

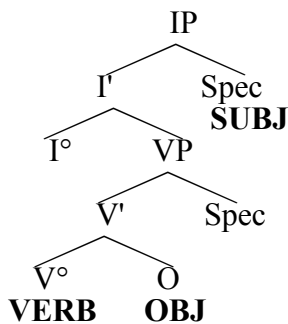
Seediq – antisymmetry and final particles in a Formosan VOS language*

Arthur Holmer, Lund University

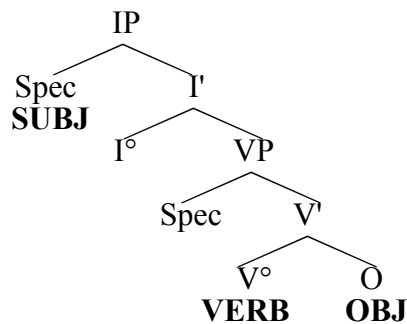
1. Background

Until the advent of Kayne's (1994) Antisymmetry hypothesis, word order patterns such as SOV and VOS were generally seen as the result of a trivial linear ordering of X° and its complement, or X' and its Specifier. For VOS languages, such analyses are found in Guilfoyle, Hung & Travis (1992), in Holmer (1996) and in Chang (1997). Under this view, the subject-predicate relation is held to be identical in SVO languages and VOS languages, the difference being confined to linear order between X' and its Specifier (1).

(1) a. VOS structure



b. SVO structure



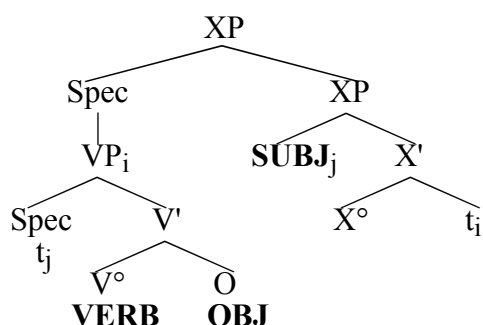
Kayne's hypothesis marked the beginning of a new era in word order research. Following his claim that c-command and linearity are inseparable concepts, and that, as a consequence, all syntactic structure is underlyingly SVO¹, new types of movement analyses were required to derive word orders such as VOS. Such movement patterns can easily become rather complex (2), and the idea of applying the

Antisymmetric hypothesis to VOS languages was therefore often either ignored (Chang 1997) or sharply criticized (Holmer 1996) during the early years following the appearance of Kayne's model.

Even in retrospect, this is a natural reaction: any comparison of (1a) with (2) must naturally view the former as a null hypothesis. Unless empirical support can be found for the structure in (2), its only advantage is the purely theory-internal consideration of a maximally constrained phrase structure.

Therefore, the most important test for Antisymmetry lies in finding empirical reasons for assuming that (2) is more correct than (1a).

(2) VOS by predicate raising



During the past few years, serious attempts have been made to provide such empirical support. Some of these studies (e.g. Aldridge 2002) are concerned with the subject-sensitivity of *wh*-relations and relativization in (primarily Austronesian) VOS languages. Others (e.g. Massam 2000) have been more concerned with the mechanism which forces leftward movement of the predicate, essentially suggesting that predicate raising is derived by a mechanism analogous to that which raises the subject out of *vP* in SVO languages (the Extended Projection Principle).²

Since these steps were taken, other fragments of evidence have been appearing which seem to lend empirical support to an antisymmetric account of VOS order. Together, these fragments now build a substantial case for the antisymmetry hypothesis. In particular, it can be demonstrated that traditional

symmetric analyses face severe empirical problems which do not obtain with an antisymmetric analysis (cf. Travis, this volume).

The present paper illustrates one such piece of evidence, namely the fact that an antisymmetric treatment of VOS clause structure captures straightforwardly important facts about final particles in the Seediq language in Taiwan which a traditional analysis can only describe with massive stipulation, if at all.

2. The facts

Seediq is an Austronesian language spoken in the mountainous areas of northern Taiwan, in an area stretching from Puli in Nantou county to Hualien on the Pacific coast. It belongs to the Atayalic branch of Austronesian, together with its sister language Atayal, which is spoken further north. Basic word order in the Atayalic languages is VOS (3).

(3) M-n-ekan bunga ka Pawan.

ACTF-PST-eat sweet.potato NOM Pawan

“Pawan ate sweet potatoes.”

Seediq also possesses a fair number of final particles. There is no evidence that any of these are calques from other South-East Asian languages (where final particles abound as an areal feature), and even if some of them were, the fact that they are present synchronically in the language must still be accounted for. A selection of the final particles in Seediq is exemplified in (4).

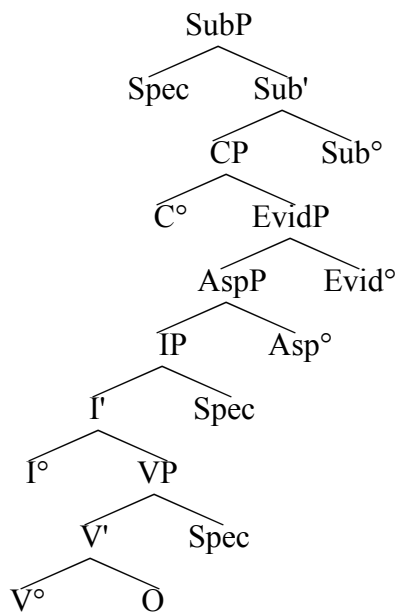
- (4) a. Wada m-sange ciga bubu mu **di**.
 PST ACTF-rest yesterday mother 1SG.GEN PERF
 “Yesterday my mother rested (i.e., refrained from work).”
- b. M-pe-ekan=ku ido seediq **na**.
 ACTF-CAUS-eat=1SG.NOM rice person yet
 “I will still invite someone to eat.”
- c. M-dengu ka yqeyaq **do**, m-cceka dhenu.
 ACTF-dry NOM wet.field if ACTF-crack consequently
 “When the wet-field dries up, it (i.e., the mud) cracks.”
- d. Wada qyux-un alang Tongan **sa**.
 PST rain-PATF village Tongan QUOT
 “Apparently, it rained in Tongan village.”
- e. M-iicu m-oda habung seediq **peni**.
 ACTF-fear ACTF-pass grave person PRT
 “Well, the people are afraid of going past a grave.”

The existence of final particles in a VOS language poses two major problems for a symmetric analysis. The first problem concerns cross-categorial harmony within the structure tree. It seems natural to assume that at least some of these particles are heads, structurally speaking. First, they represent prototypically functional categories, such as complementizers, evidentiality, and aspect. Second, they

can never be replaced by phrasal elements of any kind. Third, they can never be clefted or topicalized, whereas phrasal elements in Seediq generally can. Fourth, the linear order is fixed and remains stable across different construction types. These properties are typical of heads, not of phrases.³

Given that Seediq is a VOS language, it is, at some descriptive level, a clear instance of head-initiality. At the same time, the existence of final particles would imply that at least one level of the syntactic structure must be head-final. Worse, since the final particles appear to have to do with different kinds of functional categories (*di* and *na* have Tense / Aspect connotations, *do* is a subordinator, *sa* represents some kind of evidential meaning, and *peni* is almost untranslatable into English, but serves as a discourse connector), it would not be sufficient to propose one head-final functional projection – the examples in (4) suggest that at least two, and probably three, head-final functional categories are required. The possible appearance of such a structure is illustrated in (5).

(5)



Under the traditional (pre-Kayne) view of syntactic structure, this is, of course, not an impossibility. Mixed structures have been proposed for other languages, such as Basque (cf. Laka 1994) and German, albeit to a much lesser extent (in either case, what would be required is a single category with an

exceptional structure). In Seediq, however, we would require one half of the functional projections to be head-initial and the other half to be head-final⁴. This kind of mixed structure is somewhat at odds with the generalization that Seediq otherwise displays all the trappings of an extremely head-initial language as far as major lexical categories are concerned.

Further, if structures such as that in (5), which is mixed VOS (i.e., Head-Complement-Specifier) and OV (i.e., Complement-Head) are possible, it would seem natural to expect that other, slightly different, VOS / SOV mixtures should occur, namely grammars which combine SOV word order with initial particles. Languages with this type of word order pattern have not, to my knowledge, been discussed in the literature, and are either extremely rare or nonexistent. Thus, while there are a few attested examples of the Seediq pattern, “reverse Seediq” apparently does not exist. Facts like this can not be captured under a traditional analysis. Here we find a clear typological asymmetry which it would be desirable to account for syntactically. The thrust of this paper will be to illustrate that these facts fall out straightforwardly under an antisymmetric analysis.

3. Antisymmetry and VOS

3.1. Predicate raising

As we noted in section 1, the most straightforward antisymmetric treatment of VOS order is as illustrated in (2) above, where VP raises past the position in which the subject is located, an operation generally referred to as predicate raising. This is discussed by, among others, Pensalfini (1995), Pearson (1998), Rackowski & Travis (2000), Aldridge (2002) and can be considered the mainstream antisymmetric treatment of VOS languages. Under this analysis, it is generally assumed (cf. Massam,

this volume) that there is some syntactic feature which forces the predicate to raise, much in the same way as a subject raises in an SVO language.

An interesting point to note here is that a single instance of predicate raising might be enough to derive VOS order in a clause which only contains a verb, a subject and an object. It is not, however, enough by far to derive the entire host of syntactic properties in Austronesian VOS languages which seem indicative of VOS structure. The reasons for this are as follows.

Seediq displays a typical Western Austronesian “focus” (or voice) system similar to the type found in Tagalog and Malagasy (6a-b). If a directional auxiliary is present (6c), it is the auxiliary which bears the relevant focus morphology, whereas the lexical verb is realized in default ActF morphology (incidentally also the citation form of the verb).

(6) a. M-n-ekan bunga (ka)⁵ qolic.

ACTF-PST-eat sweet.potato NOM rat

“The rat ate sweet potatoes.”

b. P-n-uq-an qolic (ka) bunga.

-PST⁶-eat-LOCF rat NOM sweet.potato

“A rat ate the sweet potato.”

c. Yah-un m-ekan qolic (ka) bunga.

come-PATF ACTF-eat rat NOM sweet.potato

“A rat will come and eat the sweet potato.”

In (6c), the non-finite verb precedes the Agent. Two alternative interpretations are possible: either the verb has head-raised past the Agent, or the emptied VP has predicate-raised past the Agent. The head-raising option is dubious: first, it begs the question of where the verb has moved, and why this movement has taken place, e.g. is there a position responsible for checking default ActF morphology? More seriously, it makes false predictions concerning word order. Assuming that vP has SVO structure, and verb-initiality is derived by head raising, it would follow that the Agent must be the leftmost NP within vP. If VP is not vacated (e.g. in an oblique focus construction, where the subject is an oblique, and the patient remains within VP), we would expect the linear order V - AGT - PAT - SUBJ. This order is, however, ungrammatical (7a).

In contrast, the VP-raising suggestion predicts the linear order V - PAT - AGT - SUBJ in the same context. This order is in fact possible (7b)⁷, although the preferred order involves agent extraposition (7c), which is presumably due to a PF restriction concerning the linear distance between verb and subject, and need not concern us further here.⁸

(7) a. *S-sebuc na Pawan ricah ka btakan.
 INSTRF-beat GEN Pawan plum NOM bamboo

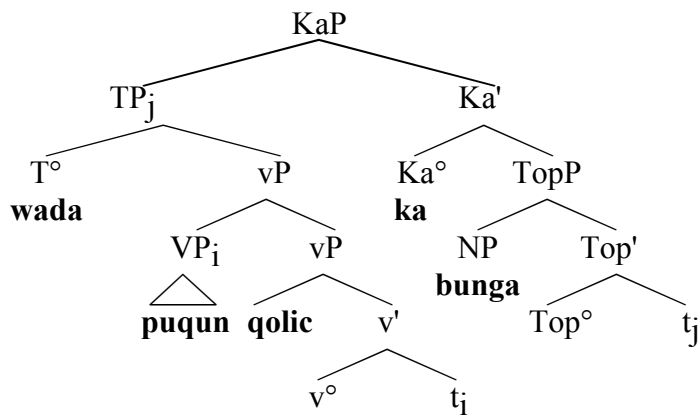
b. ?S-sebuc=na⁹ ricah na Pawan ka btakan.
 INSTRF-beat=3SG.GEN plum GEN Pawan NOM bamboo

c. S-sebuc=na ricah ka btakan, Pawan.¹⁰
 INSTRF-beat=3SG.GEN plum NOM bamboo Pawan

“Pawan strikes plums (down from a tree) with the bamboo.”

A natural conclusion is therefore that the Agent is the last element within vP. Thus, to derive the correct order in Seediq it is necessary to assume firstly that VP raises to adjoin to vP, and further that the entire predicate (i.e., basically the entire clause with the exception of the subject) raises past the surface position of the subject. This is indeed what Aldridge (2002) does in her analysis of Seediq. A subsection of the resulting structure is illustrated in (8) – the category labels are based on Aldridge’s (2002) terminology (Ka° is the functional head where the nominative particle *ka* is located).¹¹

- (8) Wada puq-un qolic ka bunga.¹²
 PST eat-PATF rat NOM sweet.potato
 “The sweet potato was eaten by rats.”



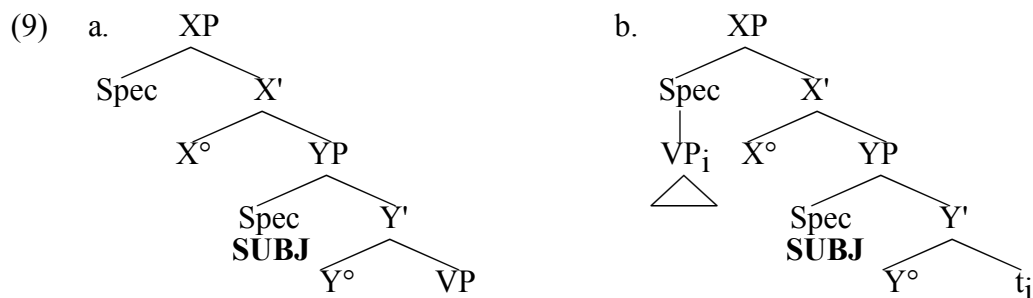
Further, the order of adverbs in Malagasy prompts Rackowski & Travis (2000) to assume several cyclic applications of predicate raising, termed *intraposition* – the purpose being to account for the fact that while preverbal adverbs appear in the order predicted by Cinque (1997), any postverbal adverbs appear in the reverse order. The mechanism of cyclic predicate raising gives rise to extremely complicated structures on the left edge of the clause.¹³

In particular, given Rackowski & Travis’ (2000) analysis, there can be no fixed number of instances of predicate raising. It follows that there can be no principle forcing each individual occurrence

of predicate raising. Rather, we must assume that it is a generalized process occurring in VOS languages. It is not clear whether such a generalized predicate raising pattern can be motivated by a single instance of a syntactic feature corresponding to the value of an EPP feature in T° (in the sense that a [+D] feature forces NP raising and a [+pred] features forces predicate raising).¹⁴ This is, in theory, a potentially problematic issue. In practice, however, it seems an unavoidable conclusion when viewing a typical VOS language from an antisymmetric point of view. It might be speculated that such generalized patterns might be the antisymmetric equivalent of directionality parameters, i.e., the beginnings of an antisymmetric account of cross-categorical harmony. We defer consequences of this to future research.¹⁵

3.2 Predicate-raising and head-finality

One interesting feature of the predicate raising analysis is the following: while designed to emulate a Spec-final surface appearance, it does not, structurally speaking, actually produce a Spec-final result. In this section it is tacitly assumed that predicate raising involves the movement of XPs, not of X'-level constituents.



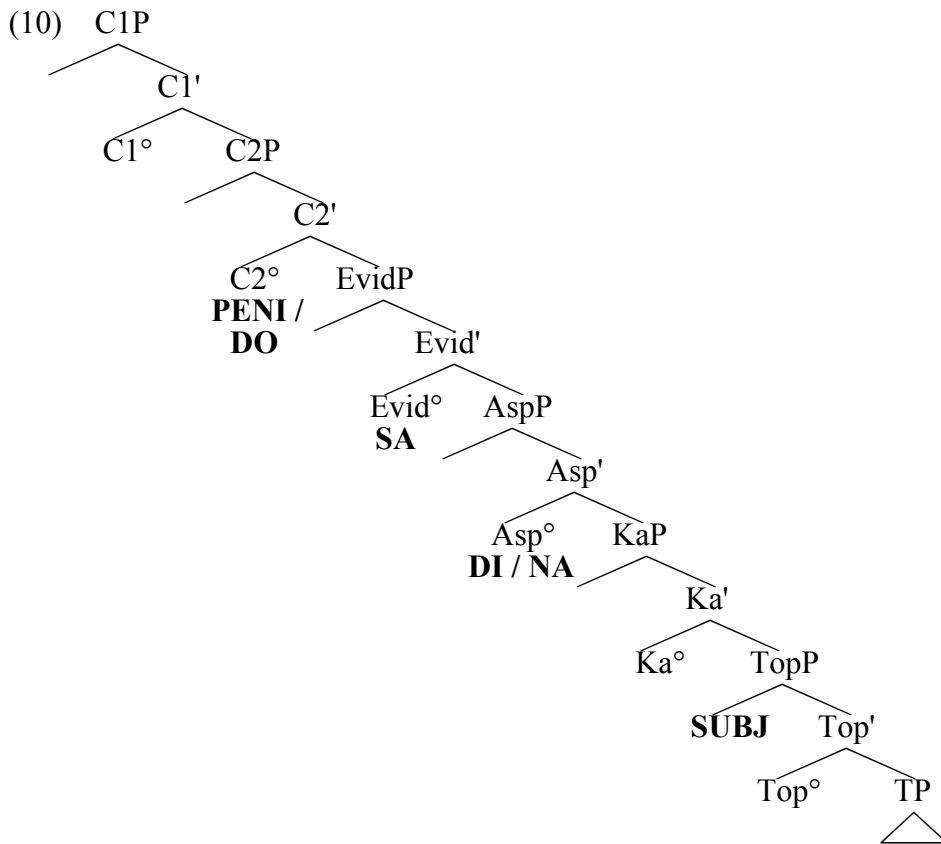
If we apply predicate raising to the structure in (9a) to derive a subject-final order (9b), the linearly last position in the clause is actually not SpecYP itself, but rather the head Y° . In other words, predicate

raising automatically generates structures which are potentially head-final, with no further stipulation: if Y° is phonologically realized, the result is an apparently head-final construction, whereas if Y° is silent, the result is an apparently Spec-final construction.

This is the crucial point of the account presented here: given the mechanism of predicate raising to derive VOS order, the existence of final particles is as expected under an antisymmetric analysis as it is unexpected under a traditional analysis. It should be noted, however, that this type of account requires the assumption that VOS order is derived by several cyclic occurrences of predicate raising – exactly the mechanism necessary for deriving other aspects of western Austronesian word order (e.g. Agent position in Seediq “passives”, cf. section 3.1, and adverb placement in Malagasy, cf. Rackowski & Travis (2000)).

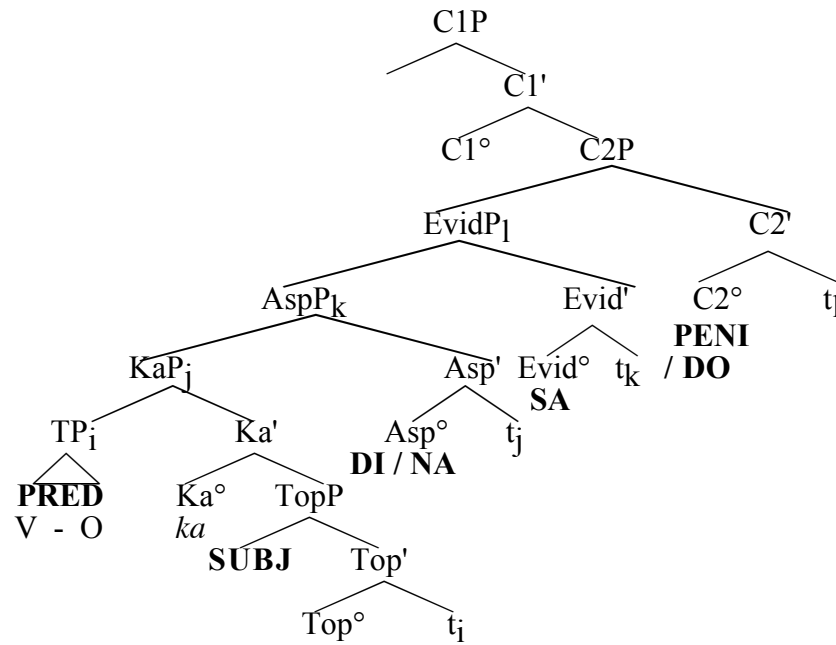
How, then, do we derive the correct order and correct clause-final placement of the final particles? Let us assume an antisymmetric structure with the particles generated in structural positions which more or less correspond to their meanings. Since Seediq has a set of final particles of different categories, as well as clause-initial subordinators, we must assume a rather finely articulated split within both the C and the INFL domains. As far as the C domain is concerned, we have labelled the top two categories C1P and C2P respectively (roughly corresponding to Pearson’s (1998) SubP and ForceP). Our reasons for choosing more neutral labels is simply that both C1P and C2P can host subordinators (clause-initial and clause-final respectively). Further, we propose the level EvidP, where the evidential particle *sa* is located. The INFL domain includes AspP, where the particles *di* and *na* which deal with aspectual interpretation, are located. Note that the relatively high position of Asp° in Seediq mirrors not only its linear position, but also its interpretation: these particles dictate the aspectual interpretation of the entire clause, crucially including the polarity.¹⁶ The INFL domain also includes KaP, TopP and TP (used more or less as defined in Aldridge (2002), cf example (8) above – these three categories are primarily responsible for deriving VOS surface order in a rather mainstream predicate

raising analysis, and will not be discussed further in this context, where the existence and order of the final particles is our primary concern). The resulting structure is given in (10).¹⁷



Let us now apply cyclic predicate raising to the structure in (10), in much the same way as Rackowski & Travis (2000) derive adverb placement. In simple terms, this implies raising each phrase to the next available specifier upwards in the structure, up to, but not including, C1P (allowing for a clause-initial subordinator position). The resulting structure is shown in (11).

(11)



As can be seen from the structure in (11), the only elements which follow the grammatical subject in the specifier of TopP are aspectual particles (*di* or *na*), the evidential particle (*sa*) and a subset of subordinators and discourse connectors (*do* and *peni* respectively). These can cooccur, and when they do, the linear order is exactly that generated by the structure in (11). Examples of cooccurrences are given in (12).

- (12) a. kiyaka puq-un=daha gaya babuy **si** (=sa)¹⁸ **peni**,
then eat-PATF=3PL.GEN law pig QUOT well.you.see
“...it is said that they then just ritually eat a pig, you see...”

- b. Cghuun seediq do,
 hang person if,
 m-usa m-ekan seediq kiya gaga cghuun kiya **di** **si** (=sa).
 ACTF-go ACTF-eat person that be hang there PERF QUOT
 “If someone hangs himself, they (the crows) go and eat the person that has hanged
 himself, so it is said.”

The linear order in itself is not a problem for the traditional pre-Kayne analysis, since right-headed structures would also generate the same placement of the particles (the higher the functional category, the further rightwards its linear placement). What (11) and (12) are intended to show is that an antisymmetric analysis is equally capable of deriving the correct ordering of the particles as the order of the arguments, without having to stipulate a mixed structure.

3.3 VOS and VSO order

In view of the traditional analysis of VSO order as being derived by head movement of the verb past the subject, a possible prediction in this respect would be that the existence of final particles be connected with basic word order – under the present analysis, we would expect final particles in VOS languages, but we would not expect them in VSO languages (given that head-raising, as opposed to predicate-raising, does not strand syntactic heads in clause-final position). To date, no such correlation has been found. Final particles are attested in Atayalic languages (VOS) and possibly in Malagasy¹⁹ (VOS), cf. section 4.1, as well as in San Lucas Quiaviní Zapotec (VSO), cf. Lee (2000, this volume). The exact extent of the distribution of final particles in verb-initial languages remains to be determined.

However, it should be noted that the present analysis does not, in fact, necessarily exclude VSO languages. Crucially, it claims that final particles should be possible in languages which derive verb-initial order by predicate raising (i.e., all VOS languages), but not in languages which derive verb-initial order by head-raising. It has recently been proposed in the literature that many VSO languages also apply predicate raising, i.e., what is often referred to as VP-remnant raising, where the VP raises after having been emptied of all material other than the verb²⁰. In fact, in Oda (this volume), a typology of VSO languages is proposed based on whether the order is derived by head-raising or VP-remnant raising. VSO languages for which VP-remnant raising has been suggested for independent reasons include Niuean (Massam, this volume)²¹ and San Lucas Quiavini Zapotec (Lee, this volume). Thus, the predictions of the present analysis are perhaps more modest than might be supposed at first glance (13).

(13) <u>Movement type:</u>	<u>XP-raising</u>	<u>X°-raising</u>
Basic word orders:	VOS, SOV, (some) VSO	(some) VSO
Final particles	likely	unlikely

As an empirical test, this prediction can be falsified by finding final particles in a language where it can be argued, for other reasons, that verb-initial order is derived by head-movement rather than by predicate raising (typical tests for predicate raising include the possibility of nominal predicates, pseudo-noun-incorporation etc., cf. Massam, this volume; Otsuka, this volume).

4. Further correlates

Having shown that final particles in verb-initial languages can be captured quite elegantly under an antisymmetric analysis, the next question is whether any independent empirical support can be found for this account. In this section, two such pieces of evidence are reviewed. In section (4.1), the placement of the polar (yes/no) interrogative particle in Seediq, Atayal and Malagasy is discussed, and section (4.2) focusses on the striking parallels between Seediq final particles and Tagalog 2nd position clitics. Both of the discussions lend support to the present account of the nature of final particles.

4.1 Placement of the interrogative particle

The Atayalic languages differ greatly with respect to the placement of the polar interrogative particle. In Seediq, the particle *ye* is clause-initial, and serves as host for the cliticization of pronominal agreement markers (14a). In Atayal, the corresponding element *quw* is a final particle (14b). Perhaps even more intriguingly, the normal placement of the Malagasy interrogative particle *ve* is neither final nor initial, but *between* the predicate and the subject (14c). However, given their common function, we would expect the particles in all three languages to be base-generated in the same position. Further, given the shared word order VOS of the three languages, we would also expect the structures involved to be quite similar. Thus, the challenge for the present account is to derive all three placements from minimal parametric differences between the languages.

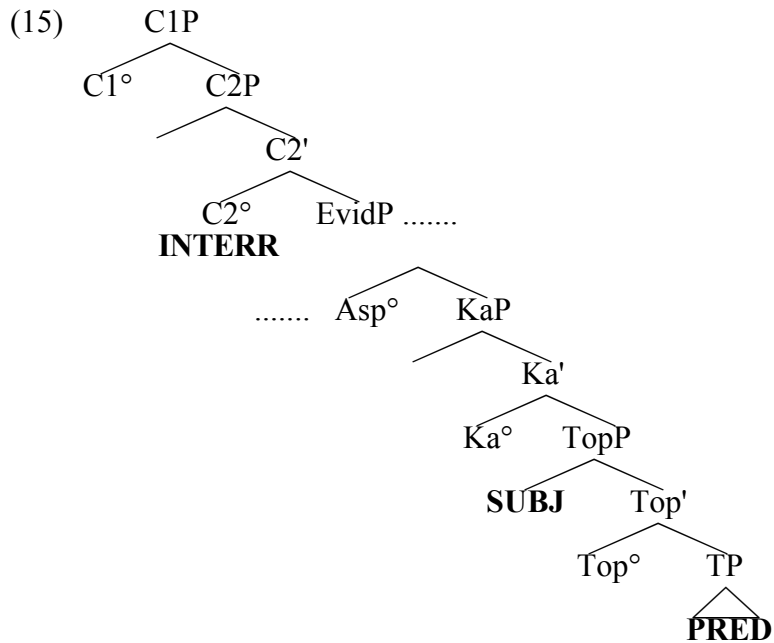
- (14) a. ye=su m-n-ekan hlama kiya? *Seediq*
 INTERR-2SG.NOM ACTF-PST-eat steamed.rice that
 “Did you eat that steamed rice snack?”
- b. kia' 'i' ma-qilaap 'i' yaya' **quw?** *Atayal (Mayrinax)*
 ASP LINK ACTF-sleep NOM mother INTERR (Huang 1995:176)
 “Is mother sleeping?”
- c. Nanome vola an-dRabe **ve** ianao? *Malagasy*
 gave money ACC-Rabe INTERR you (Keenan (1976:252))
 “Did you give Rabe money?”

Let us begin by assuming that the polar interrogative particle is located in a head position within the C-domain. Following our discussion above, we use the label C2° here, which corresponds roughly to Pearson’s (1998) Force°.

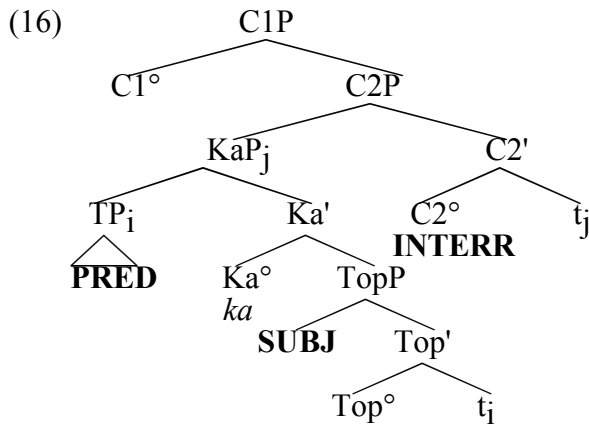
Under the symmetric view, this would make C2P head-initial in Seediq and head-final in Atayal, an undesirable difference for two extremely closely related languages which are otherwise almost identical syntactically. Worse, the placement in Malagasy, *between* the predicate and the subject, would be completely impossible to derive without crucially resorting to movement²².

On the other hand, under the antisymmetric account, we can assume that the structure involved is identical in all three languages. Let us assume, as we did above, that split C in the three languages consists of the levels C1P for clause-initial subordinators and C2P, primarily responsible for illocutionary force and clause-final discourse connectors and subordinators. Let us further assume, contra Pearson (1998), that the interrogative marker in all three languages is base-generated in C2°. In

(10) and (11) above we presented further categories which hosted final particles. These have been omitted, for reasons of space, from the structure in (15).



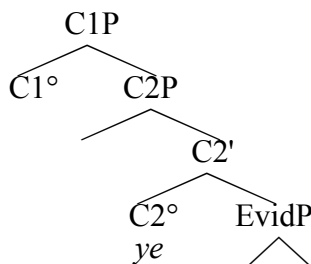
We are now concerned with deriving the correct surface order for Seediq, Atayal and Malagasy. To derive clause-level VOS order, all three languages apply predicate raising of TP to the specifier of KaP. The differences between the languages can be expressed in terms of other subsequent instances of raising. For Seediq, we noted in (11) that EvidP raises to the specifier of C2P, resulting in clause-final position for elements in C2°. In practice, if we disregard the host of categories between C2P and KaP, this implies cyclic raising until KaP is located in the specifier of C2P. A simplified structure is given in (16).



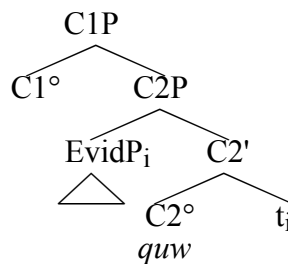
This derivation is sufficient to generate the correct order as far as the Atayal clause-final interrogative particle *quw* is concerned. For Seediq, one further step is required. Assuming, as we do, in the interests of cross-linguistic comparison, that Seediq *ye* is base-generated in C2°, its placement in initial position can be derived by head-movement of the particle from C2° to C1°. Head-movement to C1° is motivated in Seediq by the requirement that C1° be lexically filled (see below), analogously to the received analysis of V2 as V-to-C movement in Scandinavian (cf. Holmberg & Platzack (1995)). Why the same movement does not apply to Atayal *quw* is a question which we will return to in section 5. A minimal parametric difference thus results in a maximal surface difference as far as the linear placement of the interrogative particle is concerned.

Another possibility might be that Q is located in the same position (C2°) on the surface in both Seediq and Atayal, and that only Atayal, but not Seediq, applies the final instance of predicate raising to the specifier of C2P. The resulting configuration in Seediq and Atayal would be as in (17).

(17) a. Seediq



b. Atayal

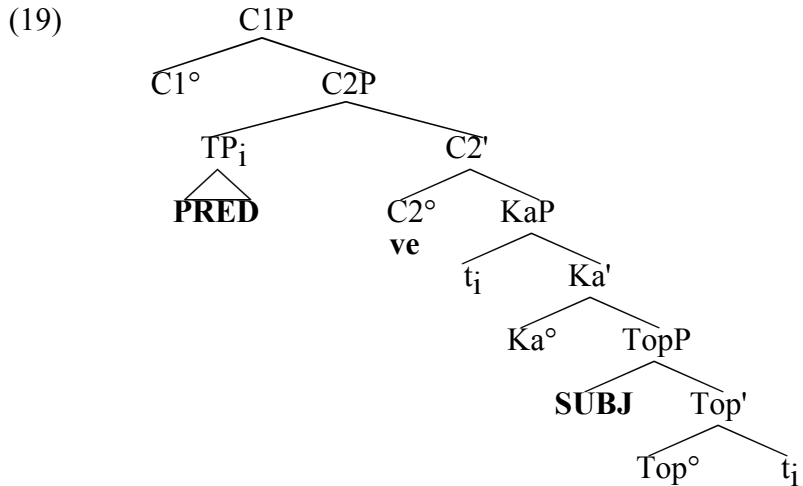


- d. Anisa-(*ku) ini=ku ekan tmaku.
 but=(*1SG.NOM) NEG=1SG.NOM eat.ACTF.CONNEG tobacco
 “But I don’t smoke.”
- e. ... ma=(*mu) ini=mu qta-i quyu kiya.
 and=(*1SG.GEN) NEG=1SG.GEN see-PATF.CONNEG snake that
 “...and I didn’t see that snake.”
- f. Ima=(*su) q-n-ta-an=su ciga?
 who=(*2SG.GEN) -PST-see-LOCF=2SG.GEN yesterday
 “Who did you see yesterday?”
- g. Ye=ku ini huwa m-ekan tmaku hini?
 INTERR=1SG.NOM NEG how.ACTF.CONNEG ACTF-eat tobacco here
 “Is it OK if I smoke here?”

The above evidence shows that pronominal cliticization in Seediq is not intonationally, but clearly syntactically, determined, and that clitic placement is therefore most straightforwardly captured by assuming cliticization to a fixed position combined with head-raising of the interrogative particle (or, indeed, the structurally closest head) to C1°.

The final challenge lies in deriving the correct order in Malagasy. As opposed to the situation in Seediq and Atayal, the interrogative particle *ve* is not clause-peripheral, but is located between the predicate and the subject. Assuming that it is located in C2°, we can derive this order straightforwardly

by raising only TP instead of KaP (or the structure containing TopP²⁴) to the specifier of C2P. The result is illustrated in (19).



The above model shows that we can derive the differences in the placement of the interrogative particle in three Austronesian VOS languages by means of minimal parametric differences based on operations on identical structures. The exact nature of the parameter which causes TP, rather than KaP (as in the Atayalic languages), to raise to the specifier of C2P is not entirely clear. However, one conceivable answer might be connected with the status of KaP. If the acquisition of structure is determined by the existence of lexical or morphological cues, it would follow that KaP is not projected in Malagasy (as opposed to the Atayalic languages). Assuming, then, that cyclic predicate raising operates in a bottom-up fashion, this would imply that the first landing site for TP would, in fact, be the specifier of C2P, and that further predicate raising would be excluded.²⁵ Note that this analysis further predicts that Malagasy should not have a set of final particles, a prediction which is more or less borne out²⁶.

4.2 Final particles vs. 2nd position clitics

One interesting point we can note about the final particles in Seediq is that they, to a remarkable extent, correspond semantically to 2nd position clitics in Tagalog. A selection of such correspondences is given in (20).

(20)	Seediq final particles	Tagalog 2nd-position clitics	Meaning
	<i>di</i>	<i>na</i>	‘PRF’
	<i>na</i>	<i>pa</i>	‘still’
	<i>uri</i>	<i>din</i>	‘also’
	<i>sa</i>	<i>daw</i>	‘reportedly’

The examples in (21) illustrate the use of the respective particles in Tagalog and Seediq.

(21) a. [Seediq]

Uxe m-e-eyah heya **di**
NEG.FUT ACTF-FUT-come 3SG.NOM PERF
“S/he won’t come anymore.”

[Tagalog] (Schachter & Otnes 1972: 418)

Hindi **na** ako pu-punta roon.

NEG PERF 1SG RED-go there

“I won’t go there anymore.”

b. [Seediq]

Ini=ku ekan ido **na**.

NEG=1SG.NOM eat.ACTF.CONNEG rice yet

“I haven’t eaten yet.”

[Tagalog] (Schachter & Otnes 1972: 419)

Hindi **pa** siya um-a-alis

NEG yet 3SG ACTF-RED-leave

“S/he hasn’t left yet.”

c. [Seediq]

...dadan ta heya **uri**.

relative 1PL.INCL.GEN 3SG.NOM also

“...she’s also a relative of ours.”

[Tagalog] (Schachter & Otnes 1972: 422)

Um-a-awit **din** si Carmen

ACTF-RED-sing also NOM Carmen

“Carmen is singing, too.”

d. [Seediq]

Wada qyux-un alang Tongan sa.

PST rain-PATF village Tongan QUOT

“Apparently, it rained in Tongan village.”

[Tagalog] (Schachter & Otones 1972: 423)

Mabuti raw ang ani.

good QUOT NOM harvest

“They say that the harvest is good.”

An intriguing question is whether there is any way of deriving these facts by means of the analysis we have presented. It seems possible that we can. Let us tentatively follow Aldridge (2002) in suggesting that word order in Tagalog is derived by X-movement rather than by XP-raising. This is not entirely uncontroversial, since Tagalog, as well as Seediq, allows for NP predicates (22a). However, given that Aldridge’s analysis captures the fact that adjunct wh-movement is grammatical in Tagalog (22b) but not in Seediq (22c, d), the consequences of deriving Tagalog word order by X-movement are worth exploring.

(22) a. [bantog na siyudad] ang Maynila (Schachter & Otones 1972: 122)

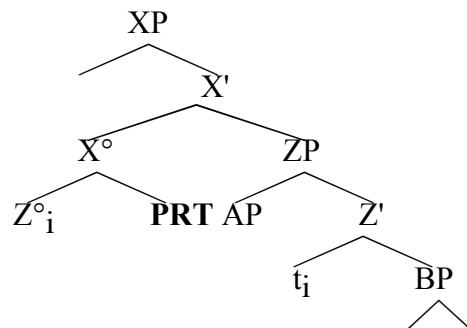
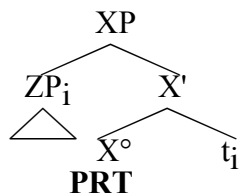
famous LIG city NOM Manila

“Manila is a famous city.”

- b. Saan=ka b-um-ili ng libro? (Aldridge 2002: 415)
 where-2SG.ABS -ACTF.PERF-buy OBL book
 “Where did you buy books?”
- c. *Inu=(su) m-n-ari=(su) patis?
 where?=(2SG.NOM) ACTF-PST-buy=(2SG.NOM) book
- d. M-n-ari=su inu patis?
 ACTF-PST-buy=2SG.NOM where? book
 “Where did you buy books?”

Let us therefore assume, in a greatly simplified structure, that the particles are located in the same position structurally in both Seediq and Tagalog, namely X° in the unlabelled structure in (23). Let us further assume that where Seediq applies the final instance of predicate raising to the specifier of XP, Tagalog instead applies head-movement of the verb to X° . The result of the two derivations is given in (23).

- (23) a. Seediq XP-raising b. Tagalog X° raising



In (23a), the particle PRT is located linearly in the last position in the clause, the correct linear order for Seediq. In (23b), the same particle is located immediately following the first head of the clause as a clitic, which is exactly what we find in Tagalog²⁷.

The validity of this as evidence in support of our analysis relies crucially on the correctness of the assumption that Tagalog applies head-raising rather than predicate raising,²⁸ and this may be subject to debate. However, it should also be noted that Aldridge's (2002) head-raising analysis for Tagalog accounts for two other important differences between Seediq and Tagalog, one being the grammaticality of adjunct wh-movement in Tagalog but not in Seediq, and the other being the tendency towards VSO order in Tagalog, in contrast to VOS in Seediq²⁹.

5. Cliticization and verb raising – an apparent problem

It might appear from the preceding discussion that we consider head raising and predicate raising to be mechanisms which occur in complementary distribution, as alternative derivations which can lead to V-initial order. In fact, there is no a priori reason to assume that one operation excludes the other, as long as freezing effects³⁰ in the raised predicate are respected. Thus, we could envisage a situation where the verb head-raises out of VP, and the remainder of the VP (without the verb) subsequently raises for reasons of its own³¹. Indeed, given that the common denominator of the two operations concerns the effect (V-initial surface order) rather than the cause³², it would be surprising if they were necessarily in complementary distribution. It will be argued here that Seediq is an example of a language where both operations cooccur. In Seediq, each can be independently motivated empirically, notwithstanding the fact that either of them is sufficient to derive V-initial order by itself.

While it is possible to assume mechanisms which render V-raising unnecessary for the checking of verb morphology in Seediq (e.g. local Spec-Head relations at various levels), the positioning of the clitics is more problematic. In Seediq, nominative and ergative agreement is realized by enclitic elements which attach to the first head position in the clause (24). This head may be a subordinator (24a), a T/A marker (24b), a negator (24c), a manner adverbial, syntactically a head in Seediq³³ (24d), the main verb (24e) or even the N° head of a nominal predicate (24f).

(24) a. Netun=su ini ekan ido, m-uure=su dhenu.
 if=2SG.NOM NEG eat.ACTF.CONNEG rice ACTF-hungry=2SG.NOM consequently
 “If you don’t eat, you will get hungry.”

b. Wada=mu qta-un ka huling su.
 PST=1SG.GEN see-PATF NOM dog 2SG.GEN
 “I saw your dog.”

c. Ini=ku kela r-m-engo kari seediq.
 NEG=1SG.NOM know.ACTF.CONNEG -ACTF-speak language person
 “I can’t speak Seediq.”

d. skret-an=daha m-ekuy quwaq salo
 tight-LOCF=3PL.GEN ACTF-tie mouth pot
 “They tie the mouth of the pot tightly.”

e. M-n-ekan=ku ido ciga.
ACTF-PST-eat=1SG.NOM rice yesterday
“I ate rice yesterday.”

f. Seediq=ku Paran yaku.
person=1SG.NOM Paran 1SG.NOM
“I am a person from Paran village.”

It seems unlikely that the clitics are simply sensitive to the linear order of the heads³⁴. The null hypothesis here must be that the host of the clitics is a discrete syntactic position. Given that clitics can attach to subordinators (24a), and assuming that downward movement is illicit, this syntactic position must be $C1^\circ$. This in turn implies that we must posit movement of the highest lexically realized head to $C1^\circ$, presumably motivated by a feature in $C1^\circ$ requiring this position to be lexically filled³⁵. If no other lexical material intervenes, the result is V-to-C movement as in (24e). Such movement can be blocked by other preverbal heads, such as negators and T/A particles, which themselves raise to $C1^\circ$ to host the clitics. Assuming V-to-C movement unless blocked by an intervening lexically filled head, this derivation clearly complies with Travis' (1984) Head Movement Constraint (HMC). Further, as discussed in Holmer (1996), morphological evidence in Seediq, including verb morphology and the behaviour of connegatives following negations, clearly supports the same hierarchical ordering of the syntactic heads as that suggested by the clitic system.

The problem instead arises when we consider the final particles. While the various syntactic heads at the left periphery of the clause (auxiliaries, verbs, negators etc) interact with each other in ways which are consistent with the HMC, such constructions in no way affect or are affected by the distribution of final particles, which is problematic if the latter are also analysed as heads. Why do final

particles not block V-to-C movement? There is clearly some important difference between the heads which are realized left-peripherally and those which are realized right-peripherally³⁶. The question is how this difference is to be captured³⁷.

One possible option might be that left-peripheral and right-peripheral heads are located in different ranges of the clause, e.g. that all final particles are hierarchically higher than all left-peripheral heads, and that V-to-C movement does not reach the positions occupied by the final particles. This option is improbable, given the wide functional variety of the final particles, ranging from aspectual meanings to illocutionary force. While a certain amount of cross-linguistic variation in the hierarchical ordering of syntactic features might be conceivable (cf. Holmer (to appear)), the placement of aspectual elements intervening hierarchically between various levels of subordination is probably stretching this type of variation beyond the limits of plausibility. Therefore, we should examine other avenues to account for the lack of interaction between clause-initial heads and final particles.

In some sense, the left-peripheral heads and the right-peripheral heads are invisible to one another. A possible account is that offered by Carnie, Harley & Pyatt (2000), who posit that head positions are subject to an A/A' distinction in the same way as XP's are, following Borsley, Rivero & Stevens' (1996) account of Long Head Movement, who refer to this distinction in terms of L-relatedness. Viewed in this light, the HMC is constrained by Relativized Minimality (Rizzi 1990) and does not necessarily exclude head movement across another head as long as the target of movement and the skipped head position belong to two different categories (e.g. A/A') which do not interfere with one another.

Let us assume the same type of distinction in Seediq. Given that in Seediq the analogy with A-positions and A'-positions is somewhat unclear (which would be the A-positions, the left-peripheral heads or the right-peripheral heads?), let us adopt a more neutral terminology and refer to the left-peripheral heads as X-heads and the right-peripheral heads as Y-heads. Let us further state that X-heads

and Y-heads do not interact, i.e., that they belong to different categories in the same sense as A-positions and A'-positions belong to different, non-interacting categories.³⁸ What follows is the unravelling of an interesting set of properties of the two types of heads which lends further support to the anti-symmetric hypothesis.

The properties of X-heads and Y-heads are given in (25).

(25)	<i>X-heads</i>	<i>Y-heads</i>
	· involved in head-movement	· not involved in head-movement
	· initial	· final

It should be noted that, even under a symmetric analysis (where certain categories may be projected head-finally and others head-initially), the problem of the non-interaction of X-heads and Y-heads would still remain. Regardless of whether heads take their complements to the left or to the right, they would normally be expected to take part in any existing chains of head-movement. Thus, the need of positing two types of head is the consequence not of the application of antisymmetry, but of any generative analysis which assumes a) head movement of the verb and b) head status for final particles.

Further, we see that the distinction between X-heads and Y-heads rests on two logically independent properties, namely involvement in head-movement and linear position (initial or final). It seems an intriguing coincidence that these two factors should coincide so exactly, unless, of course, they are in some way interrelated.

Under a symmetric view, there would seem to be no plausible reason why a head-final category should not be involved in head movement operations, while a head-initial category is. However, the crucial point is that, under an antisymmetric analysis, there are no head-final categories as such. Apparent head-finality is the result of leftward movement of the complement of the head concerned.

Following the assumption of antisymmetry, therefore, both properties of the two types of heads can be defined in terms of movement: X-heads are involved in head-movement, whereas Y-heads force the leftward movement of the complement instead. In Seediq, at any rate, there do not seem to be any clear examples of categories which apply both head-movement and complement raising (except possibly v° , depending on how we analyse V-movement). The properties in (25) can therefore perhaps be reduced to a single property under an antisymmetric analysis (26).

(26)	<i>X-heads</i>	<i>Y-heads</i>
Movement:	· head	· complement (/predicate)

If (26) is a valid generalization of the behaviour of heads, it would follow that X-heads and Y-heads can be distinguished by the types of movement they can be involved in. X-heads partake in head movement, and do not trigger predicate raising, whereas Y-heads, which trigger predicate raising, can neither undergo nor block head movement. Given antisymmetry, Y-heads will have a head-final surface appearance, whereas X-heads will typically be clause-initial. The prediction of this classification would be that (apparently) head-final categories will be unable to undergo or block head-movement. This is possibly trivial with final particles, but could perhaps be tested more fruitfully with SOV languages.

We can now return to the parametric difference between the Seediq and Atayal polar interrogative constructions discussed in 4.1. Recall that the remaining problem was accounting for the fact that Atayal *quw* is not forced to raise from $C2^\circ$ to $C1^\circ$, as opposed to Seediq *ye*. In terms of the present typology, Seediq *ye* is an X head and is a valid candidate for head-movement to $C1^\circ$, whereas Atayal *quw* is a Y head and cannot head-move, instead forcing predicate raising.³⁹

The exact implications of this analysis are not clear at present. While it is clear that head-raising and predicate-raising can cooccur in a given language, there is no evidence that they cooccur within the

same category projection. Possible reasons for this are deferred to future research. This much is certain, however: the generalization in (26) can only be expressed in antisymmetric terms, not in traditional symmetric terms.

6. Summary and conclusion

In this paper it has been demonstrated that a traditional symmetric analysis fails to capture various important facts about final particles in Seediq, facts which fall out automatically under an antisymmetric predicate raising account of VOS word order. First, the antisymmetric account can derive the presence of final particles using exactly the same mechanism as that which derives VOS word order, namely predicate raising. Second, this account predicts that there should be an asymmetry between V-initial languages with final particles and V-final languages with initial particles, the latter being extremely rare or non-existent. This prediction appears to be borne out empirically. Third, our account captures neatly the differing placements of the interrogative particles in Seediq, Atayal and Malagasy with a minimum of stipulation. Fourth, the realization of the same semantic categories as final particles in Seediq and as second-position clitics in Tagalog follows directly from viewing Seediq as a predicate-raising language and Tagalog as a head-raising language. Fifth, our analysis suggests an account for the fact that clause-final heads (viz. final particles) do not participate in or obstruct head-movement processes, whereas clause-initial heads (viz. subordinators, T/A markers, auxiliaries, negators and verbs) demonstrably do. A traditional symmetric account has no choice but to regard these two facts as entirely unrelated. Thus, this paper shows that Kayne's Antisymmetry hypothesis can be defended, not only as a matter of theory-internal issues, but also on clearly empirical grounds.

References

- Aldridge, E. 2002. "Nominalization and WH-movement in Seediq and Tagalog". *Language and Linguistics* 3.2: 393–426 (Academia Sinica, Taipei, Taiwan)
- Borsley, R. Rivero, M. L. and Stephens, J. 1996. "Long head movement in Breton". In *The Syntax of the Celtic Languages*. I. Roberts and R. Borsley (eds). pp. 53–74. Cambridge: Cambridge U. Press
- Carnie, A. and Guilfoyle, E. (eds). 2000. *The Syntax of Verb-Initial Languages*. Oxford: Oxford U. Press.
- Carnie, A. Harley, H. and Pyatt, E. 2000. "VSO order as raising out of IP? Some evidence from Old Irish". In A. Carnie and E. Guilfoyle (eds). pp. 39–59
- Chang Y.-L. 1997. *Voice, Case and Agreement in Sediq and Kavalan*. Ph.D. dissertation, Tsinghua U., Taiwan
- Cinque, G. 1997. *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. Oxford: Oxford U. Press
- Gasde, H.D. and Paul, W. 1996. "Functional categories, topic prominence and complex sentences in Mandarin Chinese". *Linguistics* 34: 263–294
- Guilfoyle, E. Hung, H., and Travis, L. 1992. "SPEC of VP and SPEC of IP: two subjects in Austronesian languages". *Natural Language and Linguistic Theory* 10: 375–414
- Holmberg, A. and Platzack, C. 1995. *The Role of Inflection in Scandinavian Syntax*. Oxford: Oxford U. Press
- Holmer, A. 1996. *A Parametric Grammar of Seediq*. Lund: Lund U. Press
- Holmer, A. 1999. "Structural implications of the function of Instrument Focus in Seediq". E. Zeitoun and P. J.-K. Li (eds). *Selected Papers from the Eighth International Conference on Austronesian Linguistics*. Taipei: Academia Sinica

- Holmer, A. 2002a. "The morphology and syntax of Seediq focus". In *The History and Typology of Western Austronesian Voice Systems*. F. Wouk and M. Ross (eds). Canberra: Australian National U., Pacific Linguistics (518). pp. 333–354.
- Holmer, A. 2002b. "The grammatical encoding of adverbs of manner in the Formosan language Seediq". Paper presented at the International Symposium on Linguistics and Speech and Hearing Sciences, October 2002, Kuala Lumpur
- Holmer, A. forthcoming. "The place of Swedish in word order typology". In *Typological Profile of Swedish*. Å. Viberg (ed.). Special issue of *Sprachtypologie und Universalienforschung*.
- Huang, L. 1995. *A Study of Mayrinax Syntax*. Taipei: Crane Publishing Co.
- Kayne, R. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press
- Keenan, Edward. 1976. "Remarkable subjects in Malagasy". In *Subject and Topic*. C. Li (ed). pp. 247–301. New York: Academic Press
- Laka, I. 1994. *On the Syntax of Negation*. (Outstanding Dissertations in Linguistics). New York & London: Garland Publishing
- Lee, F. 2000. "VP remnant movement and VSO in Quiavini Zapotec". In A. Carnie and E. Guilfoyle (eds). pp. 143–162.
- Massam, D. 2000. "VSO and VOS. Aspects of Niuean word order". In A. Carnie & E. Guilfoyle (eds). pp. 97–116
- Pearson, M. 1998. "Predicate raising and "VOS" order in Malagasy". *UCLA Occasional Papers in Linguistics* 20: 94–110
- Pensalfini, R. 1995. "Malagasy phrase structure and the LCA". *MITWPL* 27: 209–221
- Rackowski, A. and Travis, L. 2000. "V-initial languages: X or XP movement and adverbial placement". In A. Carnie and E. Guilfoyle (eds). pp. 117–141
- Rizzi, L. 1990. *Relativized Minimality*. Cambridge, MA: MIT Press

Schachter, P. and Otnes, F. 1972. *Tagalog Reference Grammar*. Berkeley: U. of California Press

Travis, L. 1984. *Parameters and Effects of Word Order Variation*. Ph.D. dissertation, MIT.

* The Seediq material included in this paper is the result of fieldwork conducted in Taiwan during 1993, 1995 and 1998. I gratefully acknowledge financial assistance from the Bank of Sweden Tercentenary Foundation, the Swedish Research Council for the Humanities and Social Sciences, and the Lundberg Ido Foundation, which together made this research possible. Naturally, my deepest debt of gratitude goes to my principal consultant and friend Teminawi Tseng, of Puli, Taiwan. I am also grateful to the audience of the Conference on the Syntax of Verb-initial languages in Tucson, Arizona, February 2003, for valuable comments and helpful suggestions, especially from Andrew Carnie, Sheila Dooley-Collberg, David Gil, Heidi Harley, Eloise Jelinek, Hilda Koopman, Diane Massam and Lisa Travis, as well as two anonymous reviewers. Any mistakes or flaws are mine and mine alone.

¹. Or perhaps more aptly described, Spec-Head-Complement. We will henceforth follow a common practice and use word order type abbreviations to refer to various linear settings of structure.

². The rationale for predicate raising is to ensure that both the verb and the object precede the verb in VOS languages. In some VSO languages, predicate raising can be applied to account for Pseudo Noun Incorporation, where indefinite (but not definite) NP objects precede the subject.

³. cf. Gasde and Paul (1996) for a treatment of final particles in Mandarin Chinese as heads.

⁴. From an acquisition point of view, the symmetric analysis and the antisymmetric analysis are presumably equally straightforward or problematic – the learner must either deduce the directionality of the structure or the types of predicate raising involved. I thank an anonymous reviewer for drawing my attention to this point. Note, however, that final heads do not partake in / interfere with verb movement. Under the symmetric analysis, this must be coincidental, under an antisymmetric analysis these facts are connected.

⁵. The NOM particle *ka* is optional in Seediq.

⁶. I adhere to the common practice of glossing infixes as -infix-. Thus the root in (6a) is *puq-*, whereas PST is realized by the infix *-n-*.

⁷. Or at least less ungrammatical than (7a).

⁸. For more details on Seediq word order patterns in Seediq cf. Holmer (2002a). Examples (7a) through (7c) are initially inspired by similar examples in Chang (1997), given in topicalized word order. The (non-topicalized) word order patterns given here have been tested with a native consultant.

⁹. The bound pronoun *na* '3SG.GEN' is obligatory unless immediately followed by the Agent (cf. (7a)).

¹⁰. Note that (7c) involves a noticeable intonational break before the extraposed Agent.

¹¹. I have followed Aldridge (2002) in assuming that KaP is the level which links the subject with the predicate, given that the particle *ka* can only occur once in a clause. Alternative views are possible, i.e., that *ka* is simply a case marker and is located together with the NP in the specifier of TopP. Nothing in the present analysis hinges crucially on this assumption.

¹². Note that word order here is not VSO, but rather V-Agent-S, with a non-subject Agent and a subject Patient. Structurally speaking, this is equivalent to VOS order, since vP-internal elements precede the grammatical subject.

¹³. Summarized very briefly – postverbal adverbs in Malagasy are viewed as heads which trigger complement raising (analogous to predicate raising), the result being that for each adverbial level, the complement consistently precedes the head.

¹⁴. Further, the fact that the subject raises to the specifier of TopP (to get its surface position to the right of the predicate) shows that a [+pred] EPP value does not exclude DP movement. Whether DP movement takes place for EPP reasons, as argued in Holmer (1996) and Holmer (1999) –albeit in a GB analysis– or whether it takes place for Case checking reasons, as suggested by Aldridge (2002) is a question outside the scope of this paper. The fact remains: to combine VOS order with an antisymmetric analysis requires DP-extraction from the predicate before predicate raising takes place.

¹⁵. A possible solution might be the following. It is generally assumed that the underlying parametric distinction is concerned with whether the EPP has the value [+pred] (in predicate raising languages) or [+D] (in argument raising languages) In a [+D] EPP language, the subject may have to raise cyclically (phrase to phrase) to reach the position where it can satisfy the EPP (depending on the amount of structure assumed to be present in the clause). It is conceivable that generalized predicate raising may be the [+pred] equivalent of this kind of cyclic movement. Possible consequences of this view are, however, beyond the scope of this paper.

¹⁶. The suitability of the label AspP may be debated (Anders Holmberg, p.c.). However, both the function and the position are rather clear. Seediq *di* can be fruitfully compared with Mandarin Chinese clause-final *le*, which indicates that the truth value of the entire proposition is new. Seediq *na*, on the other hand, indicates that it is unchanged.

¹⁷. The most suitable labels for the various categories are, of course, open to debate. It might even be conceivable that the categories proposed are language-specific (cf. Holmer (to appear) for a discussion). However, this is not really the issue at hand.

¹⁸ The realizations *sa* and *si* are in free (possibly idiolectal) variation.

¹⁹ In Malagasy they are not actually clause-final, but rather predicate-final, located between the predicate and the subject.

²⁰ For further references cf. Lee (2000), Massam (2000).

²¹ but not Tongan (cf. Otsuka, this volume).

²² Unless we follow Pearson (1998) in generating *ve* in a position which is structurally *lower* than the surface position of the subject, in which case both the symmetric and the antisymmetric analysis can yield identical results.

²³ Preposed topics which *are* intonationally separate from the clause, are naturally not valid cliticization hosts either.

²⁴ As there is no direct evidence for the existence of KaP in Malagasy, the null hypothesis is that the complement of C2° in Malagasy is TopP rather than KaP. Nothing hinges on this assumption, so we have simply included KaP for ease of comparison.

²⁵ An interesting consequence of this view would be that VOS languages which lack overt nominative / subject particles should have pre-subject polar interrogative particles, a very strong prediction indeed, which is worth examining further.

²⁶ The status of possible clause-final occurrences of *ve* reported by Jill Heather Flegg (Lisa Travis, p.c.) is not clear in this model at present. We defer this issue to further research, given that any analysis must take into account the exact circumstances under which this construction is at all possible.

²⁷ The clitics in Tagalog are 2nd position clitics, but crucially do not attach to clause-initial topics. In practice, therefore, they usually attach to syntactic heads. A possible counterexample might be the fact that they sometimes attach to certain adjuncts (cf. Aldridge 2002:413ff, see also example (22b) above). However, as has been argued in Holmer (2002b), adverbial categories which are XP's in English are demonstrably syntactic heads in various Formosan languages, and possibly in Western Austronesian in general. If this is the case in Tagalog, then Tagalog 2nd position clitics are, in actual fact, enclitic to the first syntactic head in the clause, just like the pronominal clitics in Seediq (note that we have demonstrated above that clitic placement in Seediq is syntactically, not prosodically, determined).

²⁸ Or rather, that Tagalog applies only head-raising, whereas Seediq applies both head-raising and predicate raising, cf. section 5. The motivation for head raising is assumed here to be analogous to the strong feature in C° assumed for Scandinavian V2 languages, cf. Holmberg & Platzack (1995).

²⁹ Basic word order in Tagalog is not entirely uncontroversial, given that the order of the arguments is relatively free. For ActF clauses, VSO is the least marked order, cf. the discussion in Guilfoyle, Hung & Travis (1992).

³⁰ i.e., that a moved constituent becomes a syntactic island, from which further extraction is impossible.

³¹ In a sense, the mirror image of remnant VP movement.

³² V-raising could, for instance, be caused by a strong feature in C°, cf. Holmberg & Platzack (1995). Predicate raising, on the other hand, could be caused by a mechanism analogous to the EPP (cf. Massam, this volume).

³³ For evidence of the head status of manner adverbials in Seediq and various other Formosan languages cf. Holmer (2002b). One such piece of evidence involves verbal inflection on manner adverbials.

³⁴ cf. examples (18c-g) which show that these are not Wackernagel clitics.

³⁵ cf. V-to-C movement in V2 languages (Holmberg & Platzack 1995).

³⁶ If we follow Aldridge (2002) in placing the nominative particle *ka* in Ka°, this head also becomes a potential problem. This would not be a final particle, but a post-predicate particle analogous to the Malagasy interrogative particle *ve*. It is not entirely clear whether there are any advantages to be derived from treating *ka* as a head. In fact, if it is, KaP would be a partial exception to the generalization in (25), i.e., a category which partakes in neither head-movement nor complement movement. The exact implications of this are deferred to future research.

³⁷ This difference could be described such that left-peripheral heads are part of the clause itself, whereas final particles are in some sense extra-syntactic and not subject to the same behavioral restrictions (as suggested by David Gil, p.c.). On the descriptive level, there is a great deal of truth in this statement. Unfortunately, however, generative grammar does not permit us to adopt it as it stands: we cannot simply exclude functional elements from the syntax. In a sense, the present analysis, in differentiating between two different kinds of heads which cannot interact with one another, comes as close to this suggestion as possible within a Principle and Parameter framework.

³⁸ It does not seem possible at this stage to capture this classification of heads purely in terms of a simple A-A' distinction, given that some subordinators are clause-initial and others clause-final. Further, Aspect markers are clause-final while (relative) Tense is clause-initial. In fact, the present analysis suggests that the Seediq polar interrogative marker *ye* is an X-head, whereas the Atayal polar interrogative marker *quw* is a Y-head.

³⁹ Seediq *ye* seems to be a partial exception to the X/Y typology in another sense, under the analysis given here (assuming that it is located in C2° and thus both undergoes head-raising and triggers predicate-raising). However, the most likely solution is that interrogative *ye* and final subordinators are not located in the same structural position (C2°), but that the C-domain has an even more articulated structure, where the head hosting final subordinators is of type Y, while the head hosting *ye* is of type X. Of course, assuming cross-linguistic variation in the base-generation of categories (cf. Holmer forthcoming), the solution is simple: *ye* would be base-generated in C1° and *quw* in C2°. Which model is closer to the truth remains to be seen.