The Role and Reference Grammar Analysis of Three-Place Predicates

This paper presents the Role and Reference Grammar (RRG) (Van Valin 2005) analysis of three-place predicates. RRG takes a primarily lexical approach to the analysis of three-place predicates and the coding alternations they enter into. There is an interesting range of typological variation with respect to how languages realize three-place predicates morphosyntactically, and this will be a major focus of this discussion. RRG is a monostral theory, and therefore analyses involving underlying syntactic representations and movement rules are excluded in principle. Hence some of the phenomena associated with these predicates present an interesting challenge for monostral theories like RRG. The languages to be discussed include English, Croatian, German, Indonesian, Kinyarwanda, Yoruba, Dyirbal, Saliba and Kuandulu.

1.0 Introduction

Role and Reference Grammar [RRG] (Van Valin 2005) takes a primarily lexical approach to the analysis of three-place predicates and the coding alternations they enter into. In RRG’s system of lexical decomposition, the general semantic representation for such a predicate would be as in (1).

(1) [do' (x, O)] CAUSE [BECOME predicate' (y, z)]

In this system, no abstract predicate can take more than two arguments, and consequently a three-argument verb must have a complex representation like (1). There is an interesting range of typological variation with respect to how languages realize three-place predicates morphosyntactically, and this will be a major focus of this discussion. RRG is a monostral theory, and therefore analyses involving underlying syntactic representations and movement rules are excluded in principle. Hence some of the phenomena associated with these predicates present an interesting challenge for monostral theories like RRG.

The discussion will proceed as follows. In the next section, the basics of RRG relevant to the analysis of three-place predicates will be presented. In
section 5, the RRG analysis of dative shift and the locative alternation in English and a number of other languages will be presented. In section 4, some of the more typologically intriguing ways of expressing these predicates will be analyzed, specifically symmetrical languages, e.g. Kinyarwanda, primary object languages (Dryer 1986), the Saliba directional strategy (Mrzgatta 1999), the Dyirbal genitive construction (Dixon 1972), and the Kayardilo proprietary strategy (Evans 2000).

2.0 Role and Reference Grammar

The general organization of RRG is presented in Figure 1. RRG posits a direct mapping between the semantic representation of a sentence and its syntactic representation; there are no intermediate levels of representation such as 'D-structure' or syntactic argument structure. It is a truly 'minimalist' theory. In what follows, the basics of the semantic and syntactic representations will be presented, along with the basic ideas of the theory of focus structure (represented as 'discourse-pragmatics' in Figure 1). For detailed presentations on all of these points, see Van Valin & LaFolla (1997) (VVL, VVILP), Van Valin (2005) (VVILP).

![Diagram of Role and Reference Grammar Organization]

**Figure 1: Organization of Role and Reference Grammar**

2.1 The syntactic representation of sentences

Clause structure is not represented in RRG in terms of X-bar syntax or even traditional immediate constituency structure; rather, it is captured in a semantically-based theory known as the 'layered structure of the clause'. The essential components of this model of the clause are (i) the NUCLEUS, which contains the predicate, (ii) the CORE, which contains the nucleus plus the arguments of the predicate in the nucleus, and (iii) a PERIPHERY, which contains the adjunct modifiers of the core. The structure of a simple English clause is given in Figure 2, and in Table 1 the semantic units underlying the layered structure of the clause are summarized.
Figure 2: The layered structure of the clause in English

<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>Predicate + Arguments</td>
<td>Core</td>
</tr>
<tr>
<td>Predicate + Arguments + Non-arguments</td>
<td>Clause (= Core + Periphery)</td>
</tr>
</tbody>
</table>

Table 1: Semantic units underlying the syntactic units of the layered structure of the clause

Of particular relevance to the discussion of three-place predicates is that there is no VP in this structure, and both post-nuclear NPs are sisters to the verb. The binding facts that have motivated Larson’s (1988) VP-shell analysis of the ditransitive construction are not captured in syntactic terms in RRG; they will be analyzed in section 3.

A second important component of the RRG theory of clause structure is the theory of OPERATORS. Operators are closed-class grammatical categories like aspect, negation, tense, and, most important for this discussion, directionals, e.g. *He ran in/out* of. Operators are represented in a separate projection of the clause. This is exemplified in Figure 3.
2.2 The semantic representation of sentence

The semantic representation of a sentence is based on the lexical representation of the verb or other predicating element. It is a decompositional representation based on Vendler's (1967) theory of Aktionart. The four basic classes (state, achievement, accomplishment, and activity) are augmented by two additional classes, semelfactives (punctual events; Smith 1997) and active accomplishments (telic uses of activity verbs e.g. run to the store); in addition, there are causative versions of each. Examples of the six classes are given in (2) and sentences illustrating the classes plus their causative counterparts are given in (3).

(2) a. States: be sick, be tall, be dead, love, know, believe, have
b. Activities: march, swim, walk (+ goal PP); think, eat (+ mass noun
    [bare plural NP])
c. Semelfactives: flash, tap, burst (the intransitive versions), glimpse
d. Achievements: pop, explode, shatter (all intransitive)
e. Accomplishments: melt, freeze, dry (the intransitive versions), learn
f. Active accomplishments: walk (+ goal PP), eat (+ quantified NP)

(3) a. State: The boy fears the dog.
b. Achievement: The dog frightened the boy.
c. Causative achievement: The cat popped the balloon.
d. Semelfactive: The light flashed.
e. Causative semelfactive: The conductor flashed the light.
d. Accomplishment: The ice melted.
d'. Causative accomplishment: The hot water melted the ice.
e. Activity: The dog walked in the park.
e'. Causative activity: The girl walked the dog in the park.
f. Active accomplishment: The dog walked to the park.
f'. Causative active accomplishment: The girl walked the dog to the park.

Syntactic and semantic tests determine the Aktionssatz of a clause (see VVLP §3.2.1; VVo, §2.1). As the sentences in (3a-f) show, a single verb, e.g. walk, can have more than one Aktionssatz interpretation. This verb would be listed in the lexicon as an activity verb, and lexical rules would derive the other uses from the basic activity use (see VVLP, §4.6; Van Velzen, in press).

The system of lexical decomposition builds on the one proposed in Dowty (1979). Unlike Dowty’s scheme, the RRG system treats both state and activity predicates as basic. The lexical representation of a verb or other predicate is termed its LOGICAL STRUCTURE (LS). State predicates are represented simply as predicate, while all activity predicates contain do. Accomplishments, which are durative, are distinguished from achievements, which are punctual. Accomplishment LSs contain INGR, which is short for ‘ingressive’. Semelfactives contain SEMEL. In addition, causation is treated as an independent parameter which crosses the five basic and derived Aktionssatz classes, hence the ten classes in (3). It is represented by CAUSE in LSs. The lexical representations for each type of verb in (3) are given in Table 2.

<table>
<thead>
<tr>
<th>Verb Class</th>
<th>Logical Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE</td>
<td>predicate' (x) or (y, y)</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>do' (x, predicate' (x) or (x, y))</td>
</tr>
<tr>
<td>ACHIEVEMENT</td>
<td>INGR predicate' (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>INGR do' (x, predicate' (x) or (x, y))</td>
</tr>
<tr>
<td>SEMELACTIVE</td>
<td>SEMEL predicate' (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>SEMEL do' (x, predicate' (x) or (x, y))</td>
</tr>
<tr>
<td>ACCOMPLISHMENT</td>
<td>BECOME predicate' (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>BECOME do' (x, predicate' (x) or (x, y))</td>
</tr>
<tr>
<td>ACTIVE</td>
<td>do' (x, [predicate'] (x, (y), (y))) &amp;</td>
</tr>
<tr>
<td>ACCOMPLISHMENT</td>
<td>BECOME predicate'y' (x, x) or (y)</td>
</tr>
<tr>
<td>CAUSATIVE</td>
<td>α CAUSE β, where α, β are LSs of any type</td>
</tr>
</tbody>
</table>

Table 2: Lexical representations for Aktionssatz classes
Examples of simple English sentences with the LS of the predicate are presented in (4).

(4) a. STATES
   Leon is a fool.
   Fred is at the house.
   Carl ate snacks.

b. ACTIVITIES
   The window is shattered.
   The children cry.
   The wheel squeaks.

b. SEMELFACTIVES
   John glimpsed Mary.
   The light flashed.

b. ACHIEVEMENTS
   The window shattered.
   The balloon popped.
   John glimpsed the picture.

b. ACCOMPLISHMENTS
   The snow melted.
   The sky reddened.
   Mary learned French.

b. ACTIVE ACCOMPLISHMENTS
   Carl ate the snack.
   Paul run to the store.

b. CAUSATIVES
   The dog scared the boy.
   Max broke the window.
   The cat popped the balloon.
   Bill flashed the light.
   Felix bounced the ball.
   The girl walked the dog to the park.

Full semantic representations of sentences also contain lexical representations of the NPs, adjuncts, and grammatical operators like sense and aspect; see VVLP, §4.4, 4.7; VV05, §2.2–2.3.
2.2.1 Semantic macroroles and lexical entries for verbs

The semantic interpretation of an argument is a function of its position in the LS of the predicate, and as will be seen below, the linking system refers to an element's LS position. Thematic relations as such play no role in the theory; the traditional thematic role labels are used only as mnemonics for the LS argument positions, e.g. 'theme' is the mnemonic for the second position (y) in a two-place locational LS like be-at" (x, y). RING posits two generalized semantic roles or SEMANTIC MACRO roles, which play a crucial role in the linking system. The two macroroles are ACTOR and UNDERGOER, and they are the two primary arguments of a transitive predicate; the single argument of an intransitive predicate can be either an actor or an undergoer, depending upon the semantic properties of the predicate. The basic distinction is illustrated in the following German examples.

   'The boy ate the cake.'

b. Der Hund [SUBJ, ACTOR] ist um das Haus herumgelaufen.
   'The dog [SUBJ, ACTOR] ran around the house.'

c. Der Hund [SUBJ, UNDERGOER] ist gestorben.
   'The dog [SUBJ, UNDERGOER] died.

   'The cake [SUBJ, UNDERGOER] was eaten by the boy [ACTOR].' 

In (5a), der Junge 'the boy' is the actor and den Kuchen 'the cake' is the undergoer of the transitive verb auf-lesen 'eat up'; in the sentences with intransitive verbs, Der Hund is an actor with the activity verb herumlaufen 'run around' and an undergoer with the accomplishment verb sterben 'die'. Actor is not equivalent to syntactic subject, nor is undergoer equivalent to syntactic direct object, as the examples in (5c) and crucially (5d) show: in both of these sentences the syntactic subject is an undergoer, and in the passive sentence in (5d) the actor is an oblique adjunct. In an English clause with an active voice transitive verb, the actor is the initial NP (the traditional subject) and the undergoer, when it occurs, is always the direct NP immediately following the verb. In an English passive construction, the undergoer is the subject and the actor, if it occurs, is in an adjunct PP in the periphery.

Actor and undergoer are generalizations across specific semantic argument types, as defined by LS positions. This is illustrated in Figure 4.
The x argument of all of these verbs functions as the actor, regardless of whether it is the first argument of the generalized activity verb *do* (conventionally labeled "effector"); as with *kill*, *put* and *present*, or the first argument of a two-place state predicate, as with *see*. With two-place transitive verbs like *kill* and *see*, the y argument is the undergoer. With three-place verbs like *put* and *present* (as in *Bill presented Mary with the flowers*), on the other hand, the situation is potentially more complex, and this will be discussed in sections 3 and 4.

The relationship between LS argument positions and macroroles is captured in the Actor–Undergoer Hierarchy (AUH) in Figure 5. The basic idea of the AUH is that in a LS the leftmost argument in terms of the hierarchy will be the actor and the rightmost will be the undergoer. This was true for *kill* and *put* in Figure 2. It was not true for *present*, however, and this reflects a fundamental asymmetry in the AUH: the leftmost argument in a LS (in terms of the AUH) is always the actor, but the rightmost argument is only the default choice for undergoer. This possible variation in the selection of the undergoer is the basis of the RRG analysis of dative shift and related phenomena (see section 9).

**Figure 5: The Actor–Undergoer Hierarchy**

RRG stands the notion of 'agent' rather differently from other theories. The basic notion is 'effector', which is the first argument of *do* and is unspecified for animacy. With many verbs, a human effector may be interpreted as an agent in certain contexts. If the verb lends animacy, as with murder, then the logical structure remains *DO*, which indicates that the argument must be interpreted as an agent. See Milsark (1987), Van Valin & Wilkins (1996, WLP; §3.2.3.2, for detailed discussion.

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Transitivity in RRG is defined semantically in terms of the number of macroroles a predicate takes. This is termed ‘M-transitivity’ in RRG, following Narasimhan (1998), in order to distinguish it from the number of syntactic arguments a predicate takes, its ‘S-transitivity’. The three M-transitivity possibilities are: transitive (2 macroroles), intransitive (1 macrorole), and attransitive (0 macroroles). It is important to point out in the context of this discussion of three-place predicates that there is no third macrorole, there is nothing in RRG corresponding to Primus’ (1999) notion of ‘proto-recipient’. From theoretical and empirical perspectives, there are no grounds for positing a third macrorole; see Van Valin (2004), VV05: 64-66, for detailed discussion). The theoretical label for the third argument in a ditransitive predicate, be it the picture in the English sentence Sam showed Sally the picture or the Croatian dative NP in (18a), is ‘non-macrorole direct core argument’.

The principles determining the M-transitivity of verbs are given in (6).

\(\text{6) Default Macrorole Assignment Principles}
\)

a. Number: the number of macroroles a verb takes is less than or equal to the number of arguments in its LS.
1. If a verb has two or more arguments in its LS, it will take two macroroles.
2. If a verb has one argument in its LS, it will take one macrorole.

b. Nature: for predicates which have one macrorole, one of the following holds:
1. If the verb LS contains an activity predicate, the macrorole is actor.
2. If the predicate has no activity predicate in its LS, it is undergoer.

If a verb is irregular and has exceptional transitivity, it will be indicated in the lexical entry by ‘[irreg]’, where ‘irreg’ is a variable for the number of macroroles. Examples of lexical entries for some English verbs are given in (7).

\(\text{(7) a. hill} \quad \text{[do’ (x, 0)] CAUSE [BECOME dead’ (y)]}
\)
\(\text{b. receive} \quad \text{BECOME have’ (x, y)}
\)
\(\text{c. own} \quad \text{have’ (x, y)}
\)
\(\text{d. belong (b)} \quad \text{have’ (x, y) [MRI]}
\)
\(\text{e. see} \quad \text{see’ (x, y)}
\)
\(\text{f. watch} \quad \text{do’ (x, [see’ (x, y)])}
\)
\(\text{g. show} \quad \text{[do’ (w, 0)] CAUSE [BECOME see’ (x, y)]}
\)
\(\text{h. run} \quad \text{do’ (x, [run’ (x)])}
\)
\(\text{i. drink} \quad \text{do’ (x, [drink’ (x, y)])}
\)

A major claim in RRG is that no syntactic subcategorization information of any kind is required in the lexical entries for verbs. For regular verbs, as that is required is the LS and nothing more, as in all except (7d). For most irregular verbs, only the macrorole number needs to be specified. The prepositions that mark oblique arguments with verbs like show are predictable from

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general principles and need not be listed in the lexical entry (see below, also Jolly, 1993; VVLP, §7.3.2). All of the major morphosyntactic properties of verbs and other predicates follow from their LS together with the linking system.

2.2.2 Syntactic functions, case and preposition assignment

The linking between semantics and syntax depicted in Figure 1 has two phases: first, the determination of semantic macroroles based on the LS of verb or predicate in the clause, and second, the mapping of the macroroles and other arguments into syntactic functions. The traditional grammatical relations have no theoretical status in RRG; rather, RRG posits a single, construction-specific grammatical relation, which is termed the PRIVILEGED SYNTACTIC ARGUMENT (PSA) of the construction. The non-PSA syntactic arguments in the clause are referred to as DIRECT or OBLIQUE CORE ARGUMENTS. The PSA for most (but not all) English constructions is the traditional subject. Languages have selection hierarchies to determine the PSA; the two main ones are given in (9):

(8) Privileged syntactic argument selection hierarchy:

Arg of DO > 1st arg of do' > 1st arg of pred' (x, y) > 2nd arg of pred' (x)

(9) Accessibility to Privileged Syntactic Argument Principles

a. Accusative constructions: Highest ranking direct core argument in terms of (8) [default]
b. Ergative constructions: Lowest ranking direct core argument in terms of (8) [default]
c. Restrictions on PSA in terms of macrorole status:
   1. Languages in which only macrorole arguments can be PSA: German, Italian, Dyirbal, Ijala, Sama...
   2. Languages in which non-macrorole direct core arguments can be PSA: Icelandic, Georgian, Japanese, Keresan, Kinyarwanda...

The PSA selection hierarchy in (8) is the actor part of the AUI. For a language like English, (9a) captures the fact that in an active voice clause with a transitive verb, the actor is the PSA, whereas for a language like Dyirbal (Dixon 1972), in an active voice clause with a transitive verb the undergoer is the PSA, following (9b). These are the default choices; it is possible for an undergoer to serve as PSA in a passive construction in an accusative language like English or German, and it is likewise possible for an actor to serve as PSA in an antipassive construction in syntactically ergative languages like Dyirbal and Sama (Philippines; Walton 1986). Languages also differ with respect to whether the PSA must be a macrorole: German, Italian, Dyirbal, Ijala, Sama (Mayan) and Sama restrict PSA selection to actors and undergoers only, while Icelandic, Georgian, Japanese, and Kinyarwanda allow non-macrorole direct core arguments to function as PSA (see VVLP, §7.3.1.1; VV05, §4.2). The linking system is summarized in Figure 6.
SYNTACTIC FUNCTIONS: 

- Direct Core Arguments 
- Oblique Core Arguments 

SEMANITIC MACROGROUPS:

- ACTOR 
  - DO
  - UNGERGOER

- TRANSITIVE 
  - Arg of state
  - Arg of state

- TRANSITIVE = 2

- ATTRANSITIVE = 1

Argument Positions in LOGICAL STRUCTURE

- Verb Class
- Logical Structure

STATE 
- predicate(x,y)

ACTIVITY
- do(x, predicate(x,y))

ACHIEVEMENT
- ING predicate(x,y)

SEMIFACITIVE
- predicate(x,y)

ACCOMPLISHMENT
- predicate(x,y)

ACTIVE
- CAUSATIVE
- CAUSE

CAUSATIVE
- cause(x, y)

The technical details of the linking algorithm are developed in VV05; chapter 5 presents the linking algorithm for simple sentences, while chapter 7 presents the one for complex sentences. Both Figures 1 and 6 contain double-headed arrows: this means that the linking system not only maps semantic representations into syntactic representations, but it also maps syntactic representations into semantic representations. This is, after all, part of what language users must do when they are producing and comprehending speech.

The emphasis in this paper is solely on the semantics-to-syntax mapping. The linking between syntax and semantics is governed by a very general principle called the 'Complementarity Constraint'; it states simply that all of the specified arguments in the semantic representation of a sentence must be realized in the syntax in some way, and conversely that all of the referring expressions in the syntax must be linked to something in the semantic representation of a sentence, in order to be interpreted.

Case assignment rules are formulated with reference to the linking system.

The basic rules for direct core arguments in accusative languages are given in (10) and for ergative languages in (11).

(10) Case marking rules for accusative languages:

a. Highest ranking core macrorole takes nominative case.

b. Other core macrorole takes accusative case.

(11) Case marking rules for ergative languages:

a. Lowest ranking core macrorole (in terms of (8)) takes absolutive case.

b. Other core macrorole takes ergative case.
The rules for two other important core argument cases, instrumental and dative, are given in (12); these rules apply in both ergative and accusative systems.

(12) Non-macrorole case assignment rules
   a. Assign instrumental case to non-MR b argument if, given two arguments, a and b, in a logical structure, with (1) both as possible candidates for a particular macrorole and (2) a is equal or higher (to the left of b) on the AUH, b is not selected as that macrorole.
   b. Assign dative case to non-macrorole direct core arguments (default).

Dative case is assigned only when the rules for the other cases cannot apply. In a language like English without NP case marking, there are rules for preposition assignment. The rules for to, from and with are given in (13).

(13) Preposition assignment rules for English
   a. Assign to to non-MR x argument in LS segment: \( \ldots \text{BECOME} \text{INGR} \) \( \text{pred} \)'(x, y)
   b. Assign from to non-MR x argument in LS segment: \( \ldots \text{BECOME} \text{INGR} \) \( \text{NOT} \) \( \text{pred} \)'(x, y)
   c. Assign with to non-MR y argument if, given two arguments, x and y, in a logical structure, with x lower than or equal to y on the Actor-Undergoer Hierarchy, y is not selected as a macrorole.

The rules in (13b, c) do not cover all of the uses of from and with, but they do cover the uses relevant to the analysis of three-place predicates. The rule for with is basically the same as the instrumental case rule in (12a). They will be extensively exemplified in section 3.

2.3 Focus structure

The morphosyntactic means for expressing the discourse-pragmatic status of elements in a sentence is called 'focus structure', and the approach to focus structure used in RBG is based on Lambrecht (1984). He proposes that there are recurring patterns of the organization of information across languages, which he calls 'focus types'. The three types relevant to this discussion are presented in (14), with data from English and Italian; focal stress is indicated by small caps.

(14) Focus structure in English and Italian (Lambrecht 1984)
   a. Q. What happened to your car?
      A: i. My car\'it broke DOWN.
      ii. (La mia macchina) si è ROTTA.  
   b. Q. What happened?
      A: i. My CAR broke down.
      ii. Mi si è ROTTA la MACCHINA.

  \( \text{Predicate Focus} \)
  English
  Italian

  \( \text{Sentence Focus} \)
  English
  Italian
Predicate focus corresponds to the traditional topic-comment distinction, with a topical subject NP and a focal predicate phrase which receives the focal stress. It is universally the least marked or default focus structure. In English, the subject would most likely be an unstressed pronoun, while in Italian it would most likely not occur at all; if it were overt, it would be preverbal in Italian. Sentence focus is a topicless construction in which the entire sentence is focal. In English, the subject receives the focal stress, while in Italian the subject appears postverbally and with focal stress. Narrow focus involves focus on a single constituent, in these examples, the subject. In English this is signaled by focal stress on the subject or by a cleft, e.g., *It was my car that broke down.* Italian likewise has two options: postponing the subject, or a cleft.

There is an important distinction between unmarked and marked narrow focus. All languages have an unmarked focus position in the clause; in English it is the last constituent of the core, whereas in verb-final languages it is the position immediately before the verb. Consider the following English sentence with different focal stress options.

(15) a. Dana sent the package to LESLIE yesterday.
   b. Dana sent the package to Leslie YESTERDAY.
   c. Dana sent THE PACKAGE to Leslie yesterday.
   d. Dana SENT the package to Leslie yesterday.
   e. Dana sent the package to Leslie yesterday.

Focal stress on Leslie in (a) is a case of unmarked narrow focus, while focal stress on any other constituent of the clause, as in (b)-(e), yields marked narrow focus. The most marked narrow focus is on the subject, as in (e).

3.0 Three-place predicate constructions and their alternations: marked undergoer selection

As noted in the introduction, the abstract predicates in the system of lexical decomposition employed in RRG can have only zero, one or two arguments, and therefore three-place predicates must have complex L5s composed of at least two abstract predicates; the general semantic representation for such a predicate was given in (1), repeated in (16).

(16) [do' (x, Ø)] CAUSE [BECOME predicate'(y, z)]
   a. give, present 
      [do' (x, Ø)] CAUSE [BECOME have'(y, z)]
   b. show
      [do' (x, Ø)] CAUSE [BECOME see'(y, z)]
   c. teach
      [do' (x, Ø)] CAUSE [BECOME know'(y, z)]
load  [do’ (x, Ø)] CAUSE [BECOME be-on’ (y, z)]
put   [do’ (x, Ø)] CAUSE [BECOME be-LOC’ (y, z)]

This naturally captures the observation made by Larsen (1988) and others that there seems to be an embedded predication in sentences involving verbs like these. It was mentioned in section 2.2.1 that with a LS like (16), the rightmost argument is only the default choice for undergoer, and this means that it is possible, in principle, for the y argument to be selected as undergoer. This is illustrated for give and present in (17) and (18); in these examples Kim is the y argument (recipient), and book is the z argument (theme). The alternation with verbs like give is traditionally termed ‘dative shift’, and the alternation with verbs like present may be termed the ‘transfer alternation’.

(17) a. [do’ (Pat, Ø)] CAUSE [BECOME have’ (Kim, book)]

(18) a. [do’ (Pat, Ø)] CAUSE [BECOME have’ (Kim, book)]
       Unmarked choice
       Marked choice

In (17b), the leftmost argument in the LS (Pat) is selected as actor and the rightmost argument as undergoer (the book), and because the sentence is active voice, the actor will appear in the core-initial PSA (‘subject’) position and the undergoer will occur in the immediately post-nuclear (‘direct object’) position. The third argument, Kim, is a non-macrorole argument, and therefore the proposition assignment rule in (13a) applies, assigning it to. Exactly the same analysis pertains to the default linking with present in (18b). The linking in (17b) is illustrated in Figure 7.

Figure 7: The semantics-to-syntax linking in (17a)
In (17c) and (18c), on the other hand, while the actor selection is the same, the undergoer selection is different: Kim, the y argument (recipient), is chosen as undergoer, leaving the book (theme) as a non-macrorole argument. Since this is an active construction, the actor occupies the core–initial PSA ('subject') position, and the undergoer appears in the immediately post-nuclear ('direct object') position. What happens to the non-macrorole argument, the book? It is the default choice for undergoer, but it has been 'passed over' in favor of a lower ranking argument. This is exactly the environment in which the rule for with in (15c) applies, and as (19c) shows, the book would be marked by with if the verb were present. But for the small class of dative-shift verbs, the with rule does not apply, and the result is (17c). Sentences like (17c) are often referred to as the 'ditransitive construction.' The linking in (17c) is presented in Figure 8.

![Diagram](image)

Figure 8: The semantics-to-syntax linking in (17c)

A much discussed alternation similar to (18) is the locative alternation; it is exemplified in (19) with load.

There is no small amount of controversy regarding which of the two patterned direct NPs is the 'direct object' (undergoer) (Hudson 1992). Many linguists have maintained that the book is still the 'direct object' and Kim the 'indirect object' in (16c); this will be referred to as the 'traditional' analysis. In BBS terms, such an analysis would accord to the claim that the book is the undergoer in both (16b) and (c). This is untenable, for the following reason. The BBS analysis of passive is that the undergoer appears as the PSA ('subject') in languages like English. The BBS analysis predicts that the passive acceptable to all English speakers will be Kim was given the book by Pat, whereas the other analysis predicts that the universally acceptable passive form would be The book was given Kim by Pat. In all dialects of English the first, but not the second, is considered grammatical; many speakers of English, particularly in North America, find the second form ungrammatical. This is quite unexpected on the traditional analysis, and it supports the BBS analysis (which is close to the analysis of these forms given in Relational Grammar, e.g. Perlmann 1990, mutatis mutandis).

45
(19) a. (do) (Pat, Ø) CAUSE [BECOME be-on] (trick, hay)
   b. Pat (Actor) loaded the hay [Undergoer] on the trick.
   c. Pat (Actor) loaded the truck [Undergoer] with the hay.

Unmarked choice

Marked choice

As with present, when the rightmost argument (the theme) is selected as undergoer in the unmarked linking, the non-macrocore argument is prepositionally marked, in this case by on. When the y argument (truck [location]) is chosen as undergoer, then the outranked z argument (hay) is marked by with, following (13c); the result is (19c). The basic linking pattern in the locative alternation is the same as in dative shift and the transfer alternation with present.

This kind of alternation in undergoer selection is also found in a few languages with extensive case systems; the following examples from Croatian (Zovko 2000, 2001) illustrate the alternation, which is possible with only a small number of pairs of verbs in the language, e.g. davatci/davati 'give as a gift' and ponuditi/ponuditi 'offer'.

(20) davati 'give as a gift' [do] (unuk,-, Ø) CAUSE [BECOME have'] (balc,-, cvjet-)

a. Unuc-i su balc-i davati-l-i
cvjet-e
grandson-MplNOM bx:3pl grandmother-FsgDAT give-PAST-pl
flower-MplACC
'The grandchildren gave flowers to their grandmother.'

b. Unuc-i su balc-u davati-l-i
cvjet-em.
grandson-MplNOM bx:3pl grandmother-FsgACC give-PAST-pl
flower-MplINST
'The grandchildren gave their grandmother flowers.'

The linking in (23a) is basically the same as in (17b) and (18b); the leftmost argument unak-'grandson' is selected as actor, and the rightmost argument cvjet-'flower' is selected as undergoer, leaving balc-'grandmother' as a non-macrocore core argument. The case rules in (10) and (12) assign nominative case to the actor, accusative case to the undergoer, and dative case to the non-macrocore core argument, yielding (20a). (20b) is an example of the other, undergoer selection is as in (17c) and (18c): the lower ranking argument (with respect to the undergoer part of the AUH), balc- is chosen as undergoer, leav-

minitive’, GEN ‘genitive’, IMP ‘imperative’, INST ‘instrumental’, LOC ‘locative’, M ‘mascu-
ang ejest- as a non-macrorole core argument. The default dative rule in (12b) cannot apply here, because this is not the default linking; rather, the rule for assigning instrumental case in (12a) applies, yielding (20b). Hence the case pattern in the alternation in (20) is basically the same as the prepositional pattern in (18), with 'to' being the analog of the dative case and with the analog of the instrumental case.

The same pattern obtains with the verb *ugaf* 'give' in Dyrbral, an ergative language. The alternation with *ugaf* 'give' is exemplified in (21); it is the only verb in the language which enters into this alternation.

(21) *ugaf* 'give': *(do) (dyugumbi, 0)*! CAUSE [BECOME have*{(yaqa, mirap)}*]
- Balam mirap-Ø bagun dyugumbi-çu wuga-n bagul yaqa-gu.
  NM.ABS beans-ABS NM. ERG woman-ERG give-TNS NM.DAT man-DAT
  'The woman [Actor] gave beans [Undergoer] to the man.'
- Boyi yaqa-Ø wuga-n bagun dyugumbi-çu bagun mirap-dyu.
  NM. ABS man-ABS give-TNS NM. ERG woman-ERG NM. INST beans-INST
  'The woman [Actor] gave the man [Undergoer] beans.'

The default undergoer selection is found in (21a), in which balam mirap 'beans' serves as undergoer and appears in the absolutive case. The third argument, *yaqa* 'man', is a non-macrorole argument and takes dative case. In (21b), the recipient *yaqa* 'man' is selected as undergoer and this is a marked (non-default) choice, since it is not the lowest ranking argument in terms of the ATH. Accordingly, instrumental rather than dative case is assigned, following the conditions in (12a), yielding (21b). Thus in both Croatian and Dyrbral, the occurrence of the instrumental on the non-macrorole core argument signals a non-default undergoer choice, just as with 'do' in English in (18c) and (19c).

There are three-place predicates of dispossession and removal which deserve mention, e. g. *take, drain*. Dispossession verbs like *take* and *steal* have the LS in (22), and they do not allow variable undergoer selection (but see below regarding *rob* vs. *steal*).

(22) a. *(do' (x, Ω)) CAUSE [BECOME NOT have*{(y, z)}* & BECOME have*{(x, z)}]*
  - Christ took the book from Dana,
  - b. *(do' (Chris, Ω)) CAUSE [BECOME NOT have*{(Dana, book)}* & BECOME have*{(Chris, book)}]*

With *take*, only the default undergoer selection is possible, i. e. only *book* can be the undergoer, and because *Dana* is a non-macrorole argument, the...
rule in (13b) applies, assigning from. Removal verbs like drain and empty do permit variable undergoer selection; this is exemplified in (23).

(23) a. [do' (Pat, 0)] CAUSE [BECOME NOT be-in'] (pool, water')

As in (22b), the non-macrorole arguments is assigned from by (13b) in the default linking. An interesting feature of removal verbs is that when the non-default undergoer selection is made, the theme is marked by of instead of with. This also holds for dispossessive verbs which lexicalize the non-default linking, e.g. rob (see (25c) below). The conditions for the application of of are the same as for with: transfer and other verbs, and accordingly, of can be treated as the variant of with that marks the non-macrorole argument in a non-default linking from LSs containing '... BECOME NOT pred'...

It is possible to have a single LS for both transfer and dispossessive verbs; it is given in (24).

(24) [do' (w, 0)] CAUSE [BECOME NOT have'] (y, x) & BECOME have' (x, y)

If w = x, then the LS is transfer, in which the theme (y) goes from the possession of w to the possession of z. This is the case in (17) and (18), for example. If, on the other hand, w = z, then the LS is dispossessive, in which the theme (y) goes from the possession of z to the possession of w. This is the case in (22), for example.

There are a number of general provisions that should be considered here. First, many languages do not permit this kind of variable undergoer choice with a given verb. Second, in languages that do allow it, it is very often restricted to a very limited number of verbs. English is unusual in allowing variable undergoer selection with a large number of three-place verbs; indeed, in English the question is usually put in terms of why certain verbs don't permit the alternation, e.g. donate, put, rather than the other way around. Third, there are often pairs of verbs in a language, each one lexicalizing one of the possible undergoer choices, e.g. rob vs. steal in English, or their Italian counterparts, scagiare 'rob' vs. rubare 'steal'. The English pair is given in (25).

(25) a. [do' (Kim, 0)] CAUSE [BECOME NOT have' (bank, $50,000) & BECOME have' (Kim, $50,000)]

5 See Pinker (1986) for a semantic analysis of the various classes in English; he attempts to provide a semantic characterization of such alternating class of verbs in order to explain why certain verbs do not fall into them.
Given the LS in (25a), each verb lexicalizes one of the possible undergoer choices: streichen lexicalizes the default selection, in which the lowest ranking argument in terms of the AUP is the undergoer, while rob lexicalizes the non-default selection. Fourth, it is somewhat unusual cross-linguistically for this alternation to be signaled solely by differences in case or prepositions. The more common pattern is one in which there is some kind of morpheme on the verb which signals the non-default undergoer selection in addition to the different case patterns. This is illustrated in the following alternations in German and Indonesian (Dardjojadi 1971).

(26) German streichen bestreichen 'spread'
    [do' (Max, spread 'Max, Farbe')] CAUSE BECOME be-on
    (Wand, Farbe)
    a. Max hat die Farbe an die Wand gestrichen.
    have-SgPRES the.FsgACC paint on the.FsgACC wall spread.PSTP
    'Max [Actor] spread the paint [Undergoer] on the wall.'
    b. Max hat die Wand mit der Farbe bestreichen.
    have-SgPRES the.FsgACC wall with the.FsgDAT paint
    spread.PSTP
    'Max [Actor] spread the wall [Undergoer] with the paint.'

(27) Indonesian -kan applicative construction
    ACT-buy chicken the for
    'Ali [Actor] bought the chicken [Undergoer] for Hasan.'
    ACT-buy-LOC chicken the

Each pattern in the German examples is associated with distinct but related verb forms: the default linking with streichen and the non-default linking with bestreichen, both meaning 'spread'. The Indonesian examples illustrate a type of applicative construction, in which a non-argument, the beneficiary NP Hasan, is treated as an argument of the verb in (27b), yielding a derived three-place verb. The suffix -kan signals the non-default undergoer choice in this example. Evidence for the difference in undergoer choice comes from passive sentences, because in both German and Indonesian, only the undergoer may be the 'subject' in a passive construction. In the passive of (25a) die Farbe 'the paint' would be the 'subject', and in the passive of (26b) die Wand 'the wall' would be 'subject'. The passive of (27a) would have ayam itu

6 Interestingly, some younger speakers of English have extended the unmarked pattern to rob, yielding *'Kim robbed $60,000 from the bank. Note that what they have done is take the verb which lexicalizes the marked pattern and use it to express the unmarked pattern, treating it as an alternating verb. However, no speakers permit *'Kim stole the bank of $60,000, in which the use of verb lexicalizing the unmarked pattern is extended to include the marked pattern.
'the chicken' as 'subject', while the passive of (27b) would have Have as 'subject'. Many applicative constructions are of the type exemplified in (27), i.e. they involved a non-default undergoer choice; see van Valin (1993b, 2005: 121-3), Roberts (1995) for a general discussion of applicative constructions in RRG.

The semantics of the these constructions has long been an issue, going back at least to Andersen (1971). Two observations stand out. First, there is a difference in which NP is interpreted as most affected. A classic case is (19): in (19a) all of the hay is loaded onto the truck, which may or may not be full, whereas in (19b) the truck is completely filled with hay, without any implication as to whether all of the hay is loaded or not. Second, there is some sense that the recipient-as-undergoer forms are more telic than the theme-as-undergoer forms. Consider the contrast in (28).

(28a) a. Dana taught French to the students for six months in six months.
b. Dana taught the students French in six months for six months.

While all of these possibilities are acceptable, the most natural combinations are the first ones, i.e. for six months in (28a) and in six months in (28b). This suggests that teach the students French implies that the process is completed, whereas teach French to the students carries no such implication. Moreover, this is related to the affectedness issue. This can be seen in (29).

(29a) a. Dana taught French to the students, but they didn’t learn anything.
b. ??Dana taught the students French, but they didn’t learn anything.

The first sentence is fine, but the second one seems to be internally contradictory, and this is because having the students as undergoer signals that the students were affected by the action of teaching, i.e. they learned something; hence the second clause contradicts the first, resulting in the contradiction. Since the goal of teaching is to induce learning, indicating that the students are affected by the process implies that they have learned something, and thus it is possible to construe the process as complete. This is why in six months is more natural in (28b). Since there is no implication of learning in (28a), there is likewise no implication that the process has reached a possible completion point, and consequently for six months is more natural in (28a). Thus, in the ditransitive form there is an implication that a result state obtains, e.g. all the hay is on the truck, or the students know French.

The same implications (or lack thereof) can also be seen in some transfer alternations, as in (30).

(30a) a. I sent the package to Mary, but she didn’t get it.
b. ??I sent Mary the package, but she didn’t get it.

The sense of contradiction is not as strong in (30b) as in (29b), but nevertheless (30b) is not as natural as (30a). By coding the recipient as undergoer in (30b) the speaker is implying that Mary is somehow affected by the transfer, and her actually receiving the package would be most plausible interpretation, hence the contradictory implication of the second clause. Note that the
package, the theme, is affected by being transferred, regardless of whether it reaches its destination or not, and that is why there is no implication of completion in (30a).

There are many instances of this kind of alternation which do not seem to differ significantly along either of these semantic parameters, and under these circumstances it has been argued, e.g. Erteschik-Shir (1979), Givón (1984), that discourse-pragmatics may play a role in determining which form occurs.

In English, as in most languages, more topical material strongly tends to precede more focal material, and in English, unlike many other languages, e.g. German, Croatian, it is not possible to simply order the recipient and theme NPs in terms of their relative pragmatic salience. Rather, the more topical of the two arguments would be selected as undergoer, since the undergoer is the leftmost of the post-nuclear constituents. This tendency can be seen in the following examples.

(31) a. Leslie gave a book to the girl.
   b. Leslie gave the book to a girl.
   b'. Leslie gave a girl the book.

In the default (unmarked) syntactic pattern, (31a, b) it does not seem to matter which NP is more salient (here indicated by definiteness, in a bit of an oversimplification), but in the marked pattern, (31a'; b') it appears that the topicality based order is strongly preferred. One way of looking at the problem is that it combines a non-default (marked) syntactic pattern with a marked pragmatic pattern (cf. (15)), yielding the same focus structure that would be found in the unmarked syntactic pattern combined with the unmarked pragmatic pattern, i.e. the NP a girl as the most focal NP in the clause as in (31b). This 'double markedness' of the form leads to its reduced acceptability, and this also explains the much discussed asymmetry in extraction possibilities between the two patterns.

(32) a. Who did Leslie give the book to _? [unmarked syntax, unmarked narrow focus]
   a'. What did Leslie give _ to the girl? [unmarked syntax, marked narrow focus]
   b. What did Leslie give the girl _? [marked syntax, unmarked narrow focus]
   b'. *Who did Leslie give _ the book? [marked syntax, marked narrow focus]

Here again a doubly marked form, i.e. (32b'), is used to signal the same meaning as the maximally unmarked form, i.e. (32a), and the result is greatly reduced acceptability, if not outright ungrammaticality.

This brings up the issue of the syntactic properties of the ditransitive construction, which have been much discussed in the principles-and-parameters (P&P) literature, e.g. Bars & Lasnik (1986), Larsen (1998). Two will be ana-
lyzed here: quantifier scope and binding. The basic phenomena are presented in (33) and (34).

(33) a. The teacher assigned a homework problem to every student.
    [ambiguos]
    b. The teacher assigned a student every homework problem.

(34) a. I showed John to himself in the picture.
    a'. *I showed himself to John in the picture.
    b. *I showed John himself in the picture.
    c. *I showed himself John in the picture.

Under P&P assumptions, a quantifier which takes wide scope must asymmetrically e-command the other quantifier, and likewise the antecedent of a reflexive anaphor must asymmetrically e-command the anaphor. The facts in (33) and (34), among others, led Larson (1988) to propose a 'VP-shell' analysis of the ditransitive construction, in which the first NP (recipient) asymmetrically e-commands the second NP (theme). This account also crucially involves the raising of the both the verb and the recipient NP. Such an analysis would be impossible in RRG, for two reasons. First, as Figure 2 shows, RRG treats the two NPs in the ditransitive construction as sisters to the nucleus, and therefore the undergoer is not higher in the tree than the non-macrorole NP. Second, since RRG is a monosstral theory, no transformational rules such as raising can be posited.

Neither the account of quantifier scope nor the account of reflexive binding in RRG refers to constituent structure, and therefore these facts are not a problem for the syntactic structure proposed in Figure 2. The RRG approach to quantifier scope is presented in VVLP, 5.5, and its essential features will be sketched here. Following the proposals of Spall, et al. (1986) and Kuno (1991), the interpretation of quantifier scope is strongly influenced by focus structure, with the basic principle being that more topical quantified NPs have scope over less topical quantified NPs. It has already been established that in the ditransitive construction the theme NP occurs in a more topical position, and moreover that treating it as less topical than the following NP is strongly disfavored, as (31b') and (32b') clearly show. Hence this correctly predicts that a student in (33b) should have wide scope over every homework problem. Reflexive binding is treated at the semantic level, as a relationship among arguments in LS, following the general approach of Jackendoff (1972, 1992); the RRG analysis is presented in VVLP, 7.5. The part of the analysis that is relevant to this discussion is the Role Hierarchy Condition, which states that "the reflexive pronoun must not be higher on [131] (as applied to the selection of PSAs in the language) than its antecedent" (VVLP: 398). For English, the PSA selection principle is Actor > Undergoer > Other, and the facts in (34) follow from this, as illustrated in (35).


Undergoer binds Other
4.0 Typological variation in three-place predicate constructions

The patterns described in section 3 are found in many languages, but there are additional patterns which must be accounted for. Haspelmath (2006) claims that there are three major alignment types with respect to ditransitive constructions: direct-indirect object, primary-secondary object, and neutral. The discussion thus far has dealt only with the first of these. In the following sections, the other two, along with some not mentioned by Haspelmath, will be analyzed. The challenge in this section is to see if the basic RRG approach outlined in section 3 can handle them.

4.1 Primary object languages

Dryer (1986) first proposed the notion of 'primary object language', based on his observation that in some languages the only pattern that occurs with three-argument verbs corresponds to (17c). Lakhota provides a simple example of this.

(36) a. Məthki bɛni ʃəka eya wiθi-wiθi-pi.
   bear the those dog some 3plU-kill-3plA
   'Those bears killed some dogs.'

b. Wiyə ki məthko wə hɔkiʌa ki bɛni wiθi-wiθi-0-xipəzo0-0-wiθi-kipəko.
   woman the bear a boy the those 3plU-3sgA-cause/3sgU-3sgA-cause
   'The woman showed those boys a bear.'

c. kipəko 'show' [do0wiyəa, 0̱ CAUSE [BECOME see'] (hɔkiʌa [y],
   məthi [z])]

In (36a) with a transitive verb, the plural animate undergoer is coded by the prefix wiθi- on the verb. With a three-argument verb like kipəko 'show', which of the non-aux argument is coded as the undergoer? As (36b) clearly indicates, it is not the lowest ranking argument in the LS, as would be the case in a construction like (17a), but rather the higher ranking y argument in the LS that is selected as undergoer. Moreover, there is no construction in Lakhota with a three-argument verb in which the z argument would be the undergoer. Because this pattern differs from the traditional 'direct object-'in-direct object' pattern of (17a) and (20a), Dryer refers to it as the 'primary object-'secondary object' pattern, with hɔkiʌa ki bɛni 'those boys' as the pri-
mary object and mašó waq 'a bear' as the secondary object in (35b). In the English example in (17c), Kim would be the primary object and he book the secondary object.

In RRG terms, primary object languages permit only the marked linking possibility in terms of the AUH. How can this be explained? Guerrero & Van Valin (2004) propose that in such languages, undergoer selection is based on the principle 'select the second highest ranking argument in the LS as undergoer'. With a simple transitive verb, undergoer selection will work exactly the same way as in direct-indirect object languages, but when the verb has three arguments, this will always select the y argument as undergoer, never the z argument.

The application of this analysis beyond ditransitive verbs can be seen dearly in the analysis of causative constructions in primary object languages. Yaqui (Uto-Aztecan) is a primary object language (Folsa 2000), and the following examples from Guerrero & Van Valin (2004) illustrate three-place verbs and causatives.

(37a) a. Joan-Ø Peo-ta ?uka vaci-ta mišk-wa-k. Joan-NOM Pedro-ACC DET-ACC corn-ACC give-PERF 'Joan gave Pedro the corn.'
b. Peo-Ø ?uka vaci-ta mišk-wa-k. Pedro-NOM DET-ACC corn-ACC give-PASS-PERF 'Pedro was given the corn.'
b'. *Utu vaci-Ø Peo-ta mišk-wa-k. DET-NOM corn-NOM Pedro give-PASS-PERF 'The corn was given Peter.'

In (37a) both non-PSA NPs are in the accusative case; which one is the undergoer and which one is the non-macrocode direct core argument? The answer is given by passive; in Yaqui only the undergoer can be PSA in a passive, and the actor is obligatorily omitted. Of the two logically possible passive versions of (37a), only (37b) with the recipient as PSA is grammatical. Hence the recipient Peo 'Pedro' is the undergoer in (37a). The facts in (37) could be accounted for by either of the analyses given above. A causative construction involving mišk-wa- 'give' presents an interesting problem, since there will be at least two non-PSA animate NPs; which one is the undergoer of the derived causative verb mišk-ta- 'cause to give? Again, passive provides the crucial evidence.

(38a) a. Utu mašjo usi-ta manzana-ta yoom-ta mišk-ta-wa-k. DET-NOM teacher child-ACC apple-ACC man-ACC give-CAUS-PERF 'The teacher made the child give the man the apple.'
b. Utu usi-Ø manzana-ta yoom-ta mišk-ta-wa-k. DET-NOM child-NOM apple-ACC man-ACC give-CAUS-PASS-PERF 'The child was made to give the man the apple.'

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b’. *Yoem-Ø usi-ta mansasa-ta mïk-tua-wa-k.
   man-NOM child-ACC apple-ACC give-CAUS-PASS-PERF
b’’. *Mansana-Ø usi-ta yoem-Ø mïk-tua-wa-k.
   apple-NOM child-ACC man-ACC give-CAUS-PASS-PERF
c. [do’ (maqto, Ø)] CAUSE [ido’ (usi, O)] CAUSE [BECOME have’
   (yoem, mansasa’)]

The only grammatical version of (38a) is (38b) with the causee usi ‘child’ as FSA, and this shows that the undergoer in (38a) is usi-ta ‘the child-ACC’. With respect to the LS of (38a) in (38c), the ‘second highest argument in LS’ principle for selecting the undergoer correctly identifies usi ‘child’ as the unique undergoer choice.

Yaqui presents a rather complex situation with respect to three-place predicates. There are three classes in the language, according to Guerrero & Van Valin (2004): a class which permits only the recipient or second highest ranking argument as undergoer, as illustrated in (37) and (38), a class which permits only the theme as undergoer (e. g. nanko ‘sell’), and a class which permits both possibilities (e. g. benta ‘spread’). This complexity led to the revision of the AUII presented in Figure 9

<table>
<thead>
<tr>
<th>ACTOR</th>
<th>UNDERGOER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arg. of 1st arg. of 1st arg. of 2nd arg. of</td>
<td>Arg. of state</td>
</tr>
</tbody>
</table>

DO  do’ (x,..., pred’ (x), y) pred’ (x, y) pred’ (x)

Actor selection: Highest ranking argument in LS
Undergoer selection:
Principle A: Lowest ranking argument in LS
Principle B: Second highest ranking argument in LS
Principle C: Either Principle A or Principle B

Figure 8: Actor-Undergoer Hierarchy (revised)

Actor selection is unaffected. There are two principles of undergoer selection, Principle A, which yields the direct-indirect object pattern, and Principle B, which yields the primary-secondary object pattern. In addition, there is a third variable, Principle C, in which verbs permit both of the possibilities of Principles A and B. In terms of Yaqui, nentb ‘sell’ is a Principle A verb, nentb ‘give’ is a Principle B verb, and benta ‘spread’ is a Principle C verb. English shows the same distinctions, although the number of verbs of each type is very different from Yaqui: donate and put are Principle A verbs, envy is a Principle B verb, and most three-place predicates follow Principle C. Thus while there are primary-object languages in which verbs seem to follow Principle B primarily or exclusively, e. g. Lakhto, Malsassy, there are others such as Yaqui, which have verbs of all three types.
4.2 Neutral alignment

In both direct–indirect object and primary-secondary object languages there is an asymmetry: with three-place predicates: one of the two non-actor core arguments has syntactic properties, e.g. the ability to become PSA in a passive construction, which the other one lacks. This was shown clearly for English and Yaqui above, and this is captured in RRG terms of undergoer selection. There are languages, however, which seem to lack any such asymmetry among the non-actor core arguments; in other words, in such languages any non-actor direct core argument can serve as the PSA in a passive construction. This is what Haçelmat refers to as ‘neutral alignment’. Kinyarwanda (Kimenyi 1980) is the best known and most discussed example of such a language. In (30), the ditransitive verb -hé ‘give’ occurs with the applicative suffix, yielding a clause with three non-actor direct core arguments, and as the examples in (b)-(d) show, any of these three can be selected to be the PSA in a passive construction.

(30) a. Umugóre a-ré-he-er-a umugabo imbwi ibirygo.
    woman 1-PRES-give-APPL-MOOD man dog food
    ‘The woman is giving food to the dog for the man.’
    b. Iibiro bi-ré-he-er-w-a umugabo imbwa n’umugóre.
       food 8-PRES-give-APPL-PASS-MOOD man dog by woman
       ‘The food is being given to the dog for the man by the woman.’
    c. Imbwa i-ré-he-er-w-a umugabo ibirygo n’umugóre.
       dog 4-PRES-give-APPL-PASS-MOOD man food by woman
       ‘The dog is being given food for the man by the woman.’
    d. Umugabo a-ré-he-er-w-a imbwa ibirygo n’umugóre.
       man 1-PRES-give-APPL-PASS-MOOD dog food by woman
       ‘The man benefits from the woman giving food to the dog.’

    [Lit: ‘The man is being given food to the dog by the woman.’]

The canonical passive construction cross-linguistically has the undergoer as the PSA, but as these examples make quite clear, the passive in Kinyarwanda is not so restricted. Since there cannot be multiple undergoers in a single core, the simplest analysis of the Kinyarwanda passive is that it allows non-macrorole direct core arguments to function as PSA (see (9c2)); in other words, passive is -A = PSA, where ‘-A’ includes all direct core arguments of the verb.

4.3 The Saliba directional strategy

Sziba is a Western Oceanic language spoken in Papua New Guinea (Marlett 1999). While most of the three-argument verbs follow the primary object pattern illustrated by Lakhota and Yaqui above, there is one verb of giving, le, with unique properties: first, it is used to express first or second recipient only, and second, it takes only two arguments in the core it heads, not three. It is illustrated in (40).

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(40) a. Bosa kasega ye le-ya-ma.
   basket one 3sg give-3sgU-thither
   'He gave me/us one basket.'

b. Bosa kasega ye le-ya-wa.
   basket one 3sg give-3sgU-thither
   'He gave you (sg/pl) one basket.'

It was claimed at the beginning of the paper that all three-place verbs have the LS in (1) (or some variant thereof), and yet the construction in (40) is a two-argument construction in which the recipient cannot be expressed as an argument at all. How can the properties of le- 'give' be accommodated within the framework sketched in section 2?

It was mentioned in section 2.1 that clause structure in ERG has two projections, a constituent projection and an operator projection. The operators in the operator projection are modifiers of the different layers of the clause, and they are represented in the semantic representation of the sentence (see VVLP, §§4.4.2). One of the operators is directional, and its place in the semantic representation of sentences like those in (40) is the key to their analysis. What is distinctive about le- is that it obligatorily takes a directional operator, and this operator is indexed with an argument position in the LS which is obligatorily left lexically unfilled. The lexical entry for le- is given in (41).

(41) $\langle\ldots, y, \emptyset\rangle$ TOWARDS SPEAKER $\langle\ldots, \{do\} (x, 0)\rangle$ CAUSE
   [BECOME have' (y, 2)] $\langle\ldots, y\rangle$ = lexically unfilled

If the value of the directional operator is +TOWARDS SPEAKER, then the speaker will be interpreted as the $y$ argument, yielding sentences like (40a); if the value is −TOWARDS SPEAKER, then the addressee will be interpreted as the $y$ argument, yielding sentences like (40b). Because the directional operator is specified in the lexical entry for le-, it is obligatory, and because the referential content of the $y$ argument is deducible from the directional operator, the Completeness Constraint is satisfied. Thus, the interesting pattern in (40) can be readily accounted for within the ERG linking system.

4.4 The Dyrchal genitive construction

It was mentioned that in addition to the patterns in (21) the Dyrbral verb *wugol* 'give' enters into a third pattern, which is exemplified in (42).

(42) Balam mirap-Ø bangun dyugumbi-ų wugol baaul yagų-ų
   NM.ABS beans-ABS NM.ERG woman-ERG give-TNS NM.GEN
   man-GEN
   'The woman [Actor] gave man's beans [Undergoer] (to him).'

It does not matter for this analysis if the directional operator is +TOWARDS SPEAKER or −TOWARDS ADDRESSEE.
In this pattern the theme is the undergoer in the absolutive case, and the recipient appears in the genitive case, which is the case of possessor NPs. The fact that the genuine NP occurs separated from the absolutive NP in (42) does not show that it is not an adnominal modifier, because Dyirbal freely allows discontinuous NPs. It appears, then, that, as in the Šaliba directional construction, there are only two core arguments in this construction. Dixon notes that this is the most frequent pattern with wagul, and he goes on to make the following comment about the construction in (42):

... [understood: beans are given to person to whom they belong]. This kind of construction is consistent with the Dyirbal's belief that something must belong 'by right'; there is very little spontaneous non-necessary giving, but a great deal of necessary giving, according to the people's habits of sharing most things with their relatives, etc. (1972: 237)

It is clear, then, that the possessor of the theme is also the recipient. This can be captured if we assume that the LS for wagul is as in (43).

(43) [do' (x, y)] CAUSE [BECOME have' (y, have' (y, z))]

y may be lexically filled only once

Possessive NPs are represented in LS as 'have' (x, y)', in which the possessor is the first argument of 'have' and the possessed N is the second argument; the head of the NP is underlined, e. g. Dona's car is in the garage, be-in' garage, [have' (Dona, gar)] (see VVL, §4.7.3). In (43) the recipient argument appears twice, once as the recipient of wagul 'give' and once as the possessor of the theme. It may be lexically instantiated only in one of these positions. If the argument position in the LS for wagul is filled, then the result is (44), which is the revised version of the LS in (21); both linking patterns are compatible with this LS.

(44) [do' (dyugumil, O)] CAUSE [BECOME have' (y, have' (y, mirap)])

If the possessor argument within the LS of the NP is lexically filled, then the result is the LS in (45), which is linked to (42).

(45) [do' (dyugumil, O)] CAUSE [BECOME have' (y, have' (y, mirap))]

As in the Šaliba construction, the Completeness Constraint is satisfied, because the value of the y argument of wagul can be deduced via the coindexing with the possessor of mirap 'beans'. Thus, the three linking patterns of wagul 'give' in Dyirbal can be seen to follow from the LS in (43).
4.5 The Kayardild proprietary strategy

Kayardild, an Australian language (Evans 2000), uses an interesting approach to expression possession which is also involved in the coding of three-place predicates. Kayardild uses the ‘proprietary’ case to expression possession, both in possessive predications and within NPs. This is illustrated in (46).

(46) a. Ngada
    kiyarrng-kuru makuwuru
    1sgNOM two-PROP woman-PROP
    ‘I have two wives.’ [lit. ‘I am with two women.’]

   b. Niya
    karrngi-ja dun-kuru-ya
    SgNOM keep-ACT husband-PROP-MLOC woman-MLOC
    ‘He is living with a married woman.’ [lit. ‘he keeps a woman with a husband.’]

(46a) is a possessive predication which does not contain a possessive predicate overtly. The closest Indo-European analog to this would be the Russian possessive construction, e. g. u menja knižu [at me. GEN book. NOM ‘I have a book’ [lit. ‘at me is a book’]. But in the Russian construction, the possessed NP is the nominative ‘subject’, whereas in the Kayardild construction the possessor NP is the nominative ‘subject’. Hence the linking in the two constructions is quite different; the two LSs are given in (47).

(47) a. Russian: be-at’ (1sg, kniž-)
     b. Kayardild: have’ (1sg, kiyarrng– maku-)

These are intransitive stative constructions, and following (68d), their single macrorole would be an undergoer. In the Russian LS, kniž- ‘book’ would be selected as undergoer and appear as the PSA in the nominative case, while the 1sg argument would appear as the object of the preposition u ‘at’, which assigns genitive case in this instance. If the same linking were to apply to the Kayardild LS, kiyarrng– mahu– ‘two women’ would be the undergoer and appear in the nominative case (assuming the rules in (11)), and the 1sg argument would appear as a non-macrorole argument in the dative, yielding something like the German constructions with gehören, e. g. Das Buch gehört mir [the book. NOM belongs me. DAT] ‘The book belongs to me’. But this is not what is found in the language at all. Rather, the first argument in the LS, the possessor, is selected as undergoer, which is a non-default selection in terms of the AUH. The second argument, kiyarrng– mahu– ‘two women’, has been ‘passed over’ for undergoer selection, and in this situation a rule like (12a) comes into play. It appears that the proprietary in Kayardild is analogous to with/of in English and to the instrumental case in other languages in signaling a non-default undergoer selection in terms of Principle A of the AUH.

Similar considerations are relevant to the NP–internal use of the proprietary case. Consider the two possible realizations of the possessive NP LS have’ (man, car) (see VVLP, §4.7.3). The default realization is that car is the
head of the possessive NP (analogous to undergoer selection in clausal structures), and if car is selected as head, then man appears in the genitive case, i.e. the man's car. It is also possible to select car as the head of the NP; this would be a non-default selection, and the passed over default choice for head would occur in a PP headed by with, i.e. the man with the car. In Kayardild the equivalent of car in this NP would be in the propositive case, which appears to be the only option in the language. Thus in both possessive predications like (49a) and possessive NPs like the one in (49b) Kayardild permits only what is considered the marked selection for undergoer or head from a cross-linguistic perspective, and like with/of in English and the instrumental case in other languages (e.g. Dyirbal, Croatian), the propositive case marks what would be the default choice in terms of Principle A of the AUH.

Could one analyse Kayardild as a primary-object language, i.e. one that follows Principle B of the AUH? The propositive case can also mark arguments of verbs of transfer and dispossession, and given its function in the constructions in (46), it may be predicted that it will be used to mark the lowest-ranking argument in the LS, which is not selected as undergoer. This is in fact the case, as the following examples attest.

(48) a. ... nguki-wuru wu-ja dangka-y. water-PROP give-ACT person-MLOC
    '... [I] will provide mankind with water.'
    
    b. Marni-ja dath-n-a dangka-a wumburung-kur! deprive-IMP that-NOM man-NOM spear-PROP
    'Deprive that man of [his] spear!'

The LS in (48a) would be the basic transfer LS in (1), and the propositive case marks the z argument, the lowest ranking one. In (48b), the LS would be like the one in (22), and again the propositive marks the z argument. Thus, there seems to be a strong analogy between the use of the propositive case in Kayardild and the use of with/of in English and the instrumental case in other languages with verbs of transfer and dispossession. And in terms of undergoer selection, at least in (49b), the language appears to follow Principle B of the AUH. However, Principle B does not explain the pattern in (49a); as noted above, this is a M-intrinsic state predication, and the leftmost argument in the LS is selected as undergoer, and within the NP the leftmost argument is also selected as the head. A possible generalization across all of these forms is that when there is a two-place possessive state predication, be it in the clausal nucleus or within an NP, the leftmost argument is selected as the undergoer, and the non-macrorole (core) or non-head (NP) argument receives the propositive case.

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8 The technical formulation of the with assignment rule (VVLX 381) covers both of the situations discussed in this section.
5.0 Conclusion

This paper has presented the Role and Reference Grammar approach to the analysis of three-place predicates, starting from English verbs of transfer, dispossession and removal and showing how it can apply to three-place predicates in a typologically wide range of languages, including constructions which do not superficially resemble canonical ditransitive constructions. The RRG linking system could handle all of the variations and still capture the typologically distinctive attributes of each of the constructions. This satisfies one of the main goals of RRG: to be a theory of universal grammar which can make strong cross-linguistic claims yet be flexible enough to capture and express the distinctive properties of different linguistic systems.

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Analiza tromjesnih predikata na temelju Gramatike uloga i referenci


To će biti u sredinu znanstva ove rasprave. RRG je jednorazina teorija na načinu isključuje analize koje uključuju duhanske strukturne prikaze i pravila pominjanja, zaželi se u tome vezani uz ove prikaze predstavljaju zanimljive inzor za jednorazinske teorije kao što je RRG.

U presmeni će radi o analiziranih aspekti Gramatike uloga i referenci relevantnih za analizu tromjenskih predikata. Među njima su teorija rečenice strukture poznata kao »logička rečenica struktura«, sustav leksičke rutina, teorije oblogne strukture te teorija posvećena rečenici strukturi i rečenici u engleskom i jezičnim unutarnjim tipa. Dođe se do analize tromjenskih predikata u engleskom jeziku i rečenici istog tipa. Dođe se do analize tromjenskih predikata u engleskom i rečenici istog tipa. Dođe se do analize tromjenskih predikata u engleskom i rečenici istog tipa. Dođe se do analize tromjenskih predikata u engleskom i rečenici istog tipa. Dođe se do analize tromjenskih predikata u engleskom i rečenici istog tipa.

Uz završnim će radiu dozvaditi kako RRG analizirana cijeli načina na koji se tromjensi predikati označuju u različitim jezicima. Prvo je obrađen Kiriputem, u kojem bi za koji argument koji nije činitelj može postati subjektni subjektni rečenice. Nakon toga su obrađeni u tome sajtimi jezični objekti u kojima se tromjensi predikati označuju kako je nezavisniji Trompet primatelj. Treci je tema pomalo neobična strategija u ocjenjivanju rečenice šećera. Gledajući u tome jeziku dopunjavaju samo dva jezgra u principu, a primatelj se uvijek izraša direktnom tim obilježenjem na glavu. Otvorenje je tema jedna konstrukcija u Dječaku, materijalne oseb- ličenjke značka, u kojem je primatelj kodiran kao vlastiti čovjek koji se daje. Na kraju je obra- den još jedan osebličenjki, Kiparič, u kojem se posmatra izraz integriran vlastiti čovjekem kodom (engl. «prospective case»). U njemu je vlastiti nezavisnije, a to je suprotno indoeu- ropskim pitanjima konstrukcijama za izražavanje posjedovanja.

Key words: Role and Reference Grammar, three-place predikates, semantic representation, universal grammar.

Ključne riječi: gramatika uloga i referenci, analiza predikata, semantička reprezentacija, uni- versalna gramatika.