Studies in Language Companion Series (SLCS)

This series has been established as a companion series to the periodical Studies in Language.

For an overview of all books published in this series, please see http://benjamins.com/catalog/slc

Editors

Werner Abraham
University of Vienna /
University of Munich

Elly van Gelderen
Arizona State University

Editorial Board

Bernard Comrie
Max Planck Institute, Leipzig
and University of California, Santa Barbara

William Croft
University of New Mexico

Osten Dahl
University of Stockholm

Gerrit J. Dimmendaal
University of Cologne

Ekkehard König
Free University of Berlin

Christian Lehmann
University of Erfurt

Marianne Mithun
University of California, Santa Barbara

Heiko Narrog
Tohoku University

Johanna L. Wood
University of Aarhus

Debra Ziegeler
University of Paris III

Volume 145

Linking Constructions into Functional Linguistics
The role of constructions in grammar
Edited by Brian Nolan and Elke Diedrichsen

Linking Constructions into Functional Linguistics
The role of constructions in grammar

Edited by

Brian Nolan
Institute of Technology Dublin

Elke Diedrichsen
Google Ireland

John Benjamins Publishing Company
Amsterdam/Philadelphia
Radical Role and Reference Grammar (RRRG)

A sketch for remodelling the Syntax-Semantics-Interface

Rolf Kailuwelt
University of Freiburg

Starting from the idea of a "holistic approach" (Van Valin 1980) based on text interpretation and communication analysis, the chapter sketches a radical, i.e. back to the roots, remodelling of standard RRG (Van Valin & LaPolla 1997; Van Valin 2005, 2010). It will be shown that a bidirectional linking algorithm (syntax-to-semantics and semantics-to-syntax), no matter how useful it may be for computational implementation, is not an adequate model of human communication. As Van Valin (2006) himself recognizes, the semantic as well as the syntactic representation are already infiltrated by one another. Thus, RRRG will abandon the linking algorithms and instead advocate for three structural levels of different complexity that essentially function simultaneously: lexical items, syntactic-semantic event templates and construction schemas. As in standard RRG, general rules and principles operate at all levels. In RRG, the most prominent of these principles is the Actor-Undergoer-Hierarchy which is based on actions- and driven Logical Structures (LS). However, LS prove to be too coarse-grained to describe the different activity degrees material to argument realization. Therefore, a finer-grained Activity Hierarchy will be introduced. The functioning of this centrepiece of RRRG will be illustrated with verbs of emotion (Kailuwelt 2005, 2007, 2012a) at the level of lexical items and with anticausative constructions (Kailuwelt 2011b, 2012b) at the level of constructional schemas.

o. Introduction

Since its beginnings in Foley and Van Valin (1984), Role and Reference Grammar (RRG) (Van Valin & LaPolla 1997; Van Valin 2005, 2010) has proved to be a highly successful framework for exploring the syntax-semantics interface. Foley & Van Valin were the first to overcome the imprecise concept of deep cases or theta roles. Instead of the varying lists of thematic relations, they proposed two generalized
semantic roles, actor and undergoer. Depending on its participant and *aktionsart* properties, each argument of a predicate shows a higher or lower affinity to the actor or undergoer role. The assignment of macroroles is correlated to the assignment of syntactic functions by linking algorithms that map semantics to syntax and vice-versa. By separating the constituent projection from the operator projection at the level of syntactic representation, RRG clearly distinguishes between referring expressions (constituents) and non-referring expressions (operators). Although the semantic-syntactic interface comes into focus, RRG still is mainly a theory of syntax. RRG claims to explain syntactic variation by taking semantics and pragmatics into account and, thus, considers language a fact of communication and social interaction, not just an independent module situated in the brain of each individual speaker.

As we will see in the course of this chapter, the current organization of RRG does not reflect the principles of the approach in a fully satisfying way. In addition, the formalization used in the Actor-Undergoer-Hierarchy, the centrepiece of the theory, seems to have its limits. The argument structures of several verb classes, such as causatives, verbs of speech and especially verbs of emotion cannot easily be described by the *Aktionsart*-based formalism which only permits the distinction of five activity degrees.

Therefore, the aim of the chapter is to sketch a "radical" alternative to some of RRG's central descriptive devices. The term radical is inspired by William Croft's Radical Construction Grammar (RCG) (Croft 2001, 2004). However, I will not claim, as Croft did, that my approach is "a dramatic break from prior syntactic theories" (Croft 2001:4), but it is as "radical" as RCG in that it goes "back to the foundations" (ibid.). In my approach the foundations of RRG. The sketch I present here is not yet a full-fledged theory. It consists, as the German term for remodeling *Umbaumaßnahme* suggests, of a *maßnahmen*, i.e. taking measurements for what a radical version of RRG might be.

The first section of this chapter will be dedicated to general theoretical and methodological considerations that will be the background for the discussion of the organization of RRG in Section 2, as it is presented in Van Valin (2005). Section 3 will show that some modifications in accordance with the present critical approach have already been taken into consideration by Van Valin (2006) in an article which, on the basis of psycholinguistic insights, goes beyond standard RRG's assumptions. Following this line in a more radical way, I shall sketch an alternative to the organization of RRG. In Section 4, I will deal with a more technical problem, namely the elaboration of a finer-grained alternative to the Actor-Undergoer-Hierarchy. I will show that a feature-based activity hierarchy is more appropriate to describe among other things the whole range of syntactic classes of verbs of emotion at the lexical level and the different anticausative constructions at the level of constructional schemas. Section 5 will sum up the major results.

1. Theoretical and methodological considerations

"Language does not exist even for a moment except as a social fact"

(Saussure [1916] 1983:77)

In 1980, Van Valin published a paper on meaning and interpretation that, on the base of Wittgenstein's and Heidegger's philosophy, outlines an alternative to the syntactic approaches that were dominant at the time. At the end of the paper Van Valin points out that:

"if we wish to include communication between interlocutors within the scope of linguistic theory and analysis, then we must start with it and adopt a holistic approach to the description of language rather than an atomic one. In concrete terms this means that the results of the sociolinguistic analysis of conversation along with the analysis of texts and other forms of discourse, would be the starting point of analysis. If one takes this approach, sentences no longer appear as abstract formal objects independent of speaker, hearer and context, but rather as aspects of situated human communication."

(Van Valin 1980:229).

The "holistic approach" highlighted by Van Valin would consider language a social phenomenon, a phenomenon accessible in the form of world disclosure (Erschlossenheit in Heidegger's terms) rather than by deductive or inductive methods. Hence, the data that a linguist must understand (and not just compute) comes from "sociolinguistic analysis of conversation" and "analysis of texts and other forms of discourse". In order to account for the functionality of linguistic units, one must include the context-bound interaction of syntax, semantics and pragmatics. A context-free approach to syntax that suppresses the necessity of interpretation may describe abstract constellations, but it would be unable to explain to what extent syntax is motivated by the semantics of everyday linguistic practice.

At the time, Van Valin's critique of considering sentences "abstract formal objects independent of speaker, hearer and context" (Van Valin 1980:229) was directed against the dominant paradigm: Chomsky's Generative Grammar (Chomsky 1965, 1970). Nowadays, Generative Grammar in the form of the Minimalist Program (Chomsky 1995; Boeckx 2006) is still a very important framework, but its erstwhile dominance has faded. A new paradigm has gained importance over the last decade, not least due to the technical progress in
handling big corpora of usage data. The usage-based paradigm is, of course, not a coherent linguistic framework, but rather a current of approaches that believe in the necessity to build linguistic theory upon usage data instead of speculating about an innate linguistic competence (e.g., Bybee 2006, 2007; Croft 2001; Goldberg 1995, 2006; Langacker 1987, 2008; Tomasello 2003). Even more, these approaches take it for granted that the speaker's competence results from the linguistic material s/he is exposed to. However, as Blumenthal-Dramé (2011: 5) points out, it is in fact not that clear whether "the mind or brain of each individual language user" or "objective principles guiding the emergence and dynamics of language in ontogeny, phylogeny and diachrony" should be considered the "locus of usage-based representations".

This distinction might be a hint that linguistic knowledge is fundamentally a social phenomenon that transcends the individual competence. Hence, the individual speaker does not have privileged access to structure and meaning. This is, of course, one of the central subjects of Wittgenstein's philosophy. The signs receive their meaning in interpersonal processes that Wittgenstein (1953) calls "language-games". The ability to successfully interact with others by linguistic means is a prereqisite for the cognitive function of language. The actual certainty of using language for cognition in a stable and meaningful way is always bound to the external interpersonal use. Therefore, Wittgenstein warns against hyperbolizing thinking as a form of internal private language use: "It is misleading then to talk of thinking as of a 'mental activity'. We may say that thinking is essentially the activity of operating with signs" (Wittgenstein 1958: 7).

Language is not in the brain. Its structures have to be detected by interpreting chains of tokens in interpersonal use by means of "sociolinguistic analysis of conversation along with the analysis of texts and other forms of discourse", as Van Valin (1980: 229) puts it.

These considerations take us back to the "holistic approach" (Van Valin 1980: 229) based on disclosure. Linguistic analysis is nothing that could take place in a sphere that is totally separated from the data in use. Interpreting texts and discourse is in itself a language game to be played not only with experts, but also with competent speakers. Linguistic discourse is no metalanguage strictu sensu, but an iteration of data in a particular context. This process of iteration should be understandable and acceptable not only to experts, but to the speakers themselves. Only then can the analysis obtain validity.

Therefore, interpretation of use should be based on representative corpus data. Patterns that appear frequently in large corpora may meet this criterion, but high frequency is not the only way of defining representativity.

Valuable linguistic analysis does not operate at a meta-level, but is part of the usage chain of the analysed data. Hence, qualitative and quantitative corpus analysis should be accompanied by an active involvement of the linguist in the language games the data are part of, including participant observation and interviews.

2. Consequences for the organization of RRG

![Diagram](image)

Figure 1. Organization of Role and Reference Grammar (cf. Van Valin 2005: 134)

The centre of the schema in Figure 1 is occupied by a bidirectional linking algorithm that connects the semantic and the syntactic representation. Aspects of discourse pragmatics, e.g., an affinity of a constituent to the topic or focus function, may intervene during the linking process. It is also during the linking process that constructional schemas are retrieved. These schemas contain language-specific information at the morphological, syntactic, semantic and pragmatic level. For example, for French passive constructions it will be indicated that the auxiliary is être ('be') and that the agent is omitted or realized in the periphery by the prepositions par or de, etc.

The semantic representation of a sentence is centred around the lexical entry of a predicate whose argument slots are filled by referring expressions. The lexical entry of the predicate is formalized by its Logical Structure (LS) comprising lexical semantic, Aktionsart and valence information as illustrated in Example (1) indicating the LS of the verb 'kill':

(1)  
\[
\text{kill} \ [\text{do} (x, \partial)] \text{CAUSE} [\text{BECOME} \text{dead} (y)] \\
\text{Lexical semantics: ... dead'...} \\
\text{Aktionsart: ... do'...} \text{CAUSE} [\text{BECOME}... \\
\text{Valence: ... (x, O) ...} (y)]
\]

One problematic point of this formalism is the fact that the semantic information is derived from meta-linguistic syntax. As we will see in detail, the activity degree
of the arguments depends on their ordered distribution. The more to the left an argument is represented in the LS, the higher its activity degree. However, the motivation of this metasyntax remains unclear. Is it just a formal device for the semantics or could we relate it to some extent to the syntactic representation of the sentence? Is it specific for each language or universal? And if we use English predicates for the LS of other object languages, do the English syntax of these predicates determine the meta-linguistic representation? Although the LS-formational, historically inspired by Generative Semantics and Dowty (1979), seems to be a neat and manageable tool, these are complicated questions and therefore hard to answer. As we will see in Section 4, RRGG will propose a syntax-free alternative to annotate the activity degrees of the arguments avoiding the problems raised by LS meta-syntax.

The syntactic representation of a sentence comprises a layered structure that combines different kinds of syntactic templates stored in a language-specific syntactic inventory. At the core level, templates formalize the different morphosyntactic types of core-constituent combinations that a specific language allows (syntactic valence). Example (2) gives a list of French core templates.

(2) French core-templates
   a. V (Il pleut 'it rains')
   b. NP V NP (Pierre dort 'Peter sleeps')
   c. NP V NP (Pierre mange une pomme 'Peter eats an apple')
   d. NP V PP (Pierre pense à Marie 'Peter thinks of Mary')
   e. NP V NP PP (Pierre donne un livre à Marie 'Peter gives Mary a book')
   f. NP V PP PP (Pierre parle à Marie de ce livre 'Peter talks to Mary about this book')

These core-templates combine with adjuncts that are situated in their "periphery", which is more a semantic than a syntactic term. Core-templates and periphery are "non-configurational" in the sense that the order of the constituents (predicate, arguments and adjuncts) is not determined by universal syntax, but by language-specific rules that interact with discourse pragmatics. Therefore, peripheral constituents such as pendant un moment ("for a moment") in Example (3) could appear in the center of core-template:

(3) Julie fut pendant un moment absorbée par la contemplation de cette figure
   'Julie was for a moment absorbed in the contemplation of this figure'
   (FRANTEXT: BALZAC)

The core templates are embedded in configurational syntactic templates for wh- and topicalization constructions which always occupy the right or left margin of the layered structure, depending on the language (see Figure 2).

![Figure 2. Layered structure of the clause. (The non-configurable zone is shown in grey)](image)

In the following example, a two-place core-template is combined with wh-construction and a comment in a left detached position.

(4) Au fond, que me faisait cette morale
   en art, il m'interrogeait what ART.1.SG do.PPV.1.SG this mirthless
dans la ville de province?
   town of province
   'Actually, what did this mirthless provincial town mean to me?'
   (FRANTEXT: BARREY DAUREVILLY)

Figure 3 illustrates the syntactic representation of this sentence.

One must point out that the layered structure comprises internal semantics, just as the LS comprises internal syntax. It is not only linked to semantics but is actually built upon the semantic organization of the argument structure, as Table 1 illustrates.

It is not the objective of this paper to discuss RRGG's syntactic and semantic representations in detail and the presentation is obviously far from exhaustive. Complex sentences and the whole morpho-syntactic component (operator structure) have not been discussed. What is important in the light of the holistic approach sketched in Section 1 is the fact that both the central components of syntax and semantics are already infiltrated by the other. Hence, the idea to keep them apart by a bidirectional linking algorithm that goes from semantics to syntax and vice-versa seems to be problematic.

The fact that RRGG provides a bidirectional linking algorithm is highlighted as an outstanding characteristic of the theory in Van Valin (2005: 129). Both algorithms, from semantics to syntax and from syntax to semantics, are quite complex.
because they account for all kind of typological variation. For French, Trajev (2010: 158) proposes a simplified semantics to syntax algorithm that could be adapted for other Romance and Western European languages (see Table 2).

The syntax to semantics algorithm is even more complex as far as typological variation is concerned (cf. Van Valin 2005: 149b). However, Van Valin (2006: 277) propounds a different and considerably simpler variant, which will be presented in a slightly modified form in Table 3 (cf. Kailuweit 2011a):

Table 1. Semantic units underlying the syntactic units of the layered structure of the clause (Van Valin & LaPolla 1997: 27)

<table>
<thead>
<tr>
<th>Semantic element(s)</th>
<th>Syntactic unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicate</td>
<td>Nucleus</td>
</tr>
<tr>
<td>Argument in semantic representation of predicate</td>
<td>Core argument</td>
</tr>
<tr>
<td>Non-arguments</td>
<td>Periphery</td>
</tr>
<tr>
<td>Predicates + arguments</td>
<td>Core</td>
</tr>
<tr>
<td>Predicates + arguments + non-arguments</td>
<td>Clause (Core + Periphery)</td>
</tr>
</tbody>
</table>

Table 2. Semantics to Syntax Linking Algorithm (simplified)

1. Construct the semantic representation of the sentence based on the LS of the predicate
2. Assign the Macrolres
3. Determine the privileged syntactic argument (PSA), i.e. the subject, and the morphosyntactic coding of the other arguments
4. Select the syntactic template(s) for the sentence
5. Map the arguments on the positions of the syntactic representation

Table 3. Syntax to Semantics Linking Algorithm (simplified)

1. Derive as much information as possible from the overt morphosyntactic features of the clause: case marking/word order, the voice of the verb, adpositions
2. Retrieve the LS of the verb from the lexicon and assign macrolres where possible
3. Link the argument slots in the syntactic core templates to argument positions in the LS. If there is an element in the PrCS, it will be linked last to the remaining unlinked argument position in the LS

There is no doubt that the algorithms are quite useful for computational implementation (cf. Staudinger et al. 2008). However, recalling the claim of a holistic approach, a bidirectional linking algorithm seems to be highly reductionist. On the one hand, the semantics to syntax algorithm pretends the existence of a complete semantic and potentially syntax-free representation in the mind/brain of the speaker that will be syntactically coded. On the other hand, the syntax to semantics algorithm creates the illusion that the hearer stores a complete syntactic representation before starting the decoding that, in the end, leads to a syntax-free semantic representation identical with the initial representation of the speaker.

Taking the bidirectional algorithm as a model for human communication contravenes the philosophical tradition referred to by Van Valin (1980). Furthermore, it ignores Saussure’s insight that the two sides of the sign are inseparable and that the process of forming its unit is not a process of representation, but of articulation, “a somewhat mysterious process, according to which, ‘thought-sound’ evolves divisions and a language takes shape” (Saussure [1916] 1983: 110a).²

² To some extent, Construction Grammar (CxG) seems to continue this tradition of defining constructions as “conventionalized pairings of form and function” (Goldberg 2006: 5). Nonetheless, for CxG signs, i.e. constructions including lexical items are ‘abstract’ exemplars of form-function pairings stored in the brain (cf. Goldberg 2006: 45–58). Hence, CxG ignores the social dimension of the articulation process without which we would be unable to explain conventionalization.
As we have seen in Section 1, in the light of Wittgenstein's philosophy, meaning is not a resource of the speaker's (i.e. thinker's) brain to which s/he has privileged access. Meaning and form are inseparably produced, fixed and modified in an interpersonal process of interpretation and reinterpretation that articulates the possibilities of human understanding. As far as the individual act of communication is concerned, speakers do not entirely overlook the effects of their speech, and thus neither do they overlook its meanings. Hearers in turn begin their interpretation with the first item without waiting for a full-fledged syntactic representation. This is not only a consequence of the holistic model, but also, as Van Valin himself (2006:283) recognizes, the overwhelming evidence from psycholinguistic studies.

In conclusion, RRG's model architecture, centred around a bidirectional linking algorithm that relates a syntactic and a semantic representation, does not match the holistic approach (Van Valin 1980). In addition, both levels, the semantic and the syntactic representation, are not "pure", but already infiltrated by "the other side". In the next section, I will show that Van Valin (2006) has already accounted for the hybridity of the two representations to some extent. His considerations will be the starting point for a more radical model. By preserving and enhancing the strengths of RRG, I shall sketch a model of the architecture without linking algorithms.

3. Towards a radical role and reference grammar

As we have seen in the last section, the internal syntax of LS and the underlying semantics of the syntactic inventory are not systematic pairings of syntax and semantics that would spell out articulations of signification (signified) and signal (signifier) in social interaction. However, in Van Valin (2006) we find a further approximation of the two representations. Van Valin (2006:283) recalls that the "evidence from studies on sentence comprehension is overwhelmingly that speakers do not wait until they hear the entire sentence before they start to interpret. Since parsing and interpretation occur simultaneously" he concludes (ibid.), "it is necessary to integrate the RRG system into the parser as well as the interpretative mechanism". Therefore, he postulates "for the purpose of parsing there could be macrorole-augmented templates" (ibid.: 284). As far as the LS are concerned, they could be "stored in the lexicon with the macrorole assignment of their arguments precompiled as much as possible, in order to expedite interpretation" (ibid.: 285).

In line with this idea, Staudinger et al. (2008:413) proposed syntactic templates with macrorole and case information as illustrated e.g. in Figure 4 and in Example (5):

(5) Je parle  
I speak. 

Figure 4. Two-place construction of French parler (‘speak’) with Topic of conversation (de-ARG) (Staudinger et al. 2008:413)

To sum up, macroroles and adpositions would no longer be assigned during the linking algorithms, but prior in the lexicon. Hence, verbs permitting flexible undergoer choice, which in standard RRG are represented with one LS for both alternatives as in Example (6) (cf. Van Valin 2005:61; 2006:271), would obtain two LS-representations (i. and ii.), which could be related by a lexical rule (cf. Van Valin 2006:285). This is the case in Example (7), for instance:

(6) present [do' (x, Ø)]CAUSE[BECOME have' (y, z)]

(7) present i. [do' (A: x, Ø)]CAUSE[BECOME have' (U: y, with: z)]

Referring to the linking algorithms Van Valin (2006:29) infers: "This precompiling reduces the syntax-to-semantics linking to a single step: match the information on the template to the information on the logical structure", which could be paraphrased in the final analysis: match the syntactic-semantic information to the semantic-syntactic information. On the one hand, both representations contain the coherent semantic and morphosyntactic information (macroroles, syntactic functions and morphosyntactic coding) differing from each other mainly in the type of formal representation (trees or brackets). On the other hand, if the information is almost identical at two points, linking the two representations seems to be dispensable. Let me emphasize again that the algorithms are useful as far as computational implementation is concerned. However, they do not seem to be an adequate model for the process of interpretation.

My proposal for RRRG will be to conflate the precompiled LS and the macrorole-augmented templates into syntactic-semantic event templates which are, to some extent, inspired by the event schemas of Radden & Dirven (2007:298). Syntactic-semantic event templates should contain the syntactic and semantic information to construct prototypical events in a given language, such as action, causation, location, movement, transfer, etc. These templates constitute a medium level of complexity, combining with lexical items at the lower level and
constructional schemas at a higher level. Lexical items are per se syntax-free. If the lexical items are predicates they have a basic valence that is an abstraction of the syntactic-semantic event template they are usually used with. However, this does not mean that they could not combine with other event templates under special conditions. There are affinities and restrictions that regulate the usage of a given predicate with a range of event templates. As I shall illustrate below, frequency might play a role, but so do the speaker’s attitudes concerning grammaticality.\(^3\) Other affinities and restrictions regulate the combination of event templates and constructional schemas. In French for example, passive constructions can only modify transitive event templates while German allows intransitive passives.\(^4\)

A sketch for the organization of RRRG will be given in Table 4:

<table>
<thead>
<tr>
<th>Table 4. Organization of RRRG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Level: Lexical items (predicates with a quantitative and qualitative basic valence)</td>
</tr>
<tr>
<td>Affinities/restrictions</td>
</tr>
<tr>
<td>2. Level: Syntactic-semantic event templates</td>
</tr>
<tr>
<td>Affinities/restrictions</td>
</tr>
<tr>
<td>3. Level: Constructional schemas</td>
</tr>
<tr>
<td>Universal rules (including rules of discourse pragmatics) operating at all levels</td>
</tr>
</tbody>
</table>

The model is partly in line with other current attempts to strengthen the role of constructions in RRG (Diedrichsen 2011; Nolan 2011). Diedrichsen (2011) advocates the generalization of constructional schemas. Since they provide information on e.g. illocutionary force, she claims they are active during the production and reception of any utterance and are not simply an additional device for treating language-specific information deriving from a universal linking default. I agree with this view. However, she then goes on to claim that constructional schemas are responsible also for argument realization (Diedrichsen 2011:176). As constructional schemas in her approach provide syntactic information on PSA and case assignment and separately semantic information on thematic relations, Diedrichsen suggests abandoning the concept of macroroles due to its problematic hybrid syntactic-semantic status (ibid.). On the other hand, she does not tackle the RRG’s syntactic inventory that remains an accessible device for constructional schemas (ibid.: 185).

Although I acknowledge the descriptive adequacy of her approach, I do not fully agree with Diedrichsen on these last points. First of all, in RRRG I propose that argument realization takes place at the level of syntactic-semantic event templates which conflate syntactic templates with macroroles and case information. At this level, the hybrid value of macroroles seems to be especially useful to describe the semantic effects of apparent semantic-syntactic mismatches. As far as locative shift verbs are concerned, I have argued in Kailuweit (2008: 348–353) that marked undergoer choice in the location-as-object variant can explain the well-known holistic effect. The location-object of to load is considered completely filled, since the argument that was on this occasion chosen as the undergoer receives the prototypical values of this category. Hence, it is reinterpreted as totally effected.

Secondly, the descriptive simplicity of macroroles is one of the outstanding characteristics of RRG that should not be abandoned. Macroroles help to compare and distinguish in a straightforward manner languages with accusative or ergative alignment. There have even been proposals to expand the number of macroroles to four (Haspelmath 2008) in order to deal with the typological difference between indirect and secundative alignment with the same elegance. Irrespective of whether or not one wishes to accept this expansion, the alternative would consist of the typological insights of RRG becoming lost in an unmanageable amount of descriptively adequate, but highly complex, language-specific construction schemas and is thus not nearly as attractive an option.

To sum up, RRRG proposes three levels of structures that are to an increasing degree syntactic and therefore language-specific. While the syntactically relevant semantic information of lexical items probably differs only to a relatively small extent, semantic-syntactic event templates relate supposedly universal events (acting, causing, giving, etc.) to more differentiated forms of morphosyntactic encoding. Finally, even more language-specific grammatical information is given at the level of construction schemas, ranging from morphological, syntactical and international patterns of illocutionary force to idioms and metaphor constructions.\(^5\)

I would like to emphasize that the organization of RRRG is not a model of language processing. I shall not claim that speakers pass through the levels during the articulation and interpretation process. It seems rather plausible to me that the levels operate simultaneously, but these issues are beyond the scope of the theory at present time.

---

3. I would not consider the speaker’s attitudes to be judgments based on unquestionable linguistic competence, but rather as statements about what is usual in the interpersonal language-games they are able to participate in.

4. See Van Valin (2005: 115-120) for a RRG account of typological variation of passive constructions.

5. See Diedrichsen (2011) and Nolan (2011, 2012) for a more formalized engineering of these types of constructional schemas.
To conclude this section, I would like to deepen two aspects of the model architecture: the relation between lexical valence and event templates and the intervention of general rules at the different levels. The affinities between a predicate and certain event templates can be measured out statistically. For example, verbs of precipitation are basically zerovalent. Nonetheless, they appear quite often in constructions with one or two arguments.

(8) Le ciel pluviait sur les allées
the sky rain-Pres.3sg on the alleys
'The sky rained on the alleys'
(FRANTEXT, MAURIAC)

(9) Al "perico" blanquiazul le llueven los galardonos
to the expert white and blue Dat.3sg rain-Pres.3pl the awards
'Awards rain down on the white and blue “expert”'
(CREA, LA VANGUARDIA)

On the basis of French data, Heidinger (2004:86a) measures the frequency of occurrence of *pleuvoir* ('to rain'), *neiger* ('to snow') and *gréler* ('to hail') in a zero, mono- or multi-valent construction (see Table 5). Logically, a zero valent construction is excluded in non-literal use. But it is not just the difference between literal and figurative that determines the event template. Even in literal use, verbs of precipitation appear in one- and two-place constructions.

Table 5. Literal and non-literal use of French verbs of precipitation; statistical data from (Heidinger 2004:86a)

<table>
<thead>
<tr>
<th>Literal use</th>
<th>Valence in %</th>
<th>Average number of arguments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-place</td>
<td>1-place</td>
</tr>
<tr>
<td><em>pleuvoir</em> 'rain'</td>
<td>94.6</td>
<td>5.1</td>
</tr>
<tr>
<td><em>neiger</em> 'snow'</td>
<td>99.3</td>
<td>0.7</td>
</tr>
<tr>
<td><em>gréler</em> 'hail'</td>
<td>76.3</td>
<td>21.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-literal use</th>
<th>Valence in %</th>
<th>Average number of arguments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-place</td>
<td>1-place</td>
</tr>
<tr>
<td><em>pleuvoir</em> 'rain'</td>
<td>-</td>
<td>69.6</td>
</tr>
<tr>
<td><em>neiger</em> 'snow'</td>
<td>-</td>
<td>85.7</td>
</tr>
<tr>
<td><em>gréler</em> 'hail'</td>
<td>-</td>
<td>76.5</td>
</tr>
</tbody>
</table>

However, only a finer-grained semantically analysis can show that in (8), French *pleuvoir* ('to rain') enters an event template with a causator role while in (9), Spanish *llover* ('to rain') is combined with a movement event template in which the subject is the moved object.

Last but not least, I shall return to the functioning of general rules and principles intervening at one or several of the three levels. Just like RRG (cf. Van Valin 2007), RRRG differs from Construction Grammar in that it insists on the fact that a linguistic theory should search for general rules. Again, these rules must not necessarily be found in the speaker's head as part of a linguistic storage device, but describe regularities that can be observed in language as a social system in the same way as, for example, economists look for economic laws.

The central general principle that RRG highlights is the Actor-Undergoer-Hierarchy. Languages all over the world organize their grammatical systems by referring to the activity degree of the predicates' arguments. As far as the three levels of RRRG are concerned, a hierarchy reflecting the activity degree of the arguments (Activity Hierarchy) determines the basic valence of predicates at the lexical level (macrorole assignment), but also the semantic oppositions between the arguments of event templates (second level) and, for example, the semantic promotion of arguments in certain constructions (third level). I shall give an example of the last case at the end of Section 4. Another set of general rules that operate at the event template level is spelled out, for example, in the principles of accessibility to PSA (cf. Van Valin 2005:100). The interaction of general rules and language-specific particularities can be best exemplified with voice constructions. The language-specific constructional schemas refer to the general characterization of voice constructions:

(10) General characterization of basic voice constructions (Van Valin 2005:116)

a. Privileged Syntactic Argument modulation voice: permits an argument other than the default argument [...] to function as the privileged syntactic argument.

b. Argument modulation voice: gives non-canonical realization to a macrorole argument.

In this section, I have tried to sketch the organization of RRRG. Linking algorithms of RRG have been substituted by three levels of structural complexity that operate simultaneously within the scope of general rules. The next and final section of this chapter will deal with another important modification. I will show that not only for theoretical but also for empirical reasons, RRG's Actor-Undergoer-Hierarchy should be replaced by a more flexible and syntax-free Activity Hierarchy.

4. The Activity Hierarchy

In the final section of this chapter I shall argue for a syntax-free and semantically finer-grained Activity Hierarchy. This hierarchy will be the centrepiece of RRRG, substituting the Actor-Undergoer-Hierarchy. The Activity Hierarchy is a principle
that implies several general rules which operate at all three levels of the theory. In the following, only two levels will be taken into consideration. The first part of the section considers how the Activity Hierarchy operates at the lexical level. The basic valence of verbs of emotion will be in the focus of the discussion. Based on Kailuwit (2005), I will show that especially verbs of emotion manifest valence variation that is by far more complex than RRG and other syntactic theories have assumed. A finer-grained semantic component will be needed to describe the different activity degrees of their arguments.

The second part of the section will account for the operating of the Activity Hierarchy at the level of constructional schemas. It will focus on anticausative constructions which vary in the degree of semantic undergoer promotion. In comparison with the undergoer of transitive causative constructions, the undergoer of anticausatives is more active in different degrees. This variation should be described on the grounds of the Activity Hierarchy. If activity promotion is a semantic effect of a constructional schema, one can avoid a stipulation of lexical rules that would lead to a multiplication of lexical entries.

At the second level of the theory, the Activity Hierarchy will help to describe the different argument slots of syntactic-semantic event templates that a predicate could enter. Among the verbs of precipitation for example, the Spanish verb grani zar (‘to hail’) combines with the transitive template, while in a semantically similar context, French grêler (‘to hail’) only enters a movement template:

(11) Maintenant que grêlent sur moi les mots glacés now COMP hail-PRES.3PL on me the words frozen ‘Frozen words now hail on me’ (FRANTEXT: BECKETT)

(12) Focos navideños que granzian las avenidas de la ciudad Lights Christmas COMP hail-PRES.3PL the avenues of the city ‘Christmas lights that fill the avenues of the city like hail’ (CREA: DEL CAMPO)

Nonetheless, it is not necessarily the case that RRG’s Actor-Undergoer-Hierarchy would not also be able to deal with this kind of variation. Hence, I shall not refer to the level of event templates to show that RRG requires a finer-grained semantic hierarchy.

---

6. Verbs of emotion are often equated with psych-verbs in the literature (cf. Bello et Rizzi 1988). However, they are only a subclass. Apart from verbs of emotion, psych-verbs that comprise also verbs of body experience: German frieren (‘to be cold’), verbs of cognition: to know, etc. verbs of propositional attitudes: to consider, etc. and verbs of perception: to hear, etc.

---

4.1 The Activity Hierarchy at the lexical level

Previous to Van Valin (2005), RRG was built upon the Actor-Undergoer-Hierarchy as illustrated in Figure 5:

\[ \text{Actor} \leftarrow \text{Argument} \quad \text{Undergoer} \]

\[ \text{1. argument of } \text{do' (x,...)} \quad \text{1. argument of } \text{pred' (x, y)} \]

\[ \text{AGENT} \quad \text{EFFECTION} \quad \text{LOCATION} \quad \text{THEME} \quad \text{PATTERN} \]

\[ \rightarrow = \text{increasing markedness of realization of argument as macrorole} \]

Figure 5. Actor-Undergoer-Hierarchy (cf. Van Valin & LaPolla 1997:127; 146; Van Valin 2005:61)

Van Valin (2005:126) abandons the markedness hypothesis due to the fact that in some languages the location argument seems to be an unmarked choice for undergoer. While most languages follow principle A in (13), some languages follow principle B.

(13) Principles for Undergoer-choice (Van Valin 2005:126)

Principle A: lowest ranking argument in LS (default)
Principle B: second highest ranking argument in LS

Obviously, one could also apply these principles to different constructions in one language. Hence, the LOCATION as an object construction, allowed by English give, would no longer be an instance of marked undergoer choice, but of principle B in a language that generally follows principle A.

However, the principles in (13) simply point out the hybrid nature of RRG’s macroroles that exhibit a semantic and a syntactic component. While the actor is always the most active (highest ranking) argument, the undergoer can be either the most passive (lowest ranking) or the second most active (second highest ranking) argument. Therefore, abandoning the markedness criterion does not affect the underlying hierarchy between a prototypical actor and a prototypical undergoer that allows for exactly three intermediate degrees.

A more theoretical problem of macrorole-assignment in RRG is related to causatives. Causative constructions in RRG can be formalized as "a CAUSE b, where a, b are logical structures of any type" (Van Valin 2005:45). Following the Actor-Undergoer-Hierarchy, in (14) and (15) the position of the highest ranking argument in the a-part of the construction can be the same as the position of the highest ranking argument in the b-part. In addition, in (15) the undergoer argument is an EFFECTION, a position that is not accessible for undergoer selection in accordance to the Actor-Undergoer-Hierarchy (see Figure 5).
language-specific case is the French verb en vouloir à quelqu'un de quelque chose ('to be angry with someone about something').

A possible LS for envier might be envy (x,y,z). But the three arguments of this structure do not correspond to the three argument positions in the Actor-Undergoer-Hierarchy, given that the three positions pred'(x,...), pred'(...,y) and pred'(x,y) distinguish two-place states (pred'(x,y)) from one-place states (pred'(x)). The position pred'(x), i.e. the prototypical undergoer position, is not adable to the positions pred'(x,y), since the structures pred'(x) and pred'(x,y) exclude other each logically. Therefore, the Actor-Undergoer-Hierarchy can definitely not account for three-place states. In the following, I shall prove that three-place states are not the only subclass of verbs of emotion that raise severe problems for the Actor-Undergoer-Hierarchy.

Verbs of emotion have been an intensively discussed field in the last 25 years. Nonetheless, most studies only account for a small subset of constructions. In Kailuweit (2005), I have shown that the syntactic variation of verbs of emotion is highly complex: one can distinguish 16 syntactic classes of one-place, two-place and three-place constructions in French and Italian. In the following, I will deal with nine classes of two-place and three-place constructions in what are mostly Spanish examples (cf. Kailuweit 2007, 2012a).

According to the classical study of Belletti and Rizzi (1988) on Italian, three classes of verbs of emotion in particular have been discussed in the literature:

(20) a. Gianni teme questo
John fear-prs.3sg this
'John fears this'

7. The clitic en is a desemanticized part of the lexical realization of the predicate. It is not an argument, because a de-complement that can normally be substituted by the clitic en appears alongside the clitic in the sentence.

b. Questo preoccupa Gianni
   this worries John
   ‘This worries John’

   C. A Gianni piace questo
   to John appeal-PRES.3SG this
   ‘John likes this’
   (Belletti & Rizzi 1988:291)

The description of verbs of emotion in standard RRG adds a fourth class of the number of macroroles they assign and therefore in the syntactic function the EXPERIENCER is mapped on.

(21) Non-episodic verbs of emotion
   (Van Valin & LaPolla 1997:107, 115)
   a. Mary loves John
      [love‘(x = EMOTER => 1. arg. of pred’ => ACT => PSA, y =
      TARGET => 2. arg. of pred’ => UND => DIRECT OBJECT)]
   b. Maria la gusta a Juan
      Mary DZT appeal-PRES.3SG to John
      [1MR like‘(Juan = EMOTER => 1. arg. of pred’(x, y) => INDIRECT
      OBJECT, Maria = TARGET => 2. arg. of pred’(x, y) => UND => PSA)]

(22) Episodic verbs of emotion
   (Van Valin & LaPolla 1997:156, 402)
   a. The photo in the newspaper upsets James
      [be-in(newspaper, photo)] CAUSE ‘feel‘[James, [upset-about
      (be-in(newspaper, photo))]]
   b. Pat is angry at Kelly
      [feel‘(Pat = EXPERIENCER => 1. arg. of pred’(x, y) => UND => PSA,
      [angry at‘(Kelly)]] = SENSATION => 2. arg. of pred’(x, y)]

The syntax of the non-episodic verbs follows straightforwardly from macrorole assignment. The fact that intransitive verbs of liking (Italian piace, German gefallen) select only one macrorole is taken for purely syntactic reasons. The opposition of transitive and intransitive liking (French aimer bien versus plaire; German mögen versus gefallen) is paralleled in the field of possession by syntactic oppositions such as to owe versus to belong to (German besitzen versus gehören, etc.).

Episodic verbs of emotion split into a transitive and an intransitive variant. In line with Grimshaw (1990) and Pesetsky (1995), the transitive variant is considered causative and not uncausative, as Belletti and Rizzi (1988) claimed. The intransitive variant that is not only represented by copula constructions, but also by full verbs such as to worry about, seems to be a lexicalized anticausative variant of the transitive causative construction.9 It has to be pointed out that RRG distinguishes between two semantic relations for the person experiencing the emotion: EMOTER (for non-episodic emotions) and EXPERIENCER (for episodic emotions).

As far as the second role is concerned, non-episodic emotions are directed at a target (a person or entity), episodic emotions relate the EXPERIENCER to a sensation, that is a predicate with an internal argument, i.e. angry at‘(y). In standard RRG, this internal argument is not accessible for macrorole assignment. Therefore, verbs such as to worry about are considered macrorole intransitive states. Their only argument, the EXPERIENCER, assumes the undergoer macrorole and functions as PSA. There is no difference at the level of Actor-Undergoer-Hierarchy between the non-episodic and the episodic class EMOTER and EXPERIENCER are instances of pred’(x, …), TARGET and SENSATION instances of pred’(…, y).

On the basis of the findings in Kailuweit (2005, 2007), only the class of transitive non-episodic verbs, i.e. English to love, to hate or to fear, is unproblematic as far as macrorole assignment is concerned. Let me start the discussion of the other classes with episodic transitive verbs. As Primus (1999:70) pointed out in the case of German, this class splits into a causative and a non-causative subclass. With regard to Spanish, Kailuweit (2007) has shown that there are syntactic-semantic tests which prove a clear-cut difference between prototypical verbs of each subclass. Causative verbs such as intimidor (‘to frighten’) or escandalizar (‘to scandalize’) allow (a) passives and (b) tough constructions as well as (c) imperatives and combine (d) with adverbs like de propósito (‘intentionally’), etc. Non-causative verbs such as preocupar (‘to worry’) or two-place interesar (‘to interest’) do not meet any of the four tests in (23) and (24):

(23) Causative object experiencer predicates
   a. Maria fue escandalizada/intimidada por Juan
      ‘Maria was scandalized/frightened by John’
   b. This worries John
      ‘This worries John’

Nonetheless, there are predicates such as German zürnen or Spanish rabiar contra (‘to be angry at’) that do not correspond to a specific transitive causative predicate. Also, as we will see, the corresponding transitive predicates are not always causative. I will distinguish between a causative and a non-causative subclass of transitive accusative EXPERIENCER predicates and will therefore treat transitive subject EXPERIENCER predicates as an independent lexical class and not as anticausative constructions. I shall account for anticausative constructions of change of state verbs that are not verbs of emotion in the next subsection (4.2).
b. Se deja fácilmente escandalizar/intimidar
   'She is easy to scandalize/frighten'

c. ¡No me escandalices/intimides!
   'Don't scandalize/frighten me!'

d. Juan escandalizó/intimidó a María de propósito
   'John scandalized/frightened Maria intentionally'

(24) Non-causative object experiencer predicates
a. *Juan fue preocupado/interesado por María
   'John was worried/interested by Maria'

b. *Se deja fácilmente preocupar/interesar
   'He is easy to worry/to interest'

c. ¡No me preocupes! ¡Interéstate!
   'Don't worry me! Interest me!'

d. *María preocupó/interesó Juan de propósito
   'Maria worried/frightened John intentionally'

If one proposes a LS worry(x, y) or interest(x, y) for the non-causative predicates, the experiencer would have to be an instance of pred(x, y) in order to assume the undergoer macrorole. However, there is no semantic motivation for such an assumption. Alternatively, one could consider these verbs instances of marked undergoer choice. Nonetheless, marked undergoer choice is restricted to three-place constructions. In transitive two-place constructions, marked undergoer choice would entail marked actor choice. There is no provision for marked actor choice in RRG. In fact, allowing marked actor and undergoer choice for the same structure would annul RRG's macrorole assignment principles.

It has to be pointed out that the distinction of two types of transitive accusative-experiencer verbs holds only for American Spanish. In American Spanish, the experiencer of the causative class is clearly an accusative complement, while the experiencer of the non-causative class could optionally be realized as a dative complement. In European Spanish it is the other way round. The causative class optionally permits an accusative morphology, while the experiencer of the non-causative class always retrieves the dative case.

(25) American Spanish
a. Este asunto le/lo intimidó, a Juan
   this affair DAT.3SG/ACC.3SG.M frighten-PST.3SG PREP John
   'This affair frightened John'

b. Este asunto le/lo preocupó, a Juan
   this affair DAT.3SG/ACC.3SG.M worry-PST.3SG PREP John
   'This affair worried John'

(26) European Spanish
a. Este asunto le/lo intimidó, a Juan
   this affair DAT.3SG/ACC.3SG.M frighten-PST.3SG PREP John
   'This affair frightened John'

b. Este asunto le/lo preocupó, a Juan
   this affair DAT.3SG/ACC.3SG.M worry-PST.3SG PREP John
   'This affair worried John'

Thus, in European Spanish the non-causative class is intransitive and seems to equal the non-episodic intransitive class represented prototypically by gustar ('to like').

By the way, depending on the context, both Spanish gustar and Italian piacere denote general preferences as well as situation-related, episodic pleasure. Since Spanish and Italian lack a lexical opposition for non-episodic and episodic liking (such as French aimer (bien); plaire or German mögen: gefallen), the difference is expressed by means of information structure. The following example illustrates the lexical opposition in French and the information structure opposition in Spanish:

(27) a. Ce qu'il a fait a lui... plu
   this COMP he have-PRES.3SG do-PTCP have-PRES.3SG appeal-PTCP
   à Marie
to Mary
   'What he has done appealed to Mary'
   (Koch 2001:67)

b. Mais je lui aimais mieux avec ses cheveux libres
   but I ACC.like:PFV.3SG better with POSS.PL hair loose
   'But I liked her better with her hair loose'
   (Koch 2001:67)

(28) a. A Carlos le gustan las ciudades
   to Charles DAT appeal-PRES.3PL the cities
   'Charles likes cities'
   (CREA: POZO)

b. "Como bien sabe, yo tengo un hermano
   as well know-PRES.2SG, I have-PRES.1SG a brother
   misionero en el Japón, en Nagasaki […]" Nagasaki…
   missionary in the Japan in Nagasaki Nagasaki
   el nombre le gustó a Manuel
   the name DAT appeal-PST.3SG to Manuel
   'As you well know, I have a brother missionary in Japan, in Nagasaki […]' Nagasaki… Manuel liked the name Nagasaki
   (CREA: GIRONELLA)
As far as I can see, in RRG there is no description for episodic dative-experiencer verbs.

Another problem for the RRG approach to verbs of emotion concerns the intransitive subject-experiencer verbs. Apart from the episodic predicates represented prototypically by worry about, there are also non-episodic predicates such as Spanish con fier en (‘to trust in’), tener a (‘to cherish’) or simpatizar con (‘to sympathize with’). Independently of the general distinction between episodic experiencer predicates and non-episodic emoter predicates, the structure feel(x, pred(y)) will not help us to describe predicates such as Spanish con fier en (‘to trust in’), etc. because it is by no means evident which kind of a sensation predicate should be embedded. In addition, it would be highly problematic to declare an obligatory argument, such as the prepositional object argument of Spanish con fier en (‘to trust in’), tener a (‘to cherish’) or simpatizar con (‘to sympathize with’), not accessible to macrorole assignment.

To sum up, three classes of two-place verbs of emotion must be added to the four classes already accounted for by RRG: non-causative accusative-experiencer predicates, episodic dative-experiencer predicates and non-episodic subject-experiencer predicates. There is no available RRG description for these classes that would fit into the L-S formalism (the basis for the Actor-Undergoer-Hierarchy). At the beginning of the section, I already mentioned the problematic nature of three-place verbs of emotion with regard to RRG’s L-S formalism. As a matter of fact, this class splits into two subclasses: subject-experiencer predicates, such as envy, and accusative-experiencer predicates, such as interesar (a) alguien por algo (‘to interest someone in something’) or incitar (a) alguien contra alguien (‘to incite someone against someone’). I have already shown that three-place subject-experiencer predicates are not describable in terms of L-S formalism.

Three-place accusative-experiencer predicates are causatives. Although the aCAUSE-part would not raise a problem, it is unclear which LS should spell out the CAUSEE-part. As we have already seen, the structure feel(x, pred(y)) is not appropriate for two obligatory arguments. Thus, in total, five classes out of nine will not find an adequate description in standard RRG. In the following, I shall present an alternative to the LS-based Actor-Undergoer-Hierarchy, an alternative that is not only able to describe the nine classes of two-place and three-place verbs of emotion, but also differs from the LS-formalism in that it avoids an internal syntax.

My proposal is based on the feature-value approaches of Rozwadowska (1988) and Reinhart (2002). Rozwadowska (1988:159) classifies semantic roles on the basis of three features that can take two values ± or =: sentient ±, cause ± and change ±. Reinhart’s approach is limited to two features: “cause change” and “mental state”, but she permits underspecification for the two features. Hence, Rozwadowska (1988) allows for 2^3 = 8 combinations, Reinhart (2002) for 2^4 = 9.10

In line with Rozwadowska (1988), Kailuweit (2005) takes three features into account: causative and/or control [c], mental (sentient) [m] and resultative (change of state) [r], thus allowing the features to assume three values +, − and ±. Hence, 3^3 = 27 combinations are possible. The most important difference between Kailuweit (2005) and the other approaches is the fact that the features are weighted (see Table 6). The feature [c] is a strong actor feature, [m] is a weak actor feature and [r] is a strong undergoer feature. The presence of a [c] of a strong feature will duplicate the value of the presence of a weak feature. If an argument is underspecified for one feature [±], the value will be half of the [+ value.

Table 6. Semantic role features and values

<table>
<thead>
<tr>
<th>+c</th>
<th>±c</th>
<th>±c</th>
<th>±m</th>
<th>±m</th>
<th>±±</th>
<th>±−</th>
<th>±r</th>
<th>±r</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>−2</td>
<td>−4</td>
</tr>
</tbody>
</table>

Weighing the features entails the hierarchisation of the 27 combinations according to the degree of activity. The combination [+c±m−r] represents the prototypical actor with the value 4+2+0 = 6, while the prototypical undergoer corresponds to a combination with the value [−c−m+r] 0+0−4 = −4. Nine intermediate summations are mathematically possible. Therefore, the number of activity degrees rises from five to eleven in comparison with the RRG’s Actor-Undergoer-Hierarchy.

As far as verbs of emotion are concerned, the different types of experiencer correspond to four feature-value-pairs. Following Ruwedet (1993), Kailuweit (2005) considers the TARGET of sensation argument a CORRELATE, i.e. the state of affair at which the emotion is directed.11 The CORRELATE could at the same time be a CAUSE of the change of the experiencer’s emotional state, however, this may also not be the case. The corresponding feature-value-clusters are the following: [+c±m−r] or [−c−m+r]. An EXPERIENCER undergoing a change of state in a concrete emotional episode is represented by the feature-value-cluster [−c±m+r]. Hence, the macrorole assignment follows straightforwardly for both classes of episodic accusative-experiencer predicates:


11. Even if you claim to love or hate somebody or something, what you love or hate are actually certain properties of that somebody or something. Hence, you love or hate a state of affair rather than a physical object.
(29) *asustar* (to frighten)

\[(\text{i} \text{+c-} \text{m-r}) \text{EXP} = 2 \rightarrow \text{UND}, (\text{i} \text{+c-} \text{m-r}) \text{COR} + \text{CAU} = 4 \rightarrow \text{ACT}\]

(30) *preocupar* (to worry someone)

\[(\text{i} \text{+c-} \text{m-r}) \text{EXP} = 2 \rightarrow \text{UND}, (\text{i} \text{-c-} \text{m-r}) \text{COR} = 0 \rightarrow \text{ACT}\]

The EXPERIENCER of the non-episodic transitive class is more active since s/he expresses a subjective, emotional judgment. This is represented by the cluster \(\text{[c]}\). The value \(\text{x}\) for \(\text{c}\) refers to the more active role that the EXPERIENCER plays that enables her or him to control the emotion, at least to a certain extent:

(31) *querer* (to love)

\[(\text{i} \text{-c-} \text{m-r}) \text{EXP} = 4 \rightarrow \text{ACT}, (\text{i} \text{-c-} \text{m-r}) \text{COR} = 0 \rightarrow \text{UND}\]

The representation of Spanish *gustar* (to like) is problematic because it can be non-episodic or episodic, according to the context. As a non-episodic predicate, *gustar* would obtain the same feature-value-cluster as *querer* (to love). In the episodic use, \(\text{[c]}\) would be \(\text{[+]}\) and would therefore neutralize the value of the actor-features \(\text{[c]}\): 2+2=0. The same degree of activity would be attributed to both arguments, the EXPERIENCER and the CORRELATE, thus rendering macrorole assignment undecided. The way of preventing this unfortunate outcome (that is paralleled by some Italian episodic dative-EXPERIENCER verbs) is to ignore the \(\text{[c]}\) value of a \(\text{[+]}\) argument in case of draw.12 This could be motivated by the fact that Spanish and other Romance languages show residual of active alignment in some of their grammatical domains (cf. Bentley 2006). Therefore, the representation of *gustar* in episodic and non-episodic contexts would be as follows:

(32) *gustar* (to like)

\[(\text{IMR} \text{[c]} \text{+c-} \text{m-r}) \text{EXP} = 4, (\text{[c]} \text{-c-} \text{m-r}) \text{COR} = 0 \rightarrow \text{UND}\]

In European Spanish, non-causative predicates of the *preocupar* (to worry someone) class equal the *gustar* class in syntactical behavior. Nonetheless, the EXPERIENCER seems to be less active, since s/he does not express a subjective judgment. We can only explain macrorole assignment and PSA selection of this class (that has a high type-frequency in European Spanish) if we ignore the \(\text{[c]}\)-feature as we have done in the case of the EXPERIENCER of the episodic uses of *gustar*:

(33) *preocupar* (to worry)

\[(\text{IMR} \text{[c]} \text{-c-} \text{m-r}) \text{EXP} = 2 \rightarrow \text{UND}, (\text{[c]} \text{-c-} \text{m-r}) \text{COR} = 0 \rightarrow \text{UND}\]

12 Italian *disturbare, interessare, somodare* and *sdotticare* allow for a dative-EXPERIENCER construction, apart from the more frequent accusative-EXPERIENCER construction. The dative-EXPERIENCER is more active in comparison with the accusative-EXPERIENCER. For instance, *disturbare* (to disturb) does not denote actual disturbance if it appears with a dative, but a rather insignificant intrusion that the experiencer is expected to tolerate: *Le disturba se fuma?* ("Would you mind, if I smoke?") (cf. Kahluewe 2005: 179).
The non-causative class shows a more active EXPERIENCER expressing a subjective judgment. The other two arguments correspond to the correlative and point of reference roles that, in contrast to Pesetsky's (1995) claim, do not categorically exclude each other. The correlative is the most passive argument and assumes the undergoer macrorole:

\[(\exists \text{c treatment r})\text{EXP} = 4 \Rightarrow \text{ACT}, (\exists \text{c treatment r})\text{COR} = 0 \Rightarrow \text{UND}, (\exists \text{c treatment r})\text{POR} = 1\]

The objective of this section was not to exhaustively describe the field of verbs of emotion in Romance languages. For lack of space, semantic explanations were given in a rather laconic way.13 I did not intend to justify in detail the semantic assumptions on which the description is based, but rather to show how the Activity Hierarchy could work at the lexical level. I sought to prove that a complex semantic field, such as the field of verbs of emotion, can be structured by a formalism that is finer-grained than RRG's Actor-Undergoer-Hierarchy. The 27 possible feature-value-combinations substitute the list of 36 semantic relations in Van Valin and LaPolla (1997:127). Just like the semantic relations in RRG, the feature-value-combinations in RRRG are only relevant for macrorole assignment if they are brought into a hierarchical order. In RRRG, this is done by weighing the features (Table 6). Eleven degrees of activity replace the five degrees of the Actor-Undergoer-Hierarchy, allowing for more flexible semantic representations that, in addition, are free of an unmotivated internal syntax.

4.2 Activity Hierarchy and constructional schemas

In the second part of this section I will show briefly that the Activity Hierarchy is also highly useful to describe the operating of Constructional Schemas. I shall refer to anticausative constructions that, just like verbs of emotion at the lexical level, show a high degree of semantic and syntactic variation (Kailueit 2011b, 2012b). Anticausative constructions are the intrasentential variants of transitive anticausative constructions of predicates denoting change of state. Like passive constructions, the undergoer of the transitive construction is syntactically promoted and retrieves the PSA function, whilst the actor is deleted.

(38) a. Peter opened the door
b. The door opened
c. The door was opened

However, in contrast to passive constructions, the undergoer is also semantically promoted. While the passive PSA is a prototypical undergoer, i.e. semantically identical with the corresponding undergoer of the active construction, the anticausative construction hints at certain properties of the undergoer that help to bring about the eventuality. Therefore, the undergoer of anticausative constructions is perceived as more active in comparison with the undergoer of passive constructions.

Haspelmath (1993) accounts for five syntactic types of causative-anticausative pairings. The "causative" type adds an affix to the intransitive variant (causativisation) and is not found in Romance languages. The "anticausative" type adjoins an affix to the transitive variant (anticausativation). This type is the most current type in Romance languages: the predicate is accompanied by a pseudo-reflexive pronoun clitic (se or si). The third type is called "labile" in Haspelmath's terminology and implies no morphological marking whatsoever. The predicate enters the transitive and the intransitive variant without morphological change. This type is frequent in English, but also present in Romance languages. The fourth type, called "equipollent", necessitates morphological marking of both the transitive and intransitive constructions. It is not found in Romance languages. The fifth and last type, called "suppletive", takes two different lexical stems for each construction. Since it is a lexical opposition, I shall not take this type into account in the context of Constructional Schemas. In the following, I will call the "anticausative" construction in Haspelmath's terminology the marked construction. The "labile" construction will be called the unmarked construction.14

At first glance it is surprising that in Romance languages, the marked ("anticausative") and the unmarked ("labile") type coexist even for the same verb:

(39) a. Ouroz rest plus à l'hôpital... Il
Ouroz NEG be-PRES.3SG anymore at the hospital he
a cassé une fenêtre et disparu...
have-PRES.3SG break-FTCP a window and disappear-FTCP
'O, is not at the hospital anymore. He broke a window and disappeared' (FRANTEXT: KESSEL)
b. ...le couteau a cassé. Il mangelait
the knife have-PRES.3SG break-FTCP it lack.PRES.3SG
le manche
the handle
'... the knife broke. It was lacking a handle' (FRANTEXT: MANCHETTE)


14. Referring to the labile construction as the unmarked construction can be justified only from a morphological and diachronic (Heidinger 2010) point of view, given that the morphologically marked construction is today the most current type in Romance languages.
In many contexts, the use of the marked or unmarked construction does not seem to be semantically motivated. Nonetheless, if there are cases in which the pronominal element denotes a semantic difference that is by no means arbitrary. Two different semantic contrasts can be expressed by the presence or absence of the pronominal element.

The first semantic difference is highlighted by Rothenberg (1974). The lexical element assuming the function of the subject of the unmarked construction is the host of the process that is seen as developing organically out of it because of its internal qualities. As far as the marked construction is concerned, the internal qualities of the lexical element assuming the function of the subject are considered insufficient on their own to bring about the realization of the action or the process (cf. Rothenberg 1974:67).

The idea of an internal causation that is due to the inherent properties has been adopted by Levin & Rappaport (1995:136). These authors claim that internal causation excludes causativisation, but this is clearly not the case in Romance languages. On the contrary, in some contexts it is possible to articulate an opposition between internal and external causation with the same predicate, using the marked construction for external and the unmarked for internal causation. The opposition is stable in the sense that it is never coded the other way round.

Rothenberg (1974) counts 311 French predicates that permit unmarked anticausatives and lists several examples illustrating the contrast between internal and external causation. In Spanish, only approximately 30 predicates allow unmarked anticausatives (Kailuweit 2012b). Examples for the opposition between the two constructions are given in (40) and (41).

(40) a. ...un dolor pormano, increíble, inenorable,
   a pain ardent, unbelievable, ineffable
   que no menguó
   declined-past

   '...an ardent, unbelievable, ineffable pain that did not decline'
   (CREA: CUAUHTEMOC SANCHEZ)

b. El agua hervió
   the water boil-past
   'The water boiled'

(41) a. ...sólo una minoría entiende inglés, y
   only a minority understand-PRS.3SG English
   dentro de esa minoría las cifras se menguian
   inside of this minority the numbers decline-PRS.3PL
   a la hora de captar la soltura del inglés o
   at the hour of capture the fluency of ART.3SG English or
   del americano hablado
   American speak-PRCP.M.PL

   '...only a minority understand English, and within this minority the numbers decline when listening to fluent British or American spoken English'
   (CREA: EL PAIS)

b. La leche se hirió (American Spanish)
   the milk REFLEX boil-PST.3SG
   'The milk boiled over'

The opposition between _hervir_ ('to boil') and _hervirse_ ('to boil over') in American Spanish entails a secondary contrast that has been observed by Folli (2002). Although it is not the case that the marked constructions are always telic and the unmarked atelic (cf. Schäfer 2008), if an aspectual contrast is coded with the same predicate, the pronominal construction will be interpreted as telic and the bare intransitive construction as atelic.

A third semantic opposition that is articulated by the presence and absence of the pronominal element is a contrast of responsibility. The marked construction can be used to code that the human being denoted by the subject is, to a certain extent, responsible for the eventuality that s/he is affected by. Nonetheless, the person does not control the eventuality or intend its consequences. The same predicate in the unmarked construction would denote an internal causation for which the affected subject is not responsible. A Spanish example is given in (42):

(42) a. La gente se enoja de [ ...] Eso es rock: la
   the people REFLEX deafen-PRS.3PL this be-PRS.3SG rock the
   base emocional para que se te abra
   basis emotional for COMP REFLEX DAT.2SG open-PRS.SBJV.3SG
   la cabeza
   the head

   'People become deaf [...] This is rock: the emotional basis to split your head open'
   (CREA: CLARIN)

b. ...estuvo preso... veinticuatro años en Uclés,
   be-PST.3SG imprison-PRT 24 years in Uclés
Surprisingly, the pronominal element is used not only to mark a more passive, externally affected argument, but also a more active, responsible, but not controlling one. We can explain this fact by attributing medium degrees of activity to the argument of the various anti-causative constructions in a field that ranges from real reflexivies to pronominal passives (cf. Kailuweit 2011b, 2012b). The causative transitive construction, as exemplified in (43), shows the highest possible activity contrast. A prototypical controlling Agent and/or CAUSER ([+c+m+r]) brings about a change of state in a prototypical causatively affected Patient [+c-m+r].

(43) ¿Quién afiata al barbero?  
Who shave-PRES.3SG ACC:ACT.3SG barber
'Who shaves the barber?'  
(CREA: DIARIO EL TELEGRAFO)

In real reflexivies, the agent's semantics does not change. As far as the controlling Agent and/or CAUSER is concerned, there is no difference between someone shaving another person or someone shaving oneself.

(44) Antes del amanecer, subió en silencio a su casa, se afiata y se bañó  
before dawn ascend-PST.3SG in silence to his home  
repl shave-PST.3SG and refl bath-PST.3SG
'Before dawn, he went up in silence to his home, shaved and took a bath'  
(CREA: MARTINEZ)

On the other end of the hierarchy, pronominal passives contain a prototypical undergoer argument [+c-m+r]. The undergoer in (45b) remains semantically unchanged in comparison with the corresponding active construction (45a):

(45) a. ...los partidos políticos, cuando en 1977 firmaron los Pactos de la Moncloa...
the parties political when in 1977 sign-PST.3PL the Pacts of the Moncloa
(PACTOS DE LA MONCLOA, pactos Moncloa...)
'...the political parties, when in 1977 they signed the Moncloa Pacts...'
(CREA: GARCÍA DE CORTAZAR & GONZALEZ VESGA)

b. ...se firmaron por todos los grupos parlamentarios
repl sign-PST.3PL by all the groups parliamentary

In contrast, the people denoted by the argument of the marked variant of ensordecer ('become deaf') in (42a) are not prototypical undergoers, but are responsible for the change of state which for them is a consequence they consciously tolerate. Although the direct cause of the deafness is the impact of loud rock music, the listeners are exposing their ears intentionally. Hence, in this construction the undergoer argument of the transitive construction is semantically promoted [+c-m+r] => [+c-m+r]. Notice that the argument takes the value s for the r-feature as well as for the c-feature. This corresponds to the fact that people undergo a change of state without being causatively affected in a prototypical way, since they control to a certain extent the bringing about of the eventuality.

In contrast, unmarked anti-causative constructions such as ensordecer ('become deaf') in (42b) are instances of internal causation and do not code any responsibility of the human being denoted by the subject-argument. This is represented by a [-] value for the [m]-feature. It could be argued that a human being has intrinsic properties that lead to deafness in old age. Hence, the argument is neither the prototypical undergoer of the corresponding transitive causative construction, nor a controlling Agent or an indirect responsible CAUSER. In the process of anti-causativization it retrieves a semantic promotion of a medium degree [+c-m+r] => [+c-m+r].

Last but not least, a slightly more passive argument appears in the subject position of marked anti-causatives that denote external causation, such as megular (to decline) or hervir (to boil) in (41). Therefore, the [c]-feature takes the [-] value: [+c-m+r] => [+c-m+r].

Table 7 sums up the different activity degrees according to the Activity Hierarchy:

<table>
<thead>
<tr>
<th>Activity Degree</th>
<th>Example</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+c-m-r]</td>
<td>Juan se afiata</td>
<td>Real reflexives</td>
</tr>
<tr>
<td>[+c-m+r]</td>
<td>El auditorio se ensordecio con el concierto de rock</td>
<td>Responsibility</td>
</tr>
<tr>
<td>[+c-m+r]</td>
<td>El prisionero ensordecio/El dolor minguado/El agua hirvio</td>
<td>Internal causation</td>
</tr>
<tr>
<td>[+c-m+r]</td>
<td>Las cifras se menguan/La leche se hirvio</td>
<td>External causation</td>
</tr>
<tr>
<td>[+c-m+r]</td>
<td>Los pactos se firmaron</td>
<td>Pronominal passives</td>
</tr>
</tbody>
</table>
Constructional schemas, as established in RRG, could account for the different degrees of undergoer promotion in anticausative constructions. Since in contrast to French, only a small number of Spanish predicates allow unmarked anticausatives, the marked construction could also denote internal causation. Hence, the constructional schema indicates the range of possible promotions that are coded by the pronominal element. Nonetheless, the degree of promotion in a concrete case has to be detected by a context-sensitive interpretation.

(46) Construction: Spanish marked anticausatives

Semantics:
Actor: deleted;
Undergoer: [-c-m+r]: promoted => [tc-m] v [tc-m] v [tc-m] v [tc-m] v
[tc-m] v
[tc-m] viltery; (+)

Syntax:
PSA: Undergoer; Intransitivity: unaccusative;

Morphology:
Marking: reflexive

Pragmatics:
...

(47) Construction: Spanish unmarked anticausatives

Semantics:
Actor: deleted;
Undergoer: [-c-m+r]: promoted => [ac-m];
telicity: (-)

Syntax:
PSA: Undergoer; Intransitivity: unaccusative;

Morphology:
Marking:

Pragmatics:
...

The objective of this subsection was neither to give a detailed description of the semantics of different anticausative constructions, nor to expose all the information that constructional schemas contain. I simply intended to demonstrate that the finer-grained Activity Hierarchy of RRRG is able to describe three different degrees of construction-based undergoer promotion that could not be displayed in the standard RRG framework (cf. González Vergara 2009). It has been proved that the Activity Hierarchy is not only an indispensable tool at the lexical level, but also at the level of constructional schemas.

5. Conclusion and outlook

In this chapter, I have tried to sketch a “radical” alternative to standard RRG. My objective was to focus on the “holistic approach” advocated by Van Valin (1980) and to overcome some general, but also technical shortcomings of the current RRG framework (cf. Van Valin 2005, 2010). At the level of the model architecture, it has been shown that separating a semantic and a syntactic representation (that have to be mapped onto each other by linking algorithms) may be useful for computational implementation, but does not represent an adequate model for the interpretation process which could capture linguistic structure. In line with the holistic approach, syntactic and semantic information is represented in form of event templates fusing the semantic representation of standard RRG with the syntactic representation. Thus, the modifications introduced by Van Valin (2006) are brought to a successful end. Syntactic-semantic event templates represent a medium level of complexity that provides syntactic structure for lexical information by approving or overriding the basic valence of lexical predicates. Constructional schemas modify event templates syntactically and semantically at the highest level of complexity.

The Activity Hierarchy is the centrepiece of the theory and replaces the less flexible Actor-Undergoer-Hierarchy. In combination with pragmatic constraints, the Activity Hierarchy operates at the three levels of complexity to structure the semantic-syntactic interface. I have shown that weighing semantic role features facilitates a finer-grained semantic analysis that has turned out to be useful to solve several of RRG’s Actor-Undergoer-Hierarchy descriptive problems. At the lexical level for example, the Activity Hierarchy is able to account for all of the syntactic-sematic classes of verbs of emotion. At the level of constructional schemas, the hierarchy can be used to model different degrees of semantic undergoer promotion in anticausative constructions. In both domains, standard RRG’s formalism would come to its limits.

I must again point out that the present chapter is only a sketch and does not provide a full-fledged theory. At the lexical level, the presented modifications only concern valence information. Complete lexical entries will have to be elaborated for predicates and also for other parts of speech in the future. The same holds for the formalization of syntactic-sematic event schemas that has not been dealt with in detail in the present chapter. RRRG is not a fundamental critique of RRG, but a project of theory building that is deeply inspired by the work of RRG’s founder, Robert Van Valin. It is an open question whether RRRG will eventually be an independent theory of grammar or just an impulse for people working in the RRG framework to rethink and maybe remodel the building blocks of the theory.
References


FranTEXT. (http://www fran text.fr /noncategor.htm) (30 December 2012).


