

Jerrold M. Sadock. 2012. *The Modular Architecture of Grammar*. Cambridge: Cambridge University Press. Pp. 282, USD 114.99 (Hardcover).

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The Modular Architecture of Grammar presents a state-of-the-art introduction to *automodular grammar*, a theory based on Fodor's (1983) modularity of mind hypothesis. According to the *Modularity of Grammar Hypothesis*, autonomous modules generate linguistic representations (e.g., sentence structures, propositions), but do not interact (p. 7). The representations that these systems generate, however, are connected via mapping principles governed by the interface (meta-) module. The theoretical consequences of this assumption are far-reaching. For instance, the theory lacks movement operations or hierarchical levels of representation, and syntax does not have a central function in the architecture (cf. GB and Distributed Morphology: Chomsky 1981, Halle and Marantz 1993). The theory is tested against a wide range of data, including some well-known but still controversial problems. It presents an interesting representational alternative to derivational theories, and can provide several stimulating points of reflection for theoretically inclined linguists. Below, I summarize the contents of the book.

Chapter 1, "Autonomous modularity: syntax and semantics", introduces the two central modules of this architecture: semantics and syntax. The semantic module generates *Function/Argument* (FA) structures, which determine how the meanings of lexical items, phrases and sentences are composed. The syntax module generates phrase/sentence structure, as standardly assumed in generative frameworks. The syntactic rules of representation come in a standard, if conservative generative format (e.g., $S \rightarrow NP, VP$). The semantic rules also come in a conservative, categorial format. For instance, an object of type F_{ap} is a function that takes an argument object of type a as an input, and returns a type p proposition as a result (Cresswell 1973). Lexical items are initially defined as pairings of F/A and syntactic representations, which include information about category and distribution. For instance, the intransitive verb *sneeze* has F/A type F_a and syntactic category "V in [_{VP} ___]" (i.e., it is a verb in a VP).

Chapter 2, "The interface", presents the interface module and its three core principles. The first is *lexical correspondence*: each lexical item must have a representation in each module/dimension. The second is *categorial correspondence*: categories from different modules are mapped in a homogenous way (e.g., NPs to arguments, propositions to sentences). The third is *geometric correspondence*: a relation from one dimension (e.g., c-command in syntax) must correspond to a relation in another dimension (e.g., scope in semantics). Since the theory assumes that different rules generate syntactic and semantic representations, which are connected via precise mappings, it predicts that discrepancies and asymmetries among representations can arise. For instance, copular sentences such as *Sally is a carpenter* are analysed as including lexical correspondence discrepancies, which emerge when lexical items (*is*, *a*) have syntactic representations, but null semantic representations. The interface module maps the contentful NPs in this sentence to, respectively, argument

and predicate type representations, and the copula and indefinite article to null representations. Hence, lexical and categorial correspondence is maintained even if not all syntactic representations correspond to non-null semantic representations. Other types of discrepancies can emerge as well (e.g., lexical items with a semantic but no syntactic representation).

Chapter 3, “Role structure”, adds the *Role* (also event, cognitive) structure module (RS), which determines the event structure and thematic roles associated to lexical items and sentences. Only three roles are postulated: *proto-agent*, *proto-patient*, and *ancillary participant* (Dowty 1991). Thus, the role structure of a verb such as *put* can be represented as “RS: ‘put’ (type), AGT, PAT, ANC”. Notably, unlike syntactic structures, role structures are assumed to be non-hierarchical sequences including event type and roles. The assumption that there is a distinct role structure module is motivated via the analysis of voice phenomena and relations among the role structures of verbs. For instance, passive and active sentences are analysed as involving subject NPs that have an argument (semantic) type, but distinct role values (agent for active sentences, patient for passive ones). Antonym verb pairs such as *buy* and *sell* involve the same patient (the goods being sold), but different types of agent roles, “buyers” and “sellers”.

Chapter 4, “The linear order component”, introduces the linear order component (LOC) module, which determines word order according to three principles. First, non-head lexical items can either precede or follow heads. Second, the structural complexity of lexical items determines more specific ordering relations. For instance, NPs are considered to be less complex than PPs, and PPs to be less complex than VPs and S nodes (cf. Perlmutter’s 1971 *complexity hypothesis*). Third, language-specific rules can also play a role. One example of how these rules interact is as follows. The syntactic representation of an interrogative sentence (e.g., *Who came to the party?*) involves a *wh*-pronoun in its object position (roughly, *came to the party who*). However, this English *wh*-pronoun may be linearized in sentence-initial position, since an NP is less complex than the sentence *S* it is part of. In Mandarin, however, less complex items are proposed to follow more complex ones. Thus, a Mandarin *wh*-pronoun occurs in sentence-final position.

Chapter 5, “Morphology and morphophonology”, presents the morphology module, which involves rules to derive stems (i.e., sub-word units) and words via four types of operation: *morphological derivation*, *inflection*, *cliticization* and *derivational cliticization*. Hence, a lexical item’s representation includes both the morphological process underpinning its structure, as well as a distinct morpho-phonological representation (i.e., its corresponding exponent). Building on this distinction, apparently dissimilar phenomena receive similar analyses. For instance, cliticization, incorporation, and tense/aspect realization in auxiliary verbs are analysed as involving “words” formed by combining distinct syntactic units. In the case of cliticization, the combination of a root node with an “auxiliary” value, and a negation node yields the word *haven’t*. In the case of tense/aspect realization, the combination of a root node with a “sing” value, and a tense node with the “past” value yields the word *sang*. In both cases, the lexical representations for these words include both the relevant exponents and underlying processes. For instance, *haven’t* has the

morphological representation “*stem* [V]→*word* [V, NEG]” and *sang* the representation “*stem* [V]→*word* [V, PAST]”).

The final three chapters provide a discussion of selected topics that offer further evidence for the empirical import of the *Modularity of Grammar Hypothesis*. In Chapter 6, “Gaps and other defective elements”, according to the automodular analysis, lexical items can feature mismatches amongst levels of representation: one or more levels can feature null representations, creating the types of discrepancies discussed in Chapter 2. Consequently, a wide range of phenomena find a unified account, such as zero morphemes (i.e., morphemes with a null exponent), verb and VP ellipsis (i.e., verbs and VPs with a null exponent in context, respectively), and *tough* constructions, involving gap NPs with no other representational content. Chapter 7, “Conflict resolution”, presents a theory of conflict resolution in possible mappings amongst representations (e.g., scope ambiguities, different word orders). The guiding assumption is that conflicts are resolved according to the “great chain of speaking” hierarchy. For instance, conflicts between LOC and syntax (e.g., particle shift) are resolved in favour of higher ranking LOC. Since a particle is considered a more complex item than an NP, it acts as a head following its argument. Chapter 8, “Some final observations”, offers the conclusions, and sketches some brief comparisons with other models of grammar, such as that of Culicover and Jackendoff (2005).

Overall, the book presents automodular grammar in a clear and compact manner, testing the theory against a wealth of cross-linguistic and “cross-modular” data. However, certain peripheral aspects of the theory could have benefitted from a more thorough discussion of, and comparison with, previous literature. For instance, the use of the modularity of mind/grammar hypothesis could have been motivated in more detail. In the original Fodorian formulation, modularity also involved the assumption that the same cross-modular rules generate representations: modules share a “language of thought” (Fodor 1975). Consequently, one would not expect linear representations (e.g., role structure, LOC strings) to co-exist with binary trees, in a modularity-based grammar. Although empirically adequate, these divergences from the core tenets of modularity could have benefitted from a more careful discussion. Furthermore, the heterogeneous nature of modules and building blocks could have been more thoroughly motivated. An open question, for instance, is why F/A and role structures form distinct modules, since propositions and events are often considered part of a single semantic ontology (Krifka 1998). Also, the resemblance with other representational frameworks implementing inter-modular mapping principles is at times mentioned, but never addressed in full detail. Two relevant examples are LFG (Bresnan 2001) and HPSG (Sag, Wasow and Bender 2003). Even if such theoretical reflections would have bolstered the theory’s case in a more thorough manner, it is fair to say that the book still presents a solid case for automodular grammar.

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