

A Look at Tesnière's *Éléments* through the Lens of Modern Syntactic Theory

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Abstract

A recent project to produce a much belated English translation of Lucien Tesnière's *Éléments de syntaxe structurale* has provided the opportunity for an in depth look at Tesnière's theory of syntax. This contribution examines a few aspects of Tesnière's work through the lens of modern syntactic theory. Tesnière's understandings of constituents and phrases, auxiliary verbs, prepositions, gapping, right node raising, propositional infinitives, and exocentric structures are all briefly considered. Concerning some of these areas, we see that Tesnière was visionary with his analysis, whereas in other areas, modern syntactic theory now rejects his account. Of particular interest is the fact that Tesnière's theory was not entirely dependency-based. His account of *transfer* (Fr. *translation*) acknowledged exocentric structures, which means his system was also employing constituency. In this regard, one can, surprisingly, classify Tesnière's theory as a hybrid dependency-constituency grammar.

1 Introduction

Lucien Tesnière (1893-1954) is widely considered to be the father of modern dependency grammars (DGs). While the dependency concept certainly existed in varying forms in the works of numerous grammarians that preceded him, Tesnière (1959) was the first to fully utilize the concept of direct word-word dependencies in a comprehensive manner and to illustrate these dependencies using tree representations (stemmas) that left no doubt about the analysis of syntactic structure being proposed. In particular, Tesnière appears to have been the first promi-

nent theoretician to have rejected the binary division of the clause into a subject and predicate and to have replaced this division with verb centrality. The placement of the verb as the root of all syntactic structure was the all-important novelty (and the main act of genius) in his theory. Given verb centrality, the theory of syntax that Tesnière was proposing could not help but be construed as a DG.

Despite the fact that Tesnière is widely acknowledged as the father of an entire stream of syntactic theory, most syntacticians and grammarians lack exposure to his work. Few grammarians have actually read Tesnière's *Éléments de syntaxe structurale*, largely because an English translation of the *Éléments* is absent from the world of linguistics. Spanish, Italian, and German translations of the *Éléments* exist, but surprisingly, no English translation is yet available. With this lacuna in mind, a recent project to translate the *Éléments* into English has been initiated and is continuing at present. This project is providing an in depth look at Tesnière's theory and has motivated the current contribution.

Tesnière's *Éléments* is large in size, 670 pages with hundreds of tables and tree diagrams (stemmas). Tesnière addresses many aspects and phenomena of syntax, whereby he employs examples from approximately two dozen languages, many of which he actually spoke – Tesnière was a true polyglot. In this respect, the intent of the current contribution is to briefly consider only a few important areas of the *Éléments*, these areas being the ones that stuck out during the translation work. Certain aspects of Tesnière's understanding of constituents and

phrases, auxiliary verbs, prepositions, gapping, right node raising, propositional infinitives, and exocentric structures are considered below.

Two highlights can be mentioned here up front. First, Tesnière rejected much of the terminology of syntax that preceded him, declaring that morphologists had imposed their nomenclature on the study of syntax and thus confused our understanding of syntax (ch. 15). In this regard, Tesnière had a penchant for introducing new terms, many of which have not become established. One can therefore speculate about the reduced impact of his work due to his unfortunate use of terminology. Second, Tesnière never actually employed the term *dependency grammar* (Fr. *grammaire de la dépendance*). In fact it seems likely that he was not aware of the difference between dependency and constituency, since that distinction would be established later during the reception of his work.¹ In this respect, he did not shy away from employing constituency in his theory of *transfer* (Fr. *translation*), a fact that may have been overlooked until now.

To conclude this introduction, a note concerning the citation practice employed below for Tesnière's book is necessary. The *Éléments* is split into 278 chapters, whereby each paragraph in a chapter is numbered. When citing specific passages, the chapter (ch.) and paragraph (§) are given (e.g. ch. 3, §3) instead of the page number. This practice avoids confusion that might arise if page numbers were cited due to the various editions of the *Éléments* in various languages (French, German, Spanish, Italian, and soon English as well).

2 Constituents and phrases

The constituent is the basic unit of syntactic analysis assumed by most constituency grammars. A constituent is typically defined as *a node plus all the nodes that that node dominates* (for similar definitions, see Napoli 1993:167; Jacobson 1996:55; Haegeman and Guéron 1999:51; Carnie 2008:37). Given such a definition, the number of constituents in a given tree structure matches the number of nodes. In the past, many DGs seem to have overlooked the

¹ According to Jurafsky and Martin (2000:489), David Hays (1964) may have been the first to employ the term *dependency grammar*.

fact that the definition is applicable to dependency structures as well and that it identifies subtrees as constituents. A subtree that consists of a single node is simply a *word*, whereas a subtree consisting of more than one word is a *phrase*. In other words, DGs can and do acknowledge constituents and phrases just like constituency grammars do, the only difference being that DGs acknowledge many fewer of both.

Tesnière certainly saw the need to acknowledge the status of subtrees as particular units of syntax, but his use of terminology in the area was not consistent and this inconsistency has probably contributed to the confusion about whether dependency grammars acknowledge constituents and phrases.

Tesnière defined the node (Fr. *nœud*) as follows:

“We will define the *node* as a group consisting of a governor and all the subordinates that are to some degree either directly or indirectly dependent on that governor. The governor joins these nodes into a single cluster.” (ch. 3, §3)

It should be apparent from this definition that Tesnière saw any subtree of a tree as a node, which in turn means that he was acknowledging constituents and phrases, although the terminology he was using to denote these units (*nœud*) was different from modern usage (*constituent*, *phrase*).

In fact Tesnière's use of terminology was, as stated, inconsistent in this area.² While his original definition suggested that his node was to be understood as a subtree, his later (and preferred) use of the term points to the meaning ‘vertex’. In other words, Tesnière usually meant just ‘vertex’ when he wrote *nœud* despite the fact that he had defined the node to be a subtree, i.e. a constituent. The contradiction in his use of terminology is seen most vividly in the passage where he is comparing the node to the *nucleus*:

“The *node* is nothing more than a geometric point, whereas the *nucleus* is a collection of multiple points...” (ch. 22, §12)

² This statement may be unfair. The *Éléments* was published posthumously. The inconsistency in the use of the term *nœud* may have arisen as the manuscript was being prepared for publication by others.

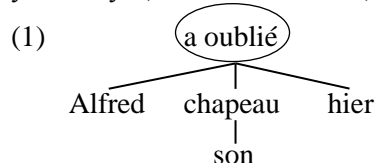
Comparing this passage with the previous one where Tesnière initially defines the node, the contradiction should be apparent.

The pertinent question now concerns the extent to which Tesnière's inconsistent use of terminology has contributed to the fallacious perception that DGs do not acknowledge constituents and phrases. They of course can and do acknowledge such units, although they have not been clear about their use of the associated terminology.

3 Auxiliary verbs

Most modern DGs assume that auxiliary verbs dominate main verbs, and in this respect, they are consistent with most constituency grammars. In the Government and Binding framework (Chomsky 1981), for instance, a finite verb resides in I, which projects up to IP, the root node of the clause, and in the Head-Driven Phrase Structure Grammar framework (Pollard and Sag 1994), a finite auxiliary verb is the head daughter in the clause, which means it passes its features up to the root node of the clause, the clause being a greater VP in a sense.

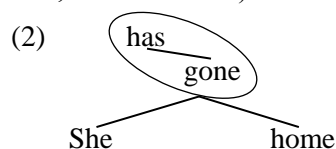
Tesnière, in contrast, did not explicitly state that given a two-word string such as *has gone*, the auxiliary verb *has* governs the main verb *gone*. He instead positioned the two in one and the same *split nucleus* (*nucleus dissocié*, ch. 23). The auxiliary verb *has* guarantees the syntactic contribution of the split nucleus and the full verb *gone* guarantees its semantic contribution. Tesnière drew a bubble around the two words in order to indicate that the two belong to one and the same nucleus. He illustrated this state of affairs with the diagram of the sentence *Alfred a oublié son chapeau hier* 'Alfred forgot his hat yesterday' (ch. 31, stemma 39):



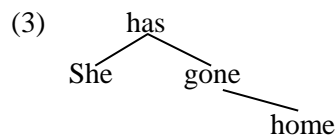
Given this analysis, Tesnière, if he were alive today, might object to the widespread assumption that sees the auxiliary verb governing the main verb.

On the other hand, he might actually approve of the modern practice, since he drew another

distinction that can be interpreted as accommodating the modern analysis. He distinguished between *constitutive* and *subsidiary* words inside nuclei (ch. 29). A constitutive word guarantees the syntactic integrity of the nucleus, whereas the subsidiary word is a satellite of the constitutive word. He also states (ch. 38, §13) that in a split nucleus consisting of an auxiliary verb and a full verb, the auxiliary verb is constitutive. Further, he explains that from an etymological point of view, the constitutive word once governed the subsidiary word (ch. 29, §18) and that this fact can be shown inside a nucleus by positioning the constitutive word above the subsidiary word. This practice would result in tree representations like the following one (my rendition, not Tesnière's):



The step from this tree to the modern analysis is not so great. By positioning the subject as a direct dependent of the finite verb and the adverb as a direct dependent of the participle, one accommodates directly in the tree both subject-verb agreement and the lack of object-verb agreement:

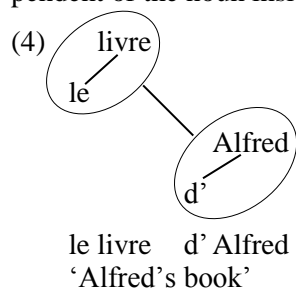


These considerations suggest that the modern practice in both constituency and dependency grammars of positioning the auxiliary verb as head over the full verb is not necessarily contrary to Tesnière's theory. In fact Tesnière's analysis can be construed as presaging the modern analysis of auxiliary verbs, which did not take full hold until the 1980s – in Transformational Grammar, the auxiliary verb was originally construed as a daughter of S (but not as the head daughter).

4 Prepositions

While Tesnière's account of auxiliary verbs presaged the modern analysis, his account of prepositions was entirely contrary to modern

assumptions. He classified many prepositions as semantically empty (Fr. *mot vide*) (ch. 28, §18) and syntactically subsidiary (Fr. *mot subsidiaire*) (ch. 29, §4). For Tesnière, prepositions were *translatives* (ch. 40, §4), which meant they served to transfer a word of one class into a word of another class, e.g. a noun to an adjective. The fact that these words were subsidiary means that for Tesnière, they could be analyzed as etymologically dependent on a constitutive word within a nucleus (ch. 29, §18). What this means is that from an etymological point of view, Tesnière took the preposition to be a dependent of the noun inside a split nucleus, e.g.



This tree has been adapted from stemma 32 (ch.29) to show the etymological dependencies inside the nuclei. The important point is that the status of the preposition *d'* in Tesnière's system as a subsidiary word requires one to view it in an etymological sense as a dependent of the prepositional object. This analysis is, however, quite contrary to modern accounts, which almost unanimously take the preposition to be head over its object.

To be fair, Tesnière's analysis of prepositions was not entirely unlike the syntactic analysis of prepositions of his day. For instance, Bloomfield's original analysis of prepositional phrases (1933) took them to be exocentric constructions, meaning that neither the preposition nor its object noun could be construed as the head of the phrase. Section 8 below has more to say about the distinction between endo- and exocentric constituents.

5 Gapping and right node raising

The part of Tesnière's theory that was perhaps most ahead of its time regards coordination (*Jonction*, Part II of the *Éléments*). In particular, Tesnière identified and produced an analysis of two aspects of coordinate structures, *gapping*

and *right node raising*, that would not be acknowledged and explored until much later in the works of Ross (1970), Jackendoff (1971), and Postal (1974). Tesnière recognized key traits of gapping and right node raising and his analysis of these phenomena remains largely consistent with more modern DG accounts (e.g. Hudson 1988, 1989, Osborne 2008), although there are certainly differences in the details.

Tesnière called gapping *double bifurcation* (*bifidité double*, ch. 146). He interpreted it to be a combination of both *catadidymic* and *anadidymic* coordination (Fr. *jonction catadidymes et anadidymes*, ch. 145, §13). Catadidymic coordination obtains when one or more shared dependents appear to the immediate right of the coordinate structure, whereas anadidymic coordination obtains when one or more shared dependents appears to the immediate left of the coordinate structure, e.g.

Catadidymic

(5) [R. picks] and [B. cracks] the chestnuts.

Anadidymic

(6) A. [loves cake] and [detests punishment].

The expressions *catadidymic* and *anadidymic* are obscure terms that Tesnière borrowed from biology. He describes their meaning with a metaphor as follows:

“... catadidymic sentences are comparable to the dragon with multiple heads in the fable (cf. La Fontaine, *Fables*, I, 12), and anadidymic sentences to the dragon with multiple tails.” (ch. 145, §14)

While Tesnière's analysis of these examples was insightful, his choice of obscure terminology has probably hindered the spread of his theory of coordination (and otherwise) more than anything. The modern English designation for instances of coordination like the one in (5) is *right node raising*, a term that is due to Postal (1974). While this modern term is also not ideal (because Postal's original analysis of the phenomenon is no longer defended), it at least contains “right”, this adjective pointing to the fact that the shared material appears to the right of the coordinate structure.

Tesnière took instances of gapping to be a combination of both catadidymic and ana-

didymic coordination. He therefore coined the term *anacatadidymic* to denote the phenomenon, e.g.

Anacatadidymic

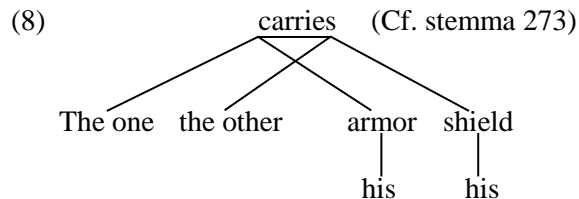
(7) The one carries his armor, the other his shield.

He characterized anacatadidymic coordination with the following metaphor:

“This sentence behaves like a dragon that has both multiple heads and multiple tails, but just one trunk. Or even like Siamese twins who are conjoined together back to back.” (ch. 146, §4)

We again sense that Tesnière’s choice of terminology was poor, since the term *anacatadidymic* does not evoke any associations. The modern term for such instances of coordination, i.e. *gapping*, is much more appropriate, since one clearly senses the presence of a “gap”; the verb is gapped from the non-initial conjuncts.

Tesnière’s primary insight in cases of gapping was that the verb is shared in a sense, a point that nobody would dispute. He rendered such cases of gapping with the French version of the following stemma:



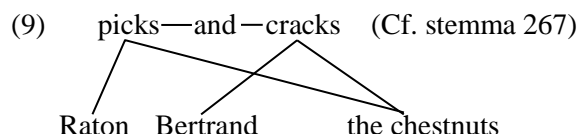
This stemma indicates important aspects of interpretation and meaning; it shows that the first subject and object share the verb in the same manner as the second subject and object. Furthermore, it shows that the verb has two subject actants and two object actants. Tesnière also correctly observed (ch. 146, §12) that the remnants in the gapped conjunct can be adjuncts (*circonstants*) as well as arguments (*actants*).

While Tesnière’s analysis of gapping was brief (ch. 146 only), it correctly identified key aspects of the gapping mechanism. The reason Tesnière is not credited with his insightful analysis may in part be his unfortunate choice of terminology. His penchant for obscure grammatical terms certainly did not promote the accessibility of his account.

6 More on right node raising

As mentioned in the previous section, Tesnière also identified the mechanism of *right node raising*. His analysis was, again, characterized in terms of bifurcation, whereby the particular type of bifurcation he assumed in cases of right node raising was catadidymic, i.e. the shared dependents appeared to the right of the coordinate structure (a dragon with two heads but just one tail).

Tesnière produced the following dependency analysis of the sentence *Raton picks and Bertrand cracks the chestnuts*:



This stemma correctly reflects some of the key traits of right node raising. It shows the manner in which the object *the chestnuts* is shared by the verbs at the same time that the verbs do not share a subject. It also correctly indicates that coordination occurs at the highest level, i.e. with the verbs.

Another important aspect of the analysis in (9) is that it does not rely on some notion of deletion or ellipsis, and in this respect, it is congruent with certain data where we can see that an ellipsis or deletion analysis contradicts observation, e.g.

- (10) a. [I sang] and [you hummed] the same tune.
 b. *[I sang ~~the same tune~~] and [you hummed the same tune].

The deletion analysis indicated in (10b) cannot be correct, since the non-elided version of the sentence would mean something different from (10a). In other words, *I sang the same tune and you hummed the same tune* does not correctly reflect the intended meaning of (10a), since it necessitates that the tune referenced appear in the preceding context, whereas sentence (10a) is not referencing a tune in the previous context.

While Tesnière’s analysis of right node raising and other phenomena of coordination did not posit deletion or ellipsis, he did make clear that at a semantic level, coordination involves the ‘addition’ of numerous underlying sentences.

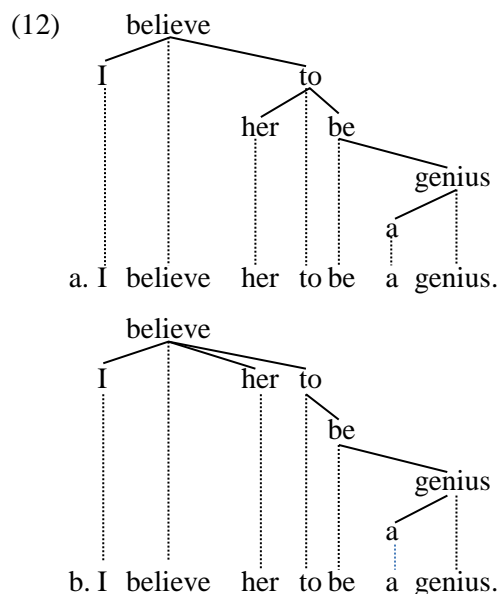
His comment in this regard was that coordination is a very powerful device that allows for great economy of expression, a statement that no one who has studied coordination would dispute.

7 Propositional infinitives

In modern syntactic theory, the analysis of certain *to*-infinitives is a matter of controversy.

- (11) a. I believe her to be a genius.
 b. You assumed me to know the answer.

There are essentially two competing analyses of the underlined strings: either the object nominal and the *to*-infinitive phrase form a constituent or they do not. If they do not, both are construed as dependents of the matrix verb. The two competing analyses are illustrated as follows:

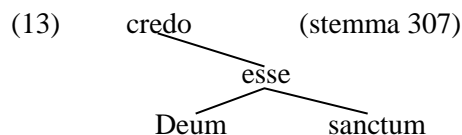


The main distinction here is whether the object nominal (here *her*) is construed as a dependent of the matrix verb or of the embedded verb (here of the particle *to*). Modern transformational/derivational accounts of such data are associated with *small clauses*, and they prefer an analysis like the one in (12a) (e.g. Chomsky 1986:20, Ouhalla 1994:109ff., Haegeman and Guéron 1999:108ff.), whereas representational grammars, which tend to be accepting of flatter structures, prefer the analysis in (12b) (e.g. Culicover and Jackendoff 2005:131ff.).

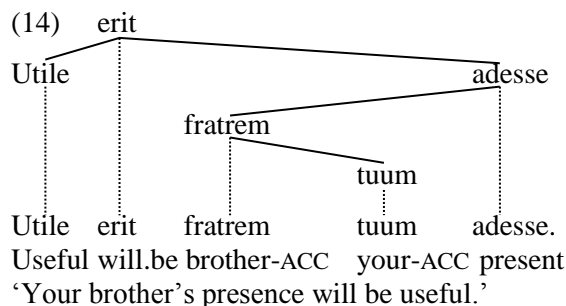
Surprisingly, Tesnière's account of such data is more supportive of the analysis shown in (12a) than of the one in (12b). This is surprising

because the very nature of dependency-based analyses of syntactic structure is that they must in many cases assume relatively flat structures. Tesnière called the small-clause-like constructions illustrated with (11-12) *propositional infinitives* (ch. 182). Based primarily on data from Latin and Greek, he construed the propositional infinitive as the root of a clause-like substructure.

The particular analysis he assumed is illustrated with the Latin sentence *Credo Deum esse sanctum* 'I believe God to be holy'.



The thing to note about this example is the fact that Tesnière construed *Deum* 'God' as a dependent of *esse* 'be'. His analysis was therefore similar to the analysis in (12a), both trees showing the (*to*-)infinitive as the root of an infinitival clause. The main piece of evidence that he produces in favor of the analysis in (13) is that the entire propositional infinitive phrase can function as subject, whereby the logical subject of the infinitive, *Deum* in (13), remains in the accusative case. Tesnière illustrated this fact with a different Latin sentence:



The fact that *fratrem tuum* remains in the accusative case suggests strongly that *fratrem tuum* is indeed a dependent of *adesse* as shown in (14), for if *fratrem tuum* were a dependent of *erit*, we would expect to find the nominative case, *frater tuus*. In other words, the nominative *frater tuus* instead of the accusative *fratrem tuum* would be necessary if *fratrem tuum* were a dependent of the finite verb *erit*. It would be functioning syntactically like a normal subject and would therefore have to appear in the nominative.

Tesnière also notes that propositional infinitives occur in English (and French). The English example he produces is *I suppose my friend to be very rich* (ch. 182, §14). While he did not produce a tree to illustrate his structural analysis of this sentence, we can assume that he would have extended his analysis of the Latin examples to English, whereby the noun phrase *my friend* would be construed as a dependent of the split nucleus *to be*.

While Tesnière's analysis of propositional infinitives seems correct for the Latin and Greek data that he discussed, it is debatable whether the analysis shown in (13) can be extended to English examples. In fact there is strong evidence suggesting that his analysis of the Latin and Greek examples does not extend to English. In other words, Tesnière's analysis of small clause-like constructions was probably incorrect for English. A number of facts demonstrate this to be the case. For instance, the propositional infinitive cannot function as the subject in English, e.g.

(15) a. *My friend to be very rich is supposed.

But the object nominal can become the subject in the passive-like counterpart:

(15) b. My friend is supposed to be very rich.

Furthermore, the object nominal can be a reflexive pronoun that is co-referential with the subject:

(15) c. My friend supposes himself to be very rich.

And finally, constituency tests suggest that *my friend to be very rich* is not a constituent, e.g.

(16) a. *My friend to be very rich I suppose.
- Topicalization

d. *It is my friend to be very rich that I suppose. - Clefting.

e. ??What I suppose is my friend to be very rich. - Pseudoclefting

f. What do I suppose? ??- My friend to be very rich. - Answer fragment

If the object nominal were a dependent of the propositional infinitive, we would expect these constituency tests to identify the infinitival clause as a constituent. These data therefore

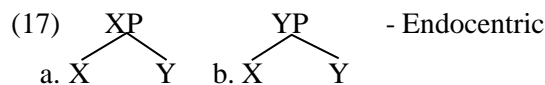
point to the validity of the analysis in (12b), where the pronoun *her* and the infinitival phrase *to be a genius* do not form a constituent.

The conclusion to be drawn from this discussion is that Tesnière's analysis of propositional infinitives was perhaps correct for Latin and Greek, but it cannot be extended to English (and not to French). His analysis was therefore not nuanced enough. A syntactic construction that was productive in Latin and ancient Greek has become largely lexicalized in modern English, meaning that only a relatively small number of predicates in English (e.g. *assume*, *believe*, *suppose*, *take*) subcategorize for such a propositional infinitive.

8 Exocentric structures

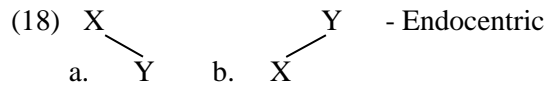
As stated in the introduction, Tesnière never employed the term *dependency grammar* (Fr. *grammaire de dépendance*). In fact Tesnière rarely used the term *dependent* in the sense that it is understood today in modern DGs; he preferred the term *subordinate* instead. What this means is that at the point in time when Tesnière was developing his theory, the distinction between dependency- and constituency-based grammars did not yet exist. Or, to be more exact, the world of linguistics was not yet aware of the distinction. In this respect, one cannot assume that Tesnière was explicitly against the modern understanding of constituency as it is employed in phrase structure grammars today. While he was very explicit about his rejection of the binary division of the clause into a subject and a predicate (ch. 49) – this division being at the core of most constituency grammars – this fact did not prevent him from employing constituency elsewhere in his theory.

The modern understanding of dependency and constituency sees all dependency-based structures as endocentric (Osborne et al. 2011:325). In this regard, the adoption of X-bar Theory in the 1970s can be interpreted as a step in the direction of DG, since X-bar Theory does not allow for exocentric structures. The distinction between endo- and exocentric structures is illustrated with the following representations:





An exocentric structure bears a category label that is unlike either of its constituent parts. Thus the structure in (17c) is exocentric because ZP is not XP or YP. Dependency by its very nature cannot acknowledge exocentric structures like the one in (17c); only endocentric structures are possible:



Dependency's rejection of the phonologically null nodes of constituency structures prevents dependency-based structures from acknowledging exocentric constituents. In other words, a given constituent in DG always bears the category label of its root node.

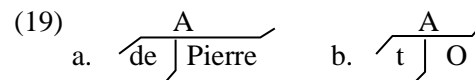
The fact that Tesnière was (probably at least somewhat) unaware of these distinctions (dependency vs. constituency, endocentric vs. exocentric) means that nothing prevented him from positing the existence of exocentric structures, for he was not attempting to produce a purely dependency-based theory of syntax. In fact, his theory of transfer (Fr. *translation*), which occupies the second half of his book (300 pages), frequently employs constituency in order to indicate transfer which, upon close examination, is revealed as an exocentric construction. This fact, i.e. that Tesnière utilized constituency to accommodate the exocentric structures that he was positing, seems to have been overlooked in the reception of Tesnière's work. In the more than 50 years since the *Éléments* was first published, the fact that Tesnière was actually proposing a hybrid dependency-constituency model of syntax is not acknowledged.

The theory of transfer starts with Tesnière's claim that in European languages, there are only four basic categories of content words (ch. 33): nouns (O), adjectives (A), verbs (I), and adverbs (E). The abbreviations O, A, I, and E are a mnemonic device; they correspond to last letter of the Esperanto equivalents (ch. 33, §3). Tesnière took other word categories that most modern theories of grammar acknowledge (adpositions, determiners, conjunctions, pronouns, etc.) to be *indices*, *junctions* (j), or *trans-*

latives (t) (ch. 38). Indices serve simply to indicate reference; they are typically clitic pronouns; junctors indicate the presence of coordination (Fr. *jonction*); and translatives serve to transfer the category of a given word to another category.

According to Tesnière, translatives are empty words and as such, they appear intra-nuclear, i.e. inside a split nucleus with a full word (ch. 40). They transfer the syntactic category of the full word in their nucleus to another category. For instance, the French preposition *de* 'of' often transfers the syntactic category of its object, which is a noun, to an adjective. The French subordinate conjunction *que* 'that' often transfers the syntactic category of its complement, which is a verb, to a noun.

Tesnière employed special devices in his stemmas to indicate the presence of transfer. He positioned the base word and its translative equi-level as sisters. He drew a vertical line separating the two, whereby the line was slanted at its base toward the translative. He drew a horizontal line above the two and placed the category resulting from the transfer medially on top of the line (ch. 155). For example:



Example (19a) is a concrete stemma, whereas (19b) is "virtual" (ch. 33), since it shows just the categories involved in the instance of transfer. Tesnière employs these graphic devices frequently. For instance, he fills 16 pages at the end of his book with large tree diagrams (stemmas 354-366), most of which contain multiple instances of transfer.

The diagrams (19a) and (19b) show that *Pierre* is a noun (O), *de* is a translative (t), and that the two together function as an adjective (A). It should be apparent that these graphic representations are manifestations of constituency, not of dependency. Constituency is evident insofar as *de* (t) and *Pierre* (O) are positioned as equi-level sisters that are dominated by the category that they become together. Constituency is also evident in the fact that there are three category labels (A, t, O) but only two words (*de* and *Pierre*). Furthermore, the entire unit is an adjective, a category distinct from either of the parts,

sistently, which may have contributed to the misconception that dependency-based structures do not acknowledge constituents and phrases, and he had an unfortunate penchant for introducing obscure terminology. This practice may also have had a negative impact on the reception and spread of his ideas. Furthermore, Tesnière's analysis of certain structures has not survived into modern theories of syntax, for instance he failed to see that prepositions are the heads of prepositional phrases and that a flat analysis of small-clause-like constructions in languages like English is more defensible than the more layered analysis he proposed.

Finally, the most noteworthy insight gained so far during the translation project occurred in the second half of the *Éléments*, where Tesnière presents his theory of transfer in great detail. He employed a graphic representation that is constituency-based. In other words, he employed constituency to accommodate his exocentric analysis of certain phrase types. What this means is that Tesnière was actually not proposing a purely dependency-based model of syntax, but rather he was proposing a hybrid dependency-constituency system.

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