

RRG—Abstract grammar vs. processing model

Robert D. Van Valin, Jr.

University at Buffalo & Heinrich Heine University Düsseldorf

Role and Reference Grammar strives to be a component of a model of the communicative competence of a native speaker of a human language, and following Kaplan & Bresnan (1982) it is incumbent upon theories making such a claim to be implementable in testable models, psycholinguistic or computational, of language processing. It has often been pointed out that the bidirectional linking algorithm of RRG reflects the fact that a speaker maps from message to form (semantics to syntax), while a hearer maps from form to message (syntax to semantics). Nevertheless, RRG is an abstract grammar and not a processing model. Van Valin (2006) attempted to make the RRG linking system compatible with the results of psycholinguistic investigations of sentence processing. With respect to production, the RRG linking system was found to fit well with the Bock & Levelt (1994) psycholinguistic model of the speaker. With respect to comprehension, the primary focus of the 2006 paper, the key idea was the precompiling of aspects of the RRG linking system in semantic and syntactic representations in order to facilitate linking. The bare, underspecified syntactic templates proposed in Van Valin & LaPolla (1997), Van Valin (2005) and other works were enriched with morphosyntactic and semantic information, which compressed the syntax-to-semantics linking algorithm and turned them into LINKING TEMPLATES [LTs]. In the lexicon, logical structures [LSs] were likewise augmented with information relevant to linking, e.g. macrorole and adposition assignments. The LTs and enhanced LSs made it possible for RRG to be compatible with the results of psycholinguistic investigations of sentence processing.

A number of important issues remained unresolved in the 2006 paper. What role, if any, do the LTs play in semantics-to-syntax linking? Are there two sets of syntactic templates, LTs and bare, underspecified templates? Are there two sets of LSs, the traditional minimal ones to which macroroles, case, and adpositions are assigned, and the enhanced, precompiled LSs? What is the status of the generalizations expressed by the Actor-Undergoer hierarchy, the PSA selection hierarchy, the case and adposition assignment rules, in terms of the LTs and enhanced LSs?

These questions can all be answered if RRG as an abstract model of grammar is distinguished from RRG as a processing model. Both are necessary if Kaplan & Bresnan's condition on psychological reality is to be met. Saussure's *langue-parole* distinction and Chomsky's competence-performance distinction are other reflections of this opposition. The abstract model of grammar is necessary, for both theoretical and practical reasons. From a theoretical perspective, the abstract grammar expresses the generalizations that investigators of the syntax-semantics-pragmatics interface have uncovered, as well as typological comparisons. This is a very valuable enterprise. From a practical perspective, the abstract grammar is the source of the principles and constraints that are precompiled in the LTs and enhanced LSs. These generalizations expressed as hierarchies and assignment rules in the abstract grammar are meta-generalizations in the processing model, i.e. generalizations across the whole range of LTs and augmented LSs. The processing version of RRG constitutes a test of the abstract grammar against the demands of on-line sentence processing. Its success in this domain represents a confirmation of the validity of the components of the abstract grammar. See Figures 1 and 2 for depictions of the organization of each.

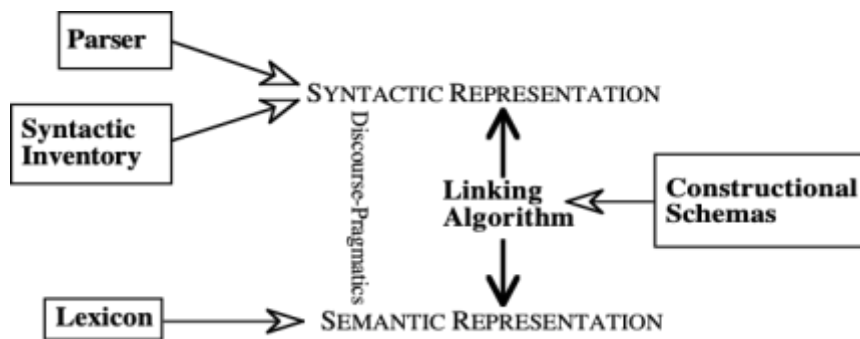


Figure 1: RRG as an abstract model of grammar

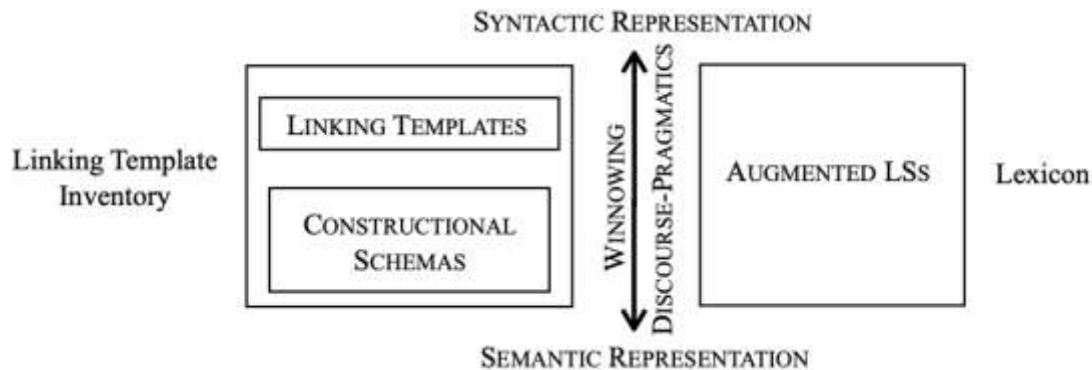


Figure 2: RRG as a language processing system

References:

- Bock, Kathryn & Willem Levelt. 1994. Language production: grammatical encoding. In M. Gernsbacher (ed.), *Handbook of Psycholinguistics*, 945-84. New York: Academic Press.
- Kaplan, Ronald & Joan Bresnan. 1982. Lexical-Functional Grammar: A formal system for grammatical representation. In Joan Bresnan (ed.), *The mental representation of grammatical relations*, pp. 173-281. Cambridge, MA: MIT Press.
- Van Valin, Robert D., Jr. 2005. *Exploring the syntax-semantics interface*. Cambridge: Cambridge University Press.
- . 2006. Semantic macroroles and language processing. In Bornkessel, Ina, Matthias Schlesewsky, Bernard Comrie, & Angela D. Friederici (eds.), *Semantic role universals and argument linking: Theoretical, typological, and psycholinguistic perspectives*, pp. 263-301. Berlin: Mouton de Gruyter.
- Van Valin, Robert D., Jr. & Randy J. LaPolla. 1997. *Syntax: Structure, meaning & function*. Cambridge: Cambridge University Press.