

52 Properties of VOS Languages

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1 Introduction

The notion of VOS language originates in Joseph H. Greenberg's work on linguistic universals and word order typology. Greenberg (1963: 76–77) observed that languages can be typologized according to what he called their dominant order: the relative surface order of subject (S), verb (V), and direct object (O) in unmarked or pragmatically neutral clauses (see also Jakobson 1963: 268–269). Greenberg claimed that almost all languages have a dominant order in which the subject precedes the direct object: SVO, SOV, or – less commonly – VSO. But even as he proposed this statistical universal, he noted the existence of languages with

a dominant order in which the direct object, exceptionally, precedes the subject (1963: 105, notes 5 and 110). Later research has established that virtually all such languages have VOS as their dominant order: the verb precedes the direct object, which in turn precedes the subject, in pragmatically neutral clauses (Dryer 1996).

For word-order typologists in Greenberg's tradition, VOS languages raise two issues. Why is VOS possible, if uncommon, as a dominant order, whereas OVS and OSV are rare or non-existent? And why do VOS languages pattern with VSO and SVO languages, as opposed to SOV languages, for the purposes of the word-order correlations uncovered by Greenberg?

Crucial information bearing on the first issue was supplied by Steele (1978), who noticed that languages whose dominant order is VSO or VOS very commonly allow the other order, VOS or VSO, as an option (see also Keenan 1978). Building on this observation, many typologists have replaced Greenberg's third dominant order with the more inclusive "verb-initial," which is intended to encompass VOS as well as VSO (see Dryer 1992; Nichols 1999: 65; and others). As for the second issue, a goal of word-order typology since Lehmann (1973) and Vennemann (1973) has been to derive Greenberg's word-order correlations from some single, more fundamental principle (but compare Hawkins 1980 for a different approach). This effort has met with mixed success; see Dryer (1996) for a useful survey.

The issues raised by VOS languages within generative grammar are remarkably similar to those that have preoccupied word-order typologists, once two differences are taken into account. First, generative syntacticians are concerned not so much with VOS as a language type as with VOS as a clause type. Second, the generative approach to clause types represents them two-dimensionally, in terms of the interaction of hierarchical relations (dominance) and left-to-right order (precedence) in constituent structure. Within this overall framework, questions like the following arise. What are the phrase structure and derivation of VOS clauses? Why is it cross-linguistically uncommon for such clauses to be pragmatically neutral? And how is the structure of VOS clauses related to that of VSO clauses or SVO clauses?

These questions bear ultimately on the theory of phrase structure and the extent to which the theory imposes universal constraints on left-to-right order. Since Chomsky (1986a: 3), it has been standard to assume that clauses conform to X'-Theory in that they are projected from a clausal head, such as T(ense) or I(nflection), whose complement is the predicate phrase or VP and whose specifier is the subject. Kayne (1994) has developed a theory of the interaction of dominance and precedence in phrase structure in which complements are universally projected to the right, and specifiers to the left, of their heads. If Kayne's theory is adopted, then the simplest possible clause structure would be an SVO structure in which VP is projected to the right of the clausal head but the subject is projected to the left – a structure in which the subject precedes VP. Clauses with any other word order, including VOS or VSO, would have to be derived from this minimal SVO structure via movement.

On the other hand, if Kayne's theory is not adopted, then there is no need to view VOS clauses as derivationally more complex than (the simplest) SVO clauses, and a wider range of analytic possibilities opens up. One could treat

VOS clauses as clauses whose specifier is simply projected to the right rather than to the left. On this view, VOS clauses would differ from SVO clauses merely in the setting of a directionality parameter. Or one could assume that all clause types, whatever their surface word order, originate as unordered hierarchical structures which are linearized relatively late, after the derivation has left the syntax proper. (For different incarnations of the idea, see, e.g., McCawley 1968a; Bresnan 1982c; Dowty 1982a; Perlmutter and Postal 1983c; Gazdar et al. 1985; Halle and Marantz 1993; and Chomsky 1995c.) If so, VOS clauses would not differ from SVO clauses in any syntactically interesting way.

Section 2 gives an overview of the languages in which the syntax of VOS clauses has been investigated. These include languages whose dominant order is frequently or exclusively VOS (e.g., Palauan, Tzotzil), as well as languages which have VOS clauses, but not as the dominant order (e.g., Italian). Section 3 surveys the kinds of evidence that have been advanced to support the claim that VOS clauses are derived by leftward movement of VP, or some larger constituent, to a higher specifier position. Section 4 raises the issue of the motivation for this movement. Section 5 examines other evidence that suggests that not all VOS clauses are derived via leftward movement of VP. The overall picture that emerges is consistent with the idea that there are multiple syntactic routes to VOS-hood. Section 6 takes a brief look at the proposal that VOS clauses are base-generated as clauses whose specifier is projected to the right. The conclusion reached is that almost no evidence distinguishes this proposal from an approach in which precedence is simply not represented in the syntax and all clausal word orders, including VOS, are derived from unordered hierarchical structures via late linearization.

2 Some languages with VOS clauses

2.1 Overview

As Greenberg noticed, there are remarkably few languages with fixed VOS order – languages whose pragmatically neutral clauses must be VOS. It is far more common for languages to have verb-initial order, that is, to allow pragmatically neutral clauses to be VOS or VSO. Fixed VOS languages and verb-initial languages have been documented in many areas of the Pacific and in parts of North America, Central America, and South America (Keenan 1978). Although such languages have various genetic affiliations, almost all that have been studied from a generative perspective happen to come from just two families: the vast Austronesian family and the much smaller Mayan family.

Very few Austronesian languages have fixed VOS order. Among them are Malagasy (Keenan 1976b, 1978; Pearson 1998, 2000a; Paul 2000), Toba Batak (Keenan 1978; Schachter 1984), and Formosan languages such as Atayal, Seediq (Aldridge 2002), and Tsou (Chang 1998). Significantly more Austronesian languages have verb-initial order: for instance, Tagalog (Schachter 1976b, 1996; Kroeger 1993) and other Philippine languages; Standard Fijian and other Fijian languages (Dixon 1988; Kikusawa 2001); Maori (Bauer et al. 1993, 1997) and other Polynesian

languages; Palauan (Georgopoulos 1985, 1991a); and Chamorro (Gibson 1980; Chung 1990). The Malagasy examples below are representative:

- (1) a. Manolotra ny vary ny vahiny aho.
offer.AT the rice the guests I
'I offer the rice to the guests.'
(Keenan 1976b: 257)
- b. Avy ny orana.
come the rain
'The rain is coming.'
(Keenan 1976b: 254)
- c. Mihevitra Rabe fa handeha ho any Antsirabe rehampitso.
thinks.AT Rabe that will.go Fut there Antsirabe tomorrow.
'Rabe thinks that he will go to Antsirabe tomorrow.'
(Keenan 1976b: 276)

Roughly as many Mayan languages have fixed VOS order as have verb-initial order. The fixed VOS languages include Tzotzil (Aissen 1987), Yukateko (Durbin and Ojeda 1978), and some dialects of Tz'utujil; the verb-initial languages include Kaqchikel, K'iche', and other dialects of Tz'utujil (England 1991). Consider these examples from Tzotzil:

- (2) a. 7i-s-pet lok'el 7antz ti t'ul-e.
cp-A3-carry away woman the rabbit-cl
'The rabbit carried away the woman.'
(Aissen 1987: 1)
- b. 7i-bat xchi7uk s-malal li Maruch-e.
cp-go with A3-husband the Maruch-cl
'Maruch went with her husband.'
(Aissen 1987: 11)
- c. Ta la x-lok' ta k'ux-7ak'al ti 7antz-e jujun 7ak'ubal.
icp cl nt-leave to crunch-charcoal the woman-cl every night
'The woman went out to crunch charcoal every night.'
(Aissen 1987: 12)

In addition, there are languages whose dominant order is not fixed VOS or verb-initial by any stretch of the imagination, but which nonetheless have clauses that are verb-initial. Included here are languages that impose few if any word-order restrictions on pragmatically neutral clauses, such as Warlpiri (Hale 1983), as well as certain SVO languages, such as Spanish and Italian. Some Italian examples follow:

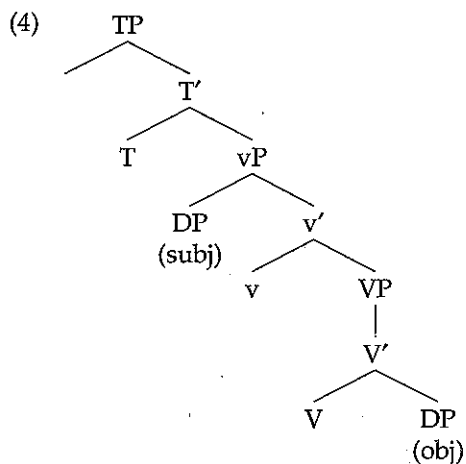
- (3) a. Esamineranno il caso molti esperti.
will.examine the case many experts
'Many experts will examine the case.'
(Burzio 1986: 21)
- b. Ha parlato Giovanni.
has spoken Giovanni
'Giovanni has spoken.'
(Burzio 1986: 85)

The analysis of verb-initial clauses in Spanish and Italian is discussed further in sections 3.3 and 5.4.

2.2 VOS and ergativity

Whether a transitive clause is characterized as VOS or VSO depends on which of its argument noun phrases is identified as the (surface) subject. In quite a few of the languages just mentioned, a transparent identification of the subject is complicated by morphological ergativity, and this complication should be acknowledged here. Many Mayan languages have an ergative-absolutive system of verb agreement, and many Austronesian languages have, or could be analyzed as having, an ergative-absolutive system of case marking. If the ergative noun phrase is identified as the subject of a transitive clause, then Tzotzil has fixed VOS order (Aissen 1987) and Niuean has fixed VSO order (Seiter 1980; Massam 2000). But had the absolutive noun phrase been identified as the subject, these classifications would be reversed. The issue is further clouded in some Western Austronesian languages, such as Malagasy and Tagalog, for which it remains controversial whether the noun phrase analyzed as the surface subject by Keenan (1976b), Kroeger (1993), and Guilfoyle et al. (1992) might instead be a topic (Pearson 2000a; Richards 2000), an absolutive (Aldridge 2002), or "none of the above" (Schachter 1976b; 1996).

An internally articulated phrase structure for the clause provides a way of navigating around these issues. Following Aissen (1992), Campana (1992), and many others (cf. Woolford 1991; Bittner and Hale 1996a), the discussion here adopts a view of the clause structure of ergative languages in which the ergative noun phrase originates as a predicate-internal subject – more precisely, as the specifier of *v*, an abstract verbal head that selects VP as its complement (Chomsky 1995c) – but does not raise in overt syntax to the highest specifier of the clause. On this view, the question of whether VOS clauses are derived via leftward movement of VP can be posed in essentially the same way for the ergative language Tzotzil as for a language like Italian. The principal difference lies in whether the subject is assumed to raise in overt syntax to the specifier of the clausal head: in Tzotzil it does not, whereas in Italian, depending on other assumptions, it might or might not (see section 3.3). See (4):



In the 1970s, most generative syntacticians assumed that clauses were members of an exocentric category, S, which consisted of the subject plus the predicate

phrase or VP. But since Chomsky (1986a), that assumption has been superseded by the view that clauses conform to X' principles: they are projected from a clausal head, T(ense) or I(nflection), whose specifier is the subject and whose complement is VP. Such a view makes it possible to see Emonds's restriction as one instance of a more general requirement that specifiers must be projected to the left.

One theory that appeals crucially to this set of ideas is Kayne's (1994) theory of antisymmetry. The core of antisymmetry is the proposal that the observed order of elements in constituent structure is determined rigidly by hierarchical relations. Kayne fleshes out this proposal as follows. First, he shows that it is workable to claim that whenever a syntactic category X asymmetrically c-commands a syntactic category Y, the words dominated by X will have a single, universally fixed order with respect to the words dominated by Y. He then observes that given this claim, a head will always have its specifier, which asymmetrically c-commands it, on the opposite side from its complement, which it asymmetrically c-commands. Finally, assuming that the subject is a specifier and VP, a complement, he uses Greenberg's statistical universal concerning dominant order (see section 1) as evidence that 'specifier-head-complement, and not the reverse, is the only order available to the subcomponents of a phrase' (1994: 36).¹ His conclusion is that whenever a category X asymmetrically c-commands a category Y, the words dominated by X must *precede* the words dominated by Y.

The theory of antisymmetry has radical consequences for the analysis of VOS clauses, as Kayne's exceedingly brief discussion makes clear. He says: "From the present perspective, . . . VOS must not have S in a final specifier position, but must instead either have . . . VO moving as a unit leftward past S, or else V and O moving separately leftward past S, with the expectation, then, that such languages should show . . . VOSX orders." (1994: 36). This, then, is another theory in which VOS order would have to be derived by movement – specifically, leftward movement, since if antisymmetry is assumed, any movement to a c-commanding position must necessarily be to the left (Kayne 1994: 47).

Suppose Kayne's theory is adopted and VOS clauses are indeed derived by leftward movement. Then one question that immediately arises is whether V and the object are moved across the subject separately or as a single phrasal constituent, say, VP.

Some relevant evidence is supplied by the possibility of VP coordination. In various languages with VOS clauses, the subject can be preceded by what is evidently a coordinate VP – a phrasal constituent consisting of multiple verbs, each accompanied by its own complement and modifiers (see Keenan 1978: 319–321). Such coordinate VPs are found in fixed VOS languages, such as Malagasy, as well as verb-initial languages, such as Chamorro.

(6) Malagasy:

- a. [Misotro toaka] sy [mihinam-bary] Rabe.
 drink alcohol and eat-rice Rabe
 'Rabe is drinking alcohol and eating rice.'

(Keenan 1978: 320)

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- b. [Henon-dRabe] sy [najeren-dRakoto] ny mpihira gasy.
 heard.TT-Rabe and watched.TT-Rakoto Det folk singer
 'The folk singer was heard by Rabe and watched by Rakoto.'
 (Pearson 1996: 119)

(7) Chamorro:

- a. [Ma-yíluluk i mata-nñiha] yan [man-haha] i famagu'un.
 agr-rub the eye-agr and agr-yawn the children
 'The children rubbed their eyes and yawned.' (Chung 1990: 591)
- b. esta ki [mam-ara mañalik] pat [mam-ara mañätfinu'] i sindalu
 until agr-stop Infin.laugh or agr-stop Infin.swear the soldier
 'until the soldiers stopped laughing or stopped swearing'
 (Chung 1990: 592)

In languages that permit predicate phrases other than VPs, these too can precede the subject even when they are coordinate. Consider the following examples from Maori, another verb-initial language. In (8a), the subject is preceded by a coordinate DP predicate; in (8b), by a coordinate PP predicate.³

(8) Maori:

- a. [He mahi roa], [he mahi manawanui] te whakapiata pounamu.
 Pred.a work long Pred.a work patient the shine greenstone
 'Working with greenstone is a long and patient enterprise.'
 (Ngata 1994: 346; s.v. *polish*)
- b. [Kai roto], [kai waho] rānei te tāke hokohoko i tēnei kaute?
 T.at inside T.at outside Q the tax trade in this account
 'Is this account G.S.T. inclusive or exclusive?'
 (Ngata 1994: 137; s.v. *exclusive*)

In clauses of these types, any attempt to derive the surface word order by moving V – more generally, the predicate X^0 – separately from its dependents would violate Ross's (1986) Coordinate Structure Constraint. Therefore, if VOS order is derived by leftward movement, the entire VP must be allowed to move across the subject as a unit.

The rest of this section adopts the simplifying assumption that VOS order is *always* derived by leftward movement of the entire VP or equivalent, where "equivalent" refers to a predicate XP or some even more inclusive category. In other words, what moves to the left is always a single maximal projection. For most practitioners of Principles and Parameters Theory (though not Carnie 1995), it follows that this VP must either raise to a higher specifier or else adjoin to a maximal projection – no other types of phrasal movement are allowed.

The analytic possibilities can be narrowed even further. It is standardly assumed in Principles and Parameters Theory that adjunction to a maximal projection is a completely free option, whereas raising to a specifier is sometimes forced – by Case, the Extended Projection Principle, and the like. As a matter of

fact, in most languages whose dominant order is VOS or verb-initial, leftward movement of VP would have to be forced. In such languages, pragmatically neutral clauses must begin with V: they are not in free variation with SVO clauses, contrary to what Greenberg (1963: 79) originally claimed (see Keenan 1978). The observation suggests that for these languages at least, VP raises to a higher specifier (see Carnie and Guilfoyle 2000).

In sum, if specifiers are universally projected to the left, then VOS clauses are derived by raising of VP to a specifier position. The precise identity of the specifier and the motivation for this movement are discussed further in section 4.

3.2 Evidence for VP raising

Several kinds of evidence have been advanced to support the hypothesis that VOS clauses – more generally, verb-initial clauses – are derived by VP raising. Some of the most convincing evidence involves language-specific patterns of *wh*-movement and their interaction with clausal word order. The basic form of the evidence is discussed in section 3.2.1. After a brief excursus into remnant movement (section 3.2.2), further refinements of the evidence are presented in section 3.2.3. Some additional arguments that have been offered for VP raising are surveyed in section 3.3.

3.2.1 VP raising and extraction

In Principles and Parameters Theory, every maximal projection that undergoes movement must move to a specifier or to an adjoined position. Now, adjuncts are generally assumed to be islands to extraction. So are specifiers, unless they are specifiers of complements to lexical heads (*passim*, but especially Chomsky 1986a). These observations create an expectation. If VOS clauses are derived by leftward movement of VP or equivalent, then the moved VP should constitute an island, and its subconstituents should be inaccessible to *wh*-movement. The subject, however, should be accessible, since any subject that originated within VP will, by hypothesis, have raised out of it before leftward movement of VP occurs.

Keenan (1972) was the first to observe that there are languages in which this expectation is realized. In many Western Austronesian and Formosan languages with VOS clauses, subjects are accessible to *wh*-movement but non-subject arguments are not. This extraction pattern is precisely what one would expect if VOS clauses are derived from an SVO structure by VP raising.

Consider, for instance, Malagasy and Seediq, both languages with fixed VOS order. (Both are also languages in which the surface subject has sometimes been analyzed as an absolutive or a topic; see section 2.2.) The examples in (9) illustrate the Malagasy clause types viewed by Keenan (1972) and others as active (9a) and one type of passive (9b). Notice that the VP is enclosed in brackets:

- (9) a. [Manasa ny lamba] ny zazavavy.
 wash.AT the clothes the girl
 'The girl is washing the clothes.' (Keenan 1976b: 265)

- b. [Sasan'ny zazavavy] ny lamba.
 wash.TT.the girl the clothes
 'The clothes are washed by the girl.' (Keenan 1976b: 265)

The examples in (10) illustrate analogous clause types in Seediq, a language that Aldridge (2002) treats as ergative. For her, (10a) is antipassive and (10b) transitive:

- (10) a. Wada [m-ari hulama laqi] ka Ape.
 Perf AP-buy treat child Abs Ape
 'Ape bought the child a treat.' (Aldridge 2002: 10)
 b. Wada [s-bari hulama na Ape] ka laqi.
 Perf Appl-buy treat Erg Ape Abs child
 'Ape bought the child a treat.' (Aldridge 2002: 6-7)

In both languages, the surface subject – more accurately, the syntactically most prominent DP, however analyzed – occurs at the right edge of the clause, outside VP. What is important is that this DP is the only argument of the clause that is accessible to *wh*-movement.

To see this, consider first relative clauses in Malagasy (Keenan 1972, 1976b, and many others), which can be assumed to involve *wh*-movement of a null operator from some clause-internal position to the specifier of C. Surface subjects can be relativized in Malagasy, whether the clause is active (11a) or passive (11b). This amounts to saying that subjects in this language can undergo *wh*-movement. (In (11) and subsequent examples, the origin site of the null operator is indicated by an underline but the moved operator itself is not represented explicitly.)

- (11) a. ny zazavavy izay [manasa ny lamba] ____
 the girl that wash.AT the clothes
 'the girl that washed the clothes' (Keenan 1976b: 265)
 b. ny lamba izay [sasan'ny zazavavy] ____
 the clothes that wash.TT.the girl
 'the clothes that are washed by the girl' (Keenan 1976b: 265)

Non-subjects cannot be relativized, whether they are direct objects (12a), benefactives (12b), or some other grammatical function. More generally, arguments that would normally have surfaced within VP are inaccessible to extraction:

- (12) Malagasy:
 a. *ny lamba izay [manasa ____] ny zazavavy
 the clothes that wash.AT the girl
 'the clothes that the girl washed' (Keenan 1976b: 265)
 b. *ny ankizy izay [nividy ny vary (ho an) ____] ny vehivavy
 the children that bought.AT the rice for the woman
 'the children that the woman bought rice for' (Keenan 1972: 174)

Rackowski and Travis (2000: 124) observe that if Malagasy clauses are derived by VP raising and the moved VP is an island, this pattern follows immediately.

Essentially the same extraction pattern occurs in Seediq, although to appreciate this, it is necessary to achieve some distance from the issue of ergativity. According to Aldridge (2002), constituent questions in Seediq are clefts in which the interrogative phrase is a higher predicate and the rest of the construction is a headless relative clause. The headless relative can be assumed to involve *wh*-movement of a null operator from some clause-internal position to the specifier of C – this is the movement relevant here. Now, surface subjects (which Aldridge analyzes as absolutes) can undergo *wh*-movement within the headless relative. Such subjects can be relativized whether the clause in which they originate is active (in her terms, antipassive; see (13a)) or passive (in her terms, transitive; see (13b)):

(13) Seediq:

- a. Ima ka wada [m-ari patis-ni] ____ ?
 who? Abs Perf AP-buy book-Def
 'Who bought this book?' (Aldridge 2002: 1)
- b. Maanu ka wada [burig-un na Ape] ____ ?
 what? Abs Perf buy-Tr Erg Ape
 'What did Ape buy?' (Aldridge 2002: 1)

But non-subjects are inaccessible to *wh*-movement. It is impossible for the null operator within the headless relative to be the agent of a passive (in Aldridge's terms, an ergative) or any other grammatical function that would normally have surfaced within VP:

(14) Seediq:

- *Ima ka wada [burig-un ____] patis-ni?
 who? Abs Perf buy-Tr book-Def
 'Who bought this book?' (Aldridge 2002: 1)

Ergativity aside, the point is that the null operator must be outside VP when it is targeted by *wh*-movement. (Compare the origin sites underlined in the examples above and their locations with respect to the bracketed VPs.) Aldridge (2002: 2–3) points out that this is the expected pattern if Seediq clauses have undergone VP raising and the moved VP is an island.

The absence of overt adjunct extraction in Seediq is highly compatible with this line of thought. As Aldridge shows, locative interrogative phrases in Seediq must surface in situ, within VP. Compare (15a) with the ungrammatical (15b), which can be analyzed two ways: either as a simplex sentence in which the locative has undergone *wh*-movement or as a cleft in which the moved constituent is a null locative operator within the headless relative. Either way, (15b) is ill-formed, presumably because locatives and other adverbials are inaccessible to *wh*-movement:

(15) Seediq:

- a. [M-n-ari inu patis] Ape?
 AP-Perf-buy where? book Ape
 'Where did Ape buy books?' (Aldridge 2002: 2)
- b. *Inu [m-n-ari patis ____] Ape?
 where? AP-Perf-buy book Ape
 'Where did Ape buy books?' (Aldridge 2002: 2)

These facts fall into place if adverbials are assumed to adjoin to VP or equivalent and, further, the VP constituent that raises in Seediq is always as inclusive as possible. More generally, the full extraction pattern of this language offers striking empirical support for the claim that VOS clauses are derived by VP raising.

The facts of adjunct extraction in Malagasy are more equivocal. Keenan (1976b: 250) observes that under certain circumstances, locative and temporal phrases in Malagasy can surface to the right of the subject, outside VP (see (16a)). This positioning is consistent with the observation that these adverbials can be clefted (16b):

(16) Malagasy:

- a. [Nividy mofo ho an'ny ankizy] aho tamin'ny asabotsy.
 bought.AT bread for.the children I on.the Saturday
 'I bought bread for the children on Saturday.' (Keenan 1976b: 250)
- b. Amin'ny Talata no [manasa lamba] Rakoto ____.
 P.Gen.Det Tuesday Foc wash.AT cloth Rakoto
 'It is on Tuesday that Rakoto washes clothes.' (Paul 2000: 37)

On the other hand, instrumental phrases can also be clefted (see Keenan 1976b: 268–269; Paul 2000: 37–38), despite the fact that they evidently must surface to the left of the subject, within VP:

(17) Malagasy:

- a. [Manasa ny lamba amin'ity savony ity] Rasoa.
 wash.AT the clothes with.this soap this Rasoa
 'Rasoa is washing clothes with this soap.' (Keenan 1976b: 268)
- b. Amin'ity savony ity no [manasa lamba ____] Rasoa.
 with.this soap this Foc wash.AT clothes Rasoa
 'It is with this soap that Rasoa is washing clothes.' (Keenan 1976b: 269)

How is this asymmetry in the overall pattern to be understood? Clefts such as (16b) and (17b) are analyzed by Paul (2000: 167–184) as biclausal constructions in which the focus is a higher predicate and the rest of the sentence is an event nominal, meaning roughly 'the event of Rasoa's washing clothes'. If this approach is correct, then (16b) and (17b) would not involve *wh*-movement at all, and no violence would be done to the evidence from argument extraction that

VPs in Malagasy are islands. On the other hand, if clefts are analyzed as biclausal constructions in which the focus is a higher predicate and the rest of the sentence is a headless relative, then (17b) would involve *wh*-movement of a null operator corresponding to the instrumental phrase, suggesting that VPs are not islands in this language after all. Which of these approaches is superior remains to be determined.

Finally, it is appropriate to step back and ask how strong the extraction evidence is for the VP raising analysis of VOS clauses. As mentioned earlier, many Western Austronesian and Formosan languages have an extraction pattern consistent with the VP raising analysis. For the evidence to be compelling, one would hope to find similar extraction patterns outside the Austronesian family – for instance, in Mayan languages, or in other VOS languages that have not yet been documented extensively. Investigation is needed to determine whether such patterns do, in fact, occur.

3.2.2 Raising of remnant VPs

Further evidence for VP raising can be found in languages whose clauses begin with V but are not rigidly subject-final. Crucial to an understanding of this evidence is the notion of remnant movement.

In theories such as antisymmetry, in which all movement is to the left, the appearance of rightward movement is achieved through multiple leftward movements. Suppose an element *X* surfaces to the right of some constituent *Y* from which it has been extracted. The relevant surface order can be derived by two leftward movements: first *X* raises out of *Y* and then the rest of *Y* raises over *X*. The key assumption is that *X* has already been extracted from *Y* at the point when *Y* raises. Movement of a constituent that some element has already been extracted from is known as remnant movement (see, e.g., den Besten and Webelhuth 1990, the references cited below, and – for a formalization – Stabler 1999).⁴

In a series of papers, Massam (2000, 2001a, 2001b) has proposed that clauses in Niuean, a VSO language, are derived by raising of a remnant VP to a higher specifier. (See Lee 2000 for a similar proposal for Quiavini Zapotec.) Although Massam's hypothesis deals specifically with Niuean, it clearly has the potential to generalize to other languages whose clauses begin with V. The observation raises the possibility that there might be a single, universally valid derivation of VSO order, one involving raising of a remnant VP. If so, VP raising might succeed in explaining the typological links between VOS and VSO languages and their perceived similarities to SVO languages (see section 1). Pragmatically neutral clauses in all three language types would originate as SVO; then VP would move leftward, either intact or as a remnant, to produce clauses that would be VOS or VSO.

Niuean is an ergative Polynesian language. This language resembles some other VSO languages in exhibiting VSO order only in clauses containing verbs (see Chung 1990 on Chamorro, and Carnie 1995 and Doherty 1996 on Irish). Clauses with non-verbal predicate phrases – DP or PP – have a word order in

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which the entire predicate XP precedes the subject. In other words, these clauses have XOS order, where X represents the predicate head:

(18) Niuean:

- a. Ko e kamuta a au.
Pred Abs carpenter Abs I
'I'm a carpenter.' (Seiter 1980: 53)
- b. Hā he fale a ia.
Pred in house Abs she
'She is in the house.' (Massam 2000: 105)

Like other Polynesian languages, Niuean has a construction traditionally known as noun incorporation. Massam (2001b) demonstrates that the bare object nominal in this construction is not just N, but rather a maximal projection with the internal structure of NP as opposed to DP (see also Seiter 1980: 69–71). Importantly, this object NP forms a constituent with the verb and that constituent (bracketed in the examples below) precedes the subject. The word order of so-called noun incorporation clauses, therefore, is VOS:

(19) Niuean:

- a. Ne [inu kofe kono] a Mele.
Past drink coffee bitter Abs Mele
'Mary drank bitter coffee.' (Massam 2001b: 158)
- b. Kua [kai ika mo e taloa] a mautolu he mogonei.
Perf eat fish with Abs taro Abs we.pl.ex at now
'We are eating fish and taro right now.' (Seiter 1980: 70)

All other Niuean clauses have fixed VSO order. Predicates that are verbs or adjectives must be separated from their complements by the subject, as (20) shows:

(20) Niuean:

- a. Ko e tele e Sione a Sefa.
Pres kick Erg Sione Abs Sefa
'Sione's kicking Sefa.' (Seiter 1980: 29)
- b. Iloilo lahi a ia he vagahau Niuē.
clever very Abs she at language Niuean
'She's very good at Niuean.' (Seiter 1980: 3)

Massam's account of these facts runs as follows. Because so-called incorporated nouns are NPs as opposed to Ns, they cannot incorporate via head-to-head-adjunction (see Baker 1988a, 1996) and therefore surface as free-standing complements of V. These NP complements have no Case feature and so need not raise out of VP for Case-checking purposes. DP complements of N or P check their Case feature in situ, but DP complements of V must raise out of VP to check their Case in the specifier of a functional head. Finally, every Niuean clause originates

as SVO and then undergoes raising of the predicate XP, either intact or as a remnant. These assumptions combine to derive the word-order patterns just surveyed. Examples (18–19) are produced by raising the intact predicate XP, which is a DP in (18a), a PP in (18b), and a VP in (19). Example (20a) is produced by first raising the direct object out of VP for Case-checking purposes and then raising the remnant VP around it.

Can this sort of approach be extended to other languages whose clauses begin with V? A key component of Massam's account of Niuean is the assumption that remnant VPs are created for theoretically motivated reasons (see also Lee 2000). For instance, the reason why DP complements must exit from VP is so that their Case feature can be checked. The observation suggests that in order for the remnant VP analysis to generalize to other clause types, the raising of other complements out of VP would have to be given a theoretical rationale. It is a completely open question whether this can be done. To get some sense of the issues, consider the following.

(i) In many languages whose clauses begin with V, including Quiavini Zapotec, Niuean, and Malagasy, CP complements of V must surface at the right edge of the clause, following the subject. In a remnant VP analysis, these CPs (bracketed in the examples below) would presumably have exited from VP before VP was moved leftward:

- (21) Quiavini zapotec:
 B-quilly Lieb Gyeeihlly [y-to'oh Gyeeihlly ca'rr].
 Perf-persuade Felipe Mike Irr-sell Mike car
 'Felipe persuaded Mike to sell the car.' (Lee 2000: 156)
- (22) Niuean:
 Pehe mai a lautolu [ne kaihā e koe e moa].
 say Dir1 Abs they Past steal Erg you Abs chicken
 'They say that you stole the chicken.' (Seiter 1980: 125)
- (23) Malagasy:
 Mihevitra Rabe [fa mitady ny zaza Rasoa].
 think.AT Rabe that look.for the child Rasoa
 'Rabe thinks that Rasoa is looking for the child.' (Keenan 1976b: 276)

What could motivate this sort of CP raising? Lee (2000: 156–158) suggests that in Quiavini Zapotec, CPs must raise out of VP in order to be licensed in the specifier of a higher functional head L(icensing). While such a suggestion leads to the desired result, its theoretical rationale is rather cloudy. Licensing in the specifier of L looks suspiciously like Case licensing – a sort of licensing that CPs are widely assumed not to need, and even to resist (see Stowell 1981; a different view is offered by Chung 1991). But if L is not a Case licenser, what exactly is it, and what other evidence supports its existence?

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(ii) In fixed VSO languages such as Irish and – arguably – Niuean, PP complements of V must surface to the right of the subject. In a remnant VP analysis, these complements too would presumably have exited from VP prior to VP raising:

- (24) Irish:
 Rinne leannán dinn.
 made lovers of-us
 'We became lovers (lit. Lovers made of us).' (McCloskey 2001a: 170)

- (25) Niuean:
 To fanogonogo a au ki a koe.
 Fut listen Abs I to Pers you
 'I'll listen to you.' (Seiter 1980: 147)

Massam's (2001b) proposal with regard to examples like (25) is that Niuean simply has no complement PPs. Instead, the goal PP in (25) is an adjunct that can be stranded when the lower VP to which it is adjoined undergoes VP raising. It is not immediately obvious that such a proposal is tenable. If there were no complement PPs at all in Niuean, what could explain their systematic absence? At the same time, one would not want to claim that the PPs in (24–25) must raise out of VP for Case-checking purposes, since PPs are standardly assumed not to have Case features.

(iii) In certain verb-initial languages, such as Chamorro (Chung 1998) and Maori (Bauer et al. 1997), all complements of V – whatever their category type – are freely ordered with respect to the subject. The Chamorro examples below illustrate this for complements that are DPs (26), CPs (27), and PPs (28):

- (26) a. Ha-bäba i petta si Antonio.
 agr-open the door Antonio
 'Antonio opened the door.'
 b. Ha-bäba si Antonio i petta.
 agr-open Antonio the door
 'Antonio opened the door.'
- (27) a. Mungnga gui' [na u-maigu' än taluani] i neni.
 refuse himself Comp agr-sleep when afternoon the baby
 'The baby refuses to sleep in the afternoons.'
 b. Mungnga gui' i neni [na pära u-maigu' än taluani].
 refuse himself the baby Comp Fut agr-sleep when afternoon
 'The baby refuses to sleep in the afternoons.'
- (28) a. Mamahlao nu hämi si Dolores.
 agr.ashamed Obl us Dolores
 'Dolores is ashamed of us.'

(24–25)

- b. Mamahlao si Dolores nu hämi.
agr.ashamed Dolores Obl us
'Dolores is ashamed of us.'

Whether this word order could be explained in terms of remnant movement is an extremely interesting question. Suppose one were to infer from the (b) examples above that all types of Chamorro complements must exit from VP in order to be licensed. Then it would seem to follow that the predicative constituent that raises in the (a) examples is not VP but (the remnant of) some substantially larger constituent – AgrOP, LP, or even TR⁵. If so, some explanation must be found for the fact that this substantially larger constituent can undergo raising in Chamorro but not, say, Niuean. What could the explanation be?

It may well be that an overall theory of remnant movement would successfully resolve all these issues. Until such a theory is developed, it remains unsettled exactly what range of clause types beginning with V can be derived by raising of (a remnant) VP.

3.2.3 More on VP raising and extraction

Regardless of how the issue of theoretical motivation is resolved, a clear empirical prediction is made by the hypothesis that all verb-initial clauses are derived, one way or another, by raising of VP or equivalent: non-subject arguments that can surface outside VP, to the right of the subject, should be accessible to *wh*-movement (see Rackowski and Travis 2000: 129).⁶

The Austronesian languages with VOS clauses provide an instructive testing ground for this prediction. It has already been shown (in section 3.2.1) that two fixed VOS languages, Seediq and Malagasy, conform completely to expectations as far as extraction of arguments is concerned. In these languages, non-subject arguments must surface inside VP and are completely inaccessible to *wh*-movement. Toba Batak is another fixed VOS language that behaves as predicted (see Clark 1984; Schachter 1984). In this language, indirect objects are evidently freely ordered with respect to the subject, but direct objects must surface to the immediate right of the verb, within VP (see (29)). Therefore, both subjects and indirect objects should be eligible for *wh*-movement, but direct objects should not be. That this is so can be seen from the constituent questions in (30).

(29) Toba Batak:

- a. [Mangalean missel i tu soridadu i] jeneral i.
AT.give missile Det to soldier Det general Det
'The general gave the missile to the soldier.' (Clark 1984: 12)
- b. [Mangalean biang] si Torus tu si Ria.
AT.give dog PM Torus to PM Ria
'Torus is giving a dog to Ria.' (Schachter 1984: 137)
- c. [Mangida si Ria] si Torus.
AT.see PM Ria PM Torus
'Torus sees Ria.' (Schachter 1984: 123)

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(30) Toba Batak:

- a. Isa [mangida turiturian] ____ ?
 who? AT.see play
 'Who is seeing a play?' (Schachter 1984: 126)
- b. Tu ise [mangalean missel i] jeneral i ____ ?
 to who? AT.give missile Det general Det
 'To whom did the general give the missile?' (Clark 1984: 12)
- c. *Aha [mangida ____] si John?
 what? AT.see PM John
 'What is John seeing?' (Schachter 1984: 126)

The extraction pattern is not as well-behaved in Austronesian languages with verb-initial order – languages that allow both VOS and VSO clauses. The prediction is that subjects and direct objects in these languages should be able to undergo *wh*-movement, since both can surface outside VP. Boumaa Fijian conforms to this prediction. Clauses in this language are VOS or VSO depending on context, although VOS is evidently more frequent in elicitation (see (31) and Dixon 1988: 243). Consistent with this profile, interrogative phrases can optionally undergo *wh*-movement whether they are subjects or direct objects. When the subject has been extracted, the verb continues to exhibit a proclitic subject pronoun (see chapter 14) which is probably a form of subject-verb agreement (see Dixon 1988: 33). When the direct object has been extracted, the verb exhibits the form of the transitive suffix appropriate for direct objects that are common nouns as opposed to pronouns. This inflection suggests that the gap left by *wh*-movement is a trace, not a resumptive pronoun (see Dixon 1988: 170; and chapter 55). See (32):

(31) Boumaa Fijian:

- a. [E rai-ca a gone] a qase.
 3sg see-Tr Art child Art old.person
 'The old person saw the child.' (Dixon 1988: 243)
- b. [E rai-ca] a gone a qase.
 3sg see-Tr Art child Art old.person
 'The child saw the old person.' (Dixon 1988: 243)

(32) Boumaa Fijian:

- a. O cei [e sabi-ci i'o] ____ ?
 Proper who? 3sg hit-Tr you
 'Who hit you?' (Dixon 1988: 170)
- b. O cei [o aa rai-ca] ____ ?
 Proper who? 2sg Past see-Tr
 'Who did you see?' (Dixon 1988: 170)

On the other hand, Tagalog does not behave as predicted. Even though the direct object in this language is freely ordered with respect to the subject (see (33)), it is – as numerous authors have observed – completely inaccessible to extraction

(see, e.g., Schachter 1976b: 500; Kroeger 1993: 23–24). Consider the relative clauses in (34), which can be assumed to involve *wh*-movement of a null operator. Although the subject can be relativized, as (34a) shows, the direct object cannot be (34b):

(33) Tagalog:

- a. [Nagbigay ng libro sa babae] ang lalaki.
AT.gave Gen book Dat woman Nom man
'The man gave the woman a book.' (Kroeger 1993: 111)
- b. [Bumasa] ang lalaki ng diyaryo.
AT.read Nom man Gen newspaper
'The man read a newspaper.' (Schachter 1976: 500)

(34) Tagalog:

- a. lalaki-ng [bumasa ng diyaryo] ____
man-Linker AT.read Gen newspaper
'the man who read a newspaper' (Schachter 1976: 500)
- b. *diyaryo-ng [bumasa] ang lalaki ____
newspaper-Linker AT.read Nom man
'the newspaper that the man read' (Schachter 1976: 500)

Other Philippine languages resemble Tagalog in permitting VSO clauses but restricting *wh*-movement to subject arguments; see Keenan (1972: 180–181).

If one steps back and reviews the Austronesian evidence just surveyed, two conclusions suggest themselves. First, there is considerable empirical support for the claim that VOS clauses in some languages – Seediq, Malagasy, Toba Batak – are derived by raising of VP or equivalent. Second, it would be far more difficult to maintain the more general hypothesis that verb-initial clauses are always derived by (remnant) VP raising. For further commentary, see section 5.

3.3 Other evidence

Three additional kinds of evidence that have been offered for the VP raising hypothesis are summarized below.

Lee (2000) argues that in Quiavini Zapotec, a fixed VSO language, verbs pattern with maximal projections (DPs and PPs) in their ability to be modified by modal and adverbial clitics and to serve as the target of constituent negation. She concludes that the V that surfaces at the left edge of the clause is actually a remnant VP that has raised to the specifier of T.

Rackowski and Travis (2000) use the left-to-right order of adverbials in Malagasy and Niuean to argue for iterative raising of VP. Their argument relies on Cinque's (1999) theory of adverbial placement (see chapter 4), a theory constructed to account for his claim that there is a universal left-to-right order of linguistic expressions with adverbial meaning. Cinque's theory holds that adverbials are specifiers of functional heads whose hierarchical arrangement is invariant across

languages. Rackowski and Travis observe that in Malagasy (a fixed VOS language) and Niuean (a fixed VSO language), the surface order of adverbials is roughly the mirror image of what Cinque's theory predicts. Their account of this mirror-image effect assumes that (i) adverbials in Malagasy and Niuean are heads, not specifiers, and (ii) VP raises iteratively through the specifiers of these heads, pied-piping ever larger amounts of functional structure, to produce the observed surface order. Although iterative VP raising could indeed achieve this result, it is by no means the only analytic possibility. Massam (2002) points out some difficulties with such an account of Niuean. She then advances the proposal that the surface order of Niuean adverbials is produced not by VP raising, but instead by iterative adjunction of the abstract verbal head *v* to higher adverbial heads.

Finally, Longobardi (2000a) uses the interpretation of unmodified bare nouns in Italian to argue that postverbal subjects in this language originate as the subjects of SVO clauses in which VP then raises leftward. The argument relies on two observations: first, bare noun subjects in SVO clauses have a generic interpretation only when they have a modifier, and second, bare nouns that serve as postverbal subjects in VOS clauses display exactly the same restriction. From this, Longobardi (2000a: 695) concludes, "Applying Occam's razor to the set of lexically ungoverned positions, . . . superficially postverbal generic subjects actually occur in the independently best known of all such positions, precisely that of preverbal subjects." The conclusion does not seem fully convincing, given that no account is offered of the restriction on bare nouns, which remains essentially unanalyzed, and given that the same restriction is evidently exhibited by bare nouns that are direct objects (Longobardi 2000a: 700–701).

4 The motivation for VP raising

What might motivate VP raising? It was observed in section 3.1 that if specifiers are universally projected to the left, then VOS clauses would have to be derived from SVO clauses by leftward movement of VP or equivalent. In the Minimalist framework (see Chomsky 1995c), overt syntactic movement is forced by a head's need to check some strong feature against a comparable feature of the category in its specifier. The natural assumption within this framework is that VP raises to the highest specifier of the clause in order to check some strong feature of the clausal head. The characterization immediately suggests the Extended Projection Principle (EPP). Originally stated as the principle that clauses must have subjects (Chomsky 1982: 9–10), the EPP has come to be understood as the requirement that the subject DP raise out of predicate-internal position to check a strong feature of T, usually identified as [D] (see Chomsky 1995c: 232) or, more simply, EPP (see Chomsky 2001b: 8–9). And indeed, several researchers have independently proposed that VP raising is driven by the need to check a strong feature of T that is, in some sense, the EPP-feature.

These proposals build on Alexiadou and Anagnostopoulou's (1998) hypothesis that in certain null subject languages with VSO clauses (such as Greek and Irish),

the EPP is satisfied by head-movement of V to the clausal head. More precisely, Alexiadou and Anagnostopoulou claim that V raises so that its agreement morphology, which is pronominal and therefore [D], can check the clausal head's strong [D] feature. In the proposals of interest here, this core intuition is recast so that the moved constituent is (a remnant) VP rather than V, and the feature to be checked is not [D] but some feature more characteristic of predicates.

For instance, Massam (2000, 2001a, 2001b) claims that the VSO clauses of Niuean arise when (a remnant) VP raises to check the [Pred] feature of the clausal head. Aldridge (2002) makes a similar proposal for the VOS clauses of Seediq.

Pearson (2000a) claims that the VOS clauses of Malagasy are produced when a maximal projection considerably more inclusive than VP (i.e., TP) raises to check the [T] feature of a higher clausal head. His proposal recalls Massam and Smallwood's (1997) earlier claim that VSO clauses in Niuean are derived by head-movement of V to T, a movement driven by V's need to check its [T] feature.

More generally, Massam and Smallwood (1997) hypothesize that the inflectional feature essential to the formation of clauses is [D] in languages like English, but [T] in languages like Niuean. This idea is taken up by Davies and Dubinsky (2001b), who propose that the EPP is parameterized to be D-prominent or V-prominent. Languages in which the EPP is D-prominent demand that a DP raise to the specifier of T; languages in which the EPP is V-prominent demand that (some projection of) V raise to T (or, presumably, to T's specifier; but see Carnie 1995).

The proposals differ in the identity of the strong feature claimed to motivate VP-raising: [Pred], [T], or [V]. Although these features are all intended to pick out the predicate as opposed to the subject, they are not equivalent, empirically or theoretically. Here are some relevant considerations.

Suppose one assumes (uncontroversially) that for the strong feature to be more than a diacritic for VP raising, it must have some independent syntactic rationale. Following the example set by the original EPP-feature, [D], one might imagine that the strong feature should be a category feature of the raised VP or equivalent that can be annotated on the clausal head.

For [V], the difficulty with such a scenario is empirical. It has already been mentioned that the clauses of some languages have predicate-first order whether the predicate head is verbal or non-verbal (see section 3.2.2). Niuean is such a language; so are the other Polynesian languages and Chamorro. Assuming that clauses in these languages are derived by raising of the predicate XP, that raising could not be driven by the need to check a [V] feature of the clausal head, since predicate DPs and PPs must be forced to raise even though they are not [V].

For [Pred] and [T], the issues seem more theoretical. In most Minimalist conceptions of the clause, [Pred] is not a category feature, although such a category could certainly be given independent existence in a more finely articulated structure for the clause. As for [T], it is usually assumed to be the defining category feature of the clausal head, not a feature of VP (or, more generally, of the predicate XP). Hence, if [T] is chosen to be the strong feature, two sorts of readjustments

must be made. The raised VP or predicate phrase must have the feature [T] as well (see Massam and Smallwood 1997; Pearson 2000a), and matters must be arranged so that VP raising is not an inevitable, universal consequence of the fact that T is the head of the clause. In other words, it must remain possible for the EPP-feature on the clausal head to be [D] or [T].

In sum, while VP raising might well be motivated by the need to check an EPP-feature, the precise identity of that feature remains unclear.

If VP raising is motivated by the EPP, what empirical evidence could reveal that this is so? One potential line of investigation is suggested by Miyagawa's (2001) discussion of the EPP and scrambling in Japanese. Miyagawa shows that when the subject of a Japanese clause is the universal quantifier *zen'in* 'all', it must have wide scope with respect to sentential negation (see chapter 53). But, surprisingly, such a subject can have narrow scope just in case an object has been scrambled to the left. His account of this pattern runs as follows. First, in order for an element to have narrow scope with respect to negation, it must be c-commanded by Neg, a functional head located below T but above the abstract verbal head *v* in the structure of the clause. Second, all of the predicate's arguments originate within *vP*: the subject originates as the specifier of *v*, the object originates within the VP complement of *v*, and so on. Third, some DP must raise to the specifier of T to check T's EPP-feature. Miyagawa claims that when the subject raises, the result is an unmarked (SOV) clause in which the subject must have wide scope with respect to negation. But, crucially, it is also possible for the object to raise to check T's EPP-feature – a movement characterized as A-scrambling in other work. When the object raises, the result is an OSV clause in which the subject remains within *vP*, in a position where it can have narrow scope with respect to negation.

Two aspects of Miyagawa's account are useful here: first, the claim that maximal projections besides the subject can raise to satisfy the EPP; and second, the insight that in such cases, the subject remains within *vP* for scope and specificity purposes (see Diesing 1992b).⁸ Generalizing these ideas to VP raising, one would expect that if this movement does satisfy the EPP, the subject should remain in situ, within *vP*, where it should be able to have narrow scope with respect to sentential operators such as negation or existential closure. It should therefore not exhibit the necessarily wide scope or specificity which Keenan (1976a) claims are characteristic of subjects and which Diesing (1992b) associates with higher syntactic positions in the clause (notably, the specifier of T).

It is well known that in Malagasy, the DP identified in this chapter as the surface subject exhibits some semantic characteristics of traditional subjects after all: it must be specific – in fact, definite (see Keenan 1976b: 252–254 and many others). If one assumes that VP raising in this language satisfies the EPP, the pattern seems contrary to expectations. But, given the controversy over whether so-called subjects in Malagasy should be analyzed instead as topics, and given that topics are often associated with definiteness (see section 2.2), it is difficult to know what, if anything, to conclude.

Further research is needed to determine whether the subject remains within vP for scope and specificity purposes in the languages for which VP raising appears to be well-motivated – Malagasy, Seediq, Toba Batak, and Niuean. If the results are as predicted, there would be good reason to believe that VP raising is forced by some version of the EPP.

5 Are all VOS clauses derived by VP raising?

5.1 Overview

The preceding discussion leads one to expect that if a language's verb-initial clauses are derived by VP raising, it should have the syntactic profile outlined in (36):

- (36) **The profile of languages whose verb-initial clauses are derived by VP raising:**
- VP coordination is allowed.
 - The subject is accessible to extraction. So are other constituents which originate outside VP or which can be shown to have raised out of VP. All other subconstituents of VP are inaccessible to extraction.
 - The subject can have narrow scope with respect to sentential operators such as negation and existential closure.

Although complete evidence is lacking for many of the languages surveyed in section 2.1, initial indications are that Malagasy, Seediq, Toba Batak, and Niuean conform quite closely to this profile (for details, see sections 3 and 4).

In view of this, one might be tempted to go further and conjecture that all VOS clauses – perhaps even all verb-initial clauses – are derived from an SVO structure by raising of (a remnant) VP or equivalent to the specifier of the clausal head. Part of the appeal of such a conjecture is its compatibility with Kayne's theory of antisymmetry and, more generally, with the proposal that specifiers are universally projected to the left (see section 3.1). So it is of some theoretical interest that the conjecture is probably not correct. There are languages whose syntactic profile deviates from (36) in ways that argue that VP raising could not be responsible for their VOS clauses. Among these languages are Tzotzil and Chamorro.

5.2 Tzotzil

Tzotzil is a Mayan language with null arguments and an ergative-absolutive system of agreement. Pragmatically neutral clauses in this language are rigidly VOS: the direct object always follows the verb and precedes the subject. PPs display a wider range of word-order possibilities, evidently being able to occur after V or any constituent further to the right (Aissen 1987: 12). Consider the following examples (more are cited in section 2.1):

- (37) a. *Zi-yal la ta te7 ti vinik-e.*
 cp-descend cl from tree the man-cl
 'The man climbed down from the tree.' (Aissen 1987: 12)
- b. *Ch-ba s-man chitom li Xun-e.*
 icp-go A3-buy pig the Xun-cl
 'Xun will go to buy pigs.' (Aissen 1987: 16)

The fact that Tzotzil has fixed VOS order leads one to expect that if this word order is produced by VP raising, direct objects should be inaccessible to extraction (see (36b)). Any PPs that must surface to the left of the subject, within VP, should be inaccessible as well. However, in a detailed study, Aissen (1996) shows that subjects, direct objects, and PPs in Tzotzil are all eligible for *wh*-movement. In the constituent questions below, the interrogative phrases that have been extracted include a subject (in (38a)), a direct object (38b), and a goal PP (38c):

- (38) a. Buch'u s-pas mantal ____ ?
 who? A3-do order
 'Who's giving the orders?' (Aissen 1996: 451)
- b. K'usi av-il ____ ?
 what cp.A2-see
 'What did you see?' (Aissen 1996: 451)
- c. [Buch'u ta s-na] ch-a-bat ____ ?
 who? P A3-house icp-B2-go
 'To whose house are you going?' (Aissen 1996: 470)

The significance of this extraction pattern is increased by the fact that it is clearly produced by movement as opposed to resumption (see chapter 55). Aissen (1996) establishes that when an interrogative phrase is the possessor of a DP that is a prepositional object or the subject of a transitive verb, *wh*-movement is not legal unless the interrogative phrase raises to the specifier of the PP or subject DP and the entire PP or DP is pied-piped (see chapter 50). For instance, in the examples surrounding this paragraph, the interrogative phrase has visibly moved to the left edge of the pied-piped constituent (enclosed in brackets), which is a PP in (38c) and (39a) and the subject DP in (39b):

- (39) a. [Buch'u ta s-na] av-ik'ta komel l-a-bolsa-e ____ ?
 who? P A3-house A2-leave Dir the-A2-bag-cl
 'In whose house did you leave your bag?' (Aissen 1996: 470)
- b. [Buch'u x-ch'amal] y-elk'an chij ____ ?
 who A3-child A3-steal sheep
 'Whose child stole sheep?' (Aissen 1996: 460)

Compare the ungrammatical examples below, in which pied-piping has not occurred:

- (40) a. *Buch'u cha-b-at [ta s-na ____]?
 who? icp-B2-go P A3-house
 'Whose house are you going to?' (Aissen 1996: 469)
- b. *Buch'u av-ik'ta komel a-bolsa [ta sn-a ____]?
 who? A2-leave Dir A2-bag P A3-house
 'Whose house did you leave your bag at?' (Aissen 1996: 469)

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- c. *Buch'u y-elk'an chij [x-ch'amal ____]?
 who? A3-steal sheep A3-child
 'Whose child stole sheep?' (Aissen 1996: 460)

Aissen's account of these patterns is phrased in terms of some central ideas of Principles and Parameters Theory: the Empty Category Principle, the *wh*-criterion, and abstract Agreement. For present purposes, the details of her account are less important than the observation that certain kinds of constituent questions are ungrammatical unless pied-piping has occurred. That fact reveals that constituent questions in Tzotzil do not have an interrogative phrase that is base-generated in the specifier of C and co-indexed with a null resumptive pronoun. The reason is this: were such a resumption strategy available, the questions in (40) should be grammatical. There is no reason to expect them not to be, given that comparable non-questions with null pronouns are well-formed:

- (41) I-kom [ta s-na *pro*].
 cp-remain P A3-house
 'He remained at his house.' (Aissen 1996: 468)

Given all this, the strong ungrammaticality of (40) argues that a resumption strategy must be simply unavailable. The corresponding questions in (39) must therefore be derived via movement.

In short, direct objects in Tzotzil are accessible to *wh*-movement, even though they surface to the left of the subject, within VP. From this it follows that VPs in Tzotzil are not islands, and so could have not undergone leftward movement, contrary to what one might have assumed. The conclusion we are led to is that VOS clauses in this language are not derived by VP raising after all.

5.3 Chamorro

Chamorro is an Austronesian language with null arguments and verb-initial order. In this language, clauses with non-verbal predicates have the entire predicate phrase preceding the subject; clauses containing verbs, which are the focus of interest here, can be VSO or VOS. Consider the following examples:

- (42) a. Ha-pula' i nāna i patgon-ña.
 agr-undress the mother the child-agr
 'The mother undressed her child.' (Chung 1998: 150)
 b. Ha-pula' i patgon-ña i nāna.
 agr-undress the child-agr the mother
 'The mother undressed her child.' (Chung 1998: 151)

Now, if Chamorro's verb-initial order were produced by raising of (a remnant) VP, one would expect VP coordination to be allowed (see (36a)). This expectation

is realized: clauses can routinely have a coordinate VP preceding the subject. See section 3.1 and the examples below:

- (43) a. [Mu-ma'a'ñao] ya [ha-yuti' i salappi'] i säkki.
agr-afraid and.then agr-drop the money the thief
'The thief got scared and dropped the money.' (Chung 1998: 133)
b. [Ha-dandan i gitala] ya [kumanta] si Juan.
agr-play the guitar and.then agr.sing Juan
'Juan played the guitar and sang.'

But implicit in the VP raising hypothesis is a further prediction: it should be impossible for a coordinate VP which is incomplete – which lacks some subconstituent of one of its conjuncts – to occur to the left of the subject. This is because the extraction that would have created such a remnant VP would violate Ross's (1986) Coordinate Structure Constraint.

Surprisingly, this further prediction is not realized. Chung (1990) shows that in clauses such as (44), the subject can be preceded by a coordinate VP that appears to be incomplete. In (44a), for instance, the right conjunct VP is missing its direct object, which surfaces after the subject. In (44b), the right conjunct VP is missing a PP complement:

- (44) a. [Mu-ma'a'ñao] ya [ha-yuti'] i säkki i salappi'.
agr-afraid and.then agr-drop the thief the money.
'The thief got scared and dropped the money.' (Chung 1998: 134)
b. kao [ligát] yan [ti kontra] un lai yan Konstitución Marianas
Q agr.legal and not agr.opposed a law with Constitution Marianas
'whether a law is legal and not in conflict with the Constitution of the Marianas' (Chung 1998: 135)

What is important is that not all types of apparently incomplete coordinate VPs are permitted. For instance, when it is the *left* conjunct VP whose *direct* object surfaces after the subject, the result is ungrammatical, as (45) shows:¹⁰

- (45) *[Ha-dandan] ya [kumanta] si Juan i gitala.
agr-play and.then agr.sing Juan the guitar
'Juan played the guitar and sang.'

Chung's account of these facts rests on the claim that in (44), there is no remnant VP whose creation would have violated the Coordinate Structure Constraint. Instead, the coordinate VP is intact and the subject simply surfaces within its right conjunct. As before, the exact details of the analysis are irrelevant. What matters is that if Chamorro clauses were derived by leftward movement of (a remnant) VP, (44) should be ill-formed. The fact that (44) is grammatical argues that the verb-initial order of this language is not produced by VP raising, contrary to what one might have initially supposed.

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Further evidence against a VP raising analysis of Chamorro clauses is provided by the semantic characteristics of surface subjects. Recall that if Chamorro had VP raising and that movement were forced by the EPP, the subject should surface in situ, within vP, where it should be able to have narrow scope with respect to sentential operators such as negation and existential closure (see (36c)). But, contrary to expectations, there are circumstances under which the subject cannot have narrow scope. Chung (1998: 102–107, 112–117) shows that Chamorro subjects which are external arguments must be specific. This amounts to saying that any subject that originates in the specifier of v must surface outside vP, the domain of existential closure. Chung (1998: 92–99) also shows that Chamorro subjects differ from non-subjects in being unable to be negative concord items (see chapter 45). Assuming that negative concord items are interpreted as narrow-scope indefinites, this distribution strongly suggests that subjects cannot have narrow scope with respect to negation.

In short, Chamorro seems to be another language whose verb-initial clauses are not derived by VP raising.

5.4 *Verb-initial clauses that are only apparent*

The discussion of this chapter has so far proceeded as if the identification of VOS clauses is a straightforward matter. It should be acknowledged here that this is not always so. In some languages, clauses that appear to be verb-initial may in fact be SVO clauses in which the subject is null.

Spanish could well be a language of this type. Although Spanish is traditionally viewed as an SVO language with some verb-initial clauses (see section 2.1), some recent research has suggested that this language might not have a classical version of the EPP – a requirement forcing some DP to raise to the specifier of the clausal head. In a thoughtful study, Goodall (2001) argues that Spanish does indeed have a classical EPP requirement, one satisfied in SVO clauses by raising of the subject DP. He goes on to propose that in verb-initial clauses, the EPP is satisfied by raising of a null adverbial. In other words, these apparently verb-initial clauses have an element occupying the specifier of the clausal head, and in this sense are actually SVO. Notice that if this is so, Spanish is simply irrelevant to the issue of whether verb-initial clauses are universally derived from an SVO structure by leftward movement of VP.

Could this sort of approach to verb-initial order be used to defuse the evidence just presented (in sections 5.2 and 5.3) that VOS clauses in Tzotzil and Chamorro do not involve VP raising? Conceivably. It should be reiterated, though, that both Tzotzil and Chamorro are languages in which no pragmatically neutral clauses are overtly SVO. Consequently, in order for such an approach to get off the ground, one would need to maintain that every pragmatically neutral clause has an SVO structure in which the highest specifier is not visibly occupied. Whether evidence could be found to support such an analytic move remains to be seen.

6 Conclusion: VOS, directionality, and late linearization

The conclusion that emerges from section 5 is that not all VOS clauses are derived from an SVO structure by VP raising. Rather, it seems likely that there are multiple syntactic routes to VOS-hood: the VOS order of some clauses (e.g., in Seediq) is derived by VP raising, but the VOS order of other clauses (e.g., in Tzotzil) is not. Such a result falls in line with other research that suggests that there is no single, universally valid derivation of any given word-order type (see, e.g., Chung 1998 on VSO).

Suppose all this is accepted. Then the next question to address is how VOS order arises when no VP raising is involved.

Within some versions of Principles and Parameters Theory, the most straightforward way of answering this question is to appeal to the parametric setting of some universal principle. For instance, Georgopoulos (1991a) proposes that the X' principle responsible for projecting the specifier has a directionality parameter associated with it. Setting that parameter to project T's specifier to the right leads to VOS order; setting it to project to the left leads to SVO order.

A directionality approach of this sort puts VOS clauses and SVO clauses on an equal footing for most syntactic purposes. Both clause types have the same hierarchical structure, neither is derivationally more complex than the other, and their linear order differences are traceable to a single parameter. The approach does not, of course, address the markedness issue of why SVO is a cross-linguistically common type of word order, whereas VOS is quite uncommon. But in this respect it does not differ much from a VP raising approach. The VP raising approach examined in section 4 claims that both VOS clauses and SVO clauses arise from a minimal SVO structure when some constituent raises to satisfy the EPP. When VP raises, the resulting word order is VOS; when the subject DP raises, the result is SVO. The initial structure of the two clause types is the same, and their derivational complexity seems equivalent. As before, the linear order differences are traceable to just one parameter – the content of the EPP-feature.

Word order is conceptualized differently in other versions of Principles and Parameters Theory and in Minimalist syntax (see, e.g., Halle and Marantz 1993; Chomsky 1995c; and others). Following a strand of thinking that goes back at least to McCawley (1968a), these frameworks assume that precedence relations are simply not represented in the syntax: clauses are unordered hierarchical structures that are linearized relatively late, after the derivation has left the syntax proper. (See the references cited in section 1.) Such an approach claims that SVO clauses and VOS clauses are syntactically identical (as long as no VP raising is involved). The two clause types are differentiated only when linear order is established, on the way to the phonology.

What matters here is that there are few if any empirical differences between a directionality approach to VOS and a late linearization approach. The two are

indistinguishable for almost all practical purposes. Consequently, much of the evidence that VOS clauses have their specifiers projected to the right need not bear on the syntax *per se*, since it can be recast in terms of late linearization.

For instance, Chung (1990, 1998) uses some intricate word-order evidence from Chamorro to argue that the specifiers of Chamorro clauses are projected to the right and the subject then lowers, optionally, to adjoin to some projection of [V]. In fact, many of the patterns she describes could equally well be produced via linearization – an alternative that fits more comfortably into Principles and Parameters Theory, given that lowering is not a standard type of movement. Chung does offer some evidence that the syntactic position of the lowered subject must be visible in Logical Form. It is not obvious how a late linearization approach would handle this evidence, which involves the interaction of quantification with the VP coordination pattern illustrated above in (44) (see section 5.3).

Georgopoulos (1991a) argues on the basis of cross-linguistic evidence that weak crossover effects arise in languages in which specifiers and complements are governed from different directions. Among other things, her proposal is intended to account for the absence of weak crossover effects in Palauan and other VOS languages. These languages, she claims, have no weak crossover because their specifiers and complements are both projected to the right (and, therefore, governed from the left). Crucial to the proposal is the assumption that bound pronouns observe the head government requirement of the Empty Category Principle. One current approach to the head government requirement is to relegate it to the phonology, broadly construed. If such an approach is tenable, one could conceivably restate Georgopoulos's proposal in PF terms as well.

Finally, Freeze and Georgopoulos (2000) contend that a directionality approach to word order accounts for certain differences in the expression of location, existence, and possession (see chapter 24) in languages of different word-order types. Their proposal aims to explain two descriptive generalizations. First, no verb-initial language has a lexical verb meaning 'have'; and second, no SOV language has a locative proform in existential sentences. What is of interest is that both generalizations actually concern the lexicon, not the syntax. Recent work in morphological theory (e.g., Anderson 1992; Halle and Marantz 1993) suggests that lexical insertion, like linearization, occurs late – after the derivation has branched to the phonology. If so, Freeze and Georgopoulos's account could conceivably be recreated outside the syntax proper. It should be noted, though, that the descriptive generalizations which are their point of departure might not be completely accurate. For instance, Chamorro is a verb-initial language but nonetheless has a lexical verb meaning 'have'. For discussion of the syntax and semantics of this verb, see Chung and Ladusaw (2004).

In conclusion, the VOS clauses that do not involve VP raising could be assumed to be VOS in the syntax. But most of the evidence is also compatible with the idea that the word order of these clauses – in fact, all word order – is the product of late linearization and therefore syntactically insignificant. Importantly, the two approaches that have been taken to (these) VOS clauses assume that they have the same hierarchical structure as SVO clauses.

NOTES

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- 1 This conclusion extends to morphologically ergative languages if they are assumed to have the phrase structure described earlier in section 2.2.
- 2 Examples like (i) suggest that Tagalog has a pattern of VP coordination similar to that of Chamorro. See Kroeger (1993: 34–36) for discussion and a different analysis:

- (i) [Huhugasan ko] at [pupunasan mo] ang mga pinggan.
 Fut.wash.DV me.Gen and Fut.dry.DV you.Gen Nom Pl dish
 'I will wash and you dry the dishes.' (Kroeger 1993: 34)

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- 3 In (fa), *he* can be analyzed as an indefinite determiner or as the content of T. If the former, then each conjunct in this example is a predicate DP; if the latter, then each conjunct is T'. See Chung and Ladusaw (2004).
- 4 If the VP-internal subject hypothesis is adopted in one of its original forms and subjects are assumed to raise out of VP for Case or EPP reasons, then leftward movement of VP will always be an instance of remnant movement. The assumption in the text is, instead, that the subject originates within the maximal projection of *v*, an abstract verbal head that takes VP as its complement (Chomsky 1995c).
- 5 This is, in fact, the style of analysis proposed by Pearson (2000a) for Malagasy and by Aldridge (2002) for Seediq. Examples (26–28) were provided by Chamorro consultants in Sunnyvale, California, and Saipan.
- 6 PP complements and adjuncts in Niuean must also surface to the right of the subject and are therefore predicted to be accessible to extraction. In fact, most of these PPs can be extracted only via a resumption strategy. See Seiter (1980).
- 7 Dixon (1988: 170) states that when the subject has been extracted, "the subject pronoun . . . is retained in the predicate." Since this pronoun routinely co-occurs with full DP subjects that surface to the right of VP (Dixon 1988: 33), it is arguably a form of subject agreement, not a resumptive pronoun.
- 8 Diesing (1992b) proposes that VP is the domain of existential closure, where the subject is assumed to originate as the specifier of V. In a theory in which the subject originates as the specifier of the abstract verbal head *v*, the obvious restatement of her proposal is that the domain of existential closure is *v*P.

An approach to scope and specificity effects different from Miyagawa's is suggested by the work of Alexiadou and Anagnostopoulou (1998). As mentioned earlier, Alexiadou and Anagnostopoulou claim that the word order of some VSO languages arises when *V* undergoes head-movement to the clausal head to satisfy the EPP. Their investigation leads them to recognize two subclasses of such languages: in one subclass, the subject remains within *v*P, while in the other, it raises to a specifier above *v*P but below the clausal head. If this further parameterization is adopted, the result would be that subjects could exhibit wide scope and specificity without actually having raised all the way to the specifier of the clausal head. All that would be necessary

- would be for them to have raised out of VP. For various reasons, such an approach is not pursued here. The position taken in the text is essentially Miyagawa's position.
- 9 The Tongan negative 'ikai in (35) is a syntactic verb that takes the negated clause as its complement (see, e.g., Churchward 1953: 62). Examples (35c-d) were provided by Tongan consultants in Los Angeles in the 1970s.
 - 10 Examples (43b) and (45) were provided by Chamorro consultants in Sunnyvale, California, and Saipan. Thanks to David Adger for pointing out the significance of examples of type (45).

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