[*BAGL* 13 (2025) 71–116]

VALENCY GRAMMAR AND NEW TESTAMENT GREEK STUDIES

Stanley E. Porter
McMaster Divinity College, Hamilton, ON, Canada

Abstract: Valency or argument structure—known by a variety of names in similar grammatical models, including valency grammar, word grammar, dependency grammar, and even functional grammar (Allerton, "Valency Grammar," 301)—has an interesting if somewhat neglected history in light of the popularity of some other linguistic models. Nevertheless, it suggests various levels of hierarchy related to form, structure, and semantics that have often proved helpful in grammatical description. However, there are also some significant limitations to valency as a descriptive model—at the constituent, clause, and beyond levels—that indicate that supplementation is necessary. This paper will provide some positive and negative comments on valency as a grammatical framework in relation to recent study of New Testament Greek from a systemic functional linguistic framework. (Article)

Keywords: valency, Systemic Functional Linguistics, Lucien Tesnière, Noam Chomsky, New Testament Greek, valency grammar, word grammar, dependency grammar, functional grammar

1. *Introduction*

Valency grammar, or rather valency grammars, are known by many different names in the field of linguistics, even if they are far less well known in biblical studies. They go by a variety of names, such as construction grammar, word grammar, dependency grammar, and even, in some circles, functional grammar.[1] As I will explore further in a moment, they are all concerned with the notion of valency (or valence) or argument structure, that is, the

1. Allerton, "Valency Grammar," 301.

arguments of a predicator and their dependencies. In other words, this is a syntactic theory. The thought is—and no doubt the thought of those who propound it—that the more we know about such predicators and their arguments, the more useful this will be in helping us to understand language, in particular, the ancient languages of the Bible, Hebrew and Greek, and by extension, how to use them, whether that is for exegetical or pedagogical purposes. The intention is a noble one—who could resist the idea of our learning more about ancient Hebrew and Greek so that we can understand the texts written in those languages and further teach these languages to others so that we can pass on the tradition of their knowledge to subsequent generations. I certainly cannot oppose, and in fact I would heartily endorse, such motivations since I have invested the large part of my academic career to just such a goal, and I have former students all over the world engaged in the same task, I hope at least partly inspired by me to engage in such a worthy endeavor.

In light of this, I was recently invited to address the issue of valency grammar considering my own linguistic interests. Having said that, I must confess to feeling a bit awkward in authoring this paper. Let me explain. For those who are interested in teaching and pedagogy, I am in full agreement with using the best linguistic information we have. I have been a teacher for nearly forty years, and during that time I have taught Greek from beginning to very advanced linguistic levels. I have even written an elementary Greek grammar and workbook and an intermediate level Greek grammar. So, I understand the problems of teaching languages, especially in environments where students start later and do not have the numbers of years to devote to study that they once did. That is not why I feel uncomfortable.

I feel uncomfortable because I am not a user or follower of valency grammar, by whatever name it is referred to. I am a systemic functional linguist and have been so ever since I introduced Systemic Functional Linguistics (SFL) to New Testament studies in 1985 as a PhD student in linguistics and biblical studies. And that is why I feel a bit uncomfortable. I do not want to be unnecessarily critical of valency grammar simply because I am a keen advocate of another linguistic model—since we know, after all, that most linguistic models are siloed from each other, and linguists often

know little to nothing about what other linguists are doing by following other models. In fact, I think that linguists are probably much more content to remain in their own paradigmatic shelters than are other disciplines with which I have first-hand acquaintance.

Nevertheless, I am thankful to have the opportunity to enter this discussion and believe that there may be a role for an outsider to say something about valency grammar, even if from the viewpoint of a different and competing linguistic model that will help us all learn something more, whether it is about valency grammars or other linguistic approaches.

2. *The History of Valency*

The major issue in valency grammar is that there is a linguistic element, often called a predicator, that attracts other elements to it in some configuration or cluster. Whereas some are perhaps accustomed to focusing upon dependency versus immediate constituency, I do not believe that that is the major issue.[2] Instead, the major issue revolves around the issue of predication. But where did such a conception come from?

There are two major ways of thinking of predication in syntactic theories. The one that appears to be most popular or widespread is that of the subject–verb relation.[3] This is the model that is used in most forms of contemporary teaching grammars. It is also the model that is used in most forms of transformational-generative grammar, no matter under what name such grammar currently goes. In 1957, when Noam Chomsky formally unveiled his phrase-structure grammar, the sentence, the basic unit of discussion and especially of syntax[4] and even language itself,[5] was described as a configuration of subject phrase and verb phrase. These

2. See Mel'čuk, *Dependency Syntax*, 3–7; cf. Kahane and Osborne, "Translators' Introduction," liv–lvii, where they acknowledge that Tesnière may be interpreted either way.

3. It is rarely noted that this terminology is inherently problematic, since Subject is a function and verb is a word-class or part of speech. I will say more about this below when I discuss transfer.

4. Chomsky, *Syntactic Structures*, 11.

5. Chomsky, *Syntactic Structures*, 13.

two elements constituted the basic unit of syntactic analysis, which also incorporated constituency analysis. But where did this bipartite model come from? This model probably came from the descriptivist North American grammarians such as Leonard Bloomfield (1887–1949), who incorporated immediate constituent analysis into structuralist linguistics, back through what we would now call traditional grammar and before that back to the Latin grammarians and then to the Greeks, such as Aristotle, who posited subject and predicate in their identification of elements of language.[6] Chomsky fashions his grammar as what he calls a Cartesian grammar,[7] based upon the conceptualizations of René Descartes (1596–1650). Chomsky does not appeal to Descartes's ontological argument for the existence of God (and I have no intention of discussing it here), but the argument is based upon predication of existence of the subject, in other words, enshrining subject and predication as inseparable.[8] This kind of logic may also lie behind Descartes's *cogito ergo sum*, in which behind the thinking *I* is the predicated existence of the *I*. I do not wish to pursue this philosophical discussion, either. In any case, there is a well-established line of subject–predicate linkage in philosophy dating back at least to Descartes. This Cartesian principle was captured in the Port-Royal grammar, written around the time of Descartes (1660) and probably under his philosophical influence, when it states "that there is no nominative case, which has not a relation to some verb expressed or understood" and "that there is no verb, which has not it's [*sic*] nominative case expressed or understood, because it is the property of the verb to affirm, and therefore there must be something to affirm of, which is the subject or the nominative of the verb."[9] And thus, by all accounts, most Western grammars have ever after been fixated upon the subject

6. See Bloomfield, *Language*, 5; Hockett, *Course in Modern Linguistics*, 147–56.

7. Chomsky, *Cartesian Linguistics*.

8. Descartes, *Philosophical Writings*, 193–211 (Meditation III) and 222–29 (Mediation V). Whether this argument works depends upon whether existence is a predicate and has been widely discussed in the philosophical literature. As an example, see the essays by William P. Alston and Alvin Plantinga in Doney, ed., *Descartes*, 278–302 and 303–11, respectively.

9. Arnauld, *General and Rational Grammar*, 150 (regularized spelling).

and predicate, a two-part syntactic structure. This two-part structure has tended to be seen in a linear and sequential fashion, in which structural and even semantic organization is conceptualized as either before or after as the two elements shift in their relationship. This model is seen in most, if not virtually every, first-year Greek grammar book that I am aware of (but I admit that there may be some books that I have not checked). In any case, it is the dominant model.

We do not, however, need to think of predication in this way. There are other ways. Those involved in valency grammars often look to Lucien Tesnière (1893–1954) as the one who liberated grammar from its two-part structure and introduced the notion of dependency. His discussion focuses upon—according to his translators—nine main concepts that have become fundamental to syntactical theories: (1) connections between elements; (2) verb centrality rather than the subject–verb structure; (3) stratification, in which there are levels of language; (4) stemmas and dependency trees illustrating the dependencies; (5) ordering and language typology for language classification; (6) nodes and nuclei with nodes participating in their representations; (7) valency, actants versus circumstants, and metataxis, in which an element functions like an atom and attracts other elements to it to form a molecule, with central or necessary and optional elements and translational syntactical changes (such as active and passive); (8) junction or coordination; and (9) transfer, where one unit takes the place of another unit, such as a noun becomes a modifying phrase (whether this is constituent or dependent is debated).[10] I will return to this list below.

The arguably most important concepts of Tesnière's thought—and many of them are, indeed, genuinely important—are the centrality of the verb that allows the severing of the subject–verb dependence, actants or central participants over optional adjuncts, and, of course, valency, in which Tesnière invokes his metaphor of the atom. His translators point out that his use of the atom/molecule analogy had precedent in Otto Jespersen's (1860–

10. Kahane and Osborne, "Translators' Introduction," xxxvii–lx, based upon Tesnière, *Elements of Structural Syntax*.

1943) parallel reference to chemistry.[11] We know now, of course, that that is not the earliest use of this chemistry metaphor. In 1879, Charles Sanders Peirce (1839–1914) used the term "valency" from chemistry as a metaphor for language,[12] and several have used it since.[13]

There is no doubt that Tesnière did write some of the most potentially helpful work on what has come to be called valence. His massive and impressive work, published in 1959, five years after his death in 1954, was thus written before but published after Chomsky's initial major work. In fact, it is believed that Tesnière wrote the first draft of his work as early as 1939 but continued to write and edit it until the early 1950s or so.[14] The reasons for the lack of attention to Tesnière's work are not hard to imagine: the work was written in French, was not translated into English for some time,[15] introduced some ideas that were not common fare in linguistics, and was overwhelmed by the tsunami of attention created by Chomsky, perhaps only recently abated. Many of Tesnière's ideas had already appeared in his earlier publication *Esquisse d'une syntaxe structural* of 1953, but this work is itself untranslated, less than sixty pages, and incomplete in all regards.[16] Even if Tesnière clearly did not fashion his ideas in reaction to Chomsky (since both works were written earlier than Chomsky wrote) and had developed many of them much earlier, this still begs the question of the origin of his views of dependency.

11. Jespersen, *Analytic Syntax*, 3. This is perhaps an unfortunate comparison to draw, based on the comments of James McCawley who introduces the reprint edition of Jespersen. McCawley (see Jespersen, *Analytic Syntax*, xi–xiii) notes that there are several parallels with Chomsky's transformational grammar, and then more specifically one of its developments, relational grammar (Perlmutter, ed., *Studies in Relational Grammar*). However, McCawley also does admit that there are elements of Jespersen's analytic that are dependency rather than constituency oriented.

12. Peirce, *Collected Papers*, 297–98.

13. See Przepiórkowski, "Origin of the Valency Metaphor."

14. Kahane and Osborne, "Translators' Introduction," lxxv.

15. A similar result was experienced by Saussure's *Course in General Linguistics*, which was published in French in 1916 but not translated and published in English until 1959, after which linguistics began to flourish in the English-speaking world.

16. Tesnière, *Esquisse d'une syntaxe structural*.

There are many possible suggestions. One of them, suggested by D. J. Allerton,[17] is to locate origins—or at least a foreshadowing—in Tesnière's contemporary, A. W. de Groot's (1892–1963) structural syntax of 1949.[18] Allerton does not specify where de Groot discusses similar ideas, but this is presumably in a chapter where, after examining various kinds of word groups, he speaks of them in terms of central and peripheral elements in the syntax.[19] If this is the case, then it speaks to either a movement of the time or, more likely, a common source or origin for the ideas to which both the French and Dutch writer appeal. Allerton[20] indicates that further back Karl Bühler (1879–1963), the German polymath (medical doctor, psychiatrist, educationalist, and linguist), had made a comment that hinted at the same ideas. In the quotation that Allerton cites (although from a different translation), Bühler states, "[W]ords of a certain word class open one or more vacant argument slots around themselves that must be filled in by words of certain other word classes."[21] There are indeed elements of Bühler's statement that resonate with Tesnière's later formulations of his syntactical principles, especially of valence and transfer. However, a closer look at the context of Bühler's statement (and especially in light of Gottlob Frege, on which see below) makes the similarities arguably less obvious. Bühler's statement appears in a section on the representational function of language and more specifically in a chapter on context and field factors. He is discussing views of syntax as either from without or from within. Bühler is arguing for a view from within, that is, within the language itself and not imposed from elsewhere, such as philosophical views of language. His reference to "word class" is to a generalized category that is apart from and beyond—an abstraction from—any particular language, not a specific language or its configuration of elements, but it is still a type of word within language, not a philosophical abstraction. Bühler is also functioning within a traditional syntactical analysis so that the metaphor has

17. Allerton, "Valency Grammar," 301.
18. De Groot, *Structurele Syntaxis*.
19. De Groot, *Structurele Syntaxis*, 148.
20. Allerton, "Valency Grammar," 301.
21. Bühler, *Sprachtheorie*, 173 (ET: *Theory of Language*, 195).

not only the language of "around"-ness but also the language of "slot" and "filler" that is more reminiscent of a ranked or stratified system such as is found in tagmemics.[22] Finally, there is a clear sense that Bühler's statement, while having resonances of later dependency terminology, is more attuned here to collocation than it is to atoms and molecules, hinting more at developments regarding collocation that were already to be seen in the writings of J. R. Firth (1890–1960) first in 1935 and often later.[23]

Others, finally, have suggested that the origins of emphasis upon predication, rather than subject–verb, are found in the philosopher Gottlob Frege (1848–1925), one of the early developers of analytic philosophy.[24] Frege had been criticized in some articles by the philosopher Benno Kerry (1858–1889) on the difference between the notions of concept and object, to which Frege responded in his now famous article, "On Concept and Object."[25] In responding, Frege makes a distinction between concepts and objects based upon predication: "A concept—as I understand the word—is predicative."[26] Frege provides a footnote that clarifies: "It is, in fact, the *Bedeutung* of a grammatical predicate."[27] That is, it is the meaning[28] of a predicate to be predicative. "On the other hand, a name of an object, a proper name, is quite incapable of being used as a grammatical predicate."[29] Frege here makes an important distinction between what he calls concepts—which are universals—and objects that are the particulars.[30] This distinction, I believe (since I am not a logician), is the fundamental basis for a

22. See Pike, *Language*.

23. Firth, "Technique of Semantics."

24. Jones, *History of Western Philosophy*, 136; cf. 88–93.

25. Found in Beaney, ed., *Frege Reader*, 181–93.

26. Beaney, ed., *Frege Reader*, 182.

27. Beaney, ed., *Frege Reader*, 182nA.

28. Or *referent* using the language of Geach and Black, eds., *Translations from the Philosophical Writings*, 43n*.

29. Beaney, ed., *Frege Reader*, 182.

30. Jones, *History of Western Philosophy*, 146. Jones (145) summarizes Frege's view of function and argument in mathematics, on which he builds his view of language: "a function is like a concept in that it has an empty place that must be filled to make it complete; an argument is like an object in that it 'falls under' a concept and thereby makes it complete." This is reminiscent of Bühler's statement, although Bühler is more localized.

major division between propositional logic and predicate logic. The result is that Frege initiated the notion of predication that is not dependent upon an attendant subject.

This recounting of these two brief histories indicates the probable lines of origin of these two major streams of thought within contemporary linguistics. Many may know this, but I believe that the historical origins are worth repeating so that we are aware of the traditions that lie behind our thoughts. The one line, from the ancients through Descartes and the Port-Royal grammarians to Chomsky, is a strong philosophical-linguistic endorsement of subject–verb. What I find interesting is that the other line, arguably (so far as I can tell) from Frege to Bühler to Tesnière, is also a strong philosophical-linguistic one, even if there are a few connections with non-formal representations of language, such as the functionalism of Bühler and Firth. This second line is not a "purely" linguistic line, even if some might wish it to be so.

As a result, it is helpful in this regard to try to place valency grammars in relation to other syntactical models of language. This is more complex than one might at first realize. In their study of a wide variety of syntax models, Robert Van Valin and Randy LaPolla differentiate two major categories of syntactical theory: the first is what they call the syntactocentric perspective, that is, Chomskyan formalism, and the second is what they call the communication-and-cognition perspective, that is, cognitive linguistics and the wide varieties of functionalism.[31] Van Valin and LaPolla include construction grammar and meaning-text theory in the latter. Many consider construction grammar as a development of valency grammar,[32] while meaning-text theory is that of the well-known dependency grammarian Igor Mel'čuk.[33] In that regard, valency grammars would be placed within the communication-and-cognition category. For some, such a classification may seem satisfactory. I am not convinced. Therefore, I have argued elsewhere that Van Valin and LaPolla's scheme is too binary, with

31. Van Valin and LaPolla, *Syntax*, 8–15; cf. Moravcsik and Wirth, eds., *Syntax and Semantics*.

32. E.g. Croft, *Radical Construction Grammar*; Goldberg, *Constructions at Work*.

33. Mel'čuk, *Dependency Syntax*.

Chomsky on one side and everything else on the other, thus distorting both synchronic and diachronic issues.[34] For example, the roots of cognitive linguistics are in Chomsky and cognitive studies that he was instrumental in generating. So, it seems counter-intuitive to place cognitive linguistics with the functional perspective simply because it shares some functional concerns. I think that a more accurate and useful classification is to have three major clumps of theories along a cline of syntactical theories (Figure 1):[35]

Formal ——— Cognitive ——— Functional

Figure 1. Cline of Syntactical Theories

The formal category is still reserved for Chomsky and his progeny, including not only all the variations of Chomskyan transformational-generative grammar and his own standard and extended theory, government and binding, and minimalist program, but also generalized phrase-structure grammar, relational grammar, categorial grammar, and the rest. The cognitive category is reserved for the variations on cognitive grammar,[36] including construction grammar and the wide varieties of valency grammars.[37] This is arguably a more faithful representation of the diachronic and synchronic relations of most of these grammars to the other two. The functional category is then reserved for a much smaller group than outlined by Van Valin and LaPolla but includes the varieties of functional grammars,[38] role and reference grammar,[39] and especially systemic functional grammar.[40] There are some who might dispute this analysis because of the desire to diametrically oppose dependency grammar to constituency grammar that is so closely associated with formalism. However, if my tracing of its roots is realistic, then the scientistic and analytic features of dependency merit inclusion with other similar models.

34. Porter, *Linguistic Descriptions*, 15–18.
35. I follow Banks, *Systemic Functional Grammar*, 11–12.
36. E.g. Langacker, *Cognitive Grammar*.
37. E.g. Hudson, *Word Grammar*.
38. This includes the so-called Northwest, as in Givon, *Syntax*; or Continental, as in Dik, *Theory of Functional Grammar: Part 1*; and Dik, *Theory of Functional Grammar: Part 2*.
39. Van Valin and LaPolla, *Syntax*.
40. Halliday, *Halliday's Introduction to Functional Grammar*.

3. *Some Questions and Answers about Valency*

The above brief history perhaps gives us some idea of the origins of valency grammars and a sense of how they manifest themselves, at least for those who are unfamiliar with some of the historical foundations. At this point, I wish to examine some of the main concepts of Tesnière that are said to underly most theories of syntax.[41] I realize that valency grammars themselves are diverse and that many models have developed particular issues in various ways,[42] so I do not attempt to differentiate various valency grammars in relation to Tesnière's thoughts. I instead wish to examine what his editors believe are his main accomplishments in light of my own perspective on linguistics. I believe it is worthwhile to examine the fundamental thoughts of Tesnière that seem to (or at least are claimed to) underly most of these theories, as they were developed by their originator—the idea being that a structure is only as strong as its foundations. I will examine Tesnière's thought from a systemic functional linguistic grammatical perspective, as an attempt to gain insights into both valency grammar and SFL.[43] I will use examples primarily in English but that have direct correlates with Greek. I approach the concepts from the list produced by Tesnière's editors and translators so as not to impose my perspective (any more than I do) on him. I recognize that I am stepping way outside my area of expertise by dealing with valency

41. According to Kahane and Osborne, "Translators' Introduction," who summarize Tesnière, *Elements of Structural Syntax*.

42. See the summaries of Herbst, "English Valency Structures"; Allerton, "Valency Grammar."

43. I have investigated whether Tesnière had any impact on M. A. K. Halliday. I checked the indexes of as many of Halliday's works as I could (far from complete or comprehensive) and came up with three references. In one, he puts Tesnière with Firth and Pike as taking a "relational" approach to syntax (Halliday, *Halliday*, 88), and in another, he refers to Fillmore ("Case for Case," 17) referring to Tesnière, *Elements of Structural Syntax* (in the original French edition) on the subject–predicate division being brought into linguistics from the field of logic (although that might be questioned, since it appears that Frege, the logician, formulated the predication position). In the third, Tesnière's book is simply listed in the bibliography (Halliday, *Halliday's Introduction to Functional Grammar*). In other words, there is little evidence that Halliday has been directly influenced, or even much indirectly influenced, by Tesnière.

grammar, so I offer these comments as suggestions for further thinking and perhaps as offering an occasional challenge to further thought.

3.1 *Connections*

Tesnière identifies a very important concept in connections. In the example sentence, *Alfred speaks*, there is a connection between the two words, more than simply there being two words, *Alfred* and *speaks*.[44] One is the governor, for Tesnière, the verb, and the other the subordinate or governed, which is a dependency relationship, at the heart of his thought and of dependency syntax. He displays this in a stemma, his form of a kind of dependency tree (Figure 2):

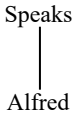

Figure 2. An Example of Tesnière's Stemma

The connection is not morphological but what is called "syntactic and semantic organization."[45] Tesnière provides only minimal definition of what it means to be a governor or governed. He states, "We say that the subordinate *depends* on the governor and that the governor *governs* the subordinate. Thus, in the sentence *Alfred speaks* . . . , *Alfred* depends on *speaks*, and *speaks* governs *Alfred*."[46] This is called an abstract relationship that gets its inspiration from Wilhelm von Humboldt's *innere Sprachform*, rather than being morphological.

Tesnière has identified a very important syntactical issue that in fact is larger than just syntax, as his various statements indicate. On the one hand, Tesnière is caught in a dilemma. He identifies his work as focused upon the elements of structural syntax. Thus, one expects structural elements to be at play in his description. He recognizes this in his identification of morphology and syntax as elements of the discussion. However, he also helpfully wants to

44. Kahane and Osborne, "Translators' Introduction," xxxviii.
45. Kahane and Osborne, "Translators' Introduction," xxxviii.
46. Tesnière, *Elements of Structural Syntax*, 5 (emphasis original).

go beyond these. In that sense, he has introduced conceptual categories that at least challenge if not go beyond structural syntax (one must wonder about the title of the book). On the other hand, Tesnière is correct that syntax is more than morphology. He probably makes this statement as a means of challenging the morphologically based immediate constituent analysis, in which constituents are arranged but not necessarily (or at least obviously) connected. However, although he invokes syntactic and semantic organization, he seems to want to go beyond this to some kind of linguistic force that is inherent in a construction. He appears in fact to take a mentalist view of language at the outset (and others that will be noted below as well).

At this point, Tesnière introduces some major problems. First, his definition offers no guidance on government or dependency. It is not self-evident in his example that *Alfred* depends on *speaks* and *speaks* governs *Alfred*. It might be said to be the other way around since the subject of the clause may be said to have agency and thus to govern the verb. Further, it is unclear how *Alfred* depends on the verb when it appears that the verb depends on *Alfred* as the originator of the event. Second, Tesnière's invocation of Humboldt simply complicates matters. This reference seems to be—although it is not entirely clear—an appeal to some kind of mystical force that binds elements of language together. This is very much reminiscent of Humboldt's comments about the "inner genius" of languages. In his introduction to Jawa, Humboldt devotes a short chapter to the notion of inner language form, by which he means that there is an internal, psychological, rule-driven character to each language that determines its character, so that each language has its own essential nature.[47] This neo-Kantian and New Grammarian-like characterization of language (language following inalterable laws), while once probably appealing to German idealism (and mentalism), strongly resembles the hard linguistic deterministic form of the Sapir–Whorf hypothesis.[48] This view is neither widely held nor provable—and it in fact seems at odds with Tesnière's view of an abstract outer force that

47. Humboldt, *On Language*, 81–87.

48. Sapir, *Selected Writings*; Whorf, *Language, Thought, and Reality*; cf. Lee, *Whorf Theory Complex*; Flack, "Inner Form."

connects the elements. Tesnière may have been better off referring not to Humboldt but to chemistry and the idea of the chemical bond within a molecule, which appears to be where valency originated in Peirce.[49]

However, I believe that Tesnière is right to look for a larger framework that connects the elements, *Alfred* and *speaks*. Syntax is not sufficient (or at least his definition), since there is usually nothing, especially in non-fusional languages, to show morphological connections between elements. For example, the English example is in the third person singular, but what if it were in the first or second person, singular or plural? For example, *I speak*, *you (all) speak*, *we speak*, or even *they speak*. The verb form would be the same, even if the subject were to vary. There does not seem to be a syntactical or morphological connection. Even in a fusional language one does not see such connection since even if both the subject and the verb change forms, this does not necessarily show a connection as Tesnière describes (inner language form) but only shows an outward morphological concord. Others have tried to find semantic connections through such things as word grammars or lexical priming.[50] But these theories also, even if they are dependency based, do not seem to exemplify the kind of internal connection between elements that Tesnière envisioned since they focus upon individual lexemes and the relationships that they form as those elements, not as elements in the kind of syntactical relationship Tesnière describes.

SFL arguably provides an explanation for the connection that Tesnière has identified, even if it is not in an inner language form or even in the syntax or semantics of the individual elements. At this point, I summarize some of the major components of the SFL grammatical architecture. The SFL stratification system provides this through its lexicogrammatical and its semantic strata, bisected by the three metafunctions: ideational, interpersonal, and textual.[51] This configuration provides an outside system rather than an in-

49. Peirce, *Collected Papers*, 297–98; see Przepiórkowski, "Origin of the Valency Metaphor."

50. Hudson, *Word Grammar*; Hoey, *Lexical Priming*.

51. See Halliday, *Halliday's Introduction to Functional Grammar*, 24–32, for a summary.

ward one but provides connection, nevertheless. The lexicogrammar provides meaningful potential choices within the language system, such as choice of one element excluding choice of another. In SFL, these are displayed not through stemmata but through system networks, which are complex displays of the semantic potential within the language rather than just the display of a single configuration (Figure 3):[52]

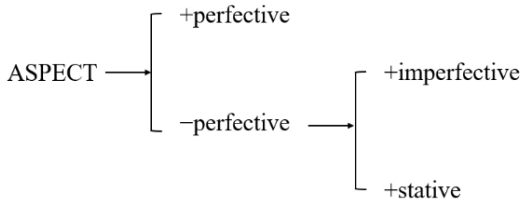

Figure 3. A Simple Network for the Greek Verbal Aspect System

One of the great features of systemic networks is that they are paradigmatic, that is, indicating choice of options, but they are realized in syntagms, that is, chains of items that are connected. Thus, Tesnière's goal can be realized through a different means of displaying language, the system network. The lexicogrammatical paradigmatic choices are then realized at the semantic level with meaningful choices of structures on a rank scale. The rank scale configures structures from the word to the word group to the clause (and all are complexible). In that sense, SFL makes use of constituency, with individual elements making up larger elements, but this is a relatively small part of the grammar designed to categorize structures.[53] How the structures are formed through paradigmatic choice is another matter entirely. Thus, SFL provides one major point of connectivity through the rank scale. It does not rely upon an inner language element but connects the elements, nevertheless.

There is, however, a second dimension to SFL connection. These content strata are bisected by the metafunctions of lan-

52. There is a growing literature on the nature of system networks in SFL. For a recent treatment of them and their complexity, see Matthiessen, *System in Systemic Functional Linguistics*.

53. Halliday, "Systemic Background," 193.

guage, that is, the various functions that are performed by the language at its various levels. For Greek, the ideational metafunction is realized by the transitivity system with verbal aspectual and causality systems, the interpersonal metafunction by the mood and modality system, and the textual metafunction by information structure (word order). The diagram below indicates how these components are connected in Tesnière's example clause but using standard SFL terminology (Figure 4):

	Alfred	*speaks*
Ideational	actor	verbal
Interpersonal	subject	predicator
Textual	theme	rheme

Figure 4. Three Metafunctional Lines in One Clause

I note in passing (but will return to it) that the display above resembles the kind of valency description that is often used in valency grammars. This is no accident. I realize that each of these metafunctional lines and their relations to the sentence require much further discussion. Such discussion is available in a number of works that go into detail on the Greek language.[54] The strata and metafunctions are able to provide a two-dimensional framework for creating the kind of connectedness that I believe Tesnière was seeking, even if he did not quite know how to conceptualize it.

3.2 *Verb Centrality*

Tesnière also identifies a very important notion of verb centrality. There are many apparent reasons for him to reject the usual means of conceiving of a clause—the element that he takes as central for description. One was his rejection of the kind of sentence diagramming found in the Reed–Kellogg book that set the tone for its use not only in English but still in some Greek grammatical study[55] be-

54. For a summary, see Porter and O'Donnell, *Discourse Analysis*, 84–95.

55. Reed and Kellogg, *Work on English Grammar* (cited in Kahane and Osborne, "Translators' Introduction," xln6). The line diagrams that are used in most sentence diagramming resemble various tree diagrams used in linguistics to this day and even resemble some of Tesnière's stemmata. If Tesnière had gone back to an earlier generation of sentence diagramming, he may have had a different impression, since some of the earliest sentence diagramming used bubbles

cause it seemed to create independent entities of the verb and its subject. As a result, Tesnière focuses upon the clause, of which the verb is the central element, rejects the bipartite subject and predicate configuration as having parallel or equal status, and rejects division of the clause into nominal and verbal groups (associating the last with logical categories). Instead, the verb is posited as the central component of the clause, with subject and object as equal and both dependents of the verb.

Halliday would readily agree with Tesnière on much of what he says. For Halliday, "The clause is the central processing unit in the lexicogrammar—in the specific sense that it is in the clause that meanings of different kinds are mapped into an integrated grammatical structure."[56] Within the clause, the predicator—to be roughly equated with the verb (mostly a simplex form, but occasionally complexed as a periphrastic or catenative)—is the central clausal component.[57] This is seen by the fact that the central systems of the lexicogrammar—transitivity in the ideational metafunction, including verbal aspect and causality systems; mood and modality in the interpersonal metafunction—all revolve around verbal choice. For example, Halliday uses process types as the way of configuring the clause in the ideational metafunction (see Figure 4 for an example). He identifies three primary (material, mental, relational) and three secondary (behavioral, verbal, existential) process types. Identification of the process type determines the semantic relations of the subject and complement. Thus, the verb is the center of clausal configuration.

This works relatively well for English although there is plenty of dispute over process types, their characterization, and what exactly they provide.[58] As a result, for Greek, I think it better if we replace process types with verbal aspectual choice regarding description of verbal action, and causal choice regarding description

that showed relationships, as is implied in the sub-title of one such book: *In Which Words, Phrases, and Sentences Are Classified According to their Offices and their Various Relations to One Another* (see Clark, *Practical Grammar*).

56. Halliday, *Halliday's Introduction to Functional Grammar*, 10.

57. However, the verbal group is highly questionable in Greek; see Porter, "Is There a Verbal Group in Ancient Greek?"

58. See Porter, "Verbal Aspect and Process Types (Part One)"; "Verbal Aspect and Process Types (Part Two)."

of agency. This is not the place to go into detail on the Greek verbal system, except to say that there are three primary verbal aspects: perfective, imperfective, and stative, realized by the aorist, present/imperfect, and perfect/pluperfect tense-forms (following their markedness hierarchy). In this regard, when we also include the non-aspectual future form, there are six aspectual or aspectual-like forms, three primary and three secondary (although not secondary in the same way as with Halliday's process types).[59] An author, rather than simply relying upon lexical meaning for configuring actions—which seems to invert the SFL rubric of lexis as most delicate grammar and make lexis determinative of verbal type[60]—aspectual choice reflects authorial conception of action, finally realized in selection of a lexeme. The causality system, realized in the voice-forms, also comprises three agency configurations: direct agency, ergative indirect external agency, and ergative indirect internal agency, realized in the active, passive, and middle voice-forms (also following their markedness hierarchy).[61] Choice of aspect and causality therefore comprises the major components of the transitivity system that indicates ideational meaning. These two system networks are represented as follows (Figure 5):

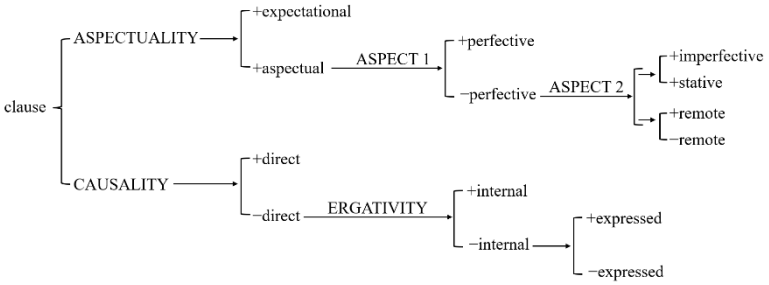

Figure 5. Transitivity in Greek of the New Testament

59. Porter, *Verbal Aspect*.
60. See Hasan, "Grammarian's Dream."
61. See Porter and O'Donnell, *Discourse Analysis*, 168–69.

The interpersonal meaning is indicated by the attitude system, realized in the mood-form system. This system is far more complex in its clause types but is based around the choices of assertion and non-assertion: directive versus projective: +contingent versus −contingent, realized in the indicative, imperative, subjunctive, and optative mood-forms (again hierarchically arranged). This system within the mood and modality system may be represented in this way (Figure 6):[62]

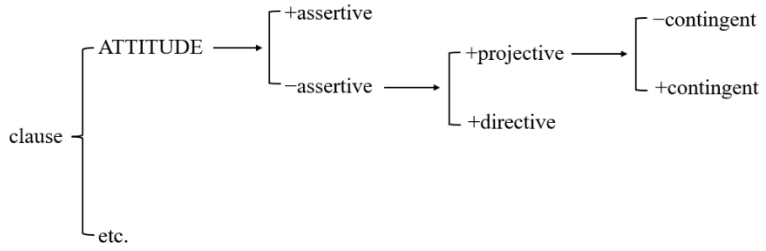

Figure 6. Attitude in Greek of the New Testament

These systems have been used not only in theoretical discussions[63] but in linguistic description of the Greek New Testament.[64]

This discussion raises several questions for Tesnière. The first is the significance of verb centrality. We have already seen that verb centrality is very important for analysis of Greek in the SFL framework presented above, as it is the verb that is the most important element in the clausal elements of aspect, causality, and attitude. For Tesnière, the question is perhaps more difficult to answer. As the editors of his *Elements* state, the centrality of the verb is part of his notion of connections.[65] The centrality of the verb is part of his stemma, but it is not clear that the verb is central to connection as discussed above. In a quotation from Jespersen (again cited by the editors), Tesnière refers to "'ranks' of words,"[66] although Jespersen has a very different rank scale than does

62. Based upon Porter, "Systemic Functional Linguistics," 27.
63. See Porter and O'Donnell, *Discourse Analysis*.
64. See Porter, *Pastoral Epistles*, 3–17.
65. Kahane and Osborne, "Translators' Introduction," xl.
66. Jespersen, *Philosophy of Grammar*, 96 (cited in Kahane and Osborne, "Translators' Introduction," xli).

Tesnière.[67] Nevertheless, this seems to provide the rationale for verb centrality, that one can rank different classes of words. Jespersen himself recognizes the importance of rank in linguistics, a notion that Halliday later made central to his scale and category grammar and then incorporated into SFL and its larger concept of stratification. It is by means of a rank scale that one can establish priority. Jespersen's and Tesnière's rank scales are different from each other and from Halliday's. For Tesnière, the verb is central, dependent upon which are all the other clausal elements—although his defense of this seems to be based on a notional priority, perhaps related to Humboldt's inner language form and his ability to create stemmata.

A second question is whether this procedure is localizable or extendable. For Tesnière, the verb is clearly central. But what about smaller structures? Is his approach applicable to word groups? What about larger structures? Is his approach applicable to clause complexes or even larger units beyond the clause? We know in fact that Tesnière's model has been localized, even to the point of individual words that are not verbs. The analogy seems to be that, just as verbs have a valency structure, such that there are actants of the verb, whether one, two, or three (see below), there should, ought, or even need to be similar descriptions of other elements. As a result, all classes of words and phrases are subject to a similar, if not identical, description. The justification of this raises other questions. Is the justification simply on the basis of analogy or is there something inherently linguistic that allows this? In other words, does a noun have the same valency structure as a verb? It would not appear to be so from syntactical criteria, even though this is a syntactical description. Such a supposition would have to be based upon some kind of analogous semantic criteria according to an analogy of function. This would appear to be the origin and justification of semantic cases (see below). SFL, however, based on the rank scale, does not posit similar structures at each rank. Whereas the clause consists of the elements of a process/predicator (depending on the metafunction), the nominal

67. See Kahane and Osborne, "Translators' Introduction," xlin7). Kahane and Osborne (xl) mistakenly refer to Jespersen's work as *Philosophy of Language*, when it is *Philosophy of Grammar* (1924).

group has a single structure. Halliday uses a particular terminology for the English nominal group, but Greek arguably has a different structure, even if similar components.[68] These consist of a head term of the group, which may consist of a wide variety of elements, hierarchicalized from proper nouns to nouns to other elements. The head term (ht) may be modified by several elements: specifier, definer, qualifier, and relator. The specifier (sp) classifies or otherwise identifies its head term, usually an article or sometimes a preposition; the definer (df) is a modifying element that attributes features to or further defines the head term, often an adjective or other appositional element; the qualifier (ql) is a modifying element that limits or constrains its head term, usually a genitive or dative element; and a relator (rl) is a word specified by a preposition (the so-called object of a preposition), modifying another element in the word group (see the OpenText.org website for further information). The components of the nominal group may be structured in a variety of ways, and hence in that sense there is similarity between valency descriptions and the Greek nominal group in SFL even if SFL is often thought of as a constituency model (this idea is probably based upon its English description, rather than Greek). A typical nominal group would be described in this way (among several different possibilities) (Figure 7):

[sp [df [[[ht]] ql] rl]]]]]

Figure 7. The Greek Nominal Group

An example in English of the above configuration would be *the big loaf of bread on the table.* The English configuration is relatively fixed, but a Greek construal of the nominal group might take any number of different configurations: τὸ μέγα φύραμα τοῦ ἄρτοῦ ἐπὶ τῆς τραπέζης or possibly τὸ ἐπὶ τῆς τραπέζης φύραμα τὸ μέγα τοῦ ἄρτοῦ, etc.

The issue of extension poses a different kind of problem. Whereas the rank scale provides a convenient means of relating

68. See Halliday, *Halliday's Introduction to Functional Grammar*, 364–96; Porter and Land, "Ancient Greek Nominal Group"; Porter, *Pastoral Epistles*, 14–16.

structures according to rank, the rank scale reaches its highest level at the clause (or clause complex). There is no agreed criterion for moving beyond the clause. We intuitively seem to know that there are ranks or levels of structure beyond the clause, but what are they? Some would say the paragraph or even the text—although these are arguably semantic units with variable structures. I am not an expert on valency grammars, but from what I have determined, valency is a property of the sentence as the maximal unit.[69] However, if we are working by analogy then perhaps there is some potential for extension of valency to structural units larger than the clause or sentence. SFL admittedly does not provide a structural means of going beyond the clause complex (a clause that has been complexified with other clauses, although this can create a significant structure), but it also does not take a syntactical view of the clause in the same way as other linguistic models. The text, in SFL, is a semantic concept, not a structural one. As a result, beyond the clause, SFL pays more attention to information structure and cohesion, that is, how information is structured and then whether units at the clause and beyond have cohesive properties. Recent work in Greek linguistics has extended the SFL perspective on information structure from the clause to the clause complex to the paragraph to the text[70] as well as providing a robust means of describing cohesion.[71]

3.3 *Stratification*

Stratification is not as major a topic for Tesnière as for some others, but that is a shame since he was definitely introducing a major and productive linguistic concept. As his editors state, "Tesnière may have been the first linguist to propose various levels of organization, thus advocating a stratified model of language."[72] I am not sure, however, that Tesnière himself fully understood what he meant by stratification. Nevertheless, it appears that by it he meant something very similar to what in SFL would be considered both the rank scale discussed above as a set of struc-

69. Herbst, "English Valency Structure"; Allerton, "Valency Grammar."
70. See Porter and O'Donnell, *Discourse Analysis*, 96–127.
71. Porter and O'Donnell, *Discourse Analysis*, 190–223.
72. Kahane and Osborne, "Translators' Introduction," xli.

tural units and stratification as levels of expression, content, and context. The analogy of speaking and understanding, which Tesnière uses, appears to appeal to the rank scale, in that the speaker must organize units linearly while the hearer must transform them into their individual structures. Tesnière's comments at this point resemble the kind of slot-and-filler language found in other linguistic models, such as tagmemics, in which smaller units make up larger ones and larger ones consist of smaller ones. The analogy of syntax and semantics being independent (something the editors say Tesnière addresses), such that one might have a well-formed sentence that makes no sense (appropriately referring to Chomsky but not necessarily limited to him), seems to encompass SFL strata. The SFL strata include phonological or graphological expression, content that consists of the lexicogrammar and semantics, and context that consists of situational and cultural.[73] The difference between SFL and Tesnière is that whereas Tesnière does not seem to see that there is a relationship between the strata, or if he does what that relationship is, SFL posits that one stratum is realized by or redounds to the other, so that lexicogrammar is realized by semantics, and semantics is realized by situational context, etc. Tesnière himself did not make a clear distinction between the strata of syntax and semantics,[74] but this is an area where later valency grammars have ventured, drawing clear boundaries between them, as well as making other distinctions (such as among syntax, semantics, and lexis). I will address some of these strata and their categories below.

One of the problems with Tesnière's understanding of the strata may be because of some confusion over phonetics, syntax, and semantics. Tesnière prefers the term *exprimende* ("expression") before *expressed* ("expressed") rather than Saussure's *signified* ("signification") and *signifier* ("sign"). However, he defines *exprimende* as "the thought and . . . the structural and linear

73. Halliday, *Halliday's Introduction to Functional Grammar*, 26. There are other stratification models in SFL, including one that includes expression–lexicogrammar–discourse semantics–context of situation–context of culture, in which register becomes part of context (as do genre and ideology). See Martin, *English Text*, 496 and related discussion.

74. Kahane and Osborne, "Translators' Introduction," xlii.

scheme which correspond to it on the linguistic plane," with *expression* indicating the "phonetic clothing that gives it a perceivable form."[75] Tesnière claims to have identified two planes, one of expression and the other of thought and structure, which are in fact two planes, one cognitive and the other structural or syntactic. They are not the same at all and can only be combined at the risk of lack of clarity and precision. What he probably means is that he should have defined three planes: expression, structure, and meaning. The differentiation of these strata, as well as their relationship, is well captured in the phonological, lexicogrammatical, and semantic planes of SFL. However, SFL has a very different conception of the relationship of these elements (and includes further planes as well). For Halliday, language is not to be equated with a set of sentences and much less of forms; he says, "A language is a semiotic system; not in the sense of a system of signs, but a systemic resource for meaning," that is, "a *meaning potential*. Language is about how people exchange meanings by 'languaging.'"[76]

3.4 *Stemmata and Dependency Trees*

The conventions that Tesnière uses for diagramming his linguistic descriptions are called stemmata and dependency trees. There are two features to notice. The first is that stemmata are designed to show verbal centrality and that they are constructed with this in mind. I would also agree that, if we are simply talking about the relationship between dependency and constituency displays, the dependency ones are probably clearer—but both are also very unclear. The reason that they are unclear is that they are formal minimalist labelings. They lack functional capability except in some hidden and problematic ways. For example, let us examine their sample sentence *Which tree is easier to understand?*[77] The labels noun, verb, and adjective may be appropriate in such a formal scheme, but what of determiner? The particle may be clear, but should the verb *understand* be subordinate to the particle *to*? *Un-*

75. Tesnière, *Elements of Structural Syntax*, 28; note the resemblance to Hjelmslev, *Prolegomena*, 47–60, on content and expression.

76. Halliday, "Systemic Background," 192–93 (emphasis original).

77. I refer here to the example in Kahane and Osborne, "Translators' Introduction," xliii.

derstand is labeled as a verb. Or are there different classes of verbs depending on function? If so, do we need a more complex form of representation and possibly even a more complex dependency system for description? In other words, these dependency trees, as well as the stemmata, are means of providing formal labels of essentially word classes and have very little to do with the functions of the components of the class.

There are two major types of networks in SFL. The first are networks of the possible formal choices, such as indicative, imperative, aorist, and present, etc. The second are system networks that represent meaning choices within the language and that are realized in structures. The second are the system networks around which SFL is built (although admittedly there is often confusion about them, even among SFL practitioners). They represent meaning potential. These are the most important dimension of SFL and something that is often not clearly articulated or sufficiently considered in other grammars, apparently valency grammars included. Labeling something a verb identifies a class of word-form, but it does not identify its function. The verb in a clause such as *Alfred speaks* functions differently than the verb *understand* in *Which tree is easier to understand?* even if they are both labeled with a V. In that sense, dependency and constituency (and Chomskyan phrase-structure trees, certainly as they were originally presented by Chomsky) are formal and not concerned with meaning—except by covert implication. By this I mean that the labeling of elements and the forming of the hierarchy is of course made based upon implicit meaning, otherwise one would not have a means of making distinctions, but a system for description of meanings is lacking. This is clearly an area where valency grammars would appear to need to develop further.

3.5 *Ordering and Language Typology*

Tesnière's concern with ordering and language typology is highly dependent upon the New Grammarians and Humboldt's categorizations, so he does not make much progress in that regard.[78] In fact, he seems to make virtually no progress and possibly even

78. See Tesnière, *Elements of Structural Syntax*, 23–25.

takes a step back (e.g., regarding English). The reason for this is that Tesnière is not concerned with linearity in language compared to structure of language. By structure, he means (syntactic) structures of dependency that are illustrated by his stemmata, with governors and governed. These structures are themselves problematic for the reasons that have already been discussed above in several places regarding how they are connected, their labeling, their display, and, most importantly, how they relate to function.

There is one area where Tesnière did deal with linearity, and that was with regard to centrifugal (head-initial) and centripetal (head-final) structures.[79] However, he apparently did not have a means of describing this in his stemmata or dependency trees, thus illustrating another limitation, in which the graphic representation controlled the conceptual analysis. The editors suggest slanted lines rather than vertical lines to show such dependencies, and some later dependency grammars do indeed use such conventions. In some cases, they are clear, but in others, they are unclear, especially when the subordinate elements are divided, so that the linearity is lost at the expense of structure. I simply note here that typological studies of languages have progressed significantly since Tesnière completed his analysis of nearly 200 languages, with the various typological factors being multiplied commensurately over the years, to the point where one can arrive at finely tuned typological descriptions of languages. From an SFL standpoint, however, language typology is a relatively recent endeavor. One of the reasons is that SFL is sufficiently complex that very few languages other than English—and even English with some limitations—have been sufficiently described so as to form an adequate typological profile. Ancient Greek is one exception to that limitation. Another possible reason is that, in some ways, language typology argues against the ethos of SFL—as it does Tesnière's analysis of language—because it describes each language as its own system, with Tesnière endorsing Humboldt's notion of language. Halliday's introduction to functional grammar is a description not of language but of English even if he incorporates some more generalizable categories such as the language metafunctions. Tesnière believed that language exemplified con-

79. Kahane and Osborne, "Translators' Introduction," xliv.

nection, based upon Humboldt's concept of inner language form, a belief that each language had its own unique genius to the point of making this conceptual (or mentalist) framework determinative for language use. If this is the case, then it is questionable the role that typology would play, since the study of language is about both the language and its unique character.

3.6 *Nodes and Nuclei*

I have very little to say about nodes and nuclei since these issues seem to be well enough covered under stemmata and dependency trees as a sub-category regarding their classification and display. I appreciate Tesnière's attempt at precision, especially regarding what constitutes a node and what constitutes a nucleus, and their relation. Nevertheless, I think that he does not escape some of the same issues that Chomsky faced, even to the point that the display took priority over the conception. I note that the problem of differentiation between syntax and semantics remains a major issue. The displays are syntactical, even though Tesnière was trying to identify and describe both.

3.7 *Valency, Actants, Circumstants, and Metataxis*

We are probably all familiar with Tesnière's syntactical analysis. He focuses upon the verb but then also identifies actants or what would now often be called arguments as well as circumstants or what would now often be called adjuncts. This is a helpful distinction so far as the hierarchy of clausal elements is concerned since it prioritizes, both semantically and functionally, the major clausal components. However, we immediately see that the analogy of the atom/molecule[80] is compromised. Whereas a molecule consists of a designated number of atoms that clump together, a clause is not so configured. It is not a clump but a string even if one chooses to reconfigure it in a drawing. Tesnière tried to avoid this by invoking structure. Clauses may be configured in a variety of ways, but what distinguishes them is that they are all linear even if hierarchically arranged internally or externally. In other words, the major components of a clause, whatever they are called (and I will call

80. Tesnière, *Elements of Structural Syntax*, 239.

them subject, predicator, complement, and adjunct for the sake of convenience), are linearly displayed and heard or read in that way even if their semantic relations may be far more complex (but often extended beyond the clause). These clausal elements contain their own individual structures such as a noun group as subject, or they may have elements within them as Tesnière acknowledges regarding transfer and may be called embedding or rankshifting (see below), but these elements are also linearly organized and seem not to follow the atom/molecule metaphor. And clauses may be hierarchically arranged in relation to each other, but this moves beyond the clause, an area that is not well addressed in valency grammars so far as I have seen.

I realize that the atom/molecule metaphor is meant to capture the fact that elements have dependent rather than constituent relationships with the other syntactical elements. However, the urge to identify dependency relations may overlook other clausal features that are worth noting. For example, the dependency relation of a subject and predicator or predicator and complement may be the same in either case, but does it make a difference whether one precedes the other? It does, whether in English or Greek, because the information structure is different. Linearity is an important concept that is perhaps not as easily handled or recognized as it should be in a non-linear model. The failure to recognize this feature overlooks an important element in the way that information is structured, even when it comprises the same elements. A further illustration is found in the nominal group in Greek. The Greek nominal group consists of a variety of elements. We may choose to examine these in terms of valency. In such a case, we would identify the predicator, which would be a head term element, and then its actants or arguments. But in Greek, modifiers may typically be placed before or after their head terms, to say nothing of being configured in different ways. The valency description might be the same whether a modifier either pre- or post-cedes its head, but something is lost in the description. We know, for example, that some New Testament Greek writers place their defining modifiers before the head term (Paul 65 percent) and some after (Mark and Luke 75 percent), and in those cases, they do so in statistically

significant ways.[81] The result is a different presentation and hence organization of information, even if the information (at least in one sense) is arguably the same.

One solution that appears to have emerged in at least some valency descriptions is the tendency to treat elements at the lexical or word level. In fact, some dependency grammars have come to be called word grammars because they believe that all pertinent syntactical and semantic information is contained within individual lexical items. As a result, if one treats each lexeme as a predicate, then one can construe valency descriptions for each. The major problem is that words in language rarely appear in isolation but virtually always in relation to others or to texts. If one has a configurational language such as English, perhaps this is less important. However, for a non-configurational language with relatively free word order such as Greek, significant semantic information is lost by not attending to these kinds of syntactical relations. In some valency descriptions, small groupings of words are put together because of their ostensively overlapping semantics and/or syntactical patterns. This may address some of the worst problems of a lexeme-based description, but it probably does not fully solve the problem, since the level of specification (rather than abstraction) remains high so that the major categorical differentiations are still made based upon lexical meaning. Collocation is important, but I do not believe that language users know or necessarily use their language on the basis of the supposed usage patterns of the individual words of the language. I will say more about words in valency descriptions below.

We have already noted the value in distinguishing between actants and circumstants. Tesnière realized that not all actants are of the same type as he indicated when he differentiated the subject from other elaborators (see comments below). He realized that circumstants are optional elements that, while not necessary to the sentence, provide a kind of information that does not complete the predicator but in some ways refines it. Circumstants often provide temporal, locative, or instrumental circumstantial knowledge. This knowledge is of a different kind than that of the actants. SFL uses the term adjunct for such elements in the clause. One of the

81. Porter, *Idioms*, 290.

distinctions that Tesnière made was to differentiate actants. He identified first actant (subject), second actant (first or direct object), and third actant (second or indirect object).[82] The question at this point becomes one of identification. How are these actant functions identified? It cannot simply be a matter of counting. In the sentence, *The boy threw the girl the book*, we may be able to agree that there are three actants. In this case, we can correctly identify the first, *the boy*, as the first actant or subject. But what of the second and third? If we take them in linear order, then we would be wrong. *The girl* is only the first object in terms of linear order, just as *the boy* is the second object by the same means. Instead, the second actant is *the book* and the third *the girl*. We do not know this simply based upon the presence or absence, much less the ordering, of the actants. We must know something else that determines the actants in the clause. In English, this is generally determined by word order. If the sentence is now *The boy threw the book to the girl*, we have a case where actants and circumstants become confusing, even if we believe that the sentence meaning remains the same, since the circumstant—which we thought was optional and not germane to the actants—is in fact a way of stating an actant by another means. In other words, differentiating actants is important, but they have semantic functions that are determined based upon much more than simply their presence.

A common way to characterize valency is with a valency description. Valency descriptions typically contain a kind of rank scale that describes the valency of a predicator in terms of its syntax, semantics, and lexical realization. Such a valency description may look something like this (Figure 8):[83]

82. Tesnière, *Elements of Structural Syntax*, 102.

83. This display is directly indebted to the kind of display used by my friend Paul Danove in his many books on construction grammar.

	Predicator		
Syntax	1	2	3
Semantics	Agt	Cont.	Exp.
Lexis	N	N+acc.	N+gen.

Figure 8. Valency Description

There is an elegance to such a description that is commendable. However, I wonder whether the apparatus is adequate for the task. I will not repeat my criticisms of the syntactic display already noted above. I wish to concentrate here upon the semantics.

This kind of problem is found with voice or diathesis. Tesnière differentiated four types of transitivity.[84] These are what he called (1) avalent, for such instances as impersonal verbs or so-called dummy subjects (*it rained*); (2) monovalent for those with only one actant (*she walks*); (3) bivalent for those with a first and second actant (*she races cars*); and (4) trivalent for those with a first, second, and third actant (*he gave her the book*). Besides the problems I have already noted (such as that in the trivalent example above the actants appear in the order first, third, and then second), I think that there are some other problems. The first is that Tesnière's avalent and monovalent categories are syntactically similar since both have an explicit subject, at least in the English examples above. What qualifies as an impersonal verb or dummy subject (if we retain such language)? In Greek, we have a similar problem. The Greek verb βρέχω in the third person singular is usually translated *it rains*. This interpretation is to be questioned. The ancient Greeks believed in gods who, even if not to be equated with nature, used or even controlled nature. The clause probably indicates something like *nature rains* or even *god rains* (or causes it to rain). This may also provide a better explanation in English as well. There are, nevertheless, potential problems with many of these valency categories. For example, the English verb *run* is said to be monovalent, the verb *build* bivalent, and the verb *give* trivalent.[85] But what about *I run home* or *I run the store*? Or *I often build* or *I am building*? Or *I give often*? Or even *I am building Bill*

84. See Kahane and Osborne, "Translators' Introduction," xlvii with references.

85. See Höllein, "Valency Theory."

a house? Höllein says that not all complements need to be expressed. I question whether this is a sufficient explanation as it does not address the issue of valency itself, but what if we have additional complements? In this situation, valency is not syntactical, but it is more competence based (if I may use such a term) than it is performance reflective. In other words, valency reflects a prototypical (?) conceptualization, not a contextual one in which valency appears to change according to context. One might speak of valency reduction, when core elements are moved to the periphery, as in active to passive moves, but what about valency addition, where periphery elements move to the core? And I have not even touched upon the notion of the monolectic verb in Greek, where there is no explicit subject but one assumed based upon a combination of morphology, syntax, and cotext (a real problem for those discussing the ordering of elements). The result is that valency descriptions are not necessarily dealing with language in use but syntactical rules, the basis of which may require further examination. Nevertheless, these examples show that more is needed than simply identifying or labeling valent roles.

In SFL, the closest that Halliday appears to come to valency is in his discussion of processes. Halliday notes that a clause as representation consists of three components: the process, participants, and circumstances.[86] In that sense, Halliday identifies the same elements as does valency grammar, with a predicator, actants, and circonstants. He also identifies them in a similar hierarchy, with process being central, then participants, and then circumstances being the most peripheral.[87] There are also some major differences. One is that Halliday confines this description to the clause and uses other systems and structures for other ranks on his scale so that nominal groups have different components and configurations than do clauses. A second is that this is the terminology that he uses for the clause as representation as part of the ideational metafunction (with the transitivity system being the major system within it). For the clause as exchange, part of the interpersonal

86. Halliday, *Halliday's Introduction to Functional Grammar*, 220.

87. See Halliday, *Halliday's Introduction to Functional Grammar*, 222; cf. 354, where he gives the number of inherent participants, similar to valency descriptions.

metafunction, with the mood and modality system as being the major system, he has another set of categories, including predicator, subject, complement, and adjunct. Why? The reason is that for Halliday, the clausal components are already part of a functional system that attempts to semanticize grammar. As a result, the process, participants, and circumstances already have a functional relationship among them.

For Halliday, it is the process types that establish the semantic roles of the participants. Halliday defines six process types: material, mental, relational, behavioral, verbal, and existential. The participants in these processes define the semantic roles that are taken. To summarize briefly (Table 1):[88]

material process	actor and goal, but also recipient, client, scope, initiator, and attribute
behavioral process	behaver but also behavior
mental process	senser and phenomenon, but also inducer
verbal process	sayer and target but also receiver and verbiage
relational process	carrier and attribute or identified, identifier, token and value but also attributor, beneficiary, and assigner
existential process	existent

Table 1. Process Types

The advantage of such a scheme (at least for English) is that the participant roles are directed by the process types—so long as one can agree on process types (and that is sometimes a problem). But even within the process types, there are variations of kinds of participants. This is highly problematic, especially for an inflected or fusional language such as Greek, where there is another layer of paradigmatic morphology that must be taken into account.

Charles Fillmore's essay "The Case for Case"[89] is arguably one of the most important articles in modern linguistics of the second half of the twentieth century for several reasons. Not only did it provide the kind of terminology needed to move beyond formal

88. Halliday, *Halliday's Introduction to Functional Grammar*, 311.
89. Fillmore, "Case for Case."

labeling, but it identified what has often come to be called semantic cases (or even universal cases), that is, cases that are defined semantically (or cross-linguistically) rather than simply by syntax or even morphology. The importance of Fillmore's view of case is often seen in various valency grammars and valency descriptions, including the rough paradigm that I laid out above. There are admittedly some questions raised by Fillmore's scheme. These include the question of how one differentiates cases, what the relationship is between syntax or morphology and case, what semantic case actually means, the limitations on the number of categories that one can legitimately identify, and any number of other issues that others have identified.[90] I think that one of the major issues is the number of semantic cases. What are the limits of the numbers of cases? I am reminded of one New Testament Greek grammar that has thirty plus categories for the genitive. Do these categories represent the semantics of the genitive case? How do we know? How do we test? Why not forty? Why not fifty? Why not five? The same problem applies to discussions of semantic cases. I suspect that most of the identified uses of the genitive in this Greek grammar are simply ways of lumping together a number of similar contextual uses and that someone else might wish to lump and split in different ways. In other words, if one were left to one's free imagination, one might well identify as many categories for use of the genitive as there are instances of the genitive in the corpus since almost each instance would have its own potential identifying feature that could conceivably call for a separate distinction. My own inclination would be to have fewer categories rather than more. But how does one limit these?

I think that Halliday's scheme for discussion of process types is flawed in a variety of ways, primarily because he has developed his grammar based upon English, and so it retains characteristics of English within its descriptive apparatus. I have attempted elsewhere to correct some of these limitations. However, I also think that there are some similar limitations to valency descriptions because of failure to differentiate between two layers of description:

90. See Blake, *Case*; Butt, *Theories of Case*; and Malchukov and Spence, eds., *Oxford Handbook of Case*; with reference to Greek, see Porter, "Case for Case Revisited."

semantics and function. In other words, I believe that even if one identifies the valency number, one can identify a semantic case with each. In other words, the case system in Greek is not just a set of morphological categories but a set of semantic morphological categories, such that nominative case is semantically different from accusative case, etc. This means that a complement in the accusative case has a different semantics—even if slight—from a complement in the genitive case—because of the difference in case. Case in Greek is a very interesting phenomenon because case functions at a variety of ranks. Case functions, for example, within the group structure, in which the nominal group consists of elements that are sometimes related to each other by case—such as qualifiers. But case functions also within the clause structure, etc. Thus, if I were to be using valency descriptions for Greek, I would add a layer of description to the system in this way (Figure 9):

	Predicator		
Syntax	1	2	3
Semantics	Nom.	Acc.	Dat. (e.g.)
Function	Subj.	Cmp.1	Cmp.2

Figure 9. SFL-Influenced Valency Description

The advantages of such a configuration are several: the semantics level is restricted by the semantics of the case and not open to almost endless individuation. The case system serves to differentiate semantics of the case-inflected elements and so preserves the need to have these semantic features recognized. However, such a description is incomplete because it does not address the question of clausal function. The clausal function is identified by the role played by the element within the clause even if related to the case semantics.

I have tried to bring valency and SFL together in a concise, unified description. Others may be much more successful with this than I have been. A major stumbling block is that valency is focused upon the predicator whereas, in SFL, the predicator is central but a part of a larger structure at clause level. Nevertheless, I might posit something along these lines (Figure 10):

		Clause
Semantics		
	Aspect	Perf./Impf./Stative (predicator aspect)
	Causality	Direct/Indirect: external/internal (agency and case)
	Attitude	Assertive/non-assertive: directive/projective
	Inf. Struc.	Theme/Rheme
Function		Subj. Cmp.1 Cmp.2 etc. (Adj.)

Figure 10. SFL-Based Valency Description

I will not attempt to exegete this figure except to say that it is not based upon syntax but upon semantics that are then realized in syntax. In other words, semantic choices of aspect, causality, and attitude are responsible for the syntactical configurations. An example would be a perfective, direct agency assertive statement with subject + complements (and adjuncts) in that thematized order being realized in an aorist active indicative clause.

Metataxis is a final feature that Tesnière identifies within this discussion. Metataxis appears to be concerned with the potential mismatch between components of languages. This was important to him, according to his editors, because Tesnière was a translator.[91] He recognized that languages were not iconistic but that elements were frequently mismatched. An active voice construction in one language might be configured with a passive construction in another. I think that Tesnière's comments here are important but perhaps for reasons other than those that are often invoked. These insights certainly apply to translation, but they are more important in moving away from the idea of universal grammar (to say nothing of a language organ) shared by all. Languages are distinct and have distinct features. One must in that sense recognize the "genius" of each language even if one does not go further down the Sapir–Whorf hypothesis path to posit uniqueness that means that one is determined in language usage or even understanding by the constraints of language. The fact that translation is possible is an excellent argument against such strong determinism.

91. Kahane and Osborne, "Translators' Introduction," xlvii–xlviii.

3.8 *Junction*

One of Tesnière's major advances was in coordination or what he prefers to call "junction." Tesnière distinguishes junction from connection or subordination. He sees junction as a horizontal function and connection/subordination as a vertical function. He also rightly sees that junction provides a means of increasing language efficiency by combining elements of similar status or levels. For example, as the editors show in an example, the two sentences *Bill attended the valency conference* and *Patricia attended the valency conference* can be more efficiently expressed as *Bill and Patricia attended the valency conference*. For this insight, Tesnière is to be commended.[92]

One might wonder, however, how this addresses questions regarding valency. There are several observations that might be made. The major one is that junction provides a means of moving beyond the clause through complexing. Nominal groups might be complexed as in the example above, as well as larger levels of the rank scale. In that sense, junction provides a means of expanding the descriptive capabilities of valency grammars by making them potential grammars of texts rather than just of clauses or sentences.

However, in the combining that Tesnière describes, there are some limitations. One of these is that the junction and connection relations are, at least at first appearance, syntactical. They are means of syntactically joining units of text. Nevertheless, in the example cited above, we may raise the question of whether the two independent sentences *Bill attended the valency conference* and *Patricia attended the valency conference* do indeed mean the same thing when combined as *Bill and Patricia attended the valency conference*. Whereas the first syntactically and functionally separates the two participants by means of their separate clausal structures, they are combined in the second. More than just syntactical junction may occur, to the point that we wonder whether it was not simply that Bill and Patricia attended the same conference but whether they attended it together, such that Bill and Patricia as a noun group complex are a conceptual entity. To put it the other way around, if I were to state, *Stan attended the valency con-*

92. See Tesnière, *Elements of Structural Syntax*, 315.

ference and *Wendy attended the valency conference*, one might wonder why, once one learned that Wendy and Stan are married, the statement was not *Stan and Wendy attended the valency conference*. Did they arrive and attend separately? Why did they do that? Etc.

These kinds of observations push us to recognize more than taxis as the means of describing clausal relations. Taxis is, as Tesnière rightly points out, a way of describing status and dependency, with junction concerned with equal status and connection with unequal or dominated status. In SFL, the taxis system is concerned with parataxis for equal elements and hypotaxis for unequal or dominated elements, a system found in many linguistic models.[93] However, as our examples above suggest, there are other ways of describing such relationships between elements that expand the potential of relational description. This is the logico-semantic relational system.[94] This system is also based upon two functional relationships: projection and expansion. Projection occurs when a secondary clause projects the primary clause by means of ideas or locutions as in *I said he would attend the conference*, in which *I said* is projected as the idea he would attend the conference. Expansion occurs when the primary clause is expanded in a variety of ways. The three major ways include (Table 2):

- elaboration, when restatement of equal elements occurs, as in *Paul, apostle of the Lord Jesus Christ* (paratactic) or *Jesus Christ, who is lord over all* (hypotactic)

- extension, when a further statement of equal status is added, as in *She attended the conference and delivered a paper* (paratactic) or *She attended the conference, whereas he did not* (hypotactic); or

93. Halliday, *Halliday's Introduction to Functional Grammar*, 440; cf. 451–60.

94. Halliday, *Halliday's Introduction to Functional Grammar*, 460–87; see Dawson, "Multi-Dimensional Model," for further on the Greek logico-semantic system.

- enhancement, when a further, qualifying statement (time, means, manner) of unequal status is added, as in *He gave a terrible paper, so he won't be invited back* (paratactic) or *She attended the conference, while she was doing her doctorate in linguistics* (hypotactic).

Table 2. Logico-Semantic Relations of Expansion

The logico-semantic system adds something to the taxis system by using notions of equality and subordination but functionally describing them in relation to each other.

3.9 *Transfer*

The final category I will discuss is transfer. Transfer is a syntactical process by which one element is transferred from one syntactical position to another usually occupied by a different kind of element, according to Tesnière.[95] The example that is given is the transfer of a noun such as *bread* to an adjective, by means of creating a prepositional phrase *of bread*. The result is that *bread* as a noun can become *loaf of bread*, with *of bread* describing *loaf*. Tesnière makes a useful distinction between content words (such as nouns, verbs, adverbs, and adjectives) and function words or what he called translatives. The content words can, by means of the translatives, be transferred. This idea is attributed by the editors to the expansive capacity of language (and equated with recursion) because the transferred elements retain characteristics of their originating position even in their secondary usage. The editors of Tesnière's *Elements* disagree, however, over whether this innovation of Tesnière is to be categorized as representing constituency or dependency. If they cannot agree, then I dare not venture into the discussion. Suffice it to say that Tesnière used transfer to speak of a wide range of kinds of transference from a source to a target category, with grammatical changes made along the way.

There are some other observations to be made, however, that I think are important. The first is that the editors note that Jespersen had already said something similar when he spoke of rank.[96] This

95. See Kahane and Osborne, "Translators' Introduction," li.

96. Jespersen, *Analytic Syntax*, 109–10; cf. Jespersen, *Philosophy of Grammar*.

is an important acknowledgment, because it is the rank scale that, I believe, provides a good explanation of much (although not all) of what Tesnière is attempting to model. To a large extent, Tesnière is speaking of the same element (or at least a form of the same element) performing different functions at different ranks or at least in different syntactical configurations.

The second is that one of the confusing and potentially limiting factors in Tesnière's description is his retention of parts of speech to describe the categories, rather than adopting a rank scale approach. It is surprising how often this distinction is neglected. For example, as noted above, it is not uncommon to hear reference to word order patterns of subject–verb–object or the like. Verb is a part of speech, but subject and object are not; they are functions within clauses.

If Tesnière had been clearer in his categories, perhaps he could have more fully developed the notion of transfer. Transfer appears in many ways to be very similar to what SFL calls rankshifting. Rankshifting occurs when an element of a higher rank performs the function of an element at a lower rank. Rankshifting may occur in a wide variety of syntactical configurations. Some examples that we are familiar with from Greek are the rankshifting of verbs, in particular, the participle. At the rank of clause, a participle may be the predicator of an embedded clause that functions as an adjunct. However, a participle may also, as a clause, be rankshifted to function as a modifier (often as a definer) in a nominal group at the word group rank. Rankshifting with components larger than the word occur frequently—for example, rankshifting of clauses in which a relative clause functions as a modifier within a nominal group.

Another interesting feature of Tesnière's concept of transfer is how similar it is in some ways to what SFL calls grammatical metaphor. Grammatical metaphor may be either interpersonal or ideational. A form of ideational metaphor is the changing of a process into an entity. An example reflective of the New Testament would be *He believes in Jesus Christ* and *His belief is known throughout Achaia*. SFL traditionally defines grammatical metaphor as unidirectional from process to entity. One of the examples that Tesnière's editors provide is *I am pleased that Peter achieved that*, in which *achieved* is a verb. They also provide the example

of *I like Peter's achievement of that*. This process *achieve* has been restated as an entity *achievement*.[97] The full possibilities of grammatical metaphor have not yet been explored, certainly in biblical Greek studies.[98]

4. *Conclusion*

The editors of Tesnière's volume conclude their chapter with a discussion of developments in dependency grammar after and in light of Tesnière.[99] They discuss the following topics: various characterizations or definitions of dependency; grammatical functions in relationship especially to syntax; projectivity, which is related to word order and larger units of dependency; function words, with the recognition that most successive dependency grammars have not adopted Tesnière's view of them; formalizing valency, to get beyond instinctive views (although arguably the editors put too much effort into the notion of formalization and proof, since most models of language can, at best, probably only be internally consistent); and automated text processing and its possibilities. From reading this brief summary and some of the other works on dependency or valency that I have, I see that some of the issues that I have raised have been addressed in various ways in some of this subsequent research. I am sure that I have made many mistakes and misinterpreted many issues in valency grammar as I have attempted to critically engage with it (please forgive me for these). In any case, my goal has not been to assess in a negative way and certainly not to re-fashion or re-make valency theory in any significant respect, but it has been to raise some questions from the perspective of an outsider in light of my own orientation to language. If I have misunderstood various matters, then perhaps these are not as clear as they might be to one coming to the topic from another perspective. If I have caused those devoted to valency grammar to at least take the time to consider my comments and proposals, then I will have been satisfied—especi-

97. Kahane and Osborne, "Translators' Introduction," liii.
98. See Porter, *Linguistic Descriptions*, 81–109.
99. Kahane and Osborne, "Translators' Introduction," lx–lxix.

ally if it leads to new and interesting insights into how to understand the Greek of the New Testament.

Bibliography

Allerton, D. J. "Valency Grammar." In *Encyclopedia of Language and Linguistics*, edited by Keith Brown, 301–14. 2nd ed. Amsterdam: Elsevier, 2006.

Arnauld, Antoine. *A General and Rational Grammar, Containing the Fundamental Principles of the Art of Speaking*. Translated by Messieurs de Port-Royal. 1660. London: Nourse, 1753.

Banks, David. *A Systemic Functional Grammar of English: A Simple Introduction*. London: Routledge, 2019.

Beaney, Michael, ed. *The Frege Reader*. Oxford: Blackwell, 1997.

Blake, Barry J. *Case*. CTL. Cambridge: Cambridge University Press, 1994.

Bloomfield, Leonard. *Language*. London: George Allen & Unwin, 1933.

Bühler, Karl. *Sprachtheorie: Die Darstellungsfunktion der Sprache*. Frankfurt: Ullstein, 1934. ET: *Theory of Language: The Representational Function of Language*. Translated by Donald Fraser Goodwin. Amsterdam: Benjamins, 1965.

Butt, Miriam. *Theories of Case*. CTL. Cambridge: Cambridge University Press, 2006.

Chomsky, Noam. *Cartesian Linguistics: A Chapter in the History of Rationalist Thought*. New York: Harper & Row, 1966.

———. *Syntactic Structures*. The Hague: Mouton, 1957.

Clark, S. W. *A Practical Grammar: In which Words, Phrases, and Sentences Are Classified According to their Offices and their Various Relations to One Another*. Rev. ed. New York: A. S. Barnes & Burr, 1863.

Croft, William. *Radical Construction Grammar: Syntactic Theory in Typological Perspective*. Oxford: Oxford University Press, 2001.

Dawson, Zachary K. "A Multi-Dimensional Model of the System of Conjunction for the Greek of the New Testament." In *Putting the Pieces Together: Formalizing Units and Structures in the Biblical Languages*, edited by Stanley E. Porter, Christopher D. Land, and James D. Dvorak, 72–103. Eugene, OR: Pickwick, 2024.

De Groot, A. W. *Structurele Syntaxis*. The Hague: Servire, 1949.

Descartes, René. *Philosophical Writings*. Translated by Norman Kemp Smith. New York: Modern Library, 1958.

Dik, Simon C. *The Theory of Functional Grammar: Part 1—The Structure of the Clause*, edited by Kees Hengeveld. 2nd rev. ed. Berlin: Mouton de Gruyter, 1997.

———. *The Theory of Functional Grammar: Part 2—Complex and Derived Constructions*, edited by Kees Hengeveld. Berlin: Mouton de Gruyter, 1997.

Doney, Willis, ed. *Descartes: A Collection of Critical Essays*. Garden City, NY: Doubleday, 1967.

Fillmore, Charles J. "The Case for Case." In *Universals in Linguistic Theory*, edited by Emmon Bach and Robert T. Harms, 1–90. New York: Holt, Rinehart & Winston, 1968.

Firth, J. R. "The Technique of Semantics." *Transactions of the Philological Society* 34 (1935) 36–73. Republished in Firth, *Papers in Linguistics 1934–1951*, 7–33. London: Oxford University Press, 1957.

Flack, Patrick. "Inner Form and the Development of the Concept of Expression in Structuralism and Phenomenology (Špet, Jakobson, Merleau-Ponty)." *Histoire, Épistémologie, Langage* 45.1 (2023) 87–104. DOI: 10.4000/hel.3516.

Geach, Peter, and Max Black, eds. *Translations from the Philosophical Writings of Gottlob Frege*. 2nd ed. Oxford: Blackwell, 1960.

Givón, T. Syntax: *A Functional-Typological Introduction. Vol. 1*. Amsterdam: Benjamins, 1984.

Goldberg, Adele E. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press, 2006.

Halliday, M. A. K. *Halliday: System and Function in Language*, edited by Gunther Kress. Oxford: Oxford University Press, 1976.

———. *Halliday's Introduction to Functional Grammar*. 4th ed. Revised by Christian M. I. M. Matthiessen. London: Routledge, 2014.

———. "Systemic Background." In *On Language and Linguistics*, edited by Jonathan J. Webster, 185–98. CWMAKH 3. London: Continuum, 2003.

Hasan, Ruqaiya. "The Grammarian's Dream: Lexis as Most Delicate Grammar." In *New Developments in Systemic Linguistics. Volume One: Theory and Description*, edited by M. A. K. Halliday and Robin P. Fawcett, 184–211. London: Pinter, 1987.

Herbst, Thomas. "English Valency Structures—A First Sketch." *EESE* 2/99 (1999). No pages. Online: https://webdoc.gwdg.de/edoc/ia/eese/artic99/herbst/main1.html.

Hjelmslev, Louis. *Prolegomena to a Theory of Language*. Translated by Francis J. Whitfield. Madison: University of Wisconsin Press, 1963.

Hockett, Charles F. *A Course in Modern Linguistics*. New York: Macmillan, 1958.

Hoey, Michael. *Lexical Priming: A New Theory of Words and Language*. London: Routledge, 2005.

Höllein, Dagobert. "Valency Theory." *Oxford Bibliographies* (2023). No pages. DOI: 10.1093/obo/9780199772810-0260.

Hudson, Richard. *Word Grammar*. Oxford: Blackwell, 1984.

Humboldt, Wilhelm von. *On Language: On the Diversity of Human Language Construction and its Influence on the Mental Development of the Human Species*, edited by Michael Losonsky. Cambridge: Cambridge University Press, 1999.

Jespersen, Otto. *Analytic Syntax*. 1937. Repr., Chicago: University of Chicago Press, 1984.

———. *The Philosophy of Grammar*. London: George Allen & Unwin, 1924.

Jones, W. T. *A History of Western Philosophy. Volume 5: The Twentieth Century to Wittgenstein and Sartre*. 2nd ed. New York: Harcourt Brace Jovanovich, 1975.

Kahane, Sylvain, and Timothy Osborne. "Translators' Introduction." In Lucien Tesnière, *Elements of Structural Syntax*, xxix–lxxiii. Translated by Timothy Osborne and Sylvain Kahane. Amsterdam: Benjamins, 2015.

Langacker, Ronald W. *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press, 2008.

Lee, Penny. *The Whorf Theory Complex: A Critical Reconstruction*. Amsterdam: Benjamins, 1996.

Malchukov, Andrej, and Andrew Spencer, eds. *The Oxford Handbook of Case*. Oxford: Oxford University Press, 2009.

Martin, J. R. *English Text: System and Structure*. Amsterdam: Benjamins, 1992.

Matthiessen, Christian M. I. M. *System in Systemic Functional Linguistics: A System-Based Theory of Language*. Sheffield: Equinox, 2023.

Mel'čuk, Igor A. *Dependency Syntax: Theory and Practice*. Albany: State University of New York Press, 1988.

Moravcsik, Edith A., and Jessica R. Wirth, eds. *Syntax and Semantics, Volume 13: Current Approaches to Syntax*. New York: Academic, 1980.

Peirce, Charles Sanders. *Collected Papers of Charles Sanders Peirce. Volumes III and IV*, edited by Charles Hartshorne and Paul Weiss. Cambridge, MA: Harvard University Press, 1933.

Perlmutter, David M., ed. *Studies in Relational Grammar 1*. Chicago: University of Chicago Press, 1983.

Pike, Kenneth L. *Language in Relation to a Unified Theory of the Structure of Human Behavior*. 2nd ed. The Hague: Mouton, 1967.

Porter, Stanley E. "The Case for Case Revisited." *Jian Dao* 6 (1996) 13–28.

———. *Idioms of the Greek New Testament*. 2nd ed. Sheffield: Sheffield Academic, 1994.

———. "Is There a Verbal Group in Ancient Greek? Some Very Preliminary Observations." In *Aspecto Verbal e Semantica Modal no Grego Antigo: Estudos Linguisticos e Literários do Grego*, edited by Roque do Nascimento Albuquerque, Paulo Ricardo Rocha Caproni, and Stanley E. Porter. Redenção, CE (Brazil): privately published, forthcoming.

———. *Linguistic Descriptions of the Greek New Testament: New Studies in Systemic Functional Linguistics*. LNTG 1. London: T&T Clark, 2023.

———. *The Pastoral Epistles: A Commentary on the Greek Text*. Grand Rapids: Baker, 2023.

———. "Systemic Functional Linguistics and the Greek Language: The Need for Further Modeling." In *Modeling Biblical Language: Selected Papers from the McMaster Divinity College Linguistics Circle*, edited by Stanley E. Porter, Gregory P. Fewster, and Christopher D. Land, 9–47. LBS 13. Leiden: Brill, 2016.

———. "Verbal Aspect and Process Types in Ancient Greek from a Systemic Functional Linguistic Standpoint (Part One)." *FilNeot* 36 (2023) 31–63.

———. "Verbal Aspect and Process Types in Ancient Greek from a Systemic Functional Linguistic Standpoint (Part Two)." *FilNeot* 38 (2025), forthcoming.

———. *Verbal Aspect in the Greek of the New Testament, with Reference to Tense and Mood*. SBG 1. New York: Peter Lang, 1989.

Porter, Stanley E., and Christopher D. Land. "The Ancient Greek Nominal Group, with Attention to the Greek New Testament." *Word* 68.1 (2022) 1–44.

Porter, Stanley E., and Matthew Brook O'Donnell. *Discourse Analysis and the Greek New Testament: Text-Generating Resources*. LNTG 2. London: T&T Clark, 2024.

Przepiórkowski, Adam. 2018. "The Origin of the Valency Metaphor in Linguistics." *Lingvisticae Investigationes* 41.1 (2018) 152–59.

Reed, Alonzo, and Brainerd Kellogg. *A Work on English Grammar and Composition*. New York: Clark & Maynard, 1879.

Sapir, Edward. *Selected Writings in Language, Culture, and Personality*, edited by David G. Mandelbaum. Berkeley: University of California Press, 1949.

Saussure, Ferdinand de. *Course in General Linguistics*. Edited by Charles Bally and Albert Riedlinger. Translated by Wade Baskin. 1916. New York: Philosophical Library, 1959.

Tesnière, Lucien. *Elements of Structural Syntax*. Translated by Timothy Osborne and Sylvain Kahane. 1954. Amsterdam: Benjamins, 2015.

———. *Esquisse d'une syntaxe structural*. Paris: Klincksieck, 1953.

Van Valin, Robert D., Jr., and Randy J. LaPolla. *Syntax: Structure, Meaning and Function*. CTL. Cambridge: Cambridge University Press, 1997.

Whorf, Benjamin Lee. *Language, Thought, and Reality*, edited by John B. Carroll, Stephen C. Levinson, and Penny Lee. 2nd ed. Cambridge, MA: MIT Press, 2012.