

Dalrymple, Mary & Lowe, John J. & Mycock, Louise (eds.). 2019. *The Oxford reference guide to Lexical Functional Grammar*. Oxford University Press. Pp. 835.

Reviewed by Yida Cai

1 Introduction

The Oxford reference guide to Lexical Functional Grammar is an edited volume offering wide-ranging and detailed information about Lexical Functional Grammar (LFG). Each chapter is designed such that the information provided progresses from basic to deep, and the chapters contain references to prior LFG research related to their respective topics. Therefore, not only does the book give the necessary information on how linguistic structures are represented in LFG and how to do linguistic analysis within the framework, it also provides an up-to-date introduction to its historical development.

The work consists of an introduction and three parts, comprising 18 chapters in total. The aim in the Introduction (Chapter 1) is to give readers an overview of the historical roots and development of LFG. It also includes guidance on using the book. The first chapter in Part I introduces the most significant representations of syntactic structures in LFG, namely the functional (*f-structure*) and the constituent (*c-structure*). In the subsequent chapters, the authors explicate the correspondences, relations and constraints of these two structures. Part II focuses on non-syntactic linguistic structures, namely semantic, argumentative, informational, prosodic, and morphological. Part III gives a comprehensive guide to the use of syntactic and semantic LFG structures for explaining various linguistic phenomena. This review is divided into three parts, corresponding to the parts of the book. Given that the *f-structure* and the *c-structure* are the cornerstones of LFG, I will discuss the chapters focusing on them in relatively more detail than in the other chapters.

2 Part I Syntax

Chapter 2. The first chapter in Part I introduces the *f-structure*. First, however, the authors clarify the grammatical functions (e. g. SUBJ, OBJ) in LFG, and their respective categories. They also demonstrate the benefits of LFG in terms of solving problems in traditional approaches to linguistic analysis. For instance,

the PREDLINK function is useful for analyzing predicative constructions including a copular verb or a linking, such as the following sentence (p. 32):¹

(1) *The problem is **that they yawned**.*

According to PREDLINK analysis, the copular predicate *is* in Example (1) selects for *the problem* and *that they yawned*. In contrast, it is assumed in the traditional approach that the copular predicate selects XCOMP. However, XCOMP is an open grammatical function whose subject is specified externally to its phrase, but in Example (1), *that they yawned* has a different subject from the subject of *is*. Therefore, the traditional approach is problematic. This problem does not manifest in PREDLINK analyses of the LFG framework.

The f-structure, the abstract level of representing the functional syntactic organization, is presented as a set of attribute-value pairs that describe functional syntactic structures. These attributes consist of grammatical functions (e.g. SUBJ, OBJ) and features (e.g. PRED, TENSE, DEF), each of which has various values. For instance, TENSE could have the value PST (past tense). The presentation starts from the basic level, then step-by-step more complex f-structures are introduced. The following example (Example 2) shows the f-structure of *The man yawned* in which f-structure *y* contains f-structure *m* (p. 45).

(2) *The man yawned.*

$$y \left[\begin{array}{ll} \text{PRED} & \text{'YAWN<SUBJ>'} \\ \text{TENSE} & \text{PST} \\ \text{SUBJ} & m \left[\begin{array}{ll} \text{PRED} & \text{'MAN'} \\ \text{DEF} & + \end{array} \right] \end{array} \right]$$

Readers are also familiarized with the three essential conditions of well-formedness (completeness, coherence, consistency) that guarantee the acceptability of a certain f-structure if it complies with them. For instance, the reason why the sentence in Example (3) below is wrong is that it does not satisfy the Completeness Condition, because in Example (4), the predicate *devour* governs SUBJ and OBJ, but Example (3) lacks the OBJ (p. 50).

¹ Unless specified otherwise, page numbers mentioned in the text refer to the volume under review.

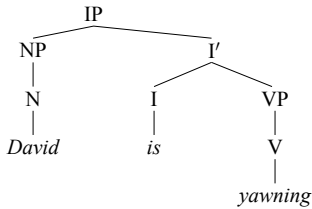
(3) **David devoured.*

(4) [PRED 'DEVOUR <SUBJ, OBJ>']

The introduction of all the grammatical functions and their features mentioned above provides a solid basis on which to understand the grammatical functions described in the f-structure. These features are described extensively in a very clear and systematic fashion.

Chapter 3 focuses on another essential structure, the c-structure, which is the syntax tree used in LFG for representing its constitution. In other words, it describes the linear and hierarchical organization of words on the syntactical level. The following is the c-structure of the clause "*David is yawning*" (p. 99).

(5) *David is yawning.*



The chapter points out the defects in several traditional arguments for a constituent structure. For example, the authors present proof that the tests administered by Radford (2009: 58–69) were not successful, which demonstrates the flaws in the testing of constituency in transformation-based theories. They also point out, for instance, that the fragment test discussed by Radford (2009: 62–63) does not suffice for examining constituency (pp. 91–93).² Example (6) (pp. 92–93) sheds light on this issue. The answer in (6b) shows that there are constituents that cannot appear as sentence fragments, whereas according to the answer in (6c), some parts that are not constituents can.

(6) a. *Q: What has Chris written?*

A: A best-selling novel.

b. *Q: What has Chris done?*

*A: *Has written a best-selling novel.*

² The authors slightly modified what Radford originally discussed. Radford (2009: 63) defines the fragment condition for constituency thus: "Only a maximal projection can serve as a sentence fragment." The authors' modification (p. 91) is "only (some) constituents can serve as sentence fragments (that is, valid free-standing expressions that are not complete sentences)."

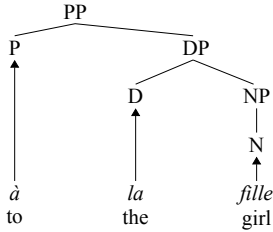
- c. *Q: Who did you see?*
A: Chris yesterday, and David today.

The authors begin their discussion on the organization of the c-structure by suggesting several categories of phrases, such as lexical (noun, preposition, verb, adjective and adverb) and functional, namely inflection (I), complementizer (C) and determiner (D). They also mention that LFG is based on X-bar theory. Inflectional (IP) and complementizer (CP) phrases are introduced briefly as examples in describing basic c-structures. Although students of syntax should be familiar with X-bar theory and all these lexical and functional categories, they are nevertheless explicated here.

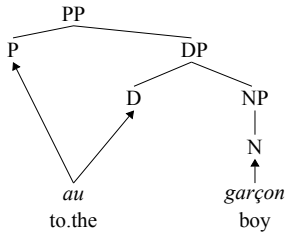
Another basic concept introduced in Chapter 3 is the syntactic string (*s-string*), which represents the string of linearly ordered syntactic units. It is explained in a very clear and accessible way: not only do the authors define it, they also explain why it is necessary for analyzing certain forms of syntactic organization. They show, for instance, that some syntactic phenomena relate to the s-string in particular. One such phenomenon is the theory of “Lexical Sharing”, according to which a certain unit in the s-string could possibly relate to two terminal nodes of the c-structure (p. 114). The authors also give very clear examples from French (Examples 7–11 below) in demonstrating their discussion (pp. 114–115). In Example (7), the preposition and the determiner are two separate words, but in Example (9) they form a single word. In the c-structure of *à la fille* (Example 10), *à* and *la* are associated separately with the P and D terminal nodes of the c-structure. However, in the case of *au garçon* (Example 11), the *au* is associated with both the P and the D terminal nodes, which relate to each other on the linear level.

- (7) *à la fille*
to the girl
- (8) **à le garçon*
to the boy
- (9) *au garçon*
to.the boy

- (10) *à la fille*
to the girl
'to the girl'



- (11) *au garçon*
to.the boy
'to the boy'



Chapter 4. The formal correspondence between the f-structure and the c-structure is explained in this chapter, which introduces the ϕ function for this purpose. Example (12) shows how this function maps the c-structure to the f-structure of the word *yawned* (p. 117). In addition, the authors examine various regularities in the mapping of the c-structure to the f-structure, such as how complements of functional categories in the former should correspond to the latter.

- (12)
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- A diagram showing the mapping of the c-structure word 'yawned' to its f-structure. The word 'yawned' is under a vertical bar V. An arrow labeled ϕ points from V to a bracketed list of f-structure elements: PRED 'YAWN <SUBJ>', TENSE PST.

Chapter 5. The main purpose of this chapter is to show how to describe the process of notational mapping from the c-structure to the f-structure. Comprehensive notations are presented with detailed examples in a logical

way, moving from the simple to the complex. In addition, various languages are used as examples to demonstrate that grammatical functions need to be encoded in different ways, depending on the language.

Chapter 6 offers more comprehensive information about the constraints of the c-structure and the f-structure, introducing concepts such as regular language, functional uncertainty, and sets. A major part of the chapter is devoted to introducing several new devices for describing the c-structure and the f-structure in more depth and more widely. Furthermore, various relations between f-structures are defined with the help of examples, described in a logical structure that gives a clear picture in terms of deciphering their respective conditions. For instance, by way of explanation, the authors describe subsumption as a relation between two f-structures f and g if g is the same as f or contains some structures that f lacks (p. 240).

3 Part II Beyond syntactic structures

The aim in Part II is to offer a comprehensive means for analyzing languages in terms of non-syntactic linguistic structures. First, Chapter 7 gives some general information about non-syntactic linguistic levels, after which various non-syntactic structures are introduced chapter-by-chapter (Chapters 8–12), proceeding from basic to more complicated formulations.

Chapter 7 gives a general picture of how non-syntactic linguistic structures relate to the f-structure and the c-structure. The concept of “modularity” is emphasized, meaning that different aspects of linguistic structures should be viewed as distinct from each other. For instance, one problem in the analysis of a certain linguistic phenomenon arising from the conflict between various structural levels (e.g. between syntactic and semantic structures) does not appear in LFG. Modularity also facilitates the generalization of analyses to any language. The chapter also introduces the concepts of description by analysis and co-description in defining relations between linguistic structures. The former refers to basing the description of a structure on an analysis of another structure (e.g. describing the semantic structure of an utterance based on the properties of the f-structure), whereas the latter means describing different structures at the same time.

Chapter 8 introduces the concept of semantic composition and how it relates to syntax from the LFG perspective. The authors refer to some previous studies, pointing out the essential properties of semantic

compositions (pp. 279–280). They focus on the glue approach, which they introduce step-by-step. The discussion proceeds from assessing the need for prerequisite knowledge (e.g. expressing meanings by means of predicate logic) to describing how the glue approach works, including how to use linear logic to assemble meanings.

Chapter 9 focuses on argument structure and mapping theory. Various influential studies on the relationship between the roles of semantic arguments and grammatical functions in LFG are discussed chronologically. The classification of arguments is supplemented with examples. Specifically, the features restricted (+R) (SUBJ and OBJ)/unrestricted(−R) (OBJ_θ and OBL_θ) and objective(+O) (SUBJ and OBL_θ)/nonobjective(−O) (OBJ and OBJ_θ) regarding grammatical functions as proposed by Bresnan & Kanerva (1989) have central positions in the classification.³

Chapter 10 mainly concerns how the information structure (*i-structure*) has been treated in LFG during its history. According to the authors, it refers to the sentence organization in contexts of exchanging information. They present problems arising from descriptions of information structures in previous LFG studies, including the *granularity problem* between the f-structure and the i-structure: “f-structure constituents are often either too small or too large to define information structure roles” (Dalrymple & Nikolaeva 2011: 92). The authors also explain how these problems have been solved in earlier research.

The focus in Chapter 11 is on prosodic structure (*p-structure*). The authors point out how prosody could affect the way in which utterances are understood, moving gradually to current approaches in LFG. Their description of prosodic structure reflects findings from previous studies suggesting various approaches to its representation. In a discussion of the prosody-syntax interface, they draw attention to Dalrymple & Mycock’s (2011) study and its suggestion about the s-string and the phonological/prosodic string (*p-string*) for analyzing linguistic signals on the levels of syntax and prosody. P-string refers to “the parsing of a signal into minimal phonological or prosodic units” (p. 407). Various features are chosen for explaining the relation between the c-structure and the p-structure, especially in connection with the node relations between them.

Chapter 12 focuses on morphological structures, with a particular emphasis on how the morphological features relate to the c-structure category

³ θ refers to the thematic role that is associated with the argument (see p. 11 in the book).

and functional descriptions. The authors first define the most significant terms that might cause confusion, namely lexical entry and lexemic entry. When they introduce the Lexemic Index, they distinguish it from the semantic form so as not to confuse readers. The clear explanation of terms in this chapter is praiseworthy and facilitates understanding of the following content.

4 Part III Phenomena

This final part of the volume showcases LFG analyses of different types of linguistic phenomena. The focus in Chapter 13 is on the syntax and semantics of modifications, exemplified by adjectival modification. This is presented from a comparative perspective, and not only on the assumption that the function of the modifier is to contribute meaning to the phrase it modifies, but also from the perspective of recursive modification. These two assumptions are described thoroughly, and the explanation flows smoothly between them.

Chapter 14 moves to different binding constraints, which are discussed cross-linguistically with the help of f-structure representation. The authors introduce positive and negative binding constraints to clarify various anaphoric situations: the former are constraints that prescribe the syntactic relation that an anaphor must have with its antecedent (e.g. the reflexive pronoun in English *himself*) (p. 503), whereas the latter are non-conference constraints such as *him* in **Chris_i nominated him_i*. (p. 510).

Chapter 15 starts with a description of anaphora, and then turns to the issue of control within LFG. Functional and anaphoric control are introduced with a focus on semantic and syntactic properties. The authors use a *raising* verb (e.g. *seem*) and an *equi* verb (e.g. *try*) as examples of differences in co-reference constraints between the verb types (*David seemed to yawn* vs. *David tried to leave*). They also point out in detail the difference between two types of anaphoric control construction, namely obligatory and arbitrary anaphoric control. The equi verb is brought in following the introduction of obligatory anaphoric control. Furthermore, control in adjuncts is discussed in terms of functional and anaphoric control, with the help of meaning constructors.

The focus in Chapter 16 is on coordination structures. After introducing simple clausal coordination, the authors divide the sample utterance into smaller parts and discuss their coordination, then they bring in predicate coordination. They further discuss the semantics of clausal and sub-sentential coordination and point out the need for a certain theory of resource

management. They take up noun-phrase coordination at the end of the chapter, specifically its semantic contribution.

Chapter 17 gives a comprehensive introduction of long-distance dependency (LDD): “Constructions in which a constituent appears in a position other than the one with which its syntactic function is usually associated.” (p. 652). The authors categorize different constructions based on their similar features, such as relative clauses. The grammatical function of displaced phrases and other relating elements is described clearly in terms of various constraints and paths. Resumptive pronouns, or morphological forms that mark LDD, are chosen as distinct constructions for discussing the phenomenon, unlike previously introduced constructions. Kikuyu and Irish are used as examples in the book, having totally different ways of causing certain LDD paths. The authors also bring in other proposals for a more thorough representation of the constraints of displaced constituents in LDD.

Finally, the last chapter of the whole book, Chapter 18, offers a perfect ending in taking up research that was not discussed in the previous chapters. The authors emphasize the roots of LFG: linguistics is dedicated to accounting for psychological reality. They discuss the contribution of LFG in other theories, too. It has been implemented as a basic aspect of processability theory in studies on second language acquisition, for example. The diachronic developments have also been discussed within the LFG framework. The relevance of LFG to computational linguistics is raised through an example of parsing and generation. The authors describe the implementation of the algorithmic results, briefly explaining how LFG grammars work in computational tools.

5 Conclusion

As a reference guide, the book provides very thorough information on how LFG works. The discussion covers not only its cornerstones, namely the f-structure and the c-structure, but also all other linguistic levels with the framework. All necessary terms are explained in detail and in a clear fashion. Therefore, even readers who have no previous experience of LFG should be able to follow the arguments. The most significant previous studies in this area are introduced and compared. Given the logical design of topics and the detailed introduction of each one, readers will easily become familiar with certain structures and areas, and they should find the necessary information.

In Part I of the book in particular, the authors point out areas in which transformational theories or traditional approaches have not been working successfully. Meanwhile, they demonstrate that suitable resolutions can be found by using LFG approaches. For example, the PREDLINK function fares better than the traditional approach in the analysis of predicative constructions. They also draw attention to flaws in transformational theories, such as that the fragment test for defining constituency is not relatively successful, but the c-structure proposed in LFG works well in this context.

The main point in Parts II and III is to show how other linguistic levels can be represented within LFG. As a framework, LFG does not focus exclusively on the syntactic level: other non-syntactic structures may also be analyzed and relate to the syntactic level, each level having already been systematically developed.

All in all, *The Oxford reference guide to Lexical Functional Grammar* offers a comprehensive resource for acquiring information about LFG. I believe that anyone working in the LFG field should enjoy reading the book as much as I did.

Acknowledgment

I would like to express my gratitude to Ida Toivonen (Carleton University) for her valuable comments and insights on my book review.

Abbreviations

C	complementizer
CP	complementizer phrase
D	determiner
DEF	definite
I	inflection
IP	inflectional phrase
LDD	long-distance dependency
LFG	Lexical Functional Grammar
OBJ	object
OBL	oblique
PRED	predicate
PST	past tense
SUBJ	subject
XCOMP	open predicate complement

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