

Reading notes of Cambridge Grammar of English Language

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This note is a reconstruction of the contents The Cambridge Grammar of the English Language (Huddleston and Pullum 2002, henceforth CGEL).

1 Theoretical preliminaries

For the discussion on the underlying theoretical framework, see the relevant chapter in [this note](#). Briefly speaking, the framework is coarse-grained Minimalism: invisible functional heads are erased, but dependency relations created by the functional projections are kept (Fig. 1(a)), and the corresponding CGEL tree is obtained by replacing the name of dependency relations by syntactic function-form pairs (Fig. 1(b)). The head is defined as the dominant *lexical* word. This makes CGEL look like old-fashioned X-bar theory, where a lexical word projects into a phrase (CGEL § 5.2 [5]), but there can be several “maximal projections” headed by the same lexical word (CGEL § 5.2 [11]). This is actually consistent with Minimalism (Fig. 2).

The standard of “lexical”, however, varies from one author to another. A PP and a CaseP (in generative terms) are similar objects, but in the coarse-grained CGEL framework, the latter is definitely an NP, while the status of the first is kind of controversial: should we recognize the preposition as a lexical word, or as a functional word? In the first analysis, a PP in generative terms is still a PP, while in the second analysis, a PP in generative terms is an oblique NP. Choosing between the two analyses is merely a problem of notation. But it is good practice to choose a notation that hints the readers about certain properties of the construction in question. For example, if a PP is analyzed as a PP, then probably the preposition has some predicative properties: a PP is therefore more like a VP, not an NP with case marking (or “CaseP” in generative terms, especially in theories focusing on morphosyntax and do not make sharp contrast between syntax and morphology). If, however, prepositions in a language work just like case markers, the argumentation raised in Dixon (2009, § 1.11, § 5.4) is then attempting: we should recognize the prepositions as case markers with standalone phonological realizations. Which analysis to choose should be decided according to observed phenomena. This is summarized by the slogan “describing a language in its own terms” – but the slogan does not go into conflict with generativism.

Not all dependency relations can be expressed purely by the context-free phrase structure grammar (Pullum and Rogers, 2008). Movements (or cross-serial dependencies in dependency terms) in Minimalism are represented by a gap (CGEL § 2.2 [5]), or by indirect dependency (CGEL § 5.14.1).

The close relation between CGEL and generative syntax apparently deviates from the common descriptive practice, especially the common descriptive framework extracted and summarized by Dixon (2009, 2010, 2012) and named Basic Linguistic Theory (BLT) by Dixon, but this distinction is illusory: while BLT assumes a flatter phrase structure, information coded by the binary-branching phrase structure in CGEL is coded by dependency arcs in BLT (Fig. 3), and the hierarchy ordering of the dependency relations are coded by notions like “pipeline ordering” and “scope”, e.g. “a prototypical passive construction takes in an AVO argument structure and turns the deep A into the surface S, the deep O into the surface E” (which in generative terms means VoiceP is higher than *v*P), and “the scope of *the* in Fig. 3 is *fat man*, indicating that the latter is definite, and the scope of *to* is *the fat man*”.

Though several disagreements with the mainstream generative syntax is raised in CGEL, and much more severe accusations are made in BLT, it can be seen all the three approaches are describing

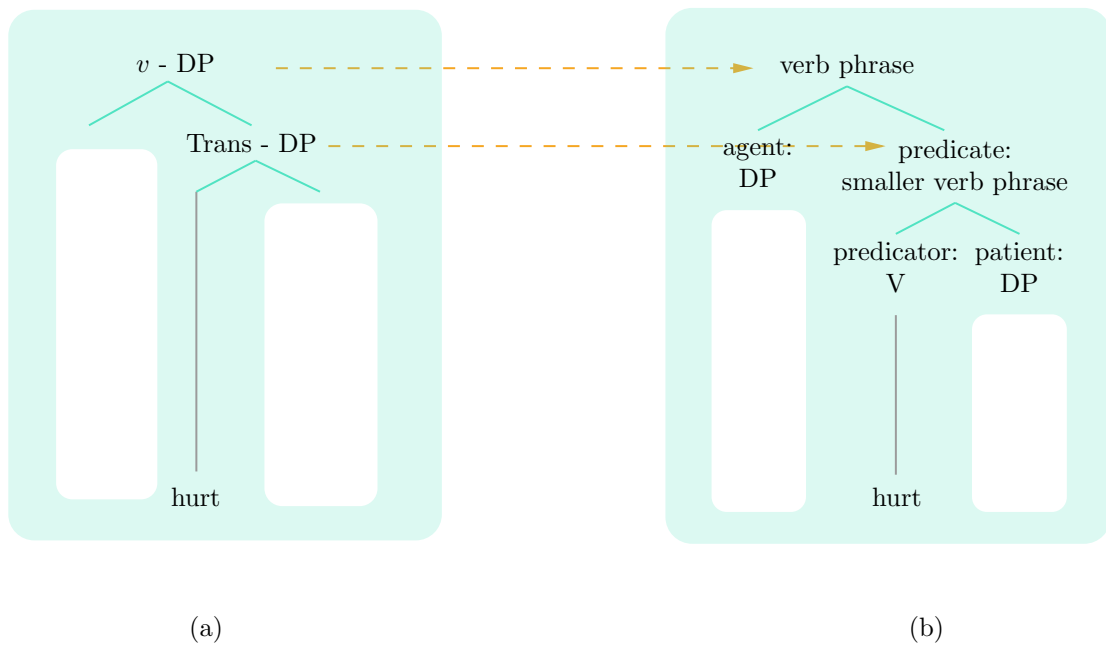


Figure 1: From coarse-grained Minimalist derivational tree to CGEL tree

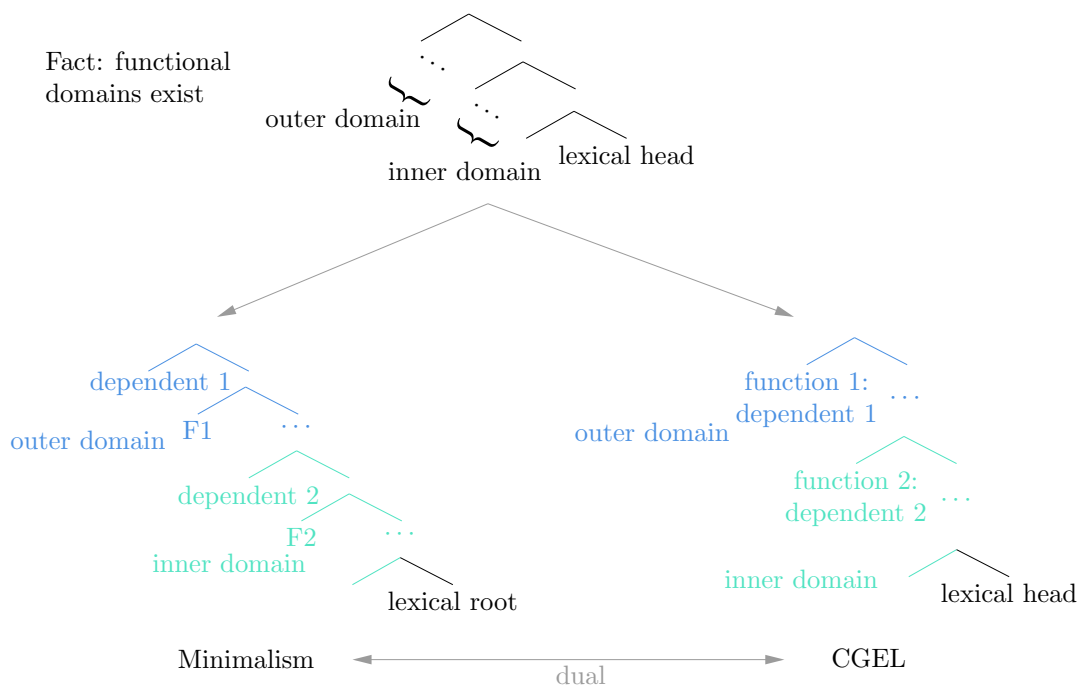


Figure 2: Duality between CGEL and Minimalism

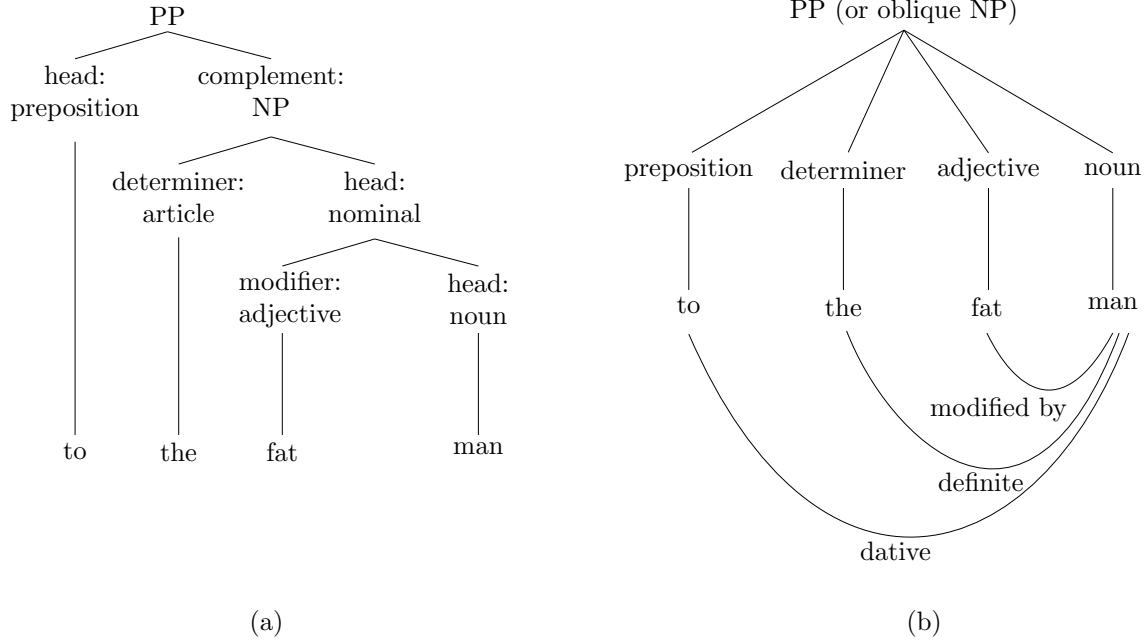


Figure 3: Comparison between the CGEL and BLT analyses of *to the fat man*

almost the same complexity class of grammars.¹

It should be noted that even though CGEL comes close with the lexical decomposition-style Minimalism, sometimes binary branching is still not available in the surface-oriented analysis, and some words about the underlying dependency relations beside the tree is needed, just as in the case of BLT. An example is ditransitive verbs. Even though in generative analysis we have plenty of reasons to assume a *vP* structure like [somebody [something SHOW]] in the clause *I showed him the photo* (possible reasons including binding effects, passivization preference, etc.), the head movement (or its post-syntactic version) breaks the binary branching structure in the surface-oriented analysis of the clause, and hence in CGEL we get a (quite infrequent) ternary tree (CGEL § 12.3.1 [4]). Another example is supplementation (§ 3.8). The difference between CGEL and BLT is therefore more about quantity instead of quality.

2 The organization of chapters in CGEL

3 Overview of clause structure

3.1 The pipeline of clause building

This section and several following sections are about the phrase structure of the clause. I will discuss clause dependents, their forms and functions, grammatical systems in the clause, and how everything is put together.

¹Well, strictly speaking, they may not, because when formalized, a grammatical theory often allows some strikingly weird productions, which arise from corner cases ignored in the formalization. But these corner cases can be, in principle, rules out by watching how linguists use the formalism in everyday work: some derivational devices are never used, weird interplay of features that trigger unexpected movements is never considered, some phrase structure rules in BLT are possible but never appear in actual reference grammars, etc. In a word, the complexity class of grammars supposed in a grammatical theory is not just determined by the explicitly articulated formalism. What is fed into the formalism is equally important.

Clausal grammars of nominative-accusative languages can fit more or less into the following paradigm:

1. Clausal complements are fed into the argument structure² or in other words *v*P. They may be NPs, adverbials or subordinated clauses.
2. Then several clausal grammatical systems are employed on the verb-complement complex or “small clause”, including agreement (or argument indexation more generally), case marking³ and non-spatial settings (or Tense, Aspect, Mood, Evidentiality (TAME) as people call them). The syntactic prominence of the subject is also introduced in this stage (commonly known as TP), but without adjuncts it is hard to see the structural prominence of the subject, and without question formation, etc, it is hard to see the consequences of the prominence. The result of these steps, after including obligatory speech act marking, is a minimal canonical clause.
3. Several adjuncts can be made to the minimal clause, conveying information like time, position, manner, etc. This step may be seen as an additional one, or it may be considered as occurring together with TAME. In the latter analysis, we need an explicit subject promoting analysis, which makes the subject in a higher position than any other complements. The result of these steps, after including obligatory speech act marking, is a canonical clause.
4. Speech act information (or “force” in generative terms, or “mood” in BLT) – declarative, interrogative, imperative – are added to the result of TAME marked and possibly adjoined small clauses. These stages occur in the CP domain.

After these steps, the clause is now fully assembled. If the speech act information marked meets the standards set in the language (e.g. the clause is finite, there is no subordination markers like a complementizer, etc.), the clause is a qualified *sentence*, i.e. it can occur independently in utterance. But it can be embedded (or subordinated) into other clauses, too, probably with some additional marking. A clause without any subordinated clauses as complements or adjuncts is called a **simple clause**. Otherwise it is a **complex clause**.

The declarative marking is often (but not always) zero, and in this way there is no obligatory speech act marking for clauses.

5. The canonical clause may further undergo processes like topicalization or focusing. This makes it non-canonical.

Topicalization and focusing may be analyzed as happening together with speech act marking and/or subordination. In the classical generative analysis, the CP domain is roughly Force-Focus-Topic-Finiteness, with the left feature being introduced after the right feature. Subordination involves both finiteness (gerund clauses can be subordinated, but they are never independent sentences) and force (subordinated clauses often have limited force choices, and the complementizer has to be introduced at a certain position). So in this analysis, there is no strict time ordering between topicalization etc. and subordination.

But it is also possible to introduce topicalization and focusing with transformational rules, since most grammars are much more surface-oriented. In this case, it still makes sense to say one happens after another.

²This is not the term used in CGEL. For discussion on *argument* and *complement*, see § 4.1.1.

³Technically, case marking involves the argument structure. The nominative-accusative alignment, for example, can be summarized as “the patient-like argument of a transitive verb receives the accusative case, while anything promoted to the subject position receives the nominative case”. In more generative terms, we have “the transitive *v*P (or some functional projection lower than Spec*v*P) assigns the accusative case, while T assigns the nominative case”. The first half of the generalization means the assignment of the accusative case is directly related to the argument structure. But we can change the wording of the above generalization easily. For example, an equivalent formulation may be “in the TP, any DP with a lower position than some DP else receives the accusative case, while the subject receives the nominative case”. Yet we have a third expression: “in the TP, DPs receive the accusative case as the default case, while the subject receives the nominative case”. It is therefore acceptable to take case marking completely away from the argument structure.

Transformational rules are largely abandoned in contemporary generative syntax. In a surface-oriented grammar, transformational rules does not say anything about the plausible generative derivational⁴ process in our brain. If construction A and construction B are connected by a transformation, it merely means the derivational process of A and B have some similar stages and there is a uniform correspondence between them.

6. There are usually certain kinds of valency-changing devices. They may be implemented by a Latin-like voice system, or by auxiliary verbs the subject of which undergoes an event, and the complement of which is a clause or small clause indicating the event, or by certain kind of *vP* constructions. There are no strict boundary between these strategies. Combination of these devices, like Collins (2005), is also possible. Just like the case of arguments and adjuncts, and the case of topicalization and speed act marking, passivization can be described with a derivational account as in contemporary generative syntax, as well as a transformational approach.
7. Each stage of the above processes may be grammaticalized or be realized by a grammaticalized construction. The so-called Chinese passive construction, the *bei*-construction, is just a grammaticalized complement clause construction with the verb *bei* expressing a meaning of “suffer from”.
8. Finally, sentences and clauses can be coordinated and undergo supplementation.

The pipelines of the machine of English clause structure is also organized in this way. Valency is an enduring topic in English grammar. Tense and aspect (usually denoted together as *tense*) appears in every introduction of the English language: do something, did something, be doing something. The subjunctive mood (or “modality” in BLT) is especially necessary in formal or archaic writing. English adverbs are traditionally ignored but are more complicated than many will think. The list can be very long.

3.2 Canonical clauses and their inner grammatical systems

CGEL uses the strategy to first describe a canonical clause and then use syntactic processes (or transformational rules in generative terms) to derive non-canonical ones. Several syntactic processes may be used together to derive a clause with multiple non-canonical features.

It should be noted that when the definition of canonical clauses is narrow (a wise decision leading to easier starting), it is possible that some non-canonical clauses cannot be obtained by applying well-recognized syntactic processes (CGEL § 2.2 [3]). This is shown in Fig. 4.

It is already reviewed in § 3.1 that clauses, strictly speaking, are fully marked with speech act information and hence are CPs themselves. Some people use the term *clause* for TPs and *sentence* for CPs. This does not agree with the acceptable terminology in surface-oriented studies, since a pure TP without CP layers rarely occurs. Therefore, in CGEL, the pipelines of clause building is not made quite clear: the approach accepted is to present grammatical relations as *static* ones.

Here is a demonstration about this static approach. Recall Fig. 3. Though (a) has more embedding hierarchies than (b), while (b) uses dependency relations in lieu of the binary branching hierarchies, both of them are static ones: (a) is presented in the grammar *as a whole*, i.e. the grammar does not treat (a) as built by first merging *fat* and *man* and then merging the result with *the* and then *to*. Rather, once a PP is discussed, all grammatical relations involved – attributive modification, definiteness, dative construction – are considered as completed. Similarly, when talking about a clause, all grammatical relations in the clause is considered as already given in CGEL. We *do not* describe the structure in terms of Merging elements. The discrepancy between CGEL and BLT is merely that the former uses hierarchy structure to show grammatical relations while the latter uses dependency arcs.

It should also be noted that though the CGEL approach is mostly static and not derivational, its analyses are not idiomatically representational, either, for the obvious deviation from approaches like

⁴From then on, *derivational process*, etc. all mean Minimalist ones, i.e. Merge-based ones. But *derived* may be associated with surface-oriented transformational rules.

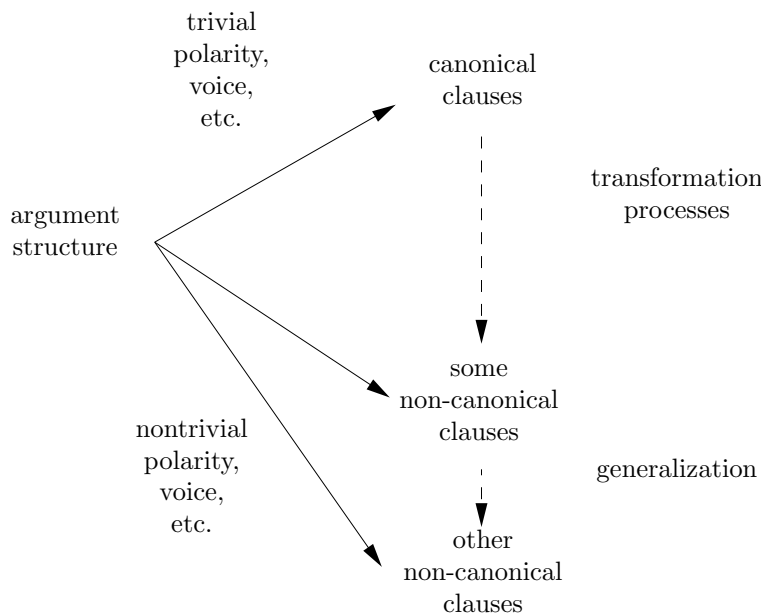


Figure 4: Building up canonical and non-canonical clauses

HPSG. It is best described as Tree-adjoining grammar (TAG)-like. Sometimes, the pipeline notion is of descriptive benefits, because some syntactic processes definitely work in order: for example, subject-auxiliary inversion always happens before *wh*-fronting. This is discussed in CGEL § 2.2: “Main clause interrogatives ... will thus have one prenucleus + nucleus construction ... functioning as nucleus within another ...”

3.2.1 Canonical clauses

A **canonical clause** is a standalone, declarative, active clause consisting of only the verb complex (*do* or *has done* or *be doing* or ..., i.e. the verb phrase in BLT), complements and adjuncts. In CGEL the verbal complex is not recognized as a phrase. Rather, it is a verbal idiom, and the head of the clause is the highest auxiliary verb. This means a canonical clause is made up solely by a verb and its complements and adjuncts. A **minimal canonical clause** does not have adjuncts.

This definition means negative clauses are not canonical, because *not* is an additional clausal dependent. An interrogative clause is not canonical, since it is not declarative and has prenucleus dependents – the fronted verb and, if any, the *wh*-expression. A passive clause is not canonical. A subordinated clause is not canonical, because even though it is declarative and active, it is not standalone. (CGEL § 2.2 [1])

3.2.2 Clausal complements and the argument structure

Though the starting point of the building process of all clauses is the argument structure, CGEL starts chap. 4 with discussion on clausal complements. This is a wise decision for a largely surface-oriented grammar, and also does not obscure the argument structure, because how the arguments (or non-argument complements) of the verb fills the *clausal* complement positions is largely based on the structural distribution of these arguments in the *vP* structure. In other words, the clause complement positions – subject, direct and indirect objects, etc. – are *syntactic* marking of coarse-grained S, A, O, E arguments, which reflect the relative positions of arguments in *vP*.⁵

⁵O is the label of the patient-like or *patientive* argument in BLT. In many modern grammars, the symbol is replaced by P. In this note the symbol O is used to be consistent with the notation in CGEL, though CGEL itself uses O as a symbol of clausal complements.

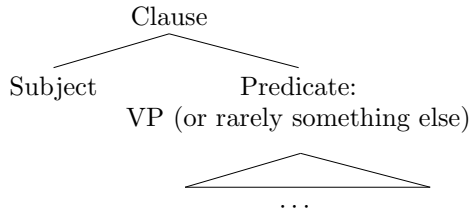


Figure 5: A minimal canonical clause is made up by a subject and a predicate

For discussion on various complement positions and their correlation with the argument structure, see § 4.1.

3.2.3 The subject

English is a subject-prominent language. This is to say, in every clause there is a **subject** (which may be omitted in limited cases) which is usually filled by an agentive argument and is somehow “higher” and external in the clause structure, and therefore is subject to several types of extraction, including relativization and coordination pivot.

In typological terms, this means English is a syntactic nominative-accusative language, because its syntactic obligatory topic (something somehow “higher” in the clause structure, but lower than the topic in topicalization) is identical to the agentive argument.⁶ In ergative languages the notion of *subject* is more complicated, because in transitive clauses, the two do not coincide. But this is not the case for English.

The external property of subjects means we have the tree diagram Fig. 5. The rest of the clause is named the **predicate**, which is mostly a VP, but in some cases can be verbless (CGEL § 2.14 [1]). Since functional heads in the *vP-TP-CP* hierarchy may be viewed as realized on the verb, the ultimate head is the verb, and in Fig. 5, the predicate is the head.

For details about the subject position, see § 4.4.

3.2.4 Agreement

Agreement, if any, is only found between the subject and the highest verb in the predicate, be it the main verb or an auxiliary verb. For details see § 5.3.

3.2.5 Objects, predicative complements, and others, and the structure of a minimal VP

A VP always start with a verb. What follow the verb are inner complements. In English possible complements include objects and predicative complements. The complexity of dependency relations inside the VP blocks the possibility to represent them with a constituency tree without movement, and hence CGEL presents the inner structure of the VP as a multiple-branching tree (CGEL § 12.3.1 [4]). The scheme of VPs is shown in Fig. 6.

Note that complements are not necessarily referential, not even lexical. Referential complements that are typically filled by NPs are **objects**, and strongly predicative complements are **predicative complements**. Note that predicative complements may also be NPs.

There are also adjunct-like complements for some verbs: the adverb *badly* in *he treats us badly*, the PP *to her article* in *he referred to her article*, etc. The adverb complement can usually be replaced by a PP (§ 3.2.8). Prepositional complements have their own complements, which can similarly be divided into object-like ones and predicative complement-like ones (CGEL § 2.4 [4]).

⁶In languages like Chinese, though when a semantically obvious agent is present, it is always the syntactic obligatory topic, there are quite common clauses in which the subject is not agentive at all, like the famous *tai shang zuo zhe zhu xi tuan*. But a deeper analysis will show that this can be attributed to the rich light verb inventory of Chinese, which may be understood as “mini-voice” in more descriptive terms, and therefore does not impose any threat to the nominative-accusative status of Chinese.

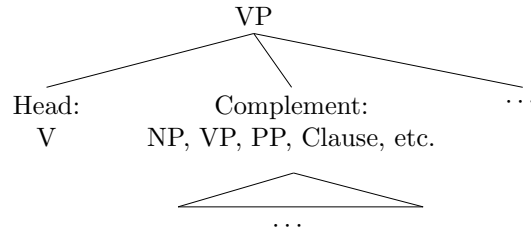


Figure 6: The inner structure of a VP

There is yet a final class of complements: **particles**. Particles are usually intransitive prepositions, but adjectives (e.g. *short* in *he cut short the debate*) are also possible. A particle is able to appear after the NP connected with it, which convince us that the NP is directly a complement of the verb and not the particle.

Complementation pattern of a verb decides what complements appear in the cause.

3.2.6 Case marking

In finite clauses, the subject receives the nominative case, and other NP complements receive the accusative case. Morphological case marking is only available for pronouns.

The subject of an infinitive receives the accusative case. The subject of a nonfinite clause headed by a participle receives the dependent genitive case.

3.2.7 Tense, aspect and mood

Tense is the grammatical category about obligatory time marking. Aspect is the grammatical category about obligatory marking of the temporal organization of the action. Mood is the grammatical category about modality – though BLT uses *modality* for *mood* in CGEL and *mood* for *clause type* in CGEL.

In CGEL, the perfect-imperfect contrast is placed under tense, not aspect.

3.2.8 Adjuncts

A VP may have left or right adjuncts. *Adjunct* is the synonym of *clausal modifier*, or *adverbial* in some grammars. Adjuncts may also be added to the left of a minimal canonical clause. It should be noted that adjuncts of different functions fill different positions and are by no means *adjuncts* in early version of generative syntax. They are actually peripheral arguments in BLT. This is even the case for adverbs: adverbs can be almost straightforwardly (but not always: some additional thinking is needed to transform some adverbs to PPs) replaced by PPs which codes peripheral arguments that can be filled by NPs denoting abstract properties (e.g. from *exceedingly* to *in an exceeding manner*).

3.3 Non-canonical clauses without prenucleus

This section is about non-canonical clauses that largely keep the structure of canonical clauses, so structural analyses of canonical clauses like Fig. 5 still works.

Below I collect non-canonical constructions, with the order from more internal ones to more external ones.

3.3.1 Polarity

A clause with clausal-level negative polarity is called a **negative clause**. Clausal negation is realized by the negative operator *not*, which always appears after the highest auxiliary verb and before the second highest verb, auxiliary or not. If there is no auxiliary verb, *do*-insertion is invoked and *not* appears after *do* and before the main verb. The negator *not* may also be attached to the highest

auxiliary verb, forming the negative form of the auxiliary verb. The position of *not* indicates the scope of negation. The relative position between *not* and adjuncts is therefore not fixed.

A negative clause has several aspects different with positive ones. Three such aspects are illustrated in CGEL § 2.9 [1], which are license of *not even* supplementation (the *not even* phrase is a supplement according to CGEL § 9.1.1), negative connective adjuncts *nor* and *neither* instead of the positive counterpart *so*, and differences in tag question formation.

Some terms (like *no longer*) are licensed in non-affirmative clauses. Negative clauses are non-affirmative, but so are interrogative ones.

Apart from clausal negation, there is also **subclausal negation**.

3.3.2 Voice

English has only one nontrivial voice: the passive voice. In a passive clause, the main verb is replaced by its past participle, the subject of the active counterpart is turned into an optional *by*-PP, which is an internal complement of the past participle, and the object of the active counterpart (or the indirect object in a ditransitive clause) is promoted to the subject position. These operations do not alter auxiliary verbs, complements not involved and adjuncts. In a finite passive clause, a proper form of *be* or *get* is inserted right before the past participle VP (so *be* or *get* is lower than the lowest auxiliary verb and higher than adjuncts in the VP). In a nonfinite passive clause, if there is any auxiliary verb, *be*-insertion happens, but if there is not, it is permitted to have a *bare* passive clause. Formally, then, finite passive clauses and nonfinite passive clauses with auxiliary verbs can be analyzed as auxiliary verb(s) + *be/get* + bare passive clause.

3.3.3 Finiteness

A nonfinite clause is a clause that obligatorily lacks some TP and/or CP functional projections, often resulting in inability to have a typical subject (since the TP layer is somehow quirky). It may be considered as somehow nominalized and the nominalization degree is deeper than content clauses, since its main role is to fill argument slots, and unlike finite content clauses that can be a sentence with a minimal transformational, the nonfinite clause can never be a full sentence. It can still constitute a short reply to a question, as in – *What are you doing?* – *Doing my midterm project*. But NPs have this function, too.

In English, nonfinite clauses are either participles or infinitives. None of them is able to have a typical, nominative (if realized as a pronoun) subject, and all of them have distinct morphosyntactic marking.

It should be noted that participle differ from “genuine” nominalization. A participle takes object(s), while a nominalized verb does not.

Even more “nonfinite” (though the term is already not appropriate here, since the TP layer may have gone) is the **verbless clause** construction, where the predicate position is not filled. In generative terms, maybe something like an invisible PredP is assumed in lieu of the copular, but from a more surface-oriented perspective, this is not necessary. Verbless clauses in English, like typical nonfinite clauses, are bound to be subordinated clauses.

3.3.4 Summary: nucleus clause

Above are all syntactic categories involved in clauses that are either canonical or have structures identical to canonical clauses. Such a clause plays the nucleus role in prenucleus constructions (§ 3.4). The structure can be summarized as generated by the following procedure, which covers varieties created by transformational rules concerning negation and voice:

1. First, build a VP with a non-catenative verb and its complements. The complementation pattern (§ 3.2.5), case marking of the complements (§ 3.2.6), and of course the argument structure are grammatical categories involved in this step. If we are building a passive clause, the voice category is also involved.

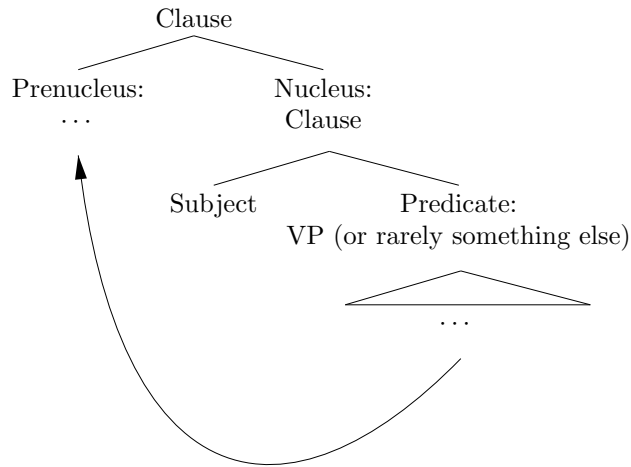


Figure 7: Prenucleus positions

2. Build the maximal VP in the clause, which is in the form of auxiliary verbs (if any) – non-auxiliary catenative verbs (if any) – a non-catenative verb – complements. Note that leftward verbs have higher syntactic positions.

All verbs must be in correct inflectional forms. Modal auxiliary verbs do not have nonfinite forms. Voice (§ 3.3.2), TAM categories (§ 3.2.7), finiteness (§ 3.3.3) are grammatical categories involved in this step.

Acceptable sequences of auxiliary verbs are given in CGEL § 3.2.3 [43].

3. Add the subject. Make sure the subject is in the nominative case if it is a pronoun. Check the agreement between the subject and the verb.
4. Add adjuncts. They can appear in all levels of the VP.
5. Add clausal negation if necessary. Mind the scope. Check whether all complements and adjuncts fit in the polarity environment. The polarity category is involved in this step.

The procedure above is certainly not the whole story of clause generation. Recall the definition of canonical clauses, the two keywords *standalone* and *declarative* are yet to come. They correspond to whether the clause is subordinated and the clause type, respectively. Syntactic devices related to these two categories, however, involve the prenucleus position, which is discussed in § 3.4.

3.4 Prenucleus

For declarative and standalone clauses with trivial information structure, § 3.3.4 is the whole story. Other clauses – all non-canonical ones – go further: something is promoted to a position even higher than the subject. Such positions are called **prenucleus** positions (CGEL § 2.2 [5]), and we get a structure like Fig. 7.

3.4.1 Subordination

English has three major types subordinated clause:

- **Content clauses**, which are often named as nominal clauses in more traditional works, but their status as NPs are rejected in CGEL.
- **Relative clauses**.

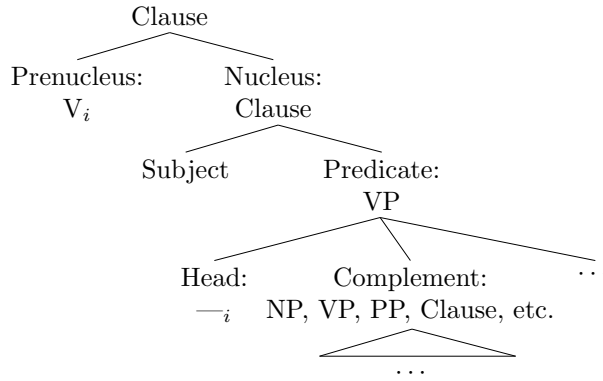


Figure 8: Subject-auxiliary inversion

- **Comparative clauses**, as in *it costs more than [we expected]*.

Subordinated clauses cannot be imperative.

CGEL also does not use the term *complement clause*, since *content clause* is about syntactic form and not function – a content clause’s main role is indeed filling a complement position, but it can also be an adjunct, for example. Traditional grammar uses *adjective clause* and *noun clause* to distinguish these two functions, but the names mislead people to a content clause and an adjunct clause differ in their forms.

A finite subordinated declarative clause may be labeled by an initial *that*.

3.4.2 Clause types

In CGEL, **clause type** means Force in generative syntax and mood in BLT. In English there are the following clause types: declarative, closed interrogative, open interrogative, exclamative, imperative.

The clause type is the syntactic coding of **illocutionary force**: an imperative clause expresses a direct illocutionary force. But illocutionary force need not be coded as the clause type: *would you please ...* is formally interrogative, but it is often a polite directive. In this case, the illocutionary force is indirect.

Non-subordinated interrogative clauses always involve the prenucleus position. Non-subordinated closed interrogative clauses undergo subject-auxiliary inversion. Non-subordinated open interrogative clauses first undergo subject-auxiliary inversion and then *wh*-fronting, if the *wh*-phrase is not the subject. Otherwise only *wh*-fronting happens. Subordinated interrogative clauses do not undergo subject-auxiliary inversion, but *wh*-fronting happens for open interrogative ones.

Imperative clauses may have zero subjects.

3.4.3 Subject-auxiliary inversion

Subject-auxiliary inversion appears in several constructions that may have certain degree of focusing. The scheme of subject-auxiliary inversion is shown in Fig. 8, which also explains its name.

Subject-auxiliary inversion occurs in subjunctive conditional clauses, causes with connective adjuncts,

After subject-auxiliary inversion,

3.4.4 Preposing

3.5 Postposing and related controversies

3.6 Information packaging

§ 3.3 and § 3.4 are about transformations on canonical clauses, about what feature triggers what transformation, and relevant syntactic positions that are not observed in canonical clauses. There

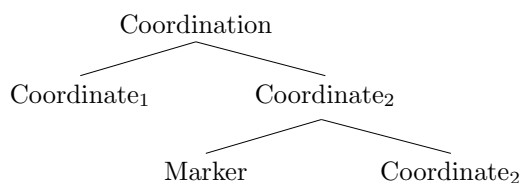


Figure 9: Scheme tree diagram of a simple coordination construction

are, however, constructions of which constituency analyses involve nothing more than § 3.3 and § 3.4 but are unable to show the information structure of these constructions. The constituency tree of a *there be* construction is just an instance of the canonical clausal structure Fig. 5, with the subject being a dummy *there*, but from the constituency tree one cannot infer confidently the existential meaning.

Without considering the information structure, the way perfect aspect is realized in English resembles the example of the *there be* existential construction in that its meaning is not combinatory: in *he has done this before*, the head may be analyzed as *has*, which agrees with the subject (§ 3.2.4) and takes the past participle VP *done this before* as its complement. In the VP *done this before*, *before* is an adjunct, and *this* is the object. The structure is crystal-clear. The only problem is the true meaning of the clause cannot be inferred from the structure. However, the perfect aspect is not marked with respect to the information structure, so it is not introduced in the chapter about information packaging in CGEL.

3.6.1 Summary: what happens after § 3.3.4

3.7 Coordination

The English clausal coordination construction is largely symmetric, though there are reasons to believe the second clause and the coordinator form a constituent. Since the coordination head is realized as a single word but is by no means lexical, it is impossible to assign the head status to any lexical word as in Fig. 2, and therefore in CGEL, coordination is deemed as a headless construction.

Fig. 9 is a scheme of coordination like “John and Paul”. More complicated forms of coordination exist, though.

3.8 Supplementation

Supplementation, as in *her father – [a man of quality] – promises to help us*, deviates further from the headed tree structure. This type of constructions shows significantly weaker dependency between the “anchor” and the inserted supplement. In generative syntax, supplementation can be analyzed as a result of PF-level clause reformulation, with major disruption of the constituent structure of the host clause, which tempts lots of people to analyze the phenomenon as a result of an idiosyncratic structure building mechanism beside Merge (Ott, 2014). Therefore, in CGEL, supplementation is recognized as a construction type, but the supplement and the anchor are not recognized as a constituent (CGEL § 15.5.1 [12]). It is practically not possible to insist on both binary branching and surface-oriented analysis.

3.8.1 Question tags

4 Complements and adjuncts

4.1 Types of complements

Clausal (or verbal, since the clause is headed by the verb) complements may be NPs and PPs, and less frequently, adverbs (as in *He treated us [kindly]*).

This section lists some criteria of classification of complements. They are all discussed in CGEL § 4.1.1.

How to tell a complement from adjuncts is a question addressed in § 4.7. § 4.7 is delayed after discussion on complements and adjuncts, because we have to first show prototypical properties of the two and introduce necessary concepts like how semantic roles are coded as clausal dependents, and only then can we draw an exact line between the two.

4.1.1 Core v.s. oblique

One classification standard is the make up of the complement. A **core** complement is a complement with similar morphosyntactic properties of NP complements. A **non-core** complement is a complement with similar morphosyntactic properties of PP complements. If a non-core complement itself takes an NP complement (or something with similar morphosyntactic properties), the latter is called an **oblique**.

Note that in CGEL, the term *argument* is reserved for purely semantic objects. A clausal complement is therefore the syntactic incarnation of an argument, but itself is not an argument. This is not the way *argument* is used in BLT.

It should also be noted that in CGEL, the terms *non-core* and *oblique* are reserved for clausal complements and the NP part of PP clausal complements. They *do not* include adjuncts with similar forms. On the other hand, in BLT, the term *peripheral argument* covers both PP complements and adjuncts. The term *oblique* is often associated with *oblique cases*. In traditional Latin grammar, cases other than the nominative and the vocative cases are all called oblique cases. In other usages, oblique cases exclude the accusative case. In English the case system has largely collapsed, and the name *oblique* does not have much morphological consequences: an oblique complement is never nominative as we will see, and that is all.

The prototypical definition of core and oblique complements are based on syntactic forms instead of functions, while the definition is extended by analog with respect to syntactic functions. Whether these terms are useful is a question we need to wait and see.

4.1.2 External and internal

The subject is the **external** complement for obvious reasons. All other complements are **internal**.

In English, internal complements include **objects**, **predicative complements**, adjunct-like complements, including prepositional complements and adverb complements, and particles. Objects and predicate complements are core complements, while prepositional complements are non-core ones. It does not make much sense to say whether adverb and particle complements are core or not.

The objects split into **direct objects** and **indirect objects**. Objects are prototypically NPs, while predicative complements are predicative. Adverbs can be replaced by appropriate PPs (§ 3.2.8), and hence adverb complements may be considered as a variant of prepositional complements. The complement of a prepositional complement may also be an object or a predicative complement.

The behavior of the object in a transitive clause differs from the behavior of objects in a ditransitive clause, and the behaviors of the two objects in a ditransitive clause are also different. Complement positions named “objects” are therefore not homogeneous. Their behaviors are strongly dependent on the transitivity.

The term *prepositional complement* is about the form and not the function. Indeed, similar to the case of objects, not all prepositional complements are in the same syntactic position. Prepositional complements can be further divided into unspecified and specified ones. Prepositional complements about manner or mean or (change of) location usually have less restricted prepositions: both *he treats us in a bad manner* and *he treat the new protocol with disdain* are fine. Therefore, they are **unspecified prepositional complements**. But some verbs only license PPs with a predetermined preposition. In this case, a PP complement licensed by the verb is a **specified prepositional complement**. Specified prepositional complement may be available to passivization, or may not be, while for unspecified prepositional complements, passivization is impossible.

The syntactic properties of these complements vary from construction to construction (especially considering the definitions of objects, predicative complements and prepositional complements are

either semantics-based or form-based, and never syntactic function-based). It is a wise idea to first give a rough sketch of coarse-grained cartography of complements, and then analyze their behaviors in various constructions, and hence obtain more detailed classification of complements.

Though we have robust evidence for the subtle subdivision in objects, prepositional complements, and predicative complements, their syntactic differences are often hard to represent in the surface-oriented coarse-grained tree diagram.

4.2 Types of minimal canonical clauses

As is mentioned in § 4.1.2, strictly speaking, a generalized notion of grammatical relations like “object” is a catch-all term for a variety of similar but not identical grammatical relations in several constructions. Since all types of complements are already listed in § 4.1, it is time to list all constructions that contain them, and the next step is to find out the behavior of their complements.

4.2.1 Five canonical clauses with only objects and predicative complements

The contents of this section are covered in CGEL § 4.1.1.

In English every clause has a subject, so the number of subjects is not a parameter. The number of objects may be 0, 1, and 2, which is denoted as **intransitive**, **transitive**, and **ditransitive**. This parameter is named as **transitivity**.

Another parameter is the number of predicate complements. There may be 0 or 1 predicative complement. It is impossible for a ditransitive clause to have a PC.

So the parameters of transitivity and PC gives the classification of clauses with respect to their complements as in CGEL § 4.1.1 [9]. Hence we have the notion of **valency** (CGEL § 4.1.1 [10]). The number of PC is included into the valency. CGEL § 4.1.1 [9] is just the classification based on S, O, and PC. There are no other complements that do not fit perfectly in the paradigm, namely prepositional complements, adverbs and particles.

We name the object in a monotransitive construction as a **monotransitive direct object**. In a S-P-O-O construction, the first object is named as a **ditransitive indirect object**, while the second object is a **ditransitive direct object**. These three types of objects have some subtle differences in their properties.

A predicative complement may be about the subject or the object (always a monotransitive direct one, since in ditransitive clauses there is no predicative complement). What it is about is called the **predicand**. If the predicand is the subject, the predicative complement is a **subject-oriented** one, and otherwise it is an **object-oriented** one.

4.2.2 Canonical clauses headed by prepositional verbs

A verb selecting a PP complement containing a specified preposition is a **prepositional verb**. Constructions containing prepositional verbs are listed in CGEL § 6.1.2 [16]. It can be seen that these schemes are directly related to CGEL § 4.1.1 [9] with the following rules:

- Replace all predicative complements with PPs containing predicative complements.
- In monotransitive schemes, replace the direct objects by PPs containing oblique objects; but it is also okay to not do so.
- In ditransitive schemes, always replace the direct objects by PPs containing oblique objects; the indirect objects may be – but not necessarily – replaced by PPs contacting oblique objects.

4.2.3 Verb-particle construction

A

Now, adjunct-like complements aside, the

4.2.4 Adjunct-like complements

Unspecified prepositional complements are still not discussed at this point. They are adjunct-like, and are dealt with in CGEL chap. 8 instead of chap. 4.

Adjunct-like complements appear in SV (*he lives in London*) and SVO (*I put my shoes here*) constructions. Their positions in a canonical clause are just the same as typical adjuncts of the same semantic roles.

4.2.5 Catenative complements

Some verbs are there to tell us some “properties” of an action. In *everyone believes Kim to be guilty*, the main verb *believes* takes *Kim to be guilty* as its complement and tells us *Kim to be guilty* is a prevalent opinion. Whether Kim *is* guilty is not talked about.

Such a complement is a **catenative complement** (CGEL § 2.14, 3.2.2). A verb taking a catenative complement is called a **catenative verb** in CGEL and a secondary verb in BLT. It seems in English (as well as in many other languages), catenative verbs only take one internal complement – the catenative complement, usually a clause, often nonfinite. (In clauses like *I want you to complete this*, *you* may be analyzed as the object of the verb *want*, leaving a gap in the catenative complement *complete this*, and *you* controls this gap.) The subject may be external to the catenative complement, or may be inside it. In the latter case the catenative verb is a raising verb.

All auxiliary verbs in English are catenative. But verbs like *believe*, *seem*, etc. are also catenative and certainly not auxiliary verbs.

Syntactic devices with similar semantics (and tree structures, if affixes are analyzed as being attached to the verb in a post-syntactic process) include certain adverbs (*Kim is [allegedly] guilty*) and certain affixes in other languages.

4.2.6 Summary

4.3 Semantic roles and the argument structure

This section is mainly about the argument structure of non-catenative lexical verbs, for the argument structures of catenative verbs are rather straightforward. Verbs have verb-specific semantic roles (BLT Table 3.1), but these roles can be clustered into larger roles, which have syntactic significance.

For examples of these roles, see CGEL § 4.2.2.

4.3.1 The causer-like group

In the most generalized sense, a **causer** is an argument that causes an action. In a narrower sense, a causer is something causing an event but not intentionally or voluntarily. A causer in the narrow sense is also called as a **force**. An **agent**, in the opposite, is something causing an event consciously. Agents are therefore usually animate.

An **instrument** may be coded as an adjunct (CGEL § 4.2.2 [3]), but it can also be coded as the subject, as in *the knife cut the lace*. When no agent is using an instrument, whether the instrument should be analyzed as a causer in the narrow sense or an instrument becomes not so clear. The practice in CGEL is to use the term *instrument* only when there is indeed an (explicit or implicit) agent using the instrument.

4.3.2 The patient and similar roles

A patient always exists with an explicit or implicit causer, especially an agent. The patient is *influenced* by an externally originated action caused by the causer. It does not merely undergo displacement or some transient mental change. Examples of prototypical patients are found in CGEL § 4.2.2 [4i].

Sometimes other argument roles have rather similar syntactic and semantic properties with the patient. For the verb *hear*, for example, the canonical object is a stimulus rather than a patient, but

we have passive constructions like *my opinions are never heard*, in which the stimulus *my opinion* is just like a patient having undergone passivization and is now the subject.

4.3.3 Experiencer and stimulus

Experiencer and **stimulus** always appear together (though maybe one of them is implicit). They appear in situations of emotional feeling or sensory perception, as well as cognition.

For some verbs, the experiencer is more agentive, while for others, the stimulus is more agentive. This is easy to expect: metaphorically, both the experiencer and the stimulus can be imagined to “do something” to the other.

4.3.4 Themes

The term **theme** covers a large number of verb-specific roles. Any argument possessing a (possibly change) property that is relevant in the clause is a theme. The prototypical “property” is the location: in *she ran home*, *she* is the theme, and *home* the goal. Another property, metaphorically related to the location, is (change of) possession. Thus *the key* in *he gave me the key*, and *the key* in *the key is mine* are all possessive themes. Themes also exist in clauses about more abstract properties, like mental states, which often but not necessarily have predicative complements. In this way, *she* in *she went mad*, *her* in *it made her angry*, *Kim’s* and *Pat’s* in *Kim’s writing resembles Pat’s* are all themes.

Similar to the case in experiencers and stimulus, a theme can be agentive or patient-like, depending to the semantics of the verb.

4.3.5 (Change of) location

For a process involving changing location, we have **path**, **source** and **goal**. In a clause about a state instead of an event, there is only a **location** role.

The **recipient** is a role related to verbs like *give*. The **beneficiary** is a role that something is done for, as in *I’ve bought [you] a present*. The two roles are subtypes of the goal.

4.3.6 Peripheral arguments related to adjuncts

Compared to complements, the relation between peripheral arguments and adjunct positions is much more clear. This can be expected, because most peripheral arguments

Therefore, there is no need to list all peripheral argument roles here and then link them to adjunct positions: it is fine to introduce an adjunct position and at the same time introduce its semantic role, because there is almost a one-to-one mapping between the two.

4.3.7 Types of argument structures

It is possible to be two agents in a clause:

4.3.8 Syntactic alignment of arguments and the S, A, O typology

In the typological perspective, the argument structure of any verb in English fits into the S, A, O, E typology in BLT. Some typological studies have G and T abstract semantic roles, but in English no goal-like and theme-like semantic role classes with stable syntactic appearance can be established. Consider, for example, the example in BLT § 3.3 (6) and (7), with semantic role labels replaced by ones in CGEL § 4.2.2:

- (1) John gave [all his goods]_{O, theme} [to charity]_{E, goal}
- (2) John gave [his favorite student]_{O, goal} [some books]_{E, theme}

The PP *to charity* and NP *some books* have similar syntactic behaviors, and in a similar manner, *all his goods* and *his favorite students* form another group of arguments with similar syntactic appearance. The first two cannot be promoted to the subject position in passivization, while the latter two can. It is, therefore, reasonable to name the group containing *all his goods* and *his favorite students* with the label O, and name the group containing *to charity* and *some books* with the label E. Note, however, there are some heterogeneity in each group: *all his goods* is a theme while *his favorite student* is a goal, but they have similar syntactic properties. So the division between O and E is useful in English (which is also shown in footnote 26 in CGEL chap. 4), while the division between G and T is not.

As is mentioned in § 3.2.3, English is a nominative-accusative language, both syntactically and morphologically. In canonical clauses, A and S arguments are consistently coded as the subject, both syntactically and, in the case of pronouns, morphologically. No split of S arguments is easily observable. O arguments are uniformly coded as clausal objects. E arguments may be coded as clausal objects (as in (2)) or obliques (as in (1)).

Once clausal complement positions are related to coarse-grained argument positions, the question becomes how semantic roles introduced in the past several sections fit into the paradigm (CGEL § 4.2.3).

4.4 The subject

Subject properties are listed in CGEL § 4.3.1. Some of these properties are demonstrated in a canonical clause. Some are reflected in certain syntactic transformation processes. Here is a summarized version:

- A subject is never oblique and is typically filled by an NP, though a content clause is also possible.
- Since constituency order in modern English is largely fixed, Fig. 5 means the subject is before the predicate in a canonical clause. Various syntactic processes can alter this, though.
- The predicator agrees with the subject.
- Pronoun subjects receive the nominative case.
-

4.5 Direct and indirect objects

4.6 Adjuncts

Adjuncts – and adjunct-like complements – are discussed in CGEL chap. 8.

4.7 Distinguish complements from adjuncts

4.7.1 Licensing and obligatoriness

If something is obligatory, it is always a complement. Complements can also be optional, though.

4.7.2 Category

4.8 Verb idioms and fossilization

4.9 Summary

5 The verb

Discussion on the verb is usually the beginning of the discussion on the clause structure in a grammar, since in the minimal case, the predicate can be just a single verb. This section deals with

subcategories in the verb category, and how the verb changes its form according to the syntactic environment.

5.1 Syncretism in English

Syntactic categories relevant to verb morphology in English include finiteness (§ 3.3.3), tense, aspect and mood (§ 3.2.7), voice (§ 3.3.2), and agreement with the subject (§ 3.2.4). These syntactic categories are all prototypical ones in Indo-European languages. Note, however, in CGEL these features are not considered as the features of the verb itself, but the clause. If these features are placed on the verb, then the verb *play* in a subjunctive clause is a homonym of the verb *play* in an indicative clause, but anyone will consider the two identical inflectional forms.

This does not mean these features do not play any role in distinguishing inflectional forms. Another extreme of morphological analysis is to insert all inflectional forms with the same surface appearance into one inflectional class. This is also not the approach taken in CGEL. To see the problem with this approach, consider the example of Latin fourth declension. What is in common between the genitive singular and the nominative plural? It definitely makes no sense to regard them the same.

The criteria to distinguish inflectional distinctions are shown in CGEL § 5.1.2 [5]. It rejects the approach placing features like finiteness, tense, etc. on the verb, which is essentially the traditional grammar approach⁷ (chap. 3 footnote 1): the uniformness of the finite part of the so-called inflectional paradigm of English verb means this part should be compressed into just three inflectional forms. It also rejects the approach positing minimal inflectional distinctions. It is often said that English has five verbal inflectional forms: *take, takes, took, taking, taken*. But modal auxiliary verbs do not appear in infinitives: the present tense form is therefore to be split into two according to CGEL § 5.1.2 [5], one appears in a finite environment, the other appears in a non-finite environment. In the latter environment, modal auxiliary verbs are constantly absent, therefore constituting a stable contrast between modal auxiliary verbs and lexical verbs, while in the former environment there is no contrast between the two. This split may be viewed as based on the finiteness category, and not purely on the surface appearance of the verb.

CGEL § 5.1.2 [5] accidentally rejects the analysis of Latin noun declension that combines the genitive singular and the nominative plural, because the identification of the two does not work for, say, the third declension, so with the same logic that makes distinction between the finite and infinite *take*. But suppose we have an imaginary language in which in all noun declension classes, the genitive singular and the nominative plural have the same surface realization. In this language, CGEL § 5.1.2 [5] is not sufficient to reject temptation of analyzing the two as one inflectional form. Fortunately, this is not the case in English, and I do not proceed more on inflectional paradigms.

5.2 Classification by complementation

One criterion of verb classification is the valency information. In CGEL, *valency* is defined purely as the number of complements. Some authors use *valency* to denote the whole complementation type, including the syntactic function of each complement.

Prepositional verbs are classified in CGEL § 4.6.1.2. Verbs with several patterns of complementation are discussed in CGEL § 4.8.

⁷Note, however, the traditional inflectional paradigm is still useful though cumbersome: it visualizes possible environments verbs may appear in.

5.3 Agreement with the subject

6 Information packaging

References

- Chris Collins. A smuggling approach to the passive in english. *Syntax*, 8:81 – 120, 09 2005. doi: 10.1111/j.1467-9612.2005.00076.x.
- RM Dixon. Basic linguistic theory. volume 3: Further grammatical topics, 2012.
- Robert MW Dixon. *Basic linguistic theory volume 1: Methodology*, volume 1. OUP Oxford, 2009.
- Robert MW Dixon. *Basic linguistic theory volume 2: Grammatical topics*, volume 2. Oxford University Press on Demand, 2010.
- Rodney Huddleston and Geoffrey K. Pullum. *The Cambridge Grammar of the English Language*. Cambridge University Press, 2002. doi: 10.1017/9781316423530.
- Dennis Ott. Ellipsis in appositives and the syntax of parenthesis. *Generative Linguistics in the Old World (GLOW)*, 37, 2014.
- Geoffrey K Pullum and James Rogers. Expressive power of the syntactic theory implicit in the cambridge grammar of the english language. In *annual meeting of the Linguistics Association of Great Britain, University of Essex*, 2008.