

## Linguistic Diversity and Theoretical Assumptions

Robert D. Van Valin, Jr.  
State University of New York at Buffalo

### 1. Introduction

The morphosyntactic diversity of human languages raises problems for many commonly held theoretical assumptions. Syntactic theories typically arise out of the study of a restricted set of issues in a specific group of languages, and then after the fundamental principles of the theory and its analytic constructs have been worked out on the basis of these data, an attempt is usually made to extend the approach to new issues and language-types. Chomskyan syntax grew out of the study of English, and this is still reflected in many of the theory's crucial assumptions, e.g. the necessity of a universal phrasal category headed by V and excluding the subject.<sup>1</sup> Relational Grammar [RelG], on the other hand, developed out of the analysis of a wider range of languages, but all were syntactically accusative, hence its postulation of what look like traditional Indo-European grammatical relations as universal primitives. Role and Reference Grammar [RRG] took a rather different starting point from generative approaches; it asked the question, 'what would syntactic theory look like if it were based on Lakhota, Tagalog and Dyirbal, rather than on English?' Interesting problems arise when theories expand their analytic reach beyond the initial range of data which motivated them, and the purpose of this paper is to look at the ways theories deal with morphosyntactic phenomena which appear *prima facie* to be incompatible with one of more of their central assumptions.

Three theoretical assumptions will be examined: (1) the universal validity of X-bar theory without discontinuous constituency; (2) the consistency of grammatical relations within a language; and (3) the linked units in complex sentences are VPs or clauses. Every theory does not make all of these assumptions, but most theoretical approaches make one or more of them. In the following sections, data problematic for each of these assumptions will be presented, and then the responses to them from several theories will be summarized. Conclusions will be presented in the final section.<sup>2</sup>

### 2. The universality of X-bar syntax

Most, but certainly not all, syntactic theories assume some version of the X-bar theory as their representation of syntactic structure. Two phenomena which are potentially problematic for this view of structure are discontinuous constituency and minimal clauses in head-marking languages. X-bar theory itself is neutral with respect to the existence of discontinuous constituents; the approaches of McCawley (1982, 1987) and Ojeda (1987), among others, permit discontinuous constituents within X-bar syntax. However, most theories disallow them. A classic example of discontinuous constituency can be found in the following Dyirbal examples (Dixon 1972).<sup>3</sup>

- (1) a. Balan  $\text{\textcircled{d}}$ ugumbil- $\emptyset$  baŋgul ya $\text{\textcircled{r}}$ a-ŋgu bu $\text{\textcircled{r}}$ a-n.  
 NM.ABS woman-ABS NM.ERG man-ERG see-TNS  
 b. Baŋgul balan ya $\text{\textcircled{r}}$ a-ŋgu bu $\text{\textcircled{r}}$ an  $\text{\textcircled{d}}$ ugumbil- $\emptyset$ .  
 NM.ERG NM.ABS man-ERG saw woman-ABS  
 c.  $\text{\textcircled{d}}$ ugumbil baŋgul bu $\text{\textcircled{r}}$ an balan ya $\text{\textcircled{r}}$ aŋgu.  
 woman.ABS NM.ERG see NM.ABS man.ERG  
 d. Ya $\text{\textcircled{r}}$ aŋgu  $\text{\textcircled{d}}$ ugumbil balan baŋgul bu $\text{\textcircled{r}}$ an.  
 man.ERG woman.ABS NM.ABS NM.ERG see  
 (all possible orders are grammatical)  
 ‘The man saw the woman.’

The basic Dyirbal sentence is given in (1a), in which the constituents of each NP, the noun marker and the head noun, are adjacent to each other; they agree in case and gender. What is so striking about Dyirbal is that all possible orders of these five words are completely grammatical; only three of the possibilities are illustrated in the remaining examples.<sup>4</sup> In (c), for example, the noun marker for *ya $\text{\textcircled{r}}$ a* ‘man’ occurs adjacent to  *$\text{\textcircled{d}}$ ugumbil* ‘woman’, while its noun marker is separated from it by the verb and is adjacent to *ya $\text{\textcircled{r}}$ a* ‘man’. The challenge that sentences like these pose to a syntactic theory is how to account for the fact that, regardless of position in the clause, *balan* is always construed as modifying  *$\text{\textcircled{d}}$ ugumbil* ‘woman’, while *baŋgul* is always interpreted as modifying *ya $\text{\textcircled{r}}$ a* ‘man’.

There are two approaches that theories assuming a version of X-bar theory without discontinuous constituents take. In derivational approaches, which include classical transformational grammar and its Principles & Parameters [P&P] descendants, the solution is to set up a form like (1a) as the underlying form and to posit a rule, originally called ‘scrambling’, to move the elements into their possible surface configurations. The interpretive problem is solved by having an abstract morphosyntactic representation in which the modifiers are adjacent to the heads they modify in (1). This analysis is possible only in multistratal theories, i.e. theories postulating multiple derivationally-linked syntactic representations. Monostratal theories take a different approach, which will be termed the *dual structure approach*, following Austin & Bresnan (1996). Theories adopting this approach include Autolexical Grammar [ALG] (Sadock 1991) and Lexical-Functional Grammar [LFG] (Austin & Bresnan 1996). Austin & Bresnan (1996) analyze the following Warlpiri example of discontinuous constituency.

- (2) Kurdu-jarra-rlu ka-pala maliki wajilipi-nyi wita-jarra-rlu.  
 child-DL-ERG PRES-3dISUBJ dog.ABS chase-NPST small-DL-ERG  
 ‘The two small children are chasing the dog.’

In this example the adjective *wita* ‘small’ modifies *kurdu* ‘child’, despite being at opposite ends of the clause; they agree in number and case. LFG posits two syntactic representations for a sentence, one based on X-bar syntax (called ‘c-structure’) and an abstract one based on grammatical functions (called ‘f-structure’).

These are not derivationally related representations akin to deep (D-)structure and surface (S-)structure in a multistratal theory; rather they are both representations of the actual form of the sentence, hence the name ‘dual structure’. The LFG treatment of (2) is given in Figure 1.

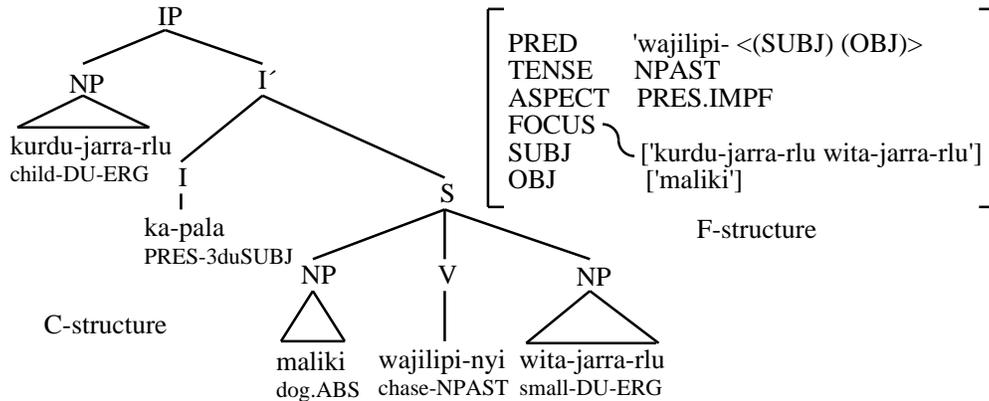


Figure 1: LFG treatment of (2) from Warlpiri

While *kurdu* ‘child’ and *wita* ‘small’ are distinct constituents in the c-structure, they are united in the f-structure, as together they constitute the subject of the sentence. In this approach, the unification of the discontinuous constituents is handled in an abstract representation not based on constituent structure.

A different approach is adopted in RRG (Van Valin 1993, Van Valin & LaPolla 1997), a theory which does not employ X-bar constituent structure. RRG adopts a multiple projection representation of clause structure in which predicates and arguments are represented in a different projection from grammatical categories like tense, aspect and modals; the same split occurs in the representation of NPs, with modifiers like determiners, quantifiers and adjectives appearing in a separate projection from the nominal heads and their arguments. Hence in an English NP, *the* and *dog* belong to separate projections, and in a Dyirbal NP, *balan* and *dugumbil* ‘woman’ likewise belong to separate projections; the two languages differ in that English requires that all elements of an NP be adjacent to each other, while Dyirbal (and Warlpiri) do not. A simplified version of the RRG treatment of (1c) is given in Figure 2, taken from Van Valin & LaPolla (1997), §2.3.2. The predicate and its arguments in the clause and the head noun in the NP are in the top projection (called the ‘constituent projection’), while the grammatical categories (called ‘operators’ in RRG) are in the lower projection (called the ‘operator projection’).

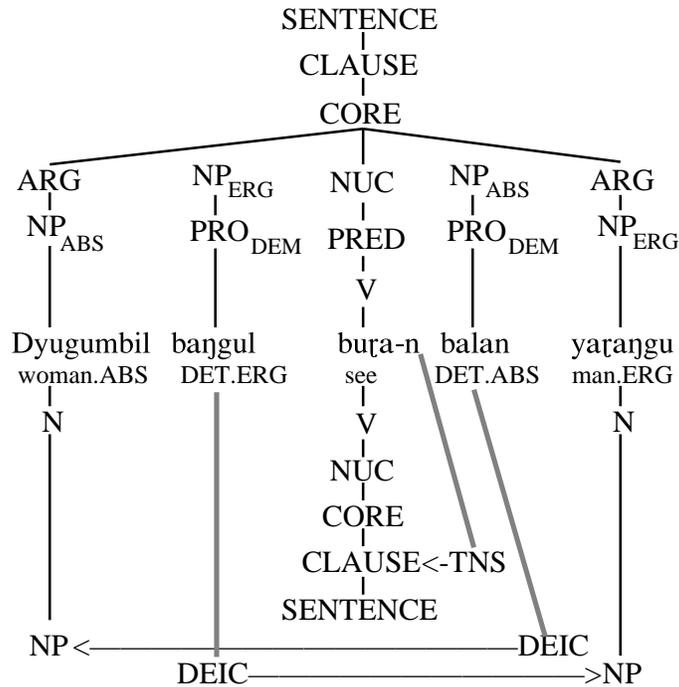


Figure 2: RRG treatment of (1c) in Dyirbal

The fact that each noun marker is associated with a unique head noun is expressed in the operator projection of the NP ('—>' indicates modification).

The second problematic phenomenon is clause structure in head-marking languages. Examples from Lakhota and Swahili are given below.

- (3) a. Mathó ki hená na-wiǰhá-wa-xʔu-kte. Lakhota  
 bear the those stem-3sgU-1sgA-hear-FUT  
 'I will hear those bears.'  
 b. Na-wiǰhá-wa-xʔu-kte.  
 stem-3sgU-1sgA-hear-FUT  
 'I will hear them.'
- (4) a. Wa-tu wa-na-vi-nunua vi-ti Swahili  
 2-person 2-PRES-8-buy 8-chair  
 'The people are buying the chairs.'  
 b. Wa-na-vi-nunua.  
 2-PRES-8-busy  
 'They are buying them.'

In both languages, there are markers on the verb signaling subject and object; the Lakhota verb *naxʔú* 'hear' takes its markers as infixes. The (a) examples in (3)

and (4) have independent NP arguments and look like sentences from more familiar languages. The interesting problem arises with respect to the (b) examples: what is the structure of sentences which are single phonological words?

There are a variety of approaches that have been proposed. One solution is to simply ignore their head-marking nature and treat them as if they were dependent-marking languages, with null pronominals in the usual argument positions and the markers on the verb treated as agreement, e.g. Williamson (1984). This analysis is depicted in Figure 3.

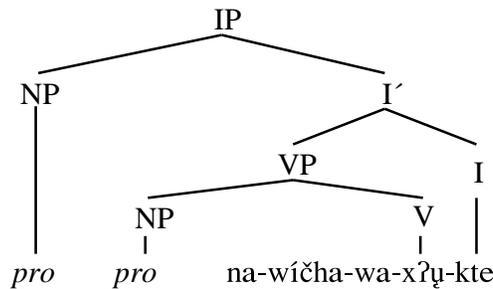


Figure 3: Analysis of (3b) in terms of mid-1980's GB

This approach runs into a number of theory-internal difficulties (Van Valin 1987) and is highly problematic. An alternative account within GB is Jelinek's (1984) pronominal argument hypothesis, which treats bound markers as the true arguments and independent NPs as adjuncts; it is further developed in Baker (1996). While this account recognizes the distinctive head-marking nature of these languages, it suffers from a variety of serious problems (see e.g. Austin & Bresnan 1996, Koenig & Michelson 1998).

There are at least two dual structure approaches. In LFG the c-structure would be minimal, but the f-structure would be like the one in Figure 2, with the SUBJ and OBJ functions filled by null pronominals, PROs. In LFG the f-structures for e.g. the Lakhota sentence in (3b) and its English translation would be the same, with the exception that the pronominals in the Lakhota f-structure would be null and the ones in the English f-structure would not be. In ALG, there would be two structures assigned, a morphophonological one expressing the fact that the unit is a single phonological word, and a syntactic tree capturing the fact that it is a clause with two arguments.

RRG takes a different tack. It analyzes the bound markers as the core arguments of the verb (Van Valin 1977, 1985); independent NPs are not adjuncts but instead are part of a discontinuous argument consisting of it and the bound marker. The constituent projections for the sentences in (3) are given in Figure 4, along with the representation for the English translation of (3b).

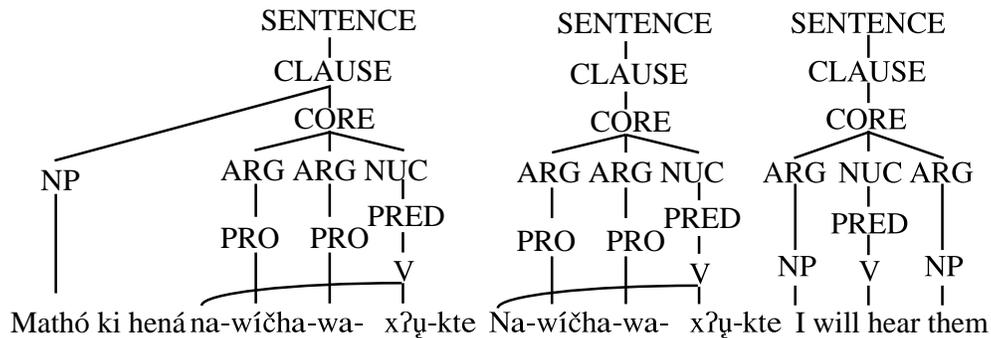


Figure 4: RRG analysis of Lakhota sentences in (3)

For (3a), represented by the first tree in Figure 4, the RRG linking algorithm would link the NP *mathó ki hená* ‘those bears’ and the bound pronominal *-wíčha* - ‘them’ to the same argument position in the semantic representation of the sentence. Because of this they are considered to form a single discontinuous argument. The major difference between the Lakhota and English clauses meaning ‘I will hear them’ is that the Lakhota pronouns are bound morphemes, while the English one are free morphemes.

### 3. Consistency of grammatical relations

A commonly made assumption about grammatical relations is that each language employs a single system of relations, be it accusative, ergative or active (split intransitive, e.g. Acehnese (Durie 1987)). The first major problem for this assumption arose when the syntax of Philippine languages began to be investigated, starting with Schachter’s seminal papers on Tagalog in the 1970’s (1976, 1977). He showed that in Tagalog there is a split in subject properties between the semantically defined actor of the clause and what he calls the ‘topic NP’, marked by the preposition *ang*. In languages in which this type of split occurs, it has been found that certain subject properties, e.g. control of reflexives, are consistently actor-type properties, and others, e.g. being the controller and target in conjunction-reduction constructions, are consistently topic-type properties. A number of different approaches have been taken to account for this split, which is found in other Philippine languages (e.g. Sama; Walton 1986), Lango (Nilotic; Noonan & Bavin-Woock 1978), and Toba Batak (Austronesian; Schachter 1984), among others. Not surprisingly, multistratal and monostratal theories offer different types of analyses. RelG associates the actor properties with subject (1) in the initial stratum and the topic properties with the 1 of the final stratum. The GB account of Guilfoyle, et al. (1992) assumes the VP-internal subject hypothesis and claims that the NP in SPEC of VP has the actor properties, while the NP raised to SPEC of IP has the topic properties.

Monostratal theories like LFG, Head-driven Phrase Structure Grammar [HPSG] and RRG take one of two approaches. The first, followed by RRG and

some work within LFG (Kroeger 1993), is to claim that the actor-type properties are in fact controlled by a semantically defined argument, the actor, and that the topic-type properties are associated with the syntactic subject (Kroeger) or the syntactic pivot (RRG).<sup>5</sup> The second is to posit a level of syntactic argument structure [ARG-S], which is a projection of the semantic structure of the verb, and which has two functions, ARG-S subject and object; they are distinct from syntactic subject and object. This is the approach taken by Manning (1996), which has been adopted in both HPSG and some work in LFG. The Philippine-type split is then captured in the following way: the actor-type properties are associated with ARG-S subject, while the topic-type properties are associated with syntactic subject. This is somewhat reminiscent of the Guilfoyle, et al. (1992) approach; however, no transformational operations relate ARG-S to syntactic structure, as the relationship between the two is one of ARG-S being mapped into or linked to syntactic structure, in contrast to the raising of a VP-internal NP to SPEC of IP in the GB account.

Philippine-type splits necessitate only a minor revision in the consistency of grammatical relations assumption, especially in light of the fact that initial 1/SPEC of VP/ARG-S subject seems to correlate with one set of phenomena cross-linguistically and final 1/SPEC of IP/syntactic subject seems to correlate with another. The consistency assumption can be maintained with respect to each type of grammatical relation. Only RRG abandons the consistency assumption in favor of a construction-specific notion of grammatical relations (see note 4).

Much more problematic than the Philippine phenomena are what Dixon (1994) calls ‘mixed-pivot’ languages, e.g. Yidj, Jakaltek, Chukchee, Greenlandic Eskimo, Tongan. Dixon characterizes pivots in terms of combinations of the grammatical functions S ‘intransitive subject’, A ‘transitive subject’ and O ‘transitive object’; following Van Valin (1981), it is useful to add a fourth function d-S ‘derived intransitive subject’ in a voice construction such as a passive or antipassive. The problems posed by the languages will be illustrated with Yidj (Dixon 1977) and Jakaltek (Craig 1977, Datz 1980). The syntactic pivots in subordinate and coordinate constructions from Yidj are given below; the notations like ‘S = S’ indicate that the main or first clause controller is an S and the coreferential omitted NP in the subordinate or second clause is an S

(5) Subordination

- a. Njuŋu-Ø buŋa-Ø dyuŋga-ŋ [maŋga-ŋunda].  
 that-ABS woman-ABS run.along-PAST laugh-SUBRD  
 ‘That woman ran along while laughing.’ S = S
- b. Wugudya-ŋgu wawa-:l miŋa mugij-Ø [bidyu-:ŋ buga-ŋunda].  
 man-ERG see-PAST mouse-ABS eaglehawk-ERG eat-SUBRD  
 ‘The man saw the mouse while the eaglehawk ate [it].’ O = O
- c. Wugudya-Ø maŋga-ŋu [buŋa-:ŋ nambil-ŋunda].  
 man-ABS laugh-PAST woman-ERG hold-SUBRD  
 ‘The man was laughing while the woman held [him].’ S = O

- d.\* Wugudya-Ø manga-ju [buɲa-Ø nambil-ɲunda].  
 man-ABS laugh-PAST woman-ABS hold-SUBRD  
 ‘The man was laughing while holding the woman.’ \*S = A
- e. Buɲa-:ɲ wugudya-Ø nambi-:l [manga-ɲunda].  
 woman-ERG man-ABS hold-PAST laugh-SUBRD O = S,  
 ‘The woman held the man while [he/\*she] was laughing.’ \*A = S

In these examples, the main clause controller can be S or O, and the omitted argument in the subordinate clause can be S or O as well; an A cannot be the omitted argument, as (d) shows, nor can it be the controller, as (e) shows. In order for the semantic actor of a transitive verb to function as controller or target, it is necessary to make it the subject of a derived intransitive verb (d-S) via antipassivization. This is illustrated in (6)

- (6) Subordination (with antipassivized transitive verbs)
- a. Wugudya-Ø manga-ju [buɲa-: nambi-:dyi-ɲu:n].  
 man-ABS laugh-PAST woman-LOC hold-ANTI-SUBRD  
 ‘The man was laughing while holding the woman.’ S = d-S
- b. Buɲa-Ø wugudya-la nambi-:dyi-ɲu [manga-ɲunda].  
 woman-ABS man-LOC hold-ANTI-PAST laugh-SUBRD  
 ‘The woman held the man while [she/\*he] laughed.’ d-S = S

In (6a), the subordinate clause is antipassivized, and consequently the A argument of (5d) appears as a d-S and can be omitted. In (b), the main clause is antipassivized, and the A argument of (5e) appears as a d-S and serve as controller of the omitted S in the subordinate clause. In Dixon’s terms the pivot for this construction in Yidj is [S, O, d-S]. Conjunction reduction in coordinate constructions creates the mixed-pivot situation: when the coreferential NPs are pronouns, the pattern of control and omission is accusative, whereas when they are full NPs, the pattern is ergative, as the following examples illustrate.

- (7) a. Coordination with shared pronominal NP  
 ɲayu guri:li-Ø gala-: baga-:li-ɲu, miɲa-Ø  
 1sgNOM wallaby-ABS spear-INST spear-go-PAST animal-ABS  
 badya-:ɽ, biɽi gundyi-:ɲ.  
 leave-PAST PRT return-PAST A = A = S  
 ‘I went and speared a wallaby with a spear, [then] left the meat [lying there] and went home.’
- b. Coordination with shared full NP  
 ɲuɲu-Ø buɲa-Ø gaba-:ɲdya dyana-:ɲ, ɲuɲdyu-:ɲ wa  
 that-ABS woman-ABS road-LOC stand-PAST that-ERG  
 gudya-ɲgu gunda-:dyi-ɲu baɲga-:lda.  
 man-ERG cut-ACD-PAST axe-INST S = O

‘That woman was standing in the road, and the man accidentally cut [her] with his axe.’

In (7a) the controller and omitted arguments are pronominal, and the controller is an A and the omitted arguments are A and S, yielding an accusative pattern. In (7b), on the other hand, full NPs are involved, and the pattern is ergative, with the controller in S function and the omitted argument in O. The mixed-pivot situation in Yidij is summarized in Table 1.

CONSTRUCTION	PIVOT
1. Subordination (incl. purposive, rel cl)	[S, O, d-S]
2. Coordination (shared full NP)	[S, O, d-S]
3. Coordination (shared pronominal NP)	[S, A]

Table 1: Syntactic pivots in Yidij (Dixon 1977)

An even more complicated situation is found in Jakaltek. It is summarized in Table 2, from Van Valin (1981).

CONSTRUCTION	PIVOT
1. ‘Subject’ [S,A]-control	[S] only
2. ‘Object’ [O]-control	[S, d-S (passive)] only
3. Promotion (‘subject’ copying with verbs like <i>begin</i> )	Dialect 1: [S] only Dialect 2: [S, d-S (both)] only
4. Relativization	[S, O, d-S (antipassive)]
5. WH-question formation	[S, O, d-S (antipassive)]
6. Clefting	[S, O, d-S (antipassive)]
7. Coordination (preferred)	[S, A, d-S (passive)]

Table 2: Syntactic pivots in Jakaltek (Craig 1977, Datz 1980)

In these seven Jakaltek constructions, *five* different pivots are found. Neither Yidij nor Jakaltek is readily amenable to the kind of analysis proposed for the Philippine-type split. In Yidij the same construction operates with different pivots depending upon whether the NPs involved are pronominal or not. In Jakaltek, the constructions that are typically topic-type properties, extraction and coordination, work on distinct patterns, and the other ones do not show a consistent pattern either. Languages of this type are much more problematic for standard assumptions about grammatical relations than the Philippine-type languages, and they have received much less attention in the theoretical literature.

#### 4. Linked units in complex sentences are VPs or clauses

An important contrast between GB and other generative theories revolves around the analysis of complex sentences: mainstream GB (e.g. Chomsky 1981, 1986) claims that the linked units in complex sentences are always clauses (small clause, IP, CP), while Generalized Phrase Structure Grammar, HPSG and LFG all posit

both VPs and clauses as linked units. Romance-type causative constructions present a much-discussed problem for the assumption that the linked unit in a complex sentence must be a VP or clause. The following examples are from Argentinean Spanish (Paris 1999).

- (8) a. María le hizo limpiar el auto a Pedro.  
3sgDAT made clean the car to  
'Maria made Pedro clean the car.'
- b. María hizo limpiar el auto por Pedro.  
made clean the car by  
'Maria had Pedro clean the car.'
- c. María lo hizo a Pedro limpiar el auto.  
3sgACC made to clean the car  
'Maria made Pedro clean the car.'

The primary problem is this: these constructions involve two propositions at the semantic level but (at least some of them) seem to be monoclausal syntactically. A crucial underlying assumption is that each verb semantically heads a proposition, and each proposition in the semantics is realized by a clause (or reduced clause, i.e. VP) in the syntax. For some X-bar-based theories, a V-V structure is ruled out by the following assumption: "X-bar theory does not allow an  $X^0$  that is a major category to be the structural sister of another  $X^0$  of a major category" (Alsina 1997:241). Consequently, the only two options available are to treat the linked unit as a VP or clause.

There is an enormous literature on these constructions, and it would be impossible to survey it all here. In derivational, non-X-bar theories like Generative Semantics [GS] and RelG, the underlying structure of these sentences is considered to be biclausal but the surface structure monoclausal; GS posited a rule of predicate raising, and RelG assumed a rule of clause union. Of the many analyses within P&P frameworks, three will be mentioned here; all assume that they are biclausal in underlying as well as surface forms. Baker (1988) proposed an abstract incorporation rule involving coindexing, while Bordelois (1988) treats them as control structures with a special notion of extended governing category to account for their monoclausal properties. Moore (1991) posits a VP complement for (8a, b) and an IP complement for (8c). Zubizarreta (1985) proposes what amounts to a dual structure analysis in GB: a morphophonological representation treats *hizo* 'made' and *limpiar* 'clean' as separate phonological units, but the morphosyntactic representation treats them as if they together constitute a single verb. This is depicted in Figure 5.

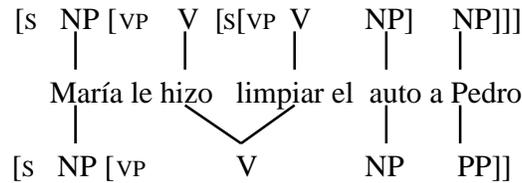


Figure 5: Parallel structures proposed in Zubizarreta (1985)

There is considerable variety among monostratal approaches. Alsina (1997) proposes a dual structure analysis in LFG: the linked unit is a VP-complement in c-structure but forms a complex predicate with the causative verb in f-structure. Both GPSG and HPSG allow V-V structures for these causative constructions. Koenig (1994) proposes monostratal clause union in Construction Grammar. ALG proposes parallel structures similar to those in Figure 5. RRG treats (8a, b) as complex predicates (nuclear junctures, in RRG terms; Paris 1999). The RRG analysis of (8b) from Paris (1999) is given in Figure 6.

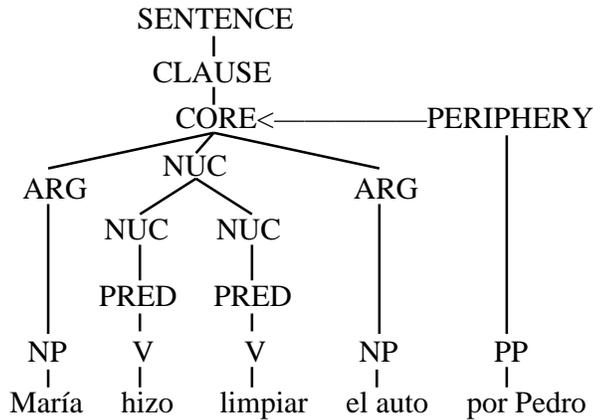


Figure 6: RRG analysis of (8b) as nuclear juncture

The data in (8) present two challenges to the VP or clause as linked unit analyses. First, the Spanish construction in (8c) is also analyzed as a VP or clausal complement, and yet it has different syntactic and semantic properties from the constructions in (8a, b). From what do these differences follow? The example in (8c) has the properties of a classic control structure, which is analyzed as a VP or CP complement, yet it has very different semantic properties from (8a, b) and does not allow clitic climbing. These differences must be accounted for. Second, many accounts treat the constructions in (8a, b) as being exceptional in some way and attribute their special character to idiosyncratic properties of the causative verbs. But the same structural contrast found between (8a) and (c) is found in constructions involving non-causative verbs in many languages, e.g. the Barai (Papua-New Guinea; Olson 1981, Foley & Van Valin 1984) data below.

- (9) a. Fu fi fase isoe. Control structure  
       3sg sit letter write  
       ‘He sat down and wrote a letter.’

- b. Fu fase fi isoe. V-V complex predicate  
 3sg letter sit write  
 ‘He sat writing a letter.’

The Barai construction in (9a) is a control structure like (8c), whereas the one in (9b) is a V-V complex predicate like (8a, b). This contrast can be seen in the behavior of adverbs, as illustrated below.

- (10) a. Fu isema fi fase isoe.  
 3sg wrongly sit letter write  
 ‘He sat wrongly and wrote a letter.’  
 b. Fu fi fase isema isoe.  
 3sg sit letter wrongly write  
 ‘He sat down and wrote a letter wrongly.’
- (11) a. Fu fase isema fi isoe.  
 3sg latter wrongly sit write  
 ‘He wrongly sat writing a letter.’  
 b.\*Fu fase fi isema isoe.  
 3sg letter sit wrongly write

The adverb *isema* ‘wrongly’ can modify each verb independently in the control structure, as the examples in (10) show. However, this is impossible in the V-V complex predicate; the adverb can only modify the complicate as a whole, not the individual verbs, as the interpretation of (11a) and the ungrammaticality of (11b) show. These are clearly not causative constructions, and accordingly the existence of V-V complex predicates as in (8a, b) cannot universally be attributed to special properties of causative verbs, since similar non-causative constructions occur in many languages (Foley & Van Valin 1984, Durie 1997).

## 5. Conclusions

The data surveyed in this paper raise important problems for syntactic theories. Most of the theories discussed attempt to maintain the assumptions in question (the universal validity of X-bar theory without discontinuous constituency, the consistency of grammatical relations within a language, and the linked units in complex sentences as VPs or clauses), and in order to do so it is necessary for them to posit some kind of abstract syntactic representation in which the assumptions hold. In derivational theories, this has typically been an underlying syntactic representation of some kind which is associated with the overt structure by means of a transformational-type rule of some kind, i.e. classical transformations, RelG relational statements, or Move in P&P approaches. Some monostratal theories posit an abstract syntactic f-structure or argument structure in terms of which analyses consistent with these assumptions can be formulated.

Of the four phenomena discussed, discontinuous constituency is most easily handled by the derivational and dual structure approaches. Single-word

clauses in head-marking languages are more amenable to dual structure rather than derivational treatments; in particular, the proposals for handling them within P&P approaches are all problematic in various respects. Mixed-pivot languages like Yidij and Jakaltek are not readily accounted for by the usual mechanisms for handling grammatical relations phenomena. They pose a particular problem for P&P approaches because of the construction-specific variation; one of the guiding assumptions of P&P theory is that grammatical constructions are epiphenomena derived from general principles and constraints, and yet it is constructions, not just properties of specific lexical items, that seem to be needed for the analysis of these phenomena. Finally, V-V constructions like those in (8a, b) and (9b) and the contrast with the control constructions in (8c) and (9a) have shown themselves to be problematic for many approaches, both multistratal and monostratal. They seriously challenge assumptions about the nature of the linked unit in complex sentences, as well as claims that such constructions are somehow linked to causative semantics.<sup>6</sup>

Of all the approaches discussed, RRG is the most radical, in that it does not make any of these assumptions and proposes rather different analyses of these phenomena. This is in part a reflection of the initial data from which it was developed (see §1). It rejects X-bar syntax and assumes instead a multi-projection, semantically-based theory of clause structure which permits crossing branches. Despite its typological flexibility, it is strongly constrained. RRG adopts a construction-specific theory of syntactic functions, which enables it to deal with mixed-pivot languages. Once the assumption of the consistency of grammatical relations is abandoned, it is possible to see more familiar data as being mixed-pivot phenomena; for example, English turns out to exhibit it, as there are constructions, e.g. purpose clauses and *tough*-movement, whose syntactic pivot is not the traditional subject. The fact that RRG posits construction-specific syntactic functions does not mean that it is unable to capture generalizations about grammatical relations (see Van Valin 1999a, b; Van Valin & LaPolla 1997, §§6.3-6.5). Finally, the RRG theory of complex sentences, grounded in the theory of clause structure, permits only a limited range of complex-sentence types universally and predicts the existence of the constructions in (8a, b) and (9b); they are not exceptional from this point of view.

## Notes

<sup>1</sup> Kayne's (1994) proposal that all languages are underlyingly SVO and that all movement is to the left is perhaps the most extreme example of this English-centric bias in Chomskyan theory.

<sup>2</sup> I would like to thank Jean-Pierre Koenig for comments on an earlier draft.

<sup>3</sup> Abbreviations used: A 'actor', 'transitive subject', ABS 'absolute', ACD 'accidental', ANTI 'antipassive', ARG-S 'argument structure', DL/dl 'dual', d-S 'derived intransitive subject', ERG 'ergative', FUT 'future tense' INST 'instrumental', LOC 'locative', M 'noun marker', NPST 'non-past tense', O 'transitive object', PRES 'present tense', PRT 'particle', S 'intransitive subject', SUBJ 'subject', SUBRD 'subordinator', TNS 'tense', U 'undergoer', 2, 8 'Swahili noun classes'

<sup>4</sup> To say that they are all grammatical is not to claim that they are all equally appropriate in any given context or that they are all equally frequent; neither is the case. The point is that they are all grammatically possible, regardless of issues of pragmatic markedness and frequency.

<sup>5</sup> The notion of syntactic pivot, taken from Heath (1975) and Dixon (1979), is used in RRG to refer to restricted neutralizations of semantic roles for syntactic purposes in specific grammatical constructions. In familiar languages, it corresponds to the traditional syntactic subject, but in syntactically ergative languages, it refers to the absolutive, not the ergative NP. RRG posits only one grammatical relation, termed the *privileged syntactic argument*, which subsumes pivots and controllers of agreement, reflexives and omitted arguments in various constructions. See Van Valin & LaPolla (1997), chapter 6, for a detailed presentation of the RRG theory of grammatical relations.

<sup>6</sup> Romance languages also have these constructions optionally with non-causative verbs, including verbs of wanting (e.g. Spanish *querer* 'want') and perception verbs (e.g. French *voir* 'see').

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