To reiterate what I stated in the introduction to this paper, in joint work (Chao, Mui & Scott, 2002) I argue that, following Sproat & Shih (1998 and 1991), we only get direct modification within hierarchical configurations — i.e., when the adjective occupies either a head or Spec position of an AOR related functional projection. We suggested that indirect modifiers are "real" adjuncts (however these are to be represented, e.g., as adjoined phrases or as specifiers of DP-related projections) and we posited a direct link between overt modification patterns in Chinese and Tenny's (2000) notion of Semantic Zones. We also argued (following ideas originally outlined in Scott, 2002c that natural language displays two types of modification pattern, "hierarchical" and "lexical" with lexical projections projected above the functional ones:

29)



The “hierarchical” projections are Cinquean and Tenny-like: with respect to the DP, they instantiate a universal and invariable hierarchy of functional projections that follow the *Universal Hierarchy of “AP”-related Functional Projections* as outlined in Scott (1998 and 2002a). These projections are “Cinquean” in the sense that they are a rigid hierarchy of functional projections but “Tenny-like” in the sense that there are Semantic Zones that regulate interpretation depending on whether adjectives are projected in the inner, middle or outer functional cores.

Above them come the lexical projections. These are adjunction structures and follow the X-bar schema for lexical projections laid out in Fukui & Speas (1986) and Fukui (1995). These projections are lexically driven and are not functional projections *per se*. We argued that, with respect to Chinese (see data given later in this Paper), we witness an overt manifestation of the two hierarchies: the functional hierarchy displays direct (DE-less) modification and the lexical hierarchy displays indirect modification (modification using DE). Thus, the structure in 29 above combines the strict, functional hierarchy of the “Cinquean” approach in order to deal with AOR, combined with the looser, lexically of the “Fukuian” approach to deal with indirect modification structures. We also hypothesised that there is a “middle” way: an intermediate path combining Kaynean binary branching, antisymmetry and the view that FPs are not conceptually driven. We suggested that the Kaynean program allows implementation of the “Fukuian” lexical projection analysis: the result being indirect modification structures which are “loose” adjunction structures, non-compositionally linked to interpretation but which nonetheless *do* have functional projections.

In the rest of this paper, I extend that research program. I argue that it is not simply the case that all natural languages have the fixed schemata whereby lexical projections are projected above functional (hierarchical) ones. What I propose instead is that natural language makes use of *The Semantic Zones Hypothesis*. Again, to reiterate what I said in the introduction, this basically states that the (DP-internal) functional hierarchy — the hierarchical field of Semantic Zones — is capable of being completely suppressed in some languages (i.e., Japanese), resulting in lexical projections only — la Fukui for those languages; certain other languages (such as English) are incapable of suppressing the functional hierarchy and display the full array of functional projections at all times, resulting in only “Cinquean” style projections for those languages. Other languages (for example, Chinese and Greek) display mixed systems and have the option of suppressing or not suppressing the Semantic Zones hierarchy. Note that there are three direct consequences of this hypothesis for Japanese:

1. it lends direct support for Fukui’s (1995) “N” analysis for the Japanese “DP” (which I reanalyse in terms of ModP in the sense of Rubin, 1994 and 2002);
2. it provides an explanation as to why there are two classes of adjective in Japanese;
3. it explains why Japanese lacks AOR;

3.0 *The Semantic Zones Hypothesis*

The rest of this Paper concerns itself with the question of how a Cinquean-style hierarchy, a framework whereby the DP has a rich array of FPs, can deal with a language like Japanese, a language where there are no apparent ordering restrictions and where restrictive and nonrestrictive interpretations seem to be dependent on the presence of a DP-internal and a DP-external AP respectively. One possible way of dealing with this problem is, I suggest, to use Tenny’s (2000) notion of Semantic Zone as a springboard. As we have seen, Tenny’s Semantic Zones can be viewed as a direct extension of Cinque’s work on the nature of Clausal Functional Projections. For the purposes of this paper, I shall (unless otherwise indicated) when referring to Semantic Zones, be referring to DP-internal Semantic Zones. I show that we can integrate the notion of Semantic Zones with Rubin’s (2002) concept of ModifierP to account for whether or not languages display AOR. My hypothesis is as follows: certain languages are able to suppress completely the Semantic Zones hierarchy. When the Semantic Zones are suppressed (or “collapsed”), there is no internal hierarchy and hence no ordering restrictions with respect to modifiers in general. I claim that human language makes use of *The Semantic Zones Hypothesis*:

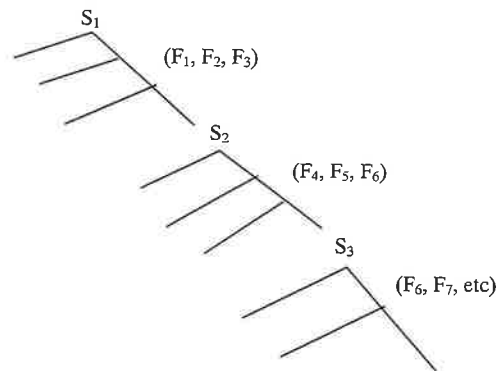
The Semantic Zones Hypothesis (Version 1)

Natural language either:

- 1) makes use of the full hierarchy of functional projections/Semantic Zones as suggested in Cinque (2000)/Tenny (2000); or
- 2) entirely suppresses the complete hierarchy of Semantic Zones

The Semantic Zones Hypothesis lays the locus of parametric variation squarely with the functional hierarchy (thus mirroring much current thinking), reflecting the idea that functional projections are responsible for core properties of the linguistic computation — in this case, distribution. With respect to the two options/parameters made available by the hypothesis, I suggest that English-style languages make use of the first option while Japanese-style languages make use of the second one (although, as we shall see, the picture is slightly more complicated than this). Thus, English-style languages display the full array of functional projections and we observe fixed AOR orderings whereas Japanese-style languages have de-activated the Semantic Zone region and consequently do not display AOR. It may well turn out (at this stage, this is a matter for further research) that within the English-style languages each Semantic Zone is itself subdivided into hierarchies of functional projections, along the following lines (where *S* = Semantic Zone and *F* = Functional Projection):

30)



and that various functional projections may group and order in certain ways *within* each Semantic Zone; Semantic Zones providing the broad “boundaries” or “borders”. When the clausal/nominal hierarchy is expressed, languages can choose whether and how to collapse the hierarchy into Semantic Zones.

Thus, I argue that English-style languages display the full array of functional projections and the full array of “ClassPs” (SizeP, SubjectiveCommentP, ColourP, etc). The ClassPs form what Leu (2001) terms “anchors” of modification — and as a consequence, we observe fixed AOR orderings. Various languages “collapse” the semantic zone region, among them Japanese, Chinese, Albanian and Greek.

One obvious question arising at this point is, what else happens when languages de-activate the Semantic Zones region. We would expect there to be other overt syntactic manifestations of this de-activation process, apart from simply a lack of AOR. I claim that languages which suppress the Semantic Zones hierarchy make use of Rubin’s ModifierP (ModP). In the next section, I shall briefly introduce Rubin’s work and I shall discuss the consequences of integrating Rubin’s ModP with my *Semantic Zone Hypothesis*.

3.1 Integrating Rubin’s (2002)¹⁰ ModP and *The Semantic Zones Hypothesis*

Rubin’s simple, central hypothesis is as follows:

“a substantive, empirically motivated, theoretically beneficial functional category exists in the domain of modifiers... :

[ModP Mod [XP...]]

This Mod hypothesis claims that the head Mod forms a functional shell at the root of all modifiers, i.e., that it is the topmost functional head of their extended projections. This proposal replaces the standard assumption, made perhaps merely by default, that modifiers, while unified as a notion, are nevertheless diverse in the nature of their structural form. For example, the data [below] present a variety of elements for which the label of “modifier” is appropriate, but to which a wide range of syntactic

¹⁰ Note Rubin’s work is, at the present time, still in draft form (although his forthcoming book is based substantially on his doctoral thesis Rubin, 1994).

category labels would normally be ascribed without question or concern [some of the following examples are relettered]:

- | | | |
|----|---|--------------------------|
| a. | ... the <u>very young</u> child | (AP) |
| b. | ... the child <u>playing checkers</u> | (VP) |
| c. | ... the child <u>under the table</u> | (PP) |
| d. | ... these <u>stone</u> benches | (NP) |
| e. | ... the book <u>that you are holding</u> | (CP) |
| f. | ... a movie <u>to see</u> | |
| g. | I <u>certainly</u> will think about it | (AdvP or AP) |
| h. | He left the stage <u>shaking his head</u> | (VP or SC) ¹¹ |

(Rubin, 2002:2)

Rubin argues that all the above underlined modifiers are examples of ModP “with the variable lexical content of the modifier embedded as, or in, XP (Rubin, 2002:2).” Rubin’s basic argument for postulating a functional ModP is that overt independent elements in the syntax, of necessity require characterisation as members of syntactic categories, which themselves are theoretical formalisations of the syntactic characteristics that sets of elements display.¹¹ Ruben shows that there are lexical items from a variety of languages (elements that are often called “linkers” in traditional grammatical description) that display functional characteristics and which are invariably realised every time modification takes place:

- | | | |
|------|--|--|
| 31a) | Binili niya ang bahay <u>na nasa probinsya</u>
bought he TOP house NA in-the provinces
‘He bought the house in the provinces’ | Tagalog “NA” |
| 32a) | Cutie <u>de la bibliotecă</u> conține niște cărți
box-the DE in library contains some books
‘The box in the library contains some books’ | Romanian “DE” |
| 32b) | na yiben zai <u>zhuozhi-shang de</u> shu
that one at table-top DE _c book
‘That book on the table’ | Chinese “DE _c ” ¹² |

In English, there is simply no overt element occupying the head position of ModP. In certain languages, Mod may manifest itself morphologically: so the attributive agreement endings found in German are the realisation of Mod in that language (see Rubin, 2002:Chapter 3), and the morpheme which is found on the ‘long’ adjective forms in Russian is also a realisation of Mod. Nevertheless, Rubin argues:

- there is a remarkable degree of overlap in how these elements consistently mark modification structures across different syntactic categories and modifier types (including for instance, adverbs, attributive adjectives, ‘attributive’ PPs (PPs modifying nominals), ‘attributive’ NPs, relative clauses, etc);

¹¹ This, and the next paragraph, are close paraphrases of the text from Rubin’s introduction.

¹² It is just a coincidence that both Chinese and Romanian use what, orthographically, seems the same element as head of ModP. Rubin attaches a sub-script “c” to Chinese “de” to distinguish it from Romanian “de”.

2. and, it is striking that when the same element occupies a non-modifier position, the “linker” is simply not present.

Thus, with respect to the second point above, note the following data:

- 33a) na nasa probinsya ang bahay Tagalog “NA”
 in-the provinces TOP house
 ‘The house is in the provinces’
- 33b) Cutia este la bibliotecă Romanian “DE”
 box-the is in library
 ‘The box is in the library’
- 33c) na yiben shu zai zhuozi-shang Chinese “DE_c”¹³
 that one book at table-top
 ‘That book is on the table’

As there is no modification in these predicative examples, no ModP is projected.

I claim that for the languages that collapse the hierarchy of Semantic Zones, ordering is irrelevant. However, these languages make use of Rubín’s ModP, whereby the default option is for the head of ModP to surface as an independent element (like Chinese DE or Tagalog NA); if this does not happen, then ModP is expressed as a morphological suffix.

The Semantic Zones Hypothesis (Version 2)

Natural language EITHER:

(Type-1 languages)

- 1 makes use of the full hierarchy of functional projections/Semantic Zones as suggested in Cinque (2000)/Tenny (2000); and elements acting as heads of ModP (Rubin, 2002) are either not found overtly at all (English) or are found morphologically (Russian; German);

OR:

(Type-2 languages)

- 2 suppresses the entire hierarchy of Semantic Zones in which case the default option is that overt lexical items serving as “linking” elements surface as heads of ModP (Rumanian; Chinese); otherwise, heads of ModP may again be found morphologically.

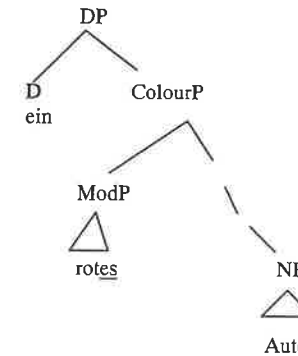
Note that *The Semantic Zones Hypothesis* unifies the “Cinquean” perspective on adjectival modification (strict hierarchical projections of FPs) with Rubín’s concept of ModP and, as such, unifies two accounts that, at first sight, seem to contradict each other.

The Semantic Zones Hypothesis predicts that, in Type-1 languages, we do not find overt instantiations of ModP as separate (overt) lexical items. This is because the Cinquean hierarchy shoulders the burden of regulating modification and its

¹³ It is just a coincidence that both Chinese and Romanian uses what, orthographically, seems the same element as head of ModP. Rubín attaches a sub-script “c” to Chinese “de” to distinguish it from Romanian “de”.

distribution. Thus, in Type-1 languages, ModP is relegated to being expressed only through morphological affixation. I provide an example from German to illustrate:

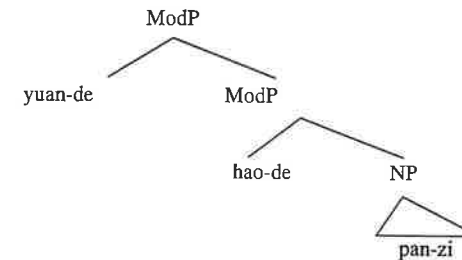
34)



ein rotes Auto ‘a red car’

The head of ModP here is the neuter agreement suffix *-es*. Note that this structure integrates the Cinquean/Tenny-style functional hierarchy with Rubín’s notion of ModP. An example of a Type 2 language structure is the following Mandarin Chinese sentence:

35)



yuan-de hao-de pan-zi ‘round good plate’
 round-DE good-DE plate

(S&S, 1988:465-466)

In terms of technical implementation, the “DE” (the linker) is head of ModP (see the discussion immediately below); whether the adjective is adjoined to the head or is found in SpecModP, I leave as an open question.

What is interesting is that Rubín argues that “linkers” all perform the semantics of “predicate intersection” (Rubin, 2002:8. fn. 13). Thus, commenting on the linker NA in Tagalog, Rubín writes: “NA does not add ‘descriptive content’ ... the category underlying NA, X as we’ve been calling it, plays a second-order role in interpretation.

Briefly, it introduces, in the sense developed in the Davidsonian paradigm of compositional semantics, the intersection of predicates, as opposed to the simple saturation of one (Rubin, 2002:13).” This “linker” is, therefore, performing exactly the same function as DE in the Chinese examples from S&S above (18; and repeated immediately below in 36): both DE and NA are overt manifestations of ModP and both DE and NA are linkers used in indirect (intersective) modification structures. Thus, in an ideal world we should find (although as we shall see, unfortunately, this is not the case) that in languages of the first type, modification is direct and can be interpreted either restrictively or nonrestrictively and that in languages of the second type, modification is indirect and is interpreted as nonrestrictive. For example, it predicts that Japanese (as a consequence of the language having its DP-internal Semantic field collapsed) displays only indirect modification (as is argued by S&S); however, I have shown that Japanese adjectives are hierarchical direct modifiers — and, of course, we know from Ikeda (1997) and Whitman (1981) that Japanese adjectives can be restrictive. However, with the tree structure I proposed above, this is not a problem. Rubin himself does not discuss the nature of ModPs when stacked, but even if they are adjoined (as I have proposed), one on top of the other, an adjunction analysis is still consistent with the hierarchical/scope interpretation facts found in Japanese. Thus I argue that Rubin’s ModPs are essentially adjoined structure (parallel in nature to Abney’s APs). And note, I also tentatively suggest here that Rubin’s ModP may be the semantic modification equivalent of the functional projection PredP (a projection that instantiates semantic predication — see Scott, 2002b).

Now, we have seen that one of the consequences of collapsing the Semantic Zone completely is that the hierarchy of functional projections is suppressed and modifiers can appear in any order. I hypothesise that another consequence of collapsing the Semantic Zones is that the very lack of Semantic Zones activates Rubin’s ModP and that functional elements like Tagalog NA and Chinese DE pop up as default expletive markers of modification. When the full array of Semantic Zones is present, the ClassPs from the AOR hierarchy regulate modification and so no modifying “linkers” are necessary (although some languages may show morphology attached to the modifiers). In these languages, modification is mediated via the AOR. However, when the Semantic zone hierarchy is suppressed, there is no functional hierarchy to regulate modification and so ModP carries out this task instead by default. Languages with fixed AOR (i.e., languages that have access to the full array of Semantic Zones and via those zones, to the full functional hierarchy) have no need to activate ModP overtly, and so ModP is manifested in these languages as either \emptyset or as inflectional morphology.

A further consequence of integrating my *Semantic Zones Hypothesis* with Rubin’s ModP is that we predict that adjectives in languages with suppressed semantic zones are not going to obey the AOR hierarchy:

- 1 as a consequence of the fact that their respective language has suppressed the functional hierarchy itself; and
- 2 as a consequence of the expletive linkers that emerge as heads of the category label ModP: the adjectives that are “attached” to them are no longer members of any ClassP; they have left their strict class membership and so no longer belong to the AOR hierarchy¹⁴

¹⁴ A similar suggestion is found in Leu (2001) where non-literal adjectives are inserted under non-Class-nodes; Leu also predicts that non-literal adjectives should not obey AOR since they no longer belong to an AOR class.

The following list provides a cross-linguistic overview of the two options:

Type-1 languages: Languages with full array of Semantic Zones (=functional hierarchy)

English, German, French, Finnish, Ibibio, Chinese, Greek

Type-2 languages: “Macro” Zone languages

Greek, Chinese, Japanese, Albanian, ?Hebrew (according to Gil, 1983)

The first thing to note about this list is that Chinese and Greek appear in both groups. Here again is the data from S&S:

- | | | |
|----------------|-------------------------------|-------------------------------|
| 36a) English: | nice round plate | *round nice plate |
| 36b) Mandarin: | hao-de yuan-de pan-zi | yuan-de hao-de pan-zi |
| | <i>good-DE round-DE plate</i> | <i>round-DE good-DE plate</i> |
| | | (S&S, 1988:46466) |
| 36c) Mandarin: | hao yuan pan-zi | *yuan hao pan-zi |
| | <i>good round plate</i> | <i>*round good plate</i> |
| | | (S&S, 1988: 466) |

Chinese is a language which makes use of *both* of the strategies that *The Semantic Zones Hypothesis* has to offer — not, of course, within the same DP. It has the option of either projecting a full “Cinquean” style DP *or else* projecting a “collapsed” DP. When the full Semantic Zones are present, Chinese displays fixed AOR with hierarchical direct modification. When the semantic zones collapse, the suppression of functional architecture forces an overt expletive element DE, the head of ModP, to emerge. In this case, AOR disappear and Chinese displays indirect modification. Thus, we see that a refinement of the hypothesis is needed: as it stands above, it is too strong and should not be phrased in terms of exclusive disjunction (*either...or....*) but rather in terms of inclusive disjunction (*and/or*). Now note the following data from Greek:

- | | | |
|------|-------------------------------------|---------------------------|
| 37a) | to meghalo ghermaniko piano | |
| | <i>the big German piano</i> | |
| | ‘the big German piano’ | |
| 37b) | to meghalo to ghermaniko to piano | |
| | <i>the big the German the piano</i> | |
| | ‘the big German piano’ | (Androutopoulou, 1996:20) |

There are two patterns of adjectival modification found in Modern Greek (see Scott, 1998a): the first above, obeys AOR while the second appears not to do so. Androutopoulou states that Modern Greek displays both *direct* and *indirect* modification: the fixed, “determinerless” modification being direct, the second case of modification, entailing the addition of the definite determiner modifying each XP (a phenomenon Androutopoulou calls *Determiner Spreading*), being indirect. As might be expected, in cases of Determiner Spreading, AOR appear relaxed and the ordering

determiners is a feature of SOV type languages like Japanese (it is found in Mongolian, Korean and Turkish, for example). In this, he is wrong: Chinese also has pre-determiner indirect modification:

40a) nei ben hao de shu 'That good book'
 that Cl good DE book

40b) hao de nei ben shu

But:

40c) nei ben hao shu 'That good book'
 that Cl good book

40d) *hao nei ben shu

Note that DE-less (direct) modification structures are ungrammatical before a determiner. *The Semantic Zones Hypothesis* may help predict why this is: Chinese, which is not an SOV language, can do this, because it collapses the Semantic Zones field, triggering the emergence of "non-configurational" structures.

The Semantic Zones Hypothesis may also provide a solution to the rather inconclusive discussion found in Chapter 1 of Scott, 2002b with respect to outer zone modifiers and their ordering restrictions. It may be the case that the broad Semantic Zones suggested by Tenny can themselves be further collapsed into just two major zones of modification: an inner and an outer zone. It could well be that adjectives found only in the outer zone (adjectives like *former*, *apparent*, *alleged*; see the discussion in Paper 1) do not display marked ordering restrictions amongst themselves. It may even be that AOR ClassPs only pertain to the inner zone and that languages like English in actual fact collapse the outer zone. Certainly, we could use the functional hierarchy posited in Chao, Mui & Scott (in preparation) to explain why we do not find orderings such as **possible every candidate* even in focussed readings. This is because adjectives generated outside DP/QP in the higher "Fukuian"-style lexical projections are obligatorily interpreted as nonrestrictive while an adjective like *possible* can never actually be construed as such.

One major (and interesting) topic for further research still remains: why does Japanese display adverbial orderings (VP domain orderings) and not adjectival orderings (DP domain orderings)? In other words, why does Japanese display functional hierarchy in the verbal domain but not in the DP domain? I have no immediate theoretical answer to this question; all I can suggest is that, for some reason, Japanese has collapsed the functional hierarchy in the DP but not in the IP/VP. An overt manifestation of this is surely the fact that Japanese DP morphology is non-agglutinative, in fact it is extremely impoverished, whereas there is rich agglutinative morphology on the verb. As I stated in the text, within a strict Cinquean style framework, it is theoretically undesirable to claim that one set of phenomena applies in one domain but does not apply in another, related domain. This may not be a problem at all, however. In fact, it may be an example of a phenomenon that is found across all human languages: Bach (p.c.) has suggested to me that, in his view, parameters within languages are not global: there can be variation within individual languages. Thus, a language may show certain phenomena in one domain but show different phenomena in another (see Bach, 1974 for the original observation). Jackendoff endorses a similar view: "the innateness of Universal Grammar in

phonology and syntax does not imply overwhelming uniformity in these aspects of language: languages can pick and choose among a repertoire of possibilities, some of which are even mutually inconsistent with each other (i.e. accusative vs. ergative case marking) (Jackendoff, 1996:545)." A hypothetical (but unattested) case would be the radical language that is configurational in the DP and non-configurational in the VP. Another hypothetical case would be that language that is agglutinative in one domain but isolating in another. In Bach's view, my observation of the way that Japanese works is an example of this: Japanese displays functional hierarchy in the verbal domain but not in the DP domain. Thus Bach believes that individual languages may not be "uniform" within themselves. The idea that languages do not set parameters once and for all, but may language-internally set different parameters over different domains, would be an interesting topic for further research. I hypothesise that, although syntactic FP architecture and the ordering of hierarchies (both clausal and nominal) is universal, languages can choose to express them or not in a particular domain.

41) "Activated" Functional Modification Domains

	Clausal Adverbial Domain	DP domain
Chinese	yes	yes (reduced) ¹⁷ & no
Japanese	yes	no
English	yes	yes
???A	no	yes
???B	yes (reduced) & no	yes
Non-configurational	no	no

The question is then, whether there exists a language (language ???A in the chart) that has suppressed its clausal functional hierarchy (and hence has no adverbial ordering restrictions) but whose DP functional architecture is fully expressed. Similarly, there may be a language (language ???B in the chart) that shows the full array of DP functional architecture but can choose whether or not it expresses the architecture in the clausal domain (just as Chinese can "choose" whether or not to express it in the DP domain).

5.0 Conclusion

In this paper I have extended the initial insights first formulated in Chao, Mui & Scott (in preparation) to Japanese. In doing so, I have proposed *The Semantic Zones Hypothesis* and integrated this with Rubin's (2002) conception of ModP, thus unifying the "Cinquean" perspective on adjectival modification with that of Rubin (unifying two accounts that, at first sight seem to contradict each other).

With respect to Japanese itself, *The Semantic Zones Hypothesis*:

- 1) provides direct support for Fukui's (1995) "N" analysis for the Japanese "DP" (which I reanalyse in terms of ModP in the sense of Rubin, 1994 and 2002);
- 2) provides an explanation for why we find two classes of adjective in Japanese; and
- 3) provides an explanation for why Japanese lacks AOR.

¹⁷ For the idea that the DP-internal functional hierarchy in Chinese is present but reduced see Chao, Mui & Scott (2002).

On a wider linguistic level, *The Semantic Zones Hypothesis* is able to account for why some languages display AOR and others not. Lack of AOR is seen as a result of localised (i.e., DP-internal) suppression of functional architecture.

References

The following abbreviations are used throughout:

CLAO = Cahiers de Linguistique Asie Orientale.
 CLS = Proceedings of The Chicago Linguistic Society
 CUP = Cambridge University Press
 GLOW = Generative Linguists of the Old World
 LI = Linguistic Inquiry
 NELS n = Proceedings of the *n*th Annual Meeting of the North Eastern Linguistics Society
 OUP = Oxford University Press
 WCCFL n = Proceedings of the *n*th West Coast Conference on Formal Linguistics
 WP = Working Papers

- Abney, S., 1987. *The English Noun Phrase in its Sentential Aspect*. PhD dissertation, Cambridge, Mass.: MIT.
- Alexiadou, A. & C. Wilder., 1998. "Adjectival Modification and Multiple Determiners", in A. Alexiadou. & C. Wilder (eds.), 1998., 302-332.
- Alexiadou, A. & C. Wilder (eds.), 1998. *Possessors, Predicates and Movement in the Determiner Phrase*. Amsterdam/ Philadelphia: John Benjamins.
- Androutsopoulou, A., 1996. "The Licensing of Adjectival Modification", *WCCFL* 14, 17-32.
- Bach, E., 1974. *Syntactic Theory*. New York: Holt Rinehart Winston.
- Backhouse, A., 1983. "Have All the Adjectives Gone?", *Lingua* 62, 169-186.
- Belletti, A. & L. Rizzi (eds.), 1996. *Parameters and Functional Heads: Essays in Comparative Syntax*. New York, Oxford: OUP.
- Bhat, D.N.S., 1994. *The Adjectival Category: Criteria for Differentiation and Identification*. Amsterdam: John Benjamins.
- Bolinger, D., 1967. "Adjectives in English: Attribution and Predication", *Lingua* 18, 1-34.
- Carnie, A., 1995. *Non-Verbal Predication and Head Movement*. PhD dissertation, MIT.
- Carnie, A., 2000. "On The Definition of X⁰ and XP," *Syntax* 3, 59-106.
- Chao, W. & E. Ki-Mei Mui., 1999. "Adverbs in Cantonese and the Universal Base Hypothesis," *SOAS WP in Linguistics and Phonetics* 9, 489-508.
- Chao, W. & E. Ki-Mei Mui., 2000. "Clausal Adverbs and Clausal Structure in Cantonese," *CLAO* 29, 3-39.
- Chao, W., E. Ki-Mei Mui & G.-J. Scott., in preparation. *Adjectival Modification in Chinese*. Ms., SOAS.
- Chomsky, N., 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N., 1993a. "A Minimalist Program for Linguistic Theory", in K. Hale & S. J. Keyser (eds.), 1993., 1-52.
- Chomsky, N., 1995a. *The Minimalist Program*. Cambridge, Mass.: The MIT Press.
- Chomsky, N., 1995b. "Base Phrase Structure", in G. Webelhuth (ed.), 1995., 383-439.
- Cinque, G., 1994. "On the Evidence for Partial N-Movement in the Romance DP", in G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi & R. Zanuttini (eds.), 1994., 85-110.
- Cinque, G., 1999. *Adverbs and Functional Heads. A Cross-Linguistic Perspective*. Oxford: OUP.

- Cinque, G. 2000. *Adverbial PPs: Implications for Clause Structure*. Handout of talk given at SOAS, October 2001.
- Cinque, G., 2002. *Functional Structure in the DP and IP: The Cartography of Syntactic Structures Vol. 1*. New York: Oxford University Press, Inc.
- Cinque, G., J. Koster, J.-Y. Pollock, L. Rizzi & R. Zanuttini (eds.), 1994. *Paths Towards Universal Grammar: Studies in Honor of Richard S. Kayne*. Washington, DC: Georgetown University Press.
- Comrie, B., 1989. *Language Universals and Linguistic Typology*, 2nd edn. Oxford: Blackwell.
- Crain, S & H. Hamburger., 1992. "Semantics, Knowledge, and NP Modification", in R. Levine (ed.), 1992., 372-401.
- Dixon, R., 1982. *Where Have all the Adjectives Gone?* The Hague: Mouton.
- Fukui, N., 1995. *Theory of Projection in Syntax*. Stanford: CSLI Publications.
- Fukui, N. & M. Speas., 1986. "Specifiers and Projection", *The MIT WP in Linguistics* 8, 128-172.
- Georgopoulos, C. & R. Ishihara (eds.), 1991. *Interdisciplinary Approaches to Language*. Dordrecht: Kluwer.
- Gil, D., 1983. "Stacked Adjectives and Configurationality", *Linguistic Analysis* 12, 141-158.
- Gil, D., 1987. "Definiteness, Noun Phrase Configurationality, and The Count-Mass Distinction" in E. J. Reuland & A. G. B. ter Meulen (eds.), 1987., 254-269.
- Goodall, G., 1987. *Parallel Structures in Syntax: Coordination, Causatives, and Restructuring*. Cambridge: CUP.
- Grimshaw, J., 1991. *Extended Projection*. Ms., Brandeis University, Waltham.
- Haegeman, L. (ed.), 1997. *The New Comparative Syntax*. Harlow, Essex: Longman.
- Henne, H., O. L. Rongen & L. J. Hansen., 1977. *A Handbook of Chinese Language Structure*. Oslo - Bergen - Tromsø: Universitetsforlaget (Scandinavian University Books).
- Hetzron, R., 1978. "On the Relative Order of Adjectives", in H. Seiler., 1978., 165-184.
- Higginbotham, J., 1985. "On Semantics", *LI* 16, 547-593.
- Ikeda, K., 1997. *Word Order Variation in Japanese Noun Phrases*. PhD dissertation, Georgetown University.
- Jackendoff, R., 1977. *X-bar Syntax: A Study of Phrase Structure*. Cambridge, Mass.: The MIT Press.
- Jackendoff, R., 1983. *Semantics and Cognition*. Cambridge, Mass.: The MIT Press.
- Jackendoff, R., 1997. *The Architecture of The Language Faculty*. Cambridge, Mass.: The MIT Press.
- Kim, M., 2001. *Does Korean have Adjectives?*. Abstract for paper presented HUMIT 01. www.fas.harvard.edu/~humit/Abstracts.html
- Koizumi, M., 1995. *Phrase Structure in Minimalist Syntax*. PhD dissertation, Cambridge, Mass.: MIT.
- Koopman, H., 2000. *The Syntax of Specifiers and Heads : Collected Essays of Hilda J. Koopman*. London: Routledge.
- Krifka, M., 1995. "Common Nouns: A Contrastive Analysis of Chinese and English", in G. Carlson & F. Pelletier (eds.), 1995., 398-411.
- Kuno, S., 1973. *The Structure of Japanese*, Cambridge, Mass.: The MIT Press.
- Kuroda, S.-Y., 1988. "Whether We Agree or Not: A Comparative Syntax of English and Japanese", *Linguisticae Investigationes* 12, 1-47.
- Kuroda, S.-Y., 1992. *Japanese Syntax and Semantics: Collected Papers*. Dordrecht: Kluwer.
- Laenzlinger, C., 2000. "French Adjective Ordering: Perspectives on DP-internal Movement Types", *GC@G (Generative Grammar in Geneva)* 1, 55-104.
- Larson, R., 1999. *Events and Modification in Nominals*. Ms., SUNY Stony Brook.
- Larson, R., 2000. "ACD in AP?", Handout of talk given at WCCFL 13.

- Larson, R. & H. Yamakido., 2001. *A New Form of Nominal Ellipsis in Japanese*. Paper presented at The LSA conference 2001..
- Larson, R. & S. Cho., 1999. "Temporal Adjectives and The Structure of Possessive DPs", *WCCFL 18*, 299-311.
- Lee, J.-E., 1999. "Korean Adverbs", *University of Venice Working Papers in Linguistics 9*, 161-180.
- Leffel, K. & D. Bouchard (eds.), 1989. *Views on Phrase Structure*. Dordrecht: Kluwer.
- Leu, T., 2001a. "A Sketchy Note on The Article-Modifier Relation," *GC@G (Generative Grammar in Geneva) 2*, 55-69.
- Leu, T., 2001b. *On Pre- and Postnominal Adjectives and The (Non-)Repetition of (Non-)Articles*. Handout given at Geneva Linguistics Weekend June 2001.
- Li, C. & S. Thompson., 1981. *Mandarin Chinese: A Functional Reference Grammar*. California: University of California Press.
- Longobardi, G., 1994. "Reference and Proper Names: A Theory of N-Movement in Syntax and Logical Form", *LI 25*, 609-666.
- Longobardi, G., 2001. "The Structure of DPs: Some Principles, Parameters and Problems", in M. Baltin & C. Collins (eds.), 2001., 562-603.
- Marantz, A., 1995. "The Minimalist Program", in G. Webelhuth., 1995., 349-382.
- Martin, S., 1975. *A Reference Grammar of Japanese*. New Haven and London: Yale University Press.
- Miyagawa, S., 1987. "Lexical Categories in Japanese", *Lingua 73*, 29-51.
- Murasugi, K., 1991. *Nouns Phrases in Japanese and English*. PhD dissertation, Storrs, Connecticut: University of Connecticut.
- Muromatsu, K., 2000. "The Count/Mass Distinction and The Ordering of Adjectives," *MIT Working Papers in Linguistics 37*, 193-209.
- Muysken, P. & H. van Riemsdijk., 1986. "Projecting Features and Featuring Projections", in P. Muysken & H. van Riemsdijk., 1986., 1-30.
- Muysken, P. & H. van Riemsdijk., 1986. *Features and Projections*. Dordrecht: Foris.
- Nishiyama, K. 1999. "Adjectives and the Copulas in Japanese", *Journal of East Asian Linguistics 7*, 183-222.
- Paris, M.-C., 1979. *Nominalization in Mandarin Chinese: The Morpheme 'de' and The 'shi'...'de' Constructions*. PhD dissertation, Université de Paris VII.
- Paul, W., 2002. *Adjectival Modification in Chinese and Related Issues*. Ms., CRLAO, Paris.
- Pozzobon, S., 2000. "Some Notes on the Distribution of Japanese Adverbs", *University of Venice Working Papers in Linguistics 10*, 153-174.
- Reuland, E. & A. G. B. ter Meulen (eds.), 1987. *The Representation of (In)definiteness*. Cambridge, Mass.: The MIT Press.
- Ritter, E., 1991. "Two Functional Categories in Noun Phrases: Evidence from Modern Hebrew", in S. Rothstein (ed.), 1991., 37-62.
- Rubin, E. J., 1994. *Modification: A Syntactic Analysis and Its Consequences*. PhD dissertation, Cornell University.
- Rubin, E. J., 2002. *The Structure of Modifiers*. Draft version (June 2002) of book to appear with Oxford University Press, first four papers available at www.hum.utah.edu/linguistics/Faculty/Rubin.
- Sackmann, R., 1996a. "The Problem of 'Adjectives' in Mandarin Chinese," in R. Sackmann (ed. with the assistance of Monika Budde), 1996b., 257-275.
- Sackmann, R (ed. with the assistance of Monika Budde), 1996b., *Theoretical Linguistics and Grammatical Description: Papers in Honour of Hans-Heinrich Lieb on the Occasion of His 60th Birthday*. Amsterdam/Philadelphia: John Benjamins.

- Sag, I. & A. Szabolsci (eds.), 1992. *Lexical Matters*. Stanford, California: Center for the Study of Language and Information.
- Saito, M., 1985. *Some Asymmetries in Japanese and Their Theoretical Implications*. PhD dissertation, Cambridge, Mass.: MIT.
- Scott, G.-J., 1998. "Stacked Adjectival Modification and The Structure of Nominal Phrases," *SOAS WP in Linguistics and Phonetics 8*, 59-89.
- Scott, G.-J., 2002a. "Stacked Adjectival Modification and The Structure of Nominal Phrases," in G. Cinque (ed.), 2002.
- Scott, G.-J., 2002b. *The Syntax and Semantics of Adjectival Modification*. PhD dissertation., SOAS, University of London.
- Scott, G.-J., 2002c. *"Japanese-Style" Languages and The Semantic Zones Hypothesis*. Ms., SOAS, University of London.
- Seiler, H. (ed.), 1978. *Language Universals*. Tübingen.
- Shibatani, M., 1990. *The Languages of Japan*. Cambridge: CUP.
- Shopen T (ed.), 1985. *Language Typology and Syntactic Description, Volume III: Grammatical Categories and the Lexicon*. Cambridge: CUP.
- Siegel, M., 1980. *Capturing the Adjective*. New York: Garland Publishing, Inc.
- Speas, M., 1990. *Phrase Structure in Natural Language*. Dordrecht: Kluwer.
- Spencer, A., 1991. *Morphological Theory*. Oxford: Blackwell.
- Spencer, A. & A. M. Zwicky (eds.), 1998. *The Handbook of Morphology*. Oxford: Blackwell Publishers.
- Sproat, R. & C. Shih., 1988. "Prenominal Adjectival Ordering in English and Mandarin", *NELS 18*, 465-489.
- Sproat, R. & C. Shih., 1991. "The Cross-Linguistic Distribution of Adjective Ordering Restrictions", in C. Georgopoulos & R. Ishihara (eds.), 1991., 565-593.
- Stowell T., 1981. *Origins of Phrase Structure*. PhD dissertation, Cambridge, Mass.: MIT.
- Sugawara, M., 1989. *Nihongo: A Japanese Approach to Japanese*. Tokyo: The East Publications, Inc.
- Takezawa, K. & J. Whitman., 1998. *Kaku-to Gojun-to Togo-Kozo* ("Case Marking, Word Order and Syntactic Structures"). Tokyo: Kenkyusha.
- Tateishi, K., 1988. *SPEC in Japanese and The Universality of X'-Theory*. Ms., Amherst, University of Massachusetts.
- Tateishi, K., 1989. "Subjects, SPEC, and DP in Japanese", *NELS 19*, 405-418.
- Travis, L., 1999. *Event Structure in Syntax*. Ms., McGill University.
- Uehara, S., 1996. "Nominal Adjectives in Japanese (and in Korean)", in S. Choi (ed.), *Japanese/Korean Linguistics Volume 3*, 1996., 235-249.
- Valois, D., 1991b. *The Internal Syntax of DP*. PhD dissertation, University of California, Los Angeles.
- Webelhuth, G (ed.), 1995. *Government and Binding Theory and The Minimalist Program*. Oxford: Blackwell.
- Whitman, J., 1981. "The Internal Structure of NP in Verb Final Languages", *CLS 17*, 411-418.
- Wierzbicka, A., 1986. "What's in a Noun (or: How do Nouns Differ in Meaning from Adjectives)?" *Studies in Language 10*, 353-389.
- Yamakido, H., 2000. "Japaneses Attributive Adjectives Are Not (All) Relative Clauses", *WCCFL 19*, 588-602.
- Zamparelli, R., 1993. "On the Spec vs. Head Status of Quantifiers and Adjectives", *Glow Newsletter 30*, 72-73.
- Zwarts, J., 1992. *X'-Syntax - X'-Semantics: On the Interpretation of Functional and Lexical Heads*. Utrecht: OTS.