

Malagasy and Formosan Languages: A Comparison

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In my paper 'Binary Branching and Null Subjects in Malagasy', it was shown that there exists a privileged relationship between a clausal head or inflections for tense/aspect and its specifier or grammatical subject. In particular, following a framework proposed in Haeberli (2000), it was argued that the specifier may contain a missing feature, which it has to pick up from the clausal head. Such a characterization fits in well with Malagasy, which as a configurational language retains its VP constituent, but not with Formosan languages, which by and large seem to have witnessed the demise of their VP constituents, given the prevalence of the VSO word order found in this group. One major purpose of this paper is to illustrate some of the similarities and differences between Malagasy and the Formosan subfamily¹ in terms of a *missing atomic f(eature)* characterization typical of Malagasy or its opposite, i.e., *feature spread*, whereby one atomic feature is spread over two different constituents, for example, shared by both the lexical head and its complement or by a functional head and its specifier.

Key words: Malagasy, Tsou, Atayal, Spec-Head agreement, missing feature, feature spread

1. Introduction

In this paper, my main purpose is to show that Malagasy is a *missing feature*

¹ The selection of the specific Austronesian languages analysed in this paper arises from the feature-driven theory of language typology rooted in Universal Grammar, which is adopted in this presentation. The theoretical linguistics model serving as our starting point is that proposed in Chomsky (2000) and supplemented with Haeberli (2000). Such a framework highlights the crucial importance played by inherent features in syntactic derivations.

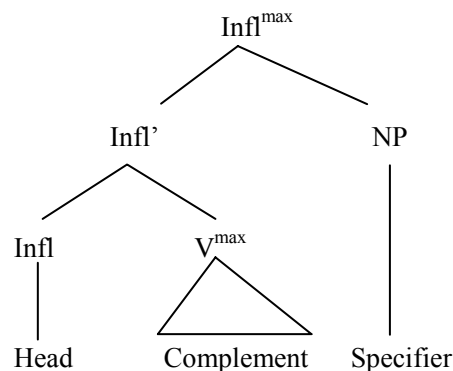
The main features which are relevant for our present purposes are the following: [+/-CONTROL], [+/-DURATIVE] or inversely [+/-PUNCTUAL], and as suggested in Randriamasimanana (2004) [+/-BOUNDED]. Malagasy, the westernmost branch of Malayo-Polynesian, certainly shows that such inherent features are quite crucial to an understanding of its syntax; linguistic data available to date in Tsou, in Wulai Atayal, and in Mayrinax Atayal also seem to point in the same general direction, although the specific manner in which a given feature is manifested may vary according to the language in question. In particular, at least in an initial phase of our research, we would like to concentrate on prototypical cases where there exist maximal differences between languages before delving into parametric variations.

language following a characterization proposed in Haeberli (2000) within a Minimalist type of framework, whereas Formosan languages generally appear to be *feature spread* languages.

2. Word order considerations in Malagasy and Tsou

In the process of sentence construction in a configurational language such as Malagasy, but also in a Formosan language like Tsou where a transitive verb is involved, there appears to be a constant interaction between features contained in the verbal head and those of its noun phrase complement, on the one hand; and a systematic relationship between features of the clausal head and the relevant interpretation of its grammatical subject or specifier, on the other. This puts the following to the fore: (a) the importance of the preservation of the verb phrase or VP constituent; and (b) the interpretation of whatever constituent ends up as the grammatical subject of the sentence.

In this paper, we shall assume the following tree representation adapted from Randriamasimanana (1998:304) to capture the relationship between the clausal head and its specifier:



Where head = lexical = {V, P, N, A}; head = functional = {voice, tense, aspect, agreement}; NP = DP or bare noun

Figure 1: X-Bar Theory and Tree Geometry

To represent the relationship obtaining between a lexical head verb and its complement in a transitive construction, we shall adopt the following subtree:

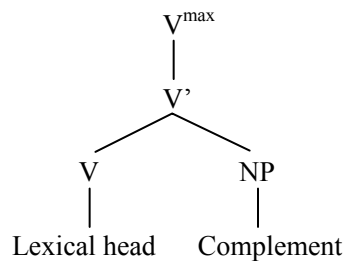


Figure 2: Lexical head V-Complement

2.1 Persistence of the VP constituent in Malagasy and Tsou

The verb phrase (VP) or V^{\max} constituent on Figure 2 seems to be maintained in both Malagasy and Tsou in the active voice. Thus, of the two illustrative examples given for Malagasy in Harries-Delisle (1978:463), only the first one—as in (1)—with the V(erb) O(bject) S(ubject) order is grammatical, whereas the second utterance shown in (2) with the putative VSO order is simply not Malagasy at all.

- (1) N-ividy vary ny vehivavy.
 Bought rice the woman
 ‘The woman bought rice.’
- (2) *N-ividy ny vehivavy vary.
 Bought the woman rice
 ‘The woman bought rice.’

After due consideration to sentences found in Szakos (1994) and in Zeitoun (1993:972, ex. (2b)), reproduced below in (3), I now revise Randriamasimanana (2000:271) and delete the VSO order from the cell dedicated to Tsou on the original table.

- (3) *[mo bon#] _v [’o amo] _s [to tac#m#] _o.
 AF² eat OBL father NOM banana

² The following abbreviations are used in this paper: ACC: Accusative; ACT: Active; AF: Agent Focus; AGR: Agreement; ASP: Aspect Passive; CrcPass: Circumstantial; DAT: Dative; DET: Determinant; FOC: Focus; GEN: Genitive; HAB: Habitual; IF: Instrument Focus; IMPERF: Imperfective; IRR: Irrealis; NRF: Non-Referential; OBL: Oblique; P: Plural; PART: Particle; PASS: Passive; PF: Patient Focus; PRES: Present; RF: Referential; S: Singular; NAF: Non-Agent Focus; NOM: Nominative.

(4) Revised version of Randriamasimanana (2000:271)

TAIWAN					
Tsou	VOS/ SVO	NG	Prep	AN	NRel/RelN
Atayal	VOS/ SVO/ VSO	NG	Prep	AN/NA	RelN
Rukai	VSO/ VOS	NG	Prep	AN	
Seediq	VOS/ VSO	NG		NA	NRel

Thus, of the Formosan languages, Tsou seems to be most similar to Malagasy. The VOS order appears to be basic in both Tsou and Malagasy in that, when in both languages the grammatical subject and the direct object are full noun phrases (and not pronouns)—as illustrated for instance in Szakos (1994:166, 1/AF—actor focus), this is the word order that materializes. In Tsou, on the other hand, when the subject is a pronoun, it automatically shows up as the first element inside the clause—as seen in Szakos (1994:164, §4.1.2.2, AF example)—thus yielding an SVO word order.

2.2 Break-up of the VP constituent in other Formosan languages

As for the relevant Formosan languages, the following situation holds. From Huang (1993:50, ex. (1a, b, c)), Atayal appears to have the VOS word order. Yet a VSO order is possible when the subject happens to be a pronoun as in Huang (1993:53, ex. (10a)). In this case, the pronoun occupies a position immediately to the right of and adjacent to the verb. From Li (1973:70), it appears that the VSO order is also possible in Rukai along with VOS. From Holmer (1996:58, ex. (2b) and 64, ex. (10a, b)), it is clear that Seediq has the basic VOS word order. And judging from Holmer (1996:49, ex. (35a) and 1997:331, ex. (1a)), the order VSO is also possible just in case the subject happens to be a pronoun.

2.3 Case-marking in Malagasy and Formosan languages

Unlike Formosan languages, Malagasy shows a rather impoverished case system, as already noted in Keenan (1976:251), with only a handful of forms corresponding to the nominative, the accusative, and the genitive for the pronoun system. By contrast, according to Zeitoun (1993), Tsou has a wide range of case particles, which in addition to the genitive³ seem to fit mainly into two slots, i.e., the nominative and the oblique.

³ This is my own interpretation of her data.

However, as demonstrated in Zeitoun (1996), such case particles, showing up in Tsou on the noun phrase complement to the head verb, appear to be semantically related to inherent features associated with the head verb. Thus, the contrast between the oblique particle *ta* vs. the oblique particle *to* seen in Zeitoun (1996:517):

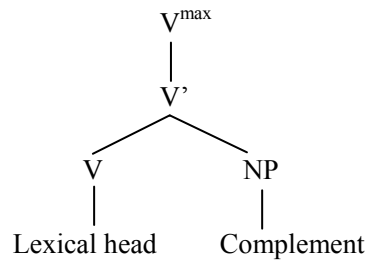


Figure 3: Complement NP with *ta/to* particle in Tsou

- (5) mi-ta -cu bonu ta tacumu
 [AF-3S.NOM -already eat-AF OBL banana]
 'He is already eating a banana.'
- (6) mi-ta -cu bonu to tacumu
 [AF-3S.NOM -already eat-AF OBL banana]
 'He has already eaten a banana.'

According to the author, the particle *to* as in (6) refers to an object “unseen” at Speech Time, whereas the particle *ta* in conjunction with the imperfective interpretation of the AF construction appears to indicate that the patient is only partially affected by the activity described by the head verb, as illustrated in (5).

In essence, the inherent feature corresponding to ‘imperfective’ arising from the AF focus of the head verb is spread onto the accompanying complement noun phrase in Tsou in the form of the particle *ta* in (5). On the other hand, in Malagasy such an accompanying complement noun phrase will simply be non-definite, as in:

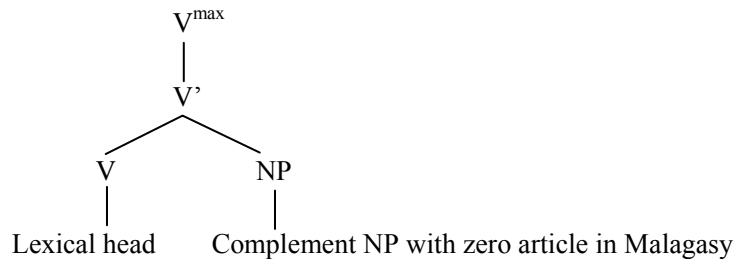
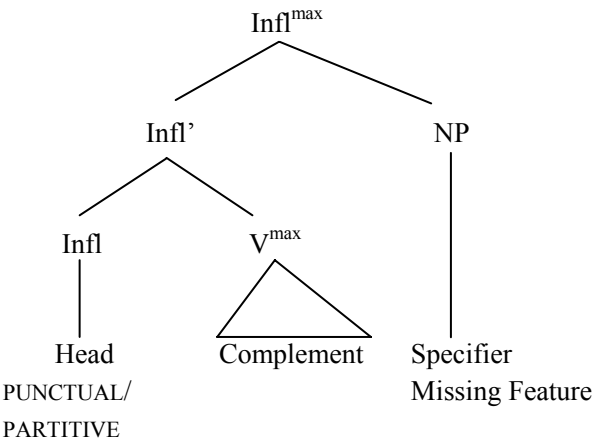


Figure 4: Complement with bare NP in Malagasy

- (7) Efa n-ihinana \emptyset akondro izy.
Already PAST-eat \emptyset banana s/he
'S/he has already eaten (a) banana.'

2.4 Head-specifier and head-complement relationships

What has just been described in §2.3 above in terms of the relationship between the head verb and its complement noun phrase is only one (lexical) aspect of the relevant structure-building operations in sentence construction. The other half of the merger has to do with the relationship between the functional head of the clause, for example, voice, tense/aspect and its specifier or grammatical subject. In my paper entitled 'Binary Branching and Null subjects in Malagasy', it is shown that there is a systematic relationship between features appearing inside the functional head of a clause and the semantic interpretation of its specifier. For example, we have the following contrast depicted on Figure 5 and illustrated in (8) and (9) below:



Where functional head Infl contains a feature like PUNCTUAL or PARTITIVE arising from voice/tense/aspect, and where NP = DP or bare noun and is lacking in some feature, as a result of the imperfection of lexical categories of language.

Figure 5: X-Bar Theory and Interpretation of Specifier

- (8) **No-didi-ndRabe** **ny mofo.** **Punctual** reading of Spec
PAST-cut-by:Rabe the bread
'The (whole) bread was cut by Rabe.'

- (9) N-**an**-didi-**and**Rabe **ny mofo.** **Partitive** reading of Spec
PAST-ACT-cut-by:Rabe the bread
‘(Some of the) bread was cut by Rabe.’

In the Malagasy sentence in (8) the functional head of the clause contains the *no...in(a)* form of passive containing the feature [+PUNCTUAL]; in (9) the functional head has the circumstantial voice form *an...an* with the feature [+PARTITIVE]. The presence inside the functional head of the relevant feature accounts for the different interpretation of the specifier *ny mofo* following a framework proposed in Haeberli (2000), whereby the specifier contains a missing element, which it has to pick up from the functional head of the clause. In Tsou, judging from Zeitoun (1996:516), the situation is mixed: the relationship between the clausal head and its specifier also yields the expected (definite phrase) interpretation following the *missing feature* type of analysis, whereas the complement noun phrase has to be interpreted in relation to the AF (actor focus) or NAF (non-actor focus) nature of the lexical head verb and the presence of the relevant particle on the complement noun phrase.

- (10) mi-ta m-imo ta emi
[AF-3S.NOM AF-drink OBL wine]
‘He is drinking wine.’
- (11) i-ta im-a ta emi
[NAF-3S.GEN drink-PF NOM wine]
‘He has drunk the wine.’

In (10) we have an actor-focus construction with *ta emi* as a complement to the head verb *m-imo*, which has an imperfective reading; whereas in (11), we have a Non-actor-focus accompanied by a feature like Malagasy PUNCTUAL, and where *ta emi* now occupies the grammatical subject position. Now in this Non-actor focus construction, the clausal head presumably contains something like the Malagasy feature just mentioned, and the grammatical subject or specifier *ta emi* has to be interpreted as definite.

2.5 Consequences

The consequences of the phenomena described under §2.1, 2.3, and 2.4 are two-fold: (i) Malagasy tends to accumulate the relevant features on a head of construction, either lexical or functional, whereas a language like Tsou shows a proclivity to spread such features between the relevant lexical head and its noun complement(s), for example. (ii) As an immediate consequence of this, while in the case of a language like Tsou, one

might get the illusion of promoting a direct object noun phrase like *ta emi* in (10) into a grammatical subject, as shown in (11), this is most certainly not the case in Malagasy: As illustrated in (7) and depicted in Figure 4, the relevant Malagasy noun phrase occupying the direct object slot is more than likely to be a non-definite phrase; therefore, it simply cannot be promoted to subject position since by definition in Malagasy, the grammatical subject must be definite. This accounts for the tremendous number of spurious ungrammatical sentences produced and reproduced in the English-speaking literature on Malagasy relational grammar, where a definite direct object is promoted to subject. (See in particular Appendices D and E of the paper ‘Binary Branching and Null Subjects in Malagasy.’)

3. The inherent feature CONTROL in Malagasy

In Malagasy, there exists at least one substantive inherent feature [+/-CONTROL] which plays an important role in the organization of the grammar in particular, with respect to incorporation as outlined in Baker (1988). As already explicitly and abundantly illustrated in Randriamasimanana (1986: §2 Control), this feature is crucial in Malagasy embedding, as opposed to adjunction, for instance.

3.1 Morphological considerations and Malagasy grammar

In Malagasy, an aspect-marker can be either internal or external to its predicate. The aspectual marker surfaces internally to the predicate in case the latter is accompanied by the feature [+CONTROL]; but it shows up externally to the predicate if the latter is characterized by the feature [-CONTROL].

3.1.1 With [+CONTROL] predicates, typically aspect is internal to the predicate.

- (12) **Ø-sorata-n'i** Paoly ilay taratasy.
PRESPASS-write-by:art Paul the letter
PUNCTUAL = right Here & Now
 ‘The letter is being written by Paul.’
- (13) **No-sorata-n'i** Paoly ilay taratasy.
PASTPASS-write-by:art Paul the letter
PUNCTUAL = at a specific moment in the Past
 ‘The letter **was** written by Paul.’
- (14) **Voa-soratr'i** Paoly ilay taratasy.
PERF-write-by:art Paul the letter
 ‘The letter **has been** written by Paul.’

The above category of predicates corresponds roughly to verbs describing DELIBERATE kinds of ACTIVITY.

3.1.2 With [−CONTROL] predicates, aspect is typically external to the predicate and is indicated by lexical items such as *efa* = ‘done’ for perfective aspect and *mbola* = ‘still’ for the non-perfective aspect.

- (15) a. \emptyset lehilahy lehibe i Paoly.
 \emptyset man big art Paul
 ‘Paul **is** a big boy.’
 b. **Efa** lehilahy lehibe i Paoly.
 PERF man big art Paul
 ‘Paul **is already** a big boy.’
 c. **Mbola** zazakely i Paoly.
 IMPERF child art Paul
 ‘Paul **is still** a child.’

This second set corresponds by and large to AUTONOMOUS kinds of EVENT.

4. Feature CONTROL in Atayal

The feature [+/−CONTROL] also appears to be relevant in Mayrinax Atayal. Indeed, some causative construction data from Huang (2000:384-5) seem to suggest that this Formosan language may utilize the same feature in constructions involving embedding. Furthermore this feature may be relevant for a distinction between argument and adjunct.

4.1 CONTROL in Atayal

In a VOS/VSO language like Atayal, even in the ‘passive’ there seems to be a distinction between an argument and an adjunct. In this language, there is a distinction between two types of ‘passive’; i.e., a Patient or Recipient passive with the suffix *-an/-un*, on the one hand and the Beneficiary and Instrument passive with the prefix *s-* on the other hand. The first subtype involves an argument which has been promoted to subject position, whereas the second type involves an adjunct added to the basic utterance and taking up the slot reserved for the grammatical subject of the verb. Furthermore, in cases of predicates allowing either possibility, passive involving an argument correlates with the presence of the verbal feature [+CONTROL], whereas passive involving an adjunct correlates with the same negative value feature [−CONTROL] (which could be synonymous with accidental).

4.2 Argument vs. adjunct in Wulai Atayal

According to Huang (1993), Wulai Atayal distinguishes between two types of passive affixes: the passive with the suffixes *-an/-un* in (16) and (17) correspond to a promotion of a direct object (with the thematic role of Patient or Recipient) to subject; while the passive with the prefix *s-*, as seen in (18) and (19), corresponds to upgrading an adjunct (with the thematic role of Beneficiary or Instrument) to grammatical subject. The following are illustrative examples from Huang (1993):

Patient

- (16) t'-an qhunig tali
 crush-AN tree Tali
 'The tree crushed Tali.'

(Huang 1993:11-12)

Recipient

- (17) t'un qhunig tali
 crush-UN tree Tali
 'The tree will crush Tali.'

(Huang 1993:12)

Beneficiary

- (18) s-'agan-mu qulih tali
 S-take-1S.GEN fish Tali
 'I'll catch Tali a fish.'

(Huang 1993:13)

Instrument

- (19) a. s-'agan-mu qulih sqari' qani
 S-take-1S.GEN fish net this
 'I used this net to catch the fish.'
- b. *s-'agan-mu sqari' qani qulih
 S-take-1S.GEN net this fish

(Huang 1993:14)

In (17), where we have an illustration of the first strategy, we have the suffix *-un* indicating that the initial direct object within sentence (16) has been promoted to grammatical subject. On the other hand, we witness a second strategy in (18) and (19), since we have a prefix *s-*, which seems to license one additional noun phrase in both (18) and (19); which noun phrase appears to be a constituent added to the core of the clause, i.e., on top of it as it were, as suggested by the impossibility of adding the extra NP *sqari' qani* immediately adjacent to the predicate, as in (19b).

4.3 Wulai Atayal semantic correlate

The two different strategies described above apparently allow speakers of Wulai Atayal to disambiguate between two utterances of a minimal pair, as in:

Circumstantial

- (20) a. wan-nya' lah-an turi hupaw-nya'
 ASP-3S.GEN leave-AN car purse-3S.GEN

Argument

‘He left his purse in the car.’ (on purpose)

- b. wan-nya' s-'alah turi hupaw-nya'
ASP-3S.GEN S-leave car purse-3S.GEN

Adjunct

'He left his purse in the car.' (by accident) (Huang 1993:24)

In (20a), where the suffix *-an* passive is used, we are dealing with a noun phrase *hupaw-nya* ‘purse-3S.GEN’, with the status of full argument of the verb. The relevant interpretation of the sequence is one where the person being referred to ‘left his purse on purpose’, i.e., deliberately, and therefore, the relevant predicate could be assumed to contain a feature [+CONTROL]. By contrast, in (20b), where the prefix *s-* passive features, we have an adjunct noun phrase *hupaw-nya* ‘purse-3S.GEN’. The relevant interpretation is one where the person in question ‘left his purse by accident’; and therefore, the relevant predicate could be assumed to contain a feature [−CONTROL].

Additional evidence that justifies our [+CONTROL] interpretation of passive *-an* suffix is available from Huang (1993:58, ex. (24a vs. b)):

- (21) m-ulu-sami lomwa hira'
[M-find-1P.NOM rascal yesterday]

'We found a rascal yesterday.' (not on purpose; happened to find him)

- (22) lw-an-myan lomwa hira'
[find-AN-1P.GEN rascal yesterday]

'We found the rascal yesterday.' (we were looking for him; finally found him)

4.4 Control and incorporation in Atayal

Some additional data from Huang (1995:150) suggest that indeed in Mayrinax Atayal we may be dealing here with an initial adjunct, but that through the process of passivization, the initial adjunct can become an argument of the verb. Consider:

- (23) a. si-culuh=mi' cu' siyam ku' batah
 IF-roast=1S.GEN ACC.NRF pork NOM.RF charcoal
 'I am using the charcoal to roast pork.'
- b. si-cabu' cu' qulih nku' nabakis ku' abag
 IF-wrap ACC.NRF fish GEN.RF old:man NOM.RF leaf
 'The old man wrapped a fish with the leaf.'

Sentence (23a) shows that the verb still assigns accusative case to its direct object complement, but that the instrument-oblique 'charcoal' is now the grammatical subject (a definite phrase, i.e., RF, referential) of the sentence with the appearance of the instrumental-focus (abbrev. IF) or the circumstantial form of passive suffix *si-* on the verb radical. Likewise for (23b), except that this time around we also have the thematic role of agent encoded in the genitive, which goes to show that indeed we have a passivization process at work here since the agent of the activity described by the verb is encoded as a genitive.

In brief, Atayal, a Malagasy-like VOS language (at first blush at least), seems to maintain a distinction between an argument of the verb indicated by the *-an* suffix and an adjunct indicated by the *s(i)-* prefix, even in the passive. This distinction seems to correlate with the contrast between a deliberate kind of activity (i.e., [+CONTROL]) versus an accidental event (i.e., [-CONTROL]).

5. Incorporation: A contrast between Mayrinax Atayal and Malagasy

It looks as though, in addition to the feature [+CONTROL], incorporation as a process requires adjacency of the target element to the lexical head in Malagasy, but apparently not in Mayrinax Atayal. This difference may be related to the predilection for recourse to *missing feature* in Malagasy, as opposed to *feature spread* in Formosan languages.

5.1 Mayrinax Atayal incorporation

Indeed, judging from the data shown in §4.4, incorporation from a distance seems possible in a language like Mayrinax Atayal, whereby a constituent that was initially outside the core of a clause may get incorporated into the core and ultimately become a derived grammatical subject. Here is some data from Mayrinax Atayal found in Huang (1995:24-26), which show that some material (here the dative with *cku'*) may appear to the right of the grammatical subject, as in (24), and that the subject itself can show up immediately after the verb, as in (25):

- (24) m-in-aiq cu' pila' 'i' yumin cku' 'ulaqi'
 AF-PAST-give ACC.NRF money NOM Yumin DAT.RF child
 'Yumin gave money to the child.'
- (25) m-in-aiq 'i' yumin cu' pila' cku' 'ulaqi'
 AF-PAST-give NOM Yumin ACC.NRF money DAT.RF child.
 'Yumin gave money to the child.'

Examples (24) and (25) show that in Mayrinax Atayal, it is possible to incorporate an element which is not adjacent to the verb. Thus in (26a) the constituent '*i*' *yumin* shows up after the first direct object; and yet as made explicit in (26b), it can be incorporated into the verb by moving into it over another constituent. Note that *ci*' '1S.NOM' is derived from *cu*' '1S.NOM' + '*i*' 'ACC'.

- (26) a. m-in-aiq=*ci*' cu' pila' 'i' yumin
 AF-PAST-give+1S.NOM ACC.NRF money ACC **Yumin**
- b. m-in-aiq=*ci*' yumin cu' pila'
 AF-PAST-give=1S.NOM **Yumin** ACC.NRF money
Verb + suffix ↑

5.2 Malagasy incorporation

Unlike in Mayrinax Atayal, adjacency of the target constituent to the head verb is required in Malagasy for incorporation to take place within VP. First note that judging from the Malagasy sentences proposed in contemporary papers (e.g., Pearson 2001:101), the above constraint does not seem to have been observed. Thus, Pearson produces the following examples shown in (27). Both sequences are at the very least of very dubious grammaticality.

- (27) a. Ny fitiavana no namonoany tena
 DET love FOC PAST-CrcPass.kill-3 self
 'He killed himself for love.'
- b. Mba ho hendry no nanasaziako azy
 so that IRR well-behaved FOC PAST-CrcPass:punish-1S 3
 'I punished them so that they'd behave.'
 lit. "It is in order that [they] would be well-behaved that I punished them."

- (28) a. N-amono tena izy noho ny fitiavana.
 PAST-kill self he because-of the love
 ‘S/he killed him/himself because of the love.’
- b. N-anasazy azy aho mba ho hendry izy.
 PAST-punish him I so-that FUT well-behaved he
 ‘I punished him/her so that s/he will be well-behaved.’

Here we note that in (27a) the Causal oblique *ny fitiavana* ‘the love’ initially shows up after (i.e., to the right of) the grammatical subject *izy* ‘s/he’ as shown in (28a). This means that in standard Malagasy this oblique phrase is not even eligible for incorporation into the target verb phrase, since it is definitely not adjacent to the head verb. However, given the word order facts of Malagasy, adjacency is required for incorporation in addition to the presence of positive value for feature CONTROL on the higher verb. The same kind of reasoning holds for (27b), where, as shown in (28b), the purposive clause *mba ho hendry izy* shows up to the right of the grammatical subject *aho* of the matrix clause. This clause is not adjacent to the putative target verb phrase of the putative incorporation. Worse still, the verb *nanasazy* does not even contain the feature [+CONTROL], which is a *sine qua non* condition for incorporation to take place in this language.

A simple explanation for the difference in incorporation behavior between Mayrinax Atayal and Malagasy is that, while in the former, the VP constituent has exploded and disappeared, presumably giving rise to feature spread along the lines sketched for Tsou in §2.3 and §2.4 above, in Malagasy the VP constituent persists and is pretty much alive so that it is possible for the lexical head verb to retain most if not all of the relevant features, this language favoring a concentration of all the features inside the head of construction (almost) exclusively, in this instance, the lexical head verb. It stands to reason, therefore, that in the absence of *feature spread*, Malagasy requires adjacency of the target element of incorporation to the lexical head verb. This is quite consistent with the rather rigid word order found in Malagasy.

6. *Missing feature in Malagasy vs. feature spread in Tsou*

As indicated in §2.1, of all the Formosan languages, Tsou appears to be the one resembling Malagasy most closely, in that it has kept somewhat intact the VP constituent, at least in the active voice. Nevertheless it is clear that even Tsou has a tendency to favor *feature spread* as opposed to the preferred strategy of *missing feature* characteristic of Malagasy.

6.1 Tsou and *feature spread* strategy

As proposed in §2.3 and §2.4 Tsou is a *feature spread* language. The following additional example from Zeitoun (1996:522) seems to confirm our analysis:

Head		headV	Complement
[+HABITUAL]			[+GENERIC]
(29) da-ta	huhucmasi	eobako	to oko
HAB-3S.NOM	every day:AF	beat:AF	OBL child
'He beats a child every day.'			

Here the crucial sequence is made up of the VP 'beat child'. First, note the presence of the particle *da* 'habitual' on the sentential head. Second, the complement noun phrase to the lexical head V is accompanied by the case-marker *to* containing the inherent feature [+GENERIC].

6.2 Malagasy and *missing feature* strategy

By contrast, as outlined in §2.4, Malagasy tends to resort to the *missing feature* strategy proposed in Haeberli (2000) whereby, for example, the specifier or grammatical subject is lacking in one element among its relevant bundle of inherent features, and it has to be put in relation with the functional head of the clause to pick up that missing feature from the head. This has widespread consequences in the grammar of Malagasy, which utilizes this strategy on a grand scale. Among other things, such an analysis, for example, contradicts the claim made in Matthew Pearson (2001:106, ex. (52)) relating to quantification in Malagasy:

- (30) a. Namangy ny rainy_i ny mpianatra tsirairay_i omaly
PAST-NOMP.visit DET father:3S DET student each yesterday
'Each student_i visited his_i father yesterday.'
- b. Novangian' ny mpianatra tsirairay_i ny rainy_i omaly
PAST-DATP.visit-DET student each DET father-3S yesterday
'His_i father, each student_i visited yesterday.'

Here (a) the quantifier *tsirairay* 'each' accompanies the subject, as illustrated in (30a), and portrays the role of the quantifier attached to the relevant noun phrase, as shown in (30b), as the essence of quantification in this language. In reality, both examples in (30) are ungrammatical. To make (30a) grammatical, we should have the strong, discontinuous form *samy...avy* inside the functional head of the sentence:

- (31) a. **Samy** *n-amangy ny rainy_i avy ny mpianatra (tsirairay_i) omaly*
Part.1 PAST-NOMP.visit DET father:3S **Part.2** DET student each yesterday
 ‘Each student_i visited his_i father yesterday.’
- b. ***Samy** *no-vangian’ ny mpianatra (tsirairay_i)avy ny rainy_i omaly*
Part.1 PAST-DATP.visit-DET student each **Part.2** DET father:3S yesterday
 ‘Their fathers_i were (each) visited by the students_i yesterday.’

Here the quantifier *tsirairay* accompanying the specifier *ny mpianatra* is optional—hence the use of the parentheses—but the lexical aspectual particles *samy...avy* are obligatory inside the clausal head. Note that despite the improvement, (31b) remains ungrammatical.

6.3 Quantifier *tsirairay*

We now need to pay closer attention to the relevant sequences from Matthew Pearson (2001:106, ex. (52)) relative to quantification in Malagasy: both are ungrammatical. The first reaction of a native speaker is that neither sentence is Malagasy. Indeed in this language, in general, it is a grammatical subject which can bind either a reflexive or a pronoun. This seems to be observed in (30a) in that the specifier *ny mpianatra* ‘the student(s)’ binds the bound pronoun form *-ny* suffixed to the direct object *ny rai-ny* ‘the father of his/hers’. However, this principle is violated in (30b), where a genitive *ny mpianatra* attached to the passive verb *novangian* by the suffix *n* is supposed to bind the specifier *ny rainy*. This pattern is not a very productive process in Malagasy; for example, it only involves a finite set of Malagasy root verbs. In other words, it occurs only in a very restricted set of predicates as described in Randriamasimanana (1986:232). We can characterize such a set as one of MARKED structure. Furthermore it involves considerations of politeness phenomena not directly related to syntax. In addition, such sentences typically use a perfective aspect marker; by contrast, the sequence in (30b) involves the non-perfective aspect marker *no...ina* of passive.

Coming back to the quantified phrase *ny mpianatra tsirairay_i* of (30a), it is necessary to resort to a feature analysis of the sequence to see that there is within this definite phrase an internal contradiction between the feature [−INDIVIDUATED] (i.e., not considered individually) contained in *ny mpianatra* (literally, ‘all the students taken together as a group/entity’) and the feature [+INDIVIDUATED] inherent in the quantifier *tsirairay* ‘each, one by one, individually’. Thus, the point of view or camera angle adopted in the definite phrase is one of external viewing; whereas the one used with the quantifier is one espousing internal viewing. (See Bernard Comrie (1976:3-6) for further discussion of this distinction.)

First, note that the specifier *ny mpianatra* in the sequence in (32a) refers to an entire set of individuals taken collectively. By contrast in (32b), with the addition of the quantifier *tsirairay* each student⁴ is now supposed to be considered individually:

- (32) a. No-sazi-n' i Paoly ny mpianatra.
PASS-punish-by art Paul the student(s)
| |
[+PUNCTUAL] [−INDIVIDUATED], i.e., entire set
'All the students were punished by Paul.'
lit.: "The entire set of students were punished by Paul."
- b. No-sazi-n' i Paoly ny mpianatra tsirairay.
PASS-punish-by art Paul the student(s) |
[+PUNCTUAL] [−INDIVIDUATED] [+INDIVIDUATED]
'Each/all the students were punished by Paul.'

Thus, the quantified definite phrase *ny mpianatra tsirairay* in isolation contains an internal contradiction, since one portion of it, *ny mpianatra*, is [–INDIVIDUATED] while the other, *tsirairay*, is [+INDIVIDUATED]. At any rate, it is not very likely for an entity to be viewed both externally and internally at exactly the same time.

⁴ We are dealing here with a [+COUNT] noun, *ny mpianatra* ‘the student(s)’. Given that a definite phrase which contains a [+COUNT] noun as its complement refers to an entire set in Malagasy, as illustrated in (32), the relevant question is: how are the members of such a set to be viewed? If they are not considered individually and are viewed collectively as members of the set, then the feature [−INDIVIDUATED] aptly characterises the situation. If on the other hand, the members of the same set are to be considered as individuals, one by one, then the relevant feature is [+INDIVIDUATED].

In the first instance, in the case of the definite phrase, the camera angle from which the situation is depicted involves EXTERNAL viewing, as proposed in Comrie (1976). This means that the set is viewed exclusively as a set and not in terms of its constitutive members or units comprising the set. By contrast, in the case of the quantifier *tsirairay* ‘each individually’, the camera angle adopted is INTERNAL viewing; that is, each member/unit of the set is considered in its own right, in its own turn, individually, one by one. Now, in sentence (32a), the *no...ina* form of Malagasy passive present in the clausal head is characterized by a feature [+PUNCTUAL]. This means that all features of the specifier must be consistent with this [+PUNCTUAL] feature. We already know that the definite phrase *ny mpianatra* ‘the student(s)’ contains the feature [–INDIVIDUATED]; this feature is fully compatible with [+PUNCTUAL]; but the reverse, the feature [+INDIVIDUATED] is totally incompatible. The reason why this is so derives from the fact that [+PUNCTUAL] does not comprise an interval of time and simply cannot therefore refer to any unit or individual unit inside the non-existing time interval or set in question.

6.4 Corrected sequences⁵

In order for the sequence shown in (30a) to be grammatical in Malagasy, we should have the following sentence in (33a), comprising the strong, discontinuous form *samy...avy*, showing up inside the functional head. However, (33b) remains ungrammatical.

- (33) a. **Samy** n-amangy ny rainy_i **avy** ny mpianatra (tsirairay_i) omaly
Part.1 PAST-NOMP.visit DET father:3S **Part.2** DET student each yesterday
 [+INDIVIUDATED] [Missing Feature]
 ‘Each student_i visited his_i father yesterday.’
- b. ***Samy** no-vangian’ ny mpianatra (tsirairay_i) **avy** ny rainy_i omaly
Part.1 PAST-DATP.visit-DET student each **Part.2** DET father:3S yesterday
 [+INDIVIUDATED] [Missing Feature]
 ‘Their fathers_i were each visited by each one of the students_i yesterday.’

Here the quantifier *tsirairay* accompanying the specifier *ny mpianatra* is optional—hence the use of the parentheses—but the lexical aspectual particles *samy...avy* containing the feature [+INDIVIUDATED] are obligatory inside the clausal head.

6.5 Other pieces of evidence

The following Malagasy example taken from Abinal & Malzac (henceforth A&M

⁵ The corrected version reflects not only my own intuitions about Malagasy as a native speaker, but also these other native speakers: A. Razanabohitra (retired teacher), M. O. Rasolomalala (Malagasy linguistics graduate from the Département de Lettres Malgaches, Université d’Antananarivo), M.Y. Rafaraso and M. Ramandrisoa. The first three were in New Zealand during the year 2001, on a visit from Madagascar. Also, in a Malagasy syntax seminar held at the Institute of Linguistics (Preparatory Office), Academia Sinica on April 28, 2001, I analyzed *samy* as an element comprising the verbal aspectual feature [+DISTRIBUTIVE]; cf. Randriamasimanana (2001).

Last, but not least, Rajemisa-Raolison (1995:858) has the following illustrative example:

(31) **Samy** naka boky telo **avy** izy mirahavavy.
Part.1 PAST-take book three **Part.2** (s)he sisters
 ‘Each sister took three books.’

Here the quantifier *tsirairay* does not show up at all, and yet the sentence is fully grammatical with the relevant interpretation of ‘each’ for the specifier. It should be noted here that Rajemisa-Raolison was not only an author who has widely published in Malagasy, but has also taught Malagasy at both secondary and university levels for several decades and written numerous grammars of the language as well as a number of Malagasy language encyclopedias. Therefore, he is generally considered to be an authority on Malagasy.

1888), reproduced in ‘Binary Branching and Null subjects in Malagasy’, shows that this language uses the *missing feature* strategy for marking plural on the specifier:

- (34) **Ireo** m-iady **ireo** ny zanakao.
 AGR PRES-fight AGR the children-of-yours
Plural verb **plural**
 ‘Voilà vos enfants qui se battent.’ (A&M 1888:282)
 ‘Your **children** are there, fighting.’
 lit.: “Your children are fighting—as we can see for ourselves.”

Note that the word *zanaka* in and of itself in Malagasy can either refer to a singular ‘a child’ or to a plural ‘children’. The relevant interpretation is totally dependent upon the AGR(eement) deictic that shows up inside the clausal head, in this instance *ireo* ‘these’, plural.

For Tsou by contrast, Szakos (1994:69-70) reports the following sequences, which show a distinct form for the singular and the plural at the level of the word:

- (35) hahocngꞰ ‘Mann, männlich’ ha-a-hocngꞰ ‘Männer’
 mameoi ‘Elternteil, alt’ ma-a-meoi ‘Eltern, Ahnen’
 oko ‘Kind klein’ o’o-ko ‘Kinder, klein’

Likewise, Holmer (1996:29-30) reports the existence of a d-prefix, which in Seediq is used to refer to a group of individuals:

- (36) mqedin ‘woman’ mmqedin/ddmqedin ‘each woman’
 rseno ‘man’ rrseno/ddrseno ‘each man’
 laqi ‘child’ lqlaqi/ddlaqi ‘each child’

The evidence shown in (5) and (36) above are relevant to our present discussion since there is a sharp contrast between these two possibilities in Formosan languages such as Tsou and Seediq, on the one hand, and their literal equivalents in Malagasy—for instance, *ny mpianatra tsirairay* ‘each student’, as illustrated in (32b) above—which are both ungrammatical and clearly belong in some peripheral variety like “Foreigner Talk” or some pidginized version of Malagasy.

7. Conclusions

It seems obvious from the data analyzed in §2.1, §2.3, and §2.4 that Malagasy is a configurational language, whereas Formosan languages by and large have already witnessed the break-up of their VP constituents as seen in the data in §2.2, with the

possible exception of Tsou, which in the active voice (or AF) still retains its VP structure, as evidenced by the example in (3).

But even Tsou shows a proclivity to *feature spread* as seen in §2.4, unlike Malagasy, which tends to concentrate all relevant features inside a head of construction—see examples (7), (8), and (9). Indeed, Tsou for example spreads such relevant inherent features from the lexical head V onto its noun complement, as illustrated in (5) and (6).

Incorporation is one grammatical process which dramatically illustrates the crucial importance of the distinction between the strategies of *missing feature* and *feature spread*. Malagasy can be characterized as a *missing feature* language, whereas most if not all Formosan languages behave more like *feature spread* languages. Thus, as a *missing feature* language, Malagasy tends to cumulate all relevant inherent features inside a head of construction: as a direct result of this, the specifier has to be put in relation to the clausal head in order for it to pick up the lacking feature from the relevant head—as illustrated in (8), (9), and (31). Furthermore the complement to a lexical head V as shown in (7) must be a bare noun phrase as it is totally dependent on features of the lexical head V for its ultimate interpretation as a non-definite phrase. As a consequence, the complement must be adjacent to its head. Malagasy exploits this aspect of its *missing feature* characteristic in requiring that the target element of incorporation be adjacent to the putative head, as abundantly illustrated in §5.2 of Randriamasimanana (1999). On the other hand, in Formosan languages with a predilection for *feature spread* adjacency does not appear to be a requirement for incorporation as is evident from Mayrinax Atayal data found in Huang (1995) and analyzed in §5.2. This characterization of Mayrinax Atayal also appears to fit in nicely with an analysis proposed in Mei (1994), as summarized in English in Chang (1997).

Last but not least (and pursuing the main idea in Mei 1994), since Malagasy is a *missing feature* language and not *feature spread* like Formosan languages, a theta-agreement treatment of voice may have to be adjusted to take into account specifics of this language. I leave this topic open for future research and in concluding shall only mention the possibility envisaged in Randriamasimanana (2000), where it is proposed that, at least for a language like Malagasy, the definite noun phrase⁶ contained within a

⁶ Within the kind of framework pursued in this paper, the grammatical subject position in Malagasy will be characterised by a combination of features such as [+LEFT BOUNDARY] [+RIGHT BOUNDARY] in that the specifier position in this language is always definite as shown in Keenan (1976). This means that in the case of a [+COUNT] noun, the members/units comprising the set are well-defined; i.e., we are dealing with a finite set, not an open-ended one. In this instance, we are envisaging a [+CONTROL] structure, which presupposes another feature, [+DURATIVE], which in turn assumes the existence an interval of time, hence the relevance of the feature [+/-BOUNDED].

given sequence be attracted into the specifier of inflections position, thus triggering passive voice morphology on the head verb, as Malagasy is also a verb-coding language.

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馬拉加西語和台灣南島語之比較研究

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在我的〈馬拉加西語中的兩權分枝與零主語〉文中，我們揭示：子句的主要語或時態/時貌屈折語與其指示語或語法主語之間存在著重要的關係。依循 Haeberli (2000) 所提出的架構，我們論證：指示語可能含有從缺的屬性，必須從子句的主要語獲得該屬性。這個分析可以正確地說明馬拉加西語的特性，卻不能正確地描繪台灣南島語言的相關現象。馬拉加西語是一個布局性語言，保留動詞詞組成分，而台灣南島語言的語序大多是 VSO，不保留完整的動詞詞組成分。本文主要目的之一是從「從缺的原子屬性」與「屬性擴散」的觀點闡明馬拉加西語與台灣南島語的一些共同點與相異處。「屬性擴散」與「原子屬性從缺」相對，某一原子屬性擴散到兩個不同的成分，例如由詞彙主要語與其補語或是由功能主要語與其指示語共享一個原子屬性。

關鍵詞：馬拉加西語，鄒語，泰雅語，指示語主要語呼應，從缺的原子屬性，屬性擴散