Introduction

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Aims and Scope of the *Cambridge Handbook of Role and Reference Grammar*

For Role and Reference Grammar (henceforth RRG), capturing the extent of variation in the grammars of the world's languages is as important a goal of linguistic theory as identifying and explaining the properties that all grammars share. The first work which aimed to provide a rigorous, comprehensive and coherent analysis of the syntax of a number of typologically dissimilar languages, introducing many of the constructs and principles which would then be developed into tenets of RRG, was Foley and Van Valin's (1984) *Functional Syntax and Universal Grammar*. Almost four decades after the publication of that volume, the *Cambridge Handbook of Role and Reference Grammar* sets forth to fulfil a more ambitious set of objectives. The volume is an up-to-date presentation of the framework, assuming very little familiarity, if any, on the part of the reader, while also introducing the many developments which RRG has undergone since the publication of the following manuals and collections: Van Valin and LaPolla (1997), Van Valin (2005), Pavey (2010) and Mairal Usón et al. (2012) (for further relevant work see the bibliography available here: https://rrg.caset.buffalo.edu/). In pursuing this objective, the volume is meant to be, quite literally, a handbook, that is, the most complete current treatment of RRG and the first point of reference for any researchers and teachers interested in this framework. Van Valin's Chapter 1 provides a broad overview of the principles and workings of the framework, while the chapters in Parts II and III adduce more detailed discussions of simple and complex sentences, respectively. Part II deals with the lexicon, lexically motivated alternations, the structure of the word, and semantic decomposition (Cortés-Rodríguez; Mairal Usón and Faber; Peterson; Watters); semantic macroroles and grammatical relations (Kailuweit; LaPolla); important facets of the linking (Latrouite and Van Valin; Nakamura); adpositional, adverbial and mimetic constructions

(Ibáñez Cerda; Toratani), and the encoding of information structure (Bentley; Latrouite and Van Valin). In Part III a discussion of the RRG theory of predicate and clause linkage (Ohori) is followed by chapters on adverbial sentences (Guerrero), relative clauses and clefts (París) and extraction restrictions in complex sentences (Shimojo). Many of these chapters offer specialist contributions on important issues in syntax, morphology, lexical semantics, discourse, and the interfaces between these levels of analysis. Therefore, they will be of interest to researchers who want to compare different perspectives on specific topics in the study of language.

Although it remains a principal objective of RRG to provide an adequate set of tools for the description of the syntax of the world's languages, RRG now also aims to offer an explanatory framework for the study of language acquisition, language change and processing and computational linguistics, and it has made contributions in the domain of neurolinguistics. The extensions of RRG to these fields are presented in Part IV: Matasović argues that the constructs of RRG, which were primarily developed to conduct synchronic work, also lend themselves to capture several aspects of language change. Weist explores the acquisition of key components of the RRG architecture of grammar within a cognition and communication approach to language acquisition. Van Valin uses the tools of RRG to explain the ability of split-brain patients to provide grammaticality judgements with their isolated right hemisphere, developing a proposal which could potentially also capture the decoupling of grammaticality judgements and interpretation in agrammatic aphasics. Finally, Kallmeyer and Osswald develop an RRG system for the formalization of syntactic and semantic composition operations, with potential advantages for the computational implementation of the framework, while Nolan discusses the merits of RRG in natural language processing. This part of the handbook will give the reader an opportunity to evaluate the potential of RRG in applied domains, and to gauge the psychological plausibility of the framework, as compared with approaches which make very different analytical assumptions.

Over the years, the framework has been adopted by a large number of fieldworkers and scholars committed to the documentation and investigation of lesser-known and endangered languages. The concluding chapters, in Part V, are prime examples of this endeavour, featuring grammatical sketches of languages spoken in Papua New Guinea (Yimas, Lower Sepik, described by Foley; Amele, Papuan, treated by Roberts), Africa (Avatime, Kwa, Niger-Congo, discussed by van Putten and Defina) and North America (Cheyenne, Algonquian, dealt with by Corral Esteban), as well as a treatment of voice and case in Amis, Austronesian, by Wu.

The handbook is aimed at a very large readership. Along with those who wish to adopt the RRG framework in their own research, this includes all advanced researchers in syntax, morphology and the discourse–semantics–syntax interface, teachers of syntax at higher education institutions, computational linguists, cognitive neuroscientists, and linguistic fieldworkers.

It is hoped that these different audiences will find the handbook instructive and stimulating, and that the descriptions and analyses presented here will engender constructive scientific debate both within the RRG community and further afield.

The volume is the result of long-term collaborative efforts of many scholars worldwide. The editors would like to thank the reviewers of the handbook proposal, and of the individual chapters, the many chapter authors, and last but by no means least, the whole community of RRG linguists, who enthusiastically and unfailingly supported the project through its many stages and vicissitudes, helping the editors to see it to its successful completion. At Cambridge University Press, the editors thank Helen Barton, Isabel Collins and Stephanie Taylor for their prompt, effective and friendly support.

RRG in Modern Linguistic Theory

An important concern of RRG is to engage in cross-theoretical debate. To give but few examples, many chapters in Van Valin and LaPolla (1997) include discussions and mentions of relevant work in different theoretical approaches, while Van Valin (2001) systematically and explicitly compares the perspectives of Relational Grammar, Principle and Parameters theories and Lexical Functional Grammar with that of Role and Reference Grammar (see also Butler 2005a, b). As noted in Van Valin (2009), this type of evaluative and contrastive debate, which had previously been central in linguistics, has become less intense since the late 1970s, although we note that Farrell (2005) and Dalrymple (forthcoming) (including Bentley and Vincent forthcoming) offer prime examples of such comparisons. In this section, we therefore reflect on the place of RRG in modern linguistic theory without aiming at exhaustivity, but rather selecting some of the themes which are at the very core of the RRG conception of the architecture of grammar and assessing the perspective of RRG vis-à-vis that of other approaches. The principal characteristic of RRG which we hope to highlight in the discussion is that it seeks to explain the similarities and differences in the syntax of the world's languages in terms of the interplay of syntax with lexical-semantic and information-structural representation, and it is with reference to the interfaces that it makes its predictions. Therefore, RRG is a prime example of those that Jackendoff (2002) called *parallel architecture theories*, that is, linguistic theories which keep syntax separate from the other levels of analysis while placing the interplay of these levels at the forefront of linguistic investigation. Alongside Lexical Functional Grammar (Bresnan 1982, 2001; Börjars et al. 2019) and Head-Driven Phrase Structure Grammar (Pollard and Sag 1994; Sag and Wasow 1999), RRG is also one of the *monostratal* syntactic theories, which means that it does not rely on movement, or promotions and demotions, and, instead, it derives any cross-constructional comparisons and generalizations from facets of the linking of syntax with semantics and discourse.

Whilst placing due emphasis on relational constructs, RRG has distanced itself since its very inception from the framework which claimed grammatical relations to be primitives of syntactic theory and universals of human language, namely Relational Grammar (for Relational Grammar see Perlmutter 1983; Perlmutter and Rosen 1984; Perlmutter and Joseph 1990; for relevant discussion, see Van Valin 1977, 1981; Foley and Van Valin 1984: 388–389; Van Valin and LaPolla 1997: 242–285). RRG recognizes that individual languages may privilege the argument which bears unmarked case or is placed in a particular position in the clause, treating it as the source of agreement relations, the antecedent in anaphoric relations, and the controller – or the controllee – in interclausal cross-reference relations. However, no principle of RRG syntax requires that such coding and behavioural properties, or any language-specific subsets thereof, should cluster together, thus defining the subject, the object, etc. of a given language (see Chapters 1 and 5). Grammatical relations are thus not universal in RRG (see Chapter 5 and, for a discussion of comparable views, Farrell 2005: 14–38), but rather have to be defined with reference to specific constructions, where a restricted number of semantic relations or pragmatic functions is neutralized for syntactic purposes. It is worth pointing out here that although Lexical Functional Grammar has a comparable notion of semantically unrestricted grammatical functions – subject and objects (Börjars et al. 2019: 332), this framework differentiates between restricted and unrestricted functions, whereas no grammatical relation is postulated in RRG, if there is no restriction. The restricted neutralizations of semantic relations which are relevant to the definition of grammatical relations in RRG are captured with reference to the generalized semantic relations actor and undergoer, which are universal. These *macroroles* are defined on the basis of a hierarchy of five grammatically salient positions in the semantic representation of predicates (Van Valin and LaPolla 1997: 146). Actor generalizes across positions at the high end of the hierarchy, while undergoer generalizes across positions at the low end (see below and Chapters 3 and 4). The alignment of the privileged syntactic argument of a construction with the actor, or with the high end of the said hierarchy, characterizes accusative alignment, whereas ergative alignment aligns the privileged syntactic argument of a construction with the undergoer, or the low end of the hierarchy. Passive and, respectively, antipassive voice flag the marked choice in each alignment type (see Chapter 26).

While the construction-specific account of grammatical relations readily captures split alignment, some languages, which are well represented in the Indo-European family, tend to select the actor as the privileged syntactic argument consistently across constructions. The notion of subject ensues precisely from this consistency, and it is in terms of this consistency that it can be understood and defined in RRG (Van Valin and LaPolla 1997: 175), although it has no cross-linguistic validity. The subject in English and other languages is defined by the restricted neutralization (A(ctor of transitive),

S (actor or undergoer of intransitive), derived-S (of passive)), which, crucially, leaves out U(ndergoer of transitive). The RRG account of grammatical relations as the synchronic neutralization, and the diachronic grammaticalization, of semantic relations turns out to be cogent in the analysis of all-focus constructions, where the controller of V-S agreement cannot align with the topic and is instead purely selected on semantic grounds (Bentley 2018; Bentley and Cennamo 2022).

Clause structure has distinctive properties which set RRG apart from most syntactocentric and parallel architecture theories alike. The framework aims to do justice to the aspects of phrase structure that are comparable across languages, while also representing the broad range of variation observed in the phrase structure of the world's languages. Since all languages distinguish structurally between predicating and non-predicating elements, the clause is composed of the following units or *layers*: (i) the Nucleus, which hosts the predicate, (ii) the Core, which includes the Nucleus and the referential phrases required by the predicate (the core arguments), and (iii) a Periphery for each layer, containing adjunct modifiers of that layer (see Chapters 1, 9 and 10). These three semantically defined layers are the only universal components of the clause.

The building blocks of the clause, and hence the nodes of the syntactic projection called constituent projection, are not named after the major phrasal categories NP, AP, VP. This is in part the consequence of the absence of rewrite rules like S → NP VP, although the main rationale of this virtually unique feature of RRG syntax is the empirical observation that noun phrases can predicate, although they are normally referential, and in fact in some languages they predicate without the support of a verb, while, in turn, verbs can be referential expressions (Van Valin 2008: 163–164 and Chapter 2 of this volume). Grammatical relations have no configurational definition in RRG (compare the notions such as Specifier of IP in Chomskyan generative theories) and the VP is ruled out as a universal feature of clause structure, as is also the case with Lexical Functional Grammar (Börjars et al. 2019: 5–6). To capture discontinuous constituency and the languages with completely unconstrained word order, there is no no-crossing condition in the constituent projection. In addition, the bound pronouns of head-marking languages, as well as the person and number morphology borne by the verb in null-subject languages, are linked to the Core node in the constituent projection, thus reflecting their referentiality and, ultimately, their status as core arguments.

As was briefly mentioned, RRG syntax cannot rely on movement. Rather, each language has an inventory of syntactic templates, which are drawn upon in parsing to differentiate passive structures from their active counterparts, *wh*-questions from their declarative counterparts, etc., while the correspondences between these pairs of structures are captured at the interfaces of syntax with semantic representation and information structure. The syntactic templates in the syntactic inventory of each language

also reflect the linear ordering requirements of the language and the whole range of clausal layers that it is endowed with (for the non-universal ones, which symmetrically occur to the left and the right of the Core, see Chapter 1). These templates are one of the constructional features of the framework, and we shall return to other such features below.

The scope of aspect, negation, tense, deontic and epistemic modality, etc. over different layers of the clause is a language universal for RRG (see Chapter 9 for similar considerations regarding the scope of adverbs and ideophones). Indeed, Foley and Van Valin (1984: 208–224) (see also Van Valin and LaPolla 1997: 46–51; Van Valin 2005: 12) make the strong empirical claim that the linear order of operators in syntax follows from their scope. This is the *Natural Serialization Principle*, which was supported by the results of a typological survey reported in Bybee (1985). Thus, operators with narrower scope (e.g. aspect) are predicted always to be closer to the nucleus than operators with wider scope (e.g. deontic modality). Although similar claims are made in Functional Syntax (Dik 1978, 1980, 1989), as well as in Cartographic proposals (Cinque 1999), it is essential to note that the constituent projection can only host predicative and referential units in RRG, and, thus, it cannot accommodate any functional projections, comparable to IP, or indeed $\text{Mood}_{(\ldots)}\text{P}$, $\text{Tense}_{(\ldots)}\text{P}$, $\text{Aspect}_{(\ldots)}\text{P}$, etc. Instead, the universal, and strictly hierarchical, array of operators is represented in the operator projection (see Chapter 1).

The fact that operators are represented separately from the clausal layers upon which they have scope has brought to light an interesting, and hitherto unexplained, property of language change (Matasović 2008 and Chapter 17). In accordance with the principle of unidirectionality, which has been explored from many theoretical perspectives, operators of narrower scope tend to grammaticalize as operators of broader scope (aspect > tense; deontic modality > epistemic modality). In RRG terms, this means that nuclear operators can only develop from nuclear operators, but can themselves develop into nuclear, core or clause operators. In turn, core operators can only develop from nuclear or core operators, but can themselves develop into core or clause operators. This is what Matasović (2008) calls the *centrifugal* direction of grammaticalization. However, the grammaticalization of verbal forms proceeds from lexical units to clitics and affixes, thus moving in a direction which is, in effect, *centripetal*, and opposite to that of the change in semantic scope. Thus, by disentangling operators from the syntactic units upon which they have scope, work in RRG has uncovered the opposite directions of the two unidirectional processes which characterize grammaticalization. This is an important contribution of the framework to the study of language change.

The layers of clause structure, and the respective operator scope, play a key role in the RRG theory of predicate and clause linkage (for which see Chapters 13, 14, 15, 16). This theory relies on a distinction which, to our knowledge, has no direct equivalent in other frameworks, namely that

between nexus and juncture. Nexus is the relationship established between two clausal layers: RRG makes a trifold distinction between coordination, co-subordination, and subordination, the last of these being further subdivided into complement and adverbial subordination, in accordance with other scholarship. Juncture amounts to the issue of which layers are joined together by one of the nexus types. All in all, there are nine nexus–juncture combinations, and operator scope is one of the principal diagnostics that are available to identify them. Not only has RRG produced important insights on predicate and clause linkage cross-linguistically, for example by highlighting differences in the number of nexus–juncture combinations which are available across languages, but it has also advanced knowledge on the interplay between the semantic relation between the units in a construction (causative, aspectual, psych-action, purposive, etc.) and the degree of syntactic cohesion that is established between them. Building upon Silverstein (1976) and Givón (1980), RRG has in fact developed an *Interclausal Relations Hierarchy* (Van Valin and LaPolla 1997: 481–483; Van Valin 2005: 209, see also Casti 2012), which juxtaposes an array of semantic relations with a range of nexus–juncture types, both being listed in decreasing order of cohesion. The mapping between the two sides of the Interclausal Relations Hierarchy is many to one, and, in fact, the hierarchy brings to light the possibility and tendency for the more cohesive semantic linkage types (e.g. causation) to be expressed not only by tight morphosyntactic linkages, but also by looser ones. Importantly, RRG makes the strong falsifiable prediction that the tightest syntactic linkage realizing a particular semantic relation in a given language should be higher than or as high as the tightest syntactic linkage realizing lower semantic relations on the hierarchy in the same language. In light of the pivotal role played by predicate and clause linkage in the syntax of natural languages, it is to be hoped that the work conducted in RRG will inspire further research on this topic in the future.

Although we cannot go into any of the relevant details (for which we refer the reader to Chapter 8), we wish to mention here that RRG has a theory of word structure, which parallels its theory of clausal structure. The three layers Nucleus, Core and Word are projected onto the constituent projection of the word, while the operators which have scope over each of the word layers figure in the operator projection of the word. The RRG approach to inflectional morphology has been characterized as inferential-realizational, in the sense of Stump (2001), and an interesting debate which has taken place in recent years concerns this type of morphology. Whereas some place inflection in the constituent projection of the word as daughters of the Core layer (see Everett 2002; Van Valin 2013), Martín Arista (2009: 90) proposes instead to treat inflection as part of the operator projection.

We dedicate the concluding part of this introduction to the interplay of syntax with lexical semantics and discourse. RRG has a bidirectional semantics–syntax and syntax–semantics linking, which attempts to

reproduce the process of language production and language comprehension, respectively. The steps of the linking that are concerned with semantics, called 'the lexical phase', are argued to be more regular and comparable cross-linguistically than the other steps of the linking, called 'the morphosyntactic phase'. The claim is therefore that the more semantically motivated a linguistic phenomenon is, the less cross-linguistic variation there is, and vice versa (see Section 1.6.5). Discourse constitutes an independent component of grammar, whose role is pervasive in the linking. Indeed, the interplay of discourse with syntax and semantics is claimed to be the site of a great deal of cross-linguistic variation (Van Valin 2014): different languages may encode the same discourse roles in different ways: prosodically, syntactically, morphologically and even by particular lexical choices. There is, therefore, no universal association of syntactic positions or projections with specific discourse functions (see notions such as Top(ic)P, Foc(us)P, etc.). Such associations are of course admitted, but only on a language-specific basis. In fact, the only analytical assumption that the theory makes about the discourse–syntax interface is that the outermost positions in the layered structure of the clause, which are not universal, may host topics and afterthoughts, while foci figure closer to the core than topics do. From this point of view, the RRG treatment of information structure differs substantially from that of other syntactic theories, notably Cartography (Rizzi 1997 and subsequent literature), while other parallel architecture frameworks have not, in the past, devoted as much attention to the interaction of syntax with discourse as RRG has (see Zaenen forthcoming for Lexical Functional Grammar).

As will be explained in Chapter 11, the RRG understanding of information structure draws heavily upon Lambrecht's (1994) distinction between, on the one hand, the role played by each information unit in pragmatic presupposition and assertion, and, on the other, the status of the discourse referent of each information unit in the minds of the discourse participants, including how this status changes in discourse or text. Discourse in RRG is also crucially involved in the retrieval of arguments and predicates that are not overtly expressed in syntax, such as the silent predicates of Japanese and the null arguments of pro-drop languages which lack rich morphology, for example Chinese. While ruling out phonologically null elements in its constituent projection, RRG has a Completeness Constraint, which requires that all the arguments that are specified in semantic representation must be represented in syntax, and vice versa. RRG thus resolves the challenging case of what in other frameworks are analysed as phonologically silent elements by allowing arguments and predicates to participate in direct semantics–discourse and discourse–semantics linking. To this effect, it adopts the formalism of Discourse Representation Theory (Kamp and Reyle 1993). We shall not continue this discussion here, but rather we refer to Chapter 12 and the work of Shimojo (2004, 2008, 2016), among others, for further discussion.

By way of conclusion, we consider the contribution of RRG to the discussion which has come to be known as the *projectionist–(neo-)constructionist debate* (see Levin and Rappaport Hovav 2005 for an overview). RRG clearly belongs to the projectionist theories of grammar, although constructions also play a role in the linking, as will be pointed out below. While fully embracing the programme launched by Gruber (1965) and Fillmore (1968), which aimed at deriving the syntactic realization of the arguments from semantic properties which they have qua arguments of a particular verb, RRG also began to address the problems faced by the theories of thematic roles earlier than such problems came to the fore in the scientific debate. We refer in particular to the difficulty of diagnosing thematic roles, and the vexed issue of the granularity and the ordering of such roles in thematic role hierarchies.

Thematic roles were *never* defined intuitively in RRG. Rather, drawing upon Jackendoff (1976) and Dowty (1979), Foley and Van Valin (1984: 47–63) considered the semantic relations of arguments to be derivatives of decomposed predicate structures. The positions of arguments on the decomposed structure of their predicate defined a cline of accessibility to each macrorole status, actor or undergoer, and the syntactic realization of the arguments was captured in terms of these generalized semantic relations. These ideas were later developed into Van Valin and LaPolla's (1997: 90–158) fully-fledged theory of lexical-semantic representation and macrorole assignment, where labels such as agent and patient are nothing but mnemonics (*ibid.*, p. 116). In this theory, there are only five universal, hierarchically arranged, thematic positions that are relevant to macrorole assignment and, therefore, to the syntactic treatment of the arguments. It is, therefore, our contention that RRG takes care of the vexed questions mentioned above, viz. the diagnostic problem and the granularity and ordering issues. Of course, it does so by making precise analytical choices, and, in particular, by relying on a system of lexical-semantic decomposition which takes the Vendlerian Aktionsart classes as foundational (Vendler 1967[1957]; see Van Valin 2005: 42 for the addition of semelfactives; Smith 1997).

While we do not think that the criticisms which have been advanced against theories of thematic roles and thematic hierarchies could justifiably be raised against RRG, it is undeniable that the linking proposed by this approach is less economical than the single projection proposed in purely syntactic theories of event structure (see, by way of example, Borer 2005a–c; Ramchand 2008). While valuing Occam's razor in scientific investigation, RRG seeks to address the question of how the interaction of syntax with semantics and pragmatics in different grammatical systems can best be captured. It is the very pursuit of this goal that leads RRG to adopt the less economical solution. Suffice it to mention the contrast between different types of alignment: this speaks in favour of the disentanglement of the event structure hierarchy from its syntactic realization across languages. Whilst

accusative alignment privileges the high end of the hierarchy in syntax (see above), ergative alignment privileges the low one. In split alignment, the high end provides the privileged syntactic argument of some constructions, though not others. The event structure hierarchy is one and the same in all grammars, and, indeed, there is reason to consider it to be the linguistic correlate of a cognitive universal. However, the study of argument realization across languages indicates that both ends can be syntactically unmarked in different languages or constructions, and this, in our view, supports the parallel architecture approach. Interestingly, evidence from neuroscience also corroborates the idea that the lexicon is an independent module in linguistic competence (see Chapter 19). Therefore, the linking will remain at the very centre of the RRG conception of grammar, and indeed work in RRG has over the years sought to refine the system of lexical decomposition which the event-structure hierarchy is a derivative of (Mairal Usón and Faber 2002; González-Orta 2002; Van Valin and Mairal Usón 2014; Bentley 2019, among others).

As for the role of constructions, these are templates which define the unique syntactic, morphological, semantic and pragmatic features of individual constructions in individual languages. These templates – called 'Constructional Schemas' – need not include any of the general principles which are valid in the grammar of a given language, or across languages, but rather are sets of specific instructions which, combined with the general linking principles, constitute the grammar of a particular language. Constructions thus play a different role in RRG than in Construction Grammar (Goldberg 1995, 2006), and, crucially, they do not in any way reduce the role of the linking or of its components, including the lexicon.

In this section we have introduced key aspects of the formalism developed by RRG to explore how different languages express linguistically salient meaning and communicate it in context. We have shed light on similarities and differences with other frameworks, and we have reflected on the role of RRG in current debates in linguistic theory. We hope that these observations will encourage researchers of various theoretical persuasions to read further.

References

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