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Valency Grammar

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The Basic Idea of Valency

Valency (also known as valence, especially in the United States) is the name given in various syntactic theories (such as valency grammar, dependency grammar, word grammar, and some kinds of functional grammar) to a particular kind of dependency property exhibited by many lexical items. This kind of lexicosyntactic property involves the relationship between, on the one hand, the different subclasses of a word-class (such as verb) and, on the other, the different structural environments required by those subclasses, these environments varying both in the number and in the types of element. Valency is thus to be seen as the capacity a verb (or noun, etc.) has for combining with particular patterns of other sentence constituents, in a similar way to that in which the valency of a chemical element is its capacity for combining with a fixed number of atoms of another element (for example, one in the case of monovalent hydrogen or sodium, two in the case of bivalent oxygen or calcium, etc.). Such information is vital for language learners but was never adequately presented in traditional grammars and dictionaries.

The concept of valency is most easily illustrated with reference to verbs. Most languages have a category that roughly corresponds to or embraces the English category of verbs. Examples from English will be given here, although, where appropriate, examples from French, German and other languages will be considered.

All English verbs share syntactic and inflectional features of a very basic kind (such as their range of tensed and untensed forms, and their modification with time adverbials), but they differ radically in

their requirements for accompanying noun phrases and/or prepositional phrases (with functions such as subject, object, prepositional object, etc.) that they require and/or permit.

The English verbs *stumble*, *jolt*, and *thrust* typically occur in distinctive environments, as in sentences like *Alfred stumbled*, *Alfred jolted the door*, and *Alfred thrust the key into the lock*. Putting one of these verbs into the distinctive syntactic context of one of the others gives an ungrammatical sequence like **Alfred stumbled the door* or **Alfred jolted the key into the lock*. Such restrictions mean that verbs need to be subclassified according to their syntactic potential, a fact recognized by traditional grammar in the (inadequate) division into transitive and intransitive verbs, and in modern linguistics by concepts like 'subcategorization properties,' 'syntactic frame,' or 'argument structure.' The special contribution of valency grammarians to the study of this type of subselection has been a thorough investigation of just how much is determined by the individual verb (or noun, etc.), and of how different potentials of the same verb (e.g., *Alfred pushed/ – pushed the key/ – pushed the key into the lock*) are related.

Different Conceptions of Valency

The invention of the notion of 'valency' (French *valence*, German *Valenz*, Dutch *valentie*) is often credited to Lucien Tesnière, whose *Esquisse d'une syntaxe structurale* appeared in 1953, but whose main work, *Éléments de syntaxe structurale* was only published posthumously in 1959. The notion had, however, been clearly expounded by A. W. de Groot in his Dutch work, *Structurele svntaxis* (1949), and is even hinted at by Karl Bühler in an oft-quoted remark from his *Sprachtheorie* (1934), to the effect that "...words of a particular word-class open up around them one or several 'empty places', which

have to be filled by words of certain other word-classes” (1934: 173).

It is nevertheless preeminently Tesnière’s notion of valency that has been studied and developed in continental Europe, especially Germany, since the 1960s. On the one hand, valency has been integrated with ‘dependency theory’ by such scholars as J. Ballweg, U. Engel, B. Engelen, H.-J. Heringer, J. Kunze, H. Schumacher, and H. Vater; on the other, it has been applied to the detailed description of, most notably, German by G. Helbig and the Leipzig school, but also of English (D. J. Allerton, R. Emons, and T. Herbst), and French (W. Busse and J.-P. Duhost). (For a historical survey up to the mid-1970s, see Korhonen, 1977.) The following review of the problems of valency theory will take Tesnière’s proposals as a starting point.

Tesnière’s Approach

Valency can be incorporated into a functional type of constituency grammar (involving relationships between the subcategorization of neighboring constituents), but for Tesnière, it was one aspect of dependency grammar. His semantically based syntax was concerned with establishing the hierarchy of word ‘connexions’ within a sentence, which make up the what he termed the ‘structural order’ of words (as opposed to their linear order). The structural order of each sentence is given in terms of a ‘stemma,’ a two-dimensional display, in which the top-to-bottom dimension represents a series of relationships between ‘governors’ (or ‘heads,’ French *régissants*) above and ‘dependents’ (French *subordonnés*) below. Typically in a ‘governor-dependent relationship,’ the governor may occur without the dependent but not vice versa, and the governor provides the central semantic element, whereas the dependent only represents a modification of this element.

A consideration of the partial structural stemma of (A) in [Figure 1](#) enables us to appreciate a number of points about Tesnière’s approach: a first point is that the governor-dependent relationship can operate at different levels (with *old* acting as dependent of *the grammarian*, but as governor of *very*); a second point is that one governor (like *the grammarian*) can have more than one dependent (*old* and *French* in this case), but not vice versa; finally, a ‘semantically empty’ word like *the* can combine with a ‘full’ word like *grammarian* to form a single ‘nucleus’ (marked with a ‘circle’), that is, a single point on the stemma. Each governor is said to act as a ‘node’ (French *noeud*) for all of its direct and indirect dependents, so that *the grammarian* acts as a node for the whole of the stemma of (A) in [Figure 1](#).

In a typical sentence, like that of (B) in [Figure 1](#), Tesnière saw the main verb as the ‘central node’ (*noeud des noeuds*). The verb achieves this central role through its high position in the hierarchy of connexions but also through its ability to determine the number and variety of its dependents. But the question of how many dependents a verb has is no simple matter. In fact, Tesnière distinguished two types of dependent for verbs, to which he gives the labels ‘actants’ and ‘circonstants.’ From a semantic point of view, the ‘actants’ represent the participants, while the ‘circonstants’ represent the setting and incidental details of the process or state expressed by the verb, the whole sentence portraying a minidrama. In the example of (B) in [Figure 1](#), where *offered* represents the process, *Alfred, (that) Bible, and to Charles* would be ‘actants,’ while *repeatedly, in Strasbourg, and on Tuesday* would be ‘circonstants.’

An Essential Distinction: ‘Actants’ versus ‘Circonstants’

Everything so far noted about Tesnière’s views has been a matter of general dependency theory, but the distinction between ‘actants’ and ‘circonstants’ is distinctively the preserve of valency theory. ‘Actants’ belong to the valency of individual verb types, whereas ‘circonstants’ are in principle potential dependents in any sentence, regardless of the verb. Thus the constellation of ‘actants’ represented in (B) in [Figure 1](#) is characteristic of one subclass of English verbs that includes not only *offer* but also *give, lend, refuse, sell, send*, and a couple of dozen others.

In (B), *Alfred, that Bible, and to Charles* would be termed by Tesnière first, second, and third ‘actant’ respectively, and these terms correspond to what in English grammar are normally called subject, (direct) object, and indirect object respectively. These are the only elements that Tesnière recognized as ‘actants’ in active sentences. This choice is unfortunate, because many prepositional phrases are equally essential to the verb, such as the prepositional object *on Barbara* in *Alice relied on Barbara*, and even purely adverbial phrases are required by certain verbs, such as *live (at home, etc.), last (for two hours, etc.), or thrust*, which, as noted earlier, needs both an object and a specification of place.

The subclass of verbs that includes *offer, give*, etc. is described as ‘trivalent,’ because its members require three ‘actants’; the same could be said of the subclass of *thrust, put*, etc., although Tesnière did not recognize this. Ordinary transitive verbs like *jolt* or *like, kill*, etc., which merely require a subject and a direct object, are termed ‘bivalent’ (or ‘divalent’); and the same applies to copular verbs like *be, seem*, or

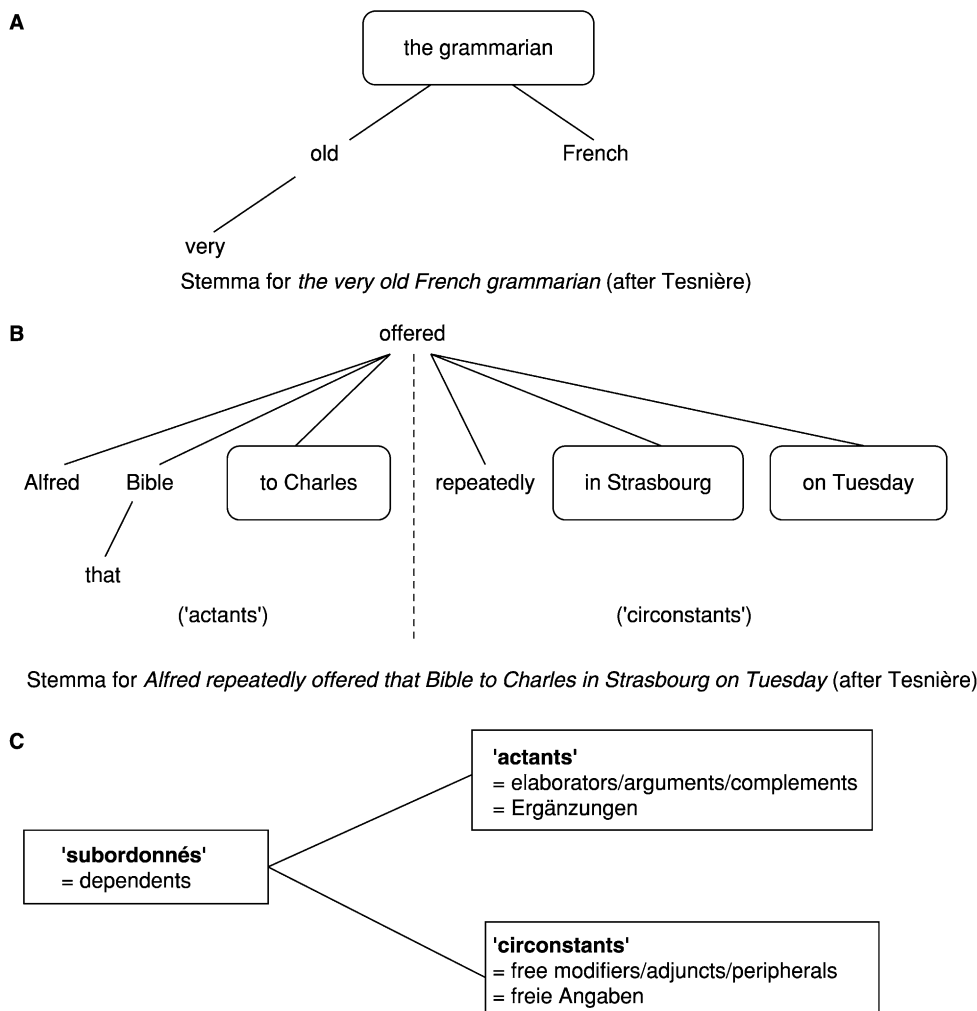


Figure 1 Stemmas and kinds of dependent.

become that take an adjectival or nominal predicative (complement) such as *beautiful* or *a beauty*. Finally, ordinary intransitive verbs like *stumble* or *deteriorate*, *sneeze*, etc. are described as ‘monovalent’. (For ‘zero-valent’ (or, to use Tesnière’s term, ‘avalent’) verbs, see the section ‘Levels of Analysis’).

By contrast with ‘actants,’ the adverbials of (b) are not relevant to valency classification. Thus *repeatedly*, an adverbial of frequency, *in Strasbourg*, a positional adverbial of place, and *on Tuesday*, a punctual adverbial of time, could all just as well have occurred with the different verb subclasses represented by *stumble*, *jolt*, and *thrust*, in fact, with any verb at all. Tesnière (1966: 125) mistakenly insisted that such adverbials are unlimited in number (by contrast with the fixed number of ‘actants’), but the essential point is their universality, their freedom to occur in any sentence.

Through the history of valency theory and grammatical theories such as transformational

grammar (cf. Baker, 1989: 266–267) and systemic grammar (cf. Halliday on ‘participant roles and circumstantial roles’), various technical terms have been used to refer to the distinction between these two kinds of dependent of a governor (or head). These are listed in (C) in [Figure 1](#). For clarity’s sake, the terms ‘verb elaborator’ and ‘free modifier’ will henceforth be used for the post-Tesnièrean equivalents of ‘actant’ and ‘circonstant.’ (The term ‘complement’ has frequently been used in the sense of elaborator, but it has the disadvantage that for traditional grammarians and many modern ones, it has a quite different meaning and may exclude the subject, which the terms elaborator and ‘actant’ never do. The more modern term ‘argument’ is unfortunate for a different reason: to the uninitiated, it suggests a whole sentence or clause rather than the sentence constituent that it is.)

Whatever the terminology, there is a consensus about the need for a distinction between elaborators

and free modifiers, but there are certain problems associated with it. Clearly Tesnière oversimplified matters by insisting that, in principle, elaborators (i.e., ‘actants’) were essentially nominal in form and semantically necessary to the verb, while free modifiers (i.e., ‘circonstants’) were adverbial in form (comprising adverbs and prepositional phrases) and semantically not required by the verb. German valency theorists, such as Helbig, Heringer, and Herbst, have proposed tests for distinguishing the two kinds of dependent. Helbig, for instance, suggested that in sentences like the following:

- (1) Alice ate the sandwich in the train.
- (2) Alice put the sandwich in the fridge.

the status of the adverbial phrases differs partly because *in the train* is omissible while *in the fridge* is not, but also because the first phrase, though not the second, has regularly corresponding sentences of the form:

- (3) Alice was in the train when she ate the sandwich.
- (4) What Alice did in the train was $\left\{ \begin{array}{l} \text{(to) eat} \\ \text{she ate} \end{array} \right\}$ the sandwich.

These correspondences to related sentences seem to indicate that *in the train* in (1) is a free modifier or ‘adjunct,’ whereas *in the fridge* in (2), though an adverbial, is a verb elaborator, just like the earlier examples of obligatory adverbials with the verbs *live*, *last*, and *thrust*.

All obligatory elements are therefore verb elaborators, but this does not mean that all optional elements are free modifiers. Even Tesnière only suggested that elaborators (‘actants’) are “often indispensable to complete the sense of the verb” (1966: 128). Helbig therefore proposed a three-way division into obligatory elaborators, optional elaborators, and free modifiers (*obligatorische Ergänzungen*, *fakultative Ergänzungen*, *freie Angaben*). The following examples suggest the need for an even more subtle analysis:

- (5) Alfred was praising the play.
- (6) Alfred was watching [the play].
- (7) Alfred was reading (the play).
- (8) Alfred was idling.

The first three have *the play* as the object of the verb and therefore as a potential part of its valency, but it is only in the first sentence that the object is obligatory. In both the second and the third sentences, *the play* may be omitted, but under different conditions: whereas in (6) the objectless version of the sentence always requires the listener to identify the thing

watched from what is evident in the context, in (7) the objectless sentence leaves the thing read totally open as a matter of no immediate interest (cf. Allerton, 1982: 68–70). Thus while the optional object is clearly part of the valency of *watch* in all its uses, the verb *read* appears to have two different valencies, only one of them involving an object. In (8), finally, no object is possible with the unequivocally intransitive verb *idle*; an object can therefore be no part of its valency. This truism suggests a useful general test: if an element, such as an object noun phrase, can only be added to certain verbs and not to others, then it participates in verb valency, in contrast to, say, a time adverbial like *yesterday* or *today*, which can be freely added to any sentence (given an appropriate tense form). The test of insertion, rather than that of omission, is therefore most useful for distinguishing elaborators from free modifiers.

The Diversity of Elaborators

Further tests are required for deciding what kinds of elaborator need to be distinguished. A substitution test, for instance, is useful in assessing combinations of verb and prepositional phrase. All the prepositional phrases in the following sentences are omissible elaborators, and yet they do not all have the same status:

- (9) Alice listened to the big waves.
- (10) Alice concentrated on the big waves.
- (11) Alice swam to the big waves.
- (12) Alice floated on the big waves.

A consideration of the first two sentences, (9) and (10), shows not only that the preposition is selected by the verb, but even that no other preposition is possible without a change in the nature of the combination; the prepositional phrase is therefore some kind of prepositional object (a category not allowed for by Tesnière but standard in German valency grammar). The prepositional phrases in (11) and (12), however, are not prepositional objects, as various tests show: the preposition can be replaced with a range of other prepositions to give a series of regular semantic contrasts (*to* → *into*, *towards*, *under*, etc.; *on* → *over*, *near*, *behind*, etc.); unlike the prepositional phrases of (9) and (10), those of (11) and (12) demonstrate their place-adverbial nature through their capacity for being preceded by particles like *right* or *back*; finally, whereas the phrases of (9) and (10) show their partly nominal nature through their elicitation with a *What* + preposition question, those of (11) and (12) are typically elicited with the

Where (... *to*) question typical of place adverbials of location and destination respectively.

These and similar criteria have been referred to by valency grammarians as establishing the various possible elaborators of verbs. It has become clear that these elaborators include not only noun phrases but also prepositional phrases and adverbs. They also include adjective phrases, as in the first two ((13a) and (13b)) of the following sentences:

(13a) Alfred seemed rather stupid.

(13b) Alfred remained fit.

(14a) Alfred seemed a fool.

(14b) Alfred remained an athlete.

(15) Alfred insulted an athlete.

The first two pairs of these sentences, i.e., (13a)/(13b) and (14a)/(14b), illustrate the pattern of a verb with what is in traditional grammar called a complement but in most modern works is referred to as a 'predicative' (following Jespersen). Most typically, this pattern contains an adjective phrase, as in (13), but where it is a noun phrase, as in (14), the noun phrase may generally be replaced with an adjective phrase (hence the alternative label 'predicate nominal/adjectival'). One way in which predicatives differ from objects is in their nonacceptance of 'clefting,' with the result that, comparing (14) with (15), we find that **It was an athlete that he remained* is not a possible sentence, while *It was an athlete that he insulted* is perfectly natural.

Noun phrases and adjective phrases are the two universally described kinds of predicative, but there is a third kind, in the form of a prepositional phrase, as in (16):

(16a) Alfred seemed in a funny mood.

(16b) Alfred remained in good health.

The prepositional phrases *in a funny mood* and *in good health* in these sentences have a similar function to the adjectival phrases *rather stupid* and *fit* in (13a)/(13b); it seems only reasonable then to recognize them as prepositional predicatives, alongside nominal and adjectival ones. In such prepositional phrases, the preposition has a weak semantic contribution to make and is selected by the noun (cf. *under a misapprehension, on top form*).

Returning to noun phrase predicatives, we see that they can be formally identical to noun phrase objects. Clearly predicatives and objects are noun phrases with rather different functions, and it can be argued that function is a vital ingredient in the specification of elaborators, particularly in a noncase language like English. In addition to the 'clefting' test just mentioned, 'passivization' of a sentence, in particular,

the moving of an active object to subject position in the corresponding passive clause (e.g., changing (15) above to *An athlete was insulted by Alfred*), can play a part in evaluating such functions. It is worth noting, however, that not all the noun phrases traditionally classed as objects pass this test, and if this is taken to be the hallmark of objecthood, some will need to be thought of as pseudo-objects or 'objoids.' In a language like German, on the other hand, it might be sufficient to define elaborators with such labels as accusative object, dative object, prepositional object, etc. and regard the predicative as a nominative kind of object, since passivization is not limited to sentences with any one kind of object (though, admittedly, only the accusative object can become the passive subject).

One final type of elaborator needs to be considered. As a variation of (11), we might cite (17), which differs only in having its adverbial (elaborator) in the shape of a single word adverb instead of a prepositional phrase. It needs to be contrasted with (18), in which the single word adverb has a rather different function:

(17) Alice swam out.

(18) Alice turned out.

Whereas the normal adverbial elaborator *out* in (17) participates in normal semantic contrasts like *swam out* versus *swam in* versus *swam across*, and can be compared with the fuller form *swam out of the lagoon*, the *out* of (18) has a quite different status. The contrast between *turn out* ('appear on duty') and *turn in* ('go to bed') is not the normal one between *in* and *out*, and the combination *turn across* is virtually nonoccurrent. Combinations like *turn out* (or *turn in*) are not normal sequences of verb and adverbial elaborator but tight collocations of the type usually referred to as 'phrasal verbs,' and in these collocations, the adverb has a strong limiting effect on the meaning of the verb, so that *turn*, for instance, has to be understood in a special new sense. Such adverbs (and it is only a question of single-word adverbs) can be described as limiter adverbs.

One view of the total range of English verb elaborators other than the subject is given for bivalent verbs in Figure 2. After each elaborator, a suggested abbreviatory symbol is given in parenthesis.

The Special Status of Subjects

The range of English verb elaborators displayed in Figure 2 expressly excludes the subject. But, as noted above, valency grammarians differ from other grammarians in seeing the subject not as standing apart from the predicate or verb phrase but rather as

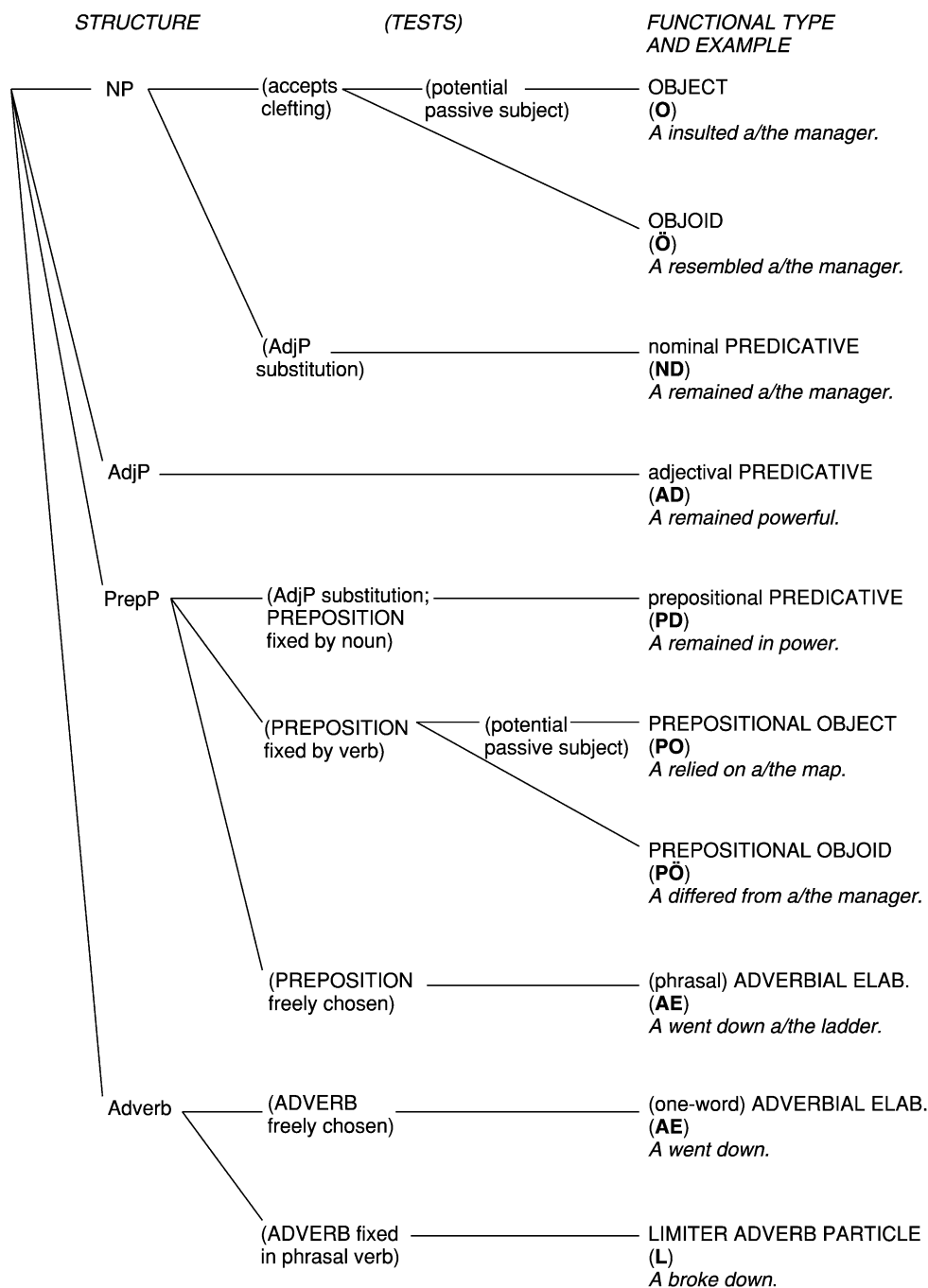


Figure 2 Nonclause elaborators of English bivalent verbs, excluding the subject (S).

standing alongside the object as an elaborator. As Tesnière put it (1966: 109), “... *du point de vue structural. . . le sujet est un complément comme les autres*”; but this statement is something of an oversimplification.

The subject has a special place as regards inflectional morphology. In languages that have grammatical case, there is frequently a case such as the nominative that is selected for active subjects regardless of the lexical verb used, whereas verbs may govern objects in at least two different cases (as in German or

Russian). As for the verb’s own inflections, these commonly agree with the number, person, etc. of the subject but not the object, whereas the reverse never obtains. Languages with an ergative/absolutive case system, like Basque, are slightly different in these two respects.

In terms of syntactic form, subjects have greater positional prominence in the sense that, in the absence of a specially marked theme, the subject occurs typically as the first noun phrase in the

sentence – a feature shared by SOV, SVO, and VSO languages, that is, well over 90 percent of the world's languages. As regards syntactic dependence for occurrence, the subject normally has a higher priority than the object, in the sense that with all verbs, or (depending on the language) the vast majority of them, a subject is obligatory, while an object is only required by a proportion of verbs (i.e., by transitive ones). It is of course true that many languages – so-called pro-drop languages like Spanish, Italian, or Japanese – allow the subject to be omitted when it is identifiable from the linguistic or situational context (e.g., Spanish *vinó* 'he/she/it came'). But these languages further allow the objects of many verbs to be omitted with no requirement of contextual recoverability (just like English *read*, discussed above, cf. Spanish *leyó* 'he/she/it read (something)'); and of course purely intransitive verbs (like Spanish *venir* 'come') reject objects altogether.

Finally, the subject (but not the object) has a textual role in being the typical sentential theme, one often carried forward from previous sentences, and is often phonologically marked as such (in English, for instance, often through a separate intonation unit). On the whole, then, subjects stand apart from other verb elaborators and need to be accorded a special status *vis-à-vis* the verb; but they are elaborators nonetheless.

Levels of Analysis

The above discussion of subjects and objects partly presupposes a clear definition of these categories. But this issue is a complex one, in which much hinges on the relationship between transitive active sentences and passive sentences as well as sentences with other formats. Consider a pair of sentences like:

(19) Alice attacked Barbara.

(20) Barbara was attacked by Alice.

According to most criteria (position, agreement, obligatoriness, for instance), *Alice* is the subject of (19), whereas *Barbara* is the subject of (20) despite the virtual synonymy of the two sentences. Tesnière accepted such an analysis but noted that the subject of the passive, *Barbara*, has the same semantic role ('patient' or 'sufferer' of the verbal action) as the object of the active sentence; whereas the subject of the active sentence, *Alice*, has the same semantic role ('agent') as the passive agentive phrase, *by Alice*, which he termed 'counter-subject' (French *contre-sujet*). What Tesnière failed to note is that these semantic roles are not valid for all active and passive subjects, objects, and counter-subjects; rather, it is a

matter of the semantic valency requirements of individual verbs, as exemplified by the similar correspondences observable in the following sentences:

(21) Alice liked Barbara.

(22) Barbara was liked by Alice.

(23) Alice pleased Barbara.

(24) Barbara was pleased by Alice.

Thus, while in the first two sentences, (21) and (22), with *liked*, the active object and the passive subject, *Barbara*, agree in being the causer or stimulus of the emotion described by the verb, in the last two sentences, (23) and (24), with *pleased*, it is the active subject and passive 'counter-subject' (termed 'perject' in Allerton, 1982), (*by*) *Alice*, that have this kind of role. There is a similar exchange of syntactic functions between the *liked* sentences and the *pleased* sentences for the other semantic role of 'mental experiencer.' So while precise semantic roles are determined by the meaning of individual verbs (cf. also *defeat* and *lose (to)*), there is, given sentences containing any particular verb, a crucial correspondence between the syntactic functions of the active and the passive format of related sentences, and therefore a need to recognize a level of analysis independent of and intermediate between superficial subjects and objects on the one hand and purely semantic roles on the other. This recognition is of the valency level of deep or underlying subjects and objects.

A further reason for recognizing this underlying valency level of description is the behavior of certain meteorological verbs, as exemplified by English *It was raining*, French *Il pleuvait*, and Spanish *Llovía*. In Spanish (and other pro-drop languages), it is impossible to have a subject with such verbs in their normal use, and the verb *llover* can be said to be zero-valent (or 'avalent,' to use Tesnière's term). In English and French, the words *it* and *il* respectively fulfill the requirements discussed above to qualify as superficial subjects; but such a subject has no clear semantic role and is not replaceable (by such a phrase as *the weather*), and it seems that it may simply be part of the required surface structure for English and French sentences without corresponding to a true valency subject. For the corresponding German form *Es regnet*, the situation appears to be slightly different, because sentences without a (nominative) subject do occur, e.g., *Mich friert* 'Me is freezing = I am freezing,' *Mir ist kalt* 'To-me is cold = I am cold,' *Mir wurde geholfen* 'To-me was helped = I was helped'. (N.B. The initial pronoun in these sentences is the theme but not the subject.) It could therefore be argued that, since this empty German *es* is not required by any

	Valency gap	Valency subject	Valency object
Sentence with:			
Zero-valent verb (e.g. <i>rain</i>)	SURFACE SUBJECT	—	—
Monovalent verb (e.g. <i>stumble</i>)	—	SURFACE SUBJECT	—
Divalent verb (e.g. <i>jolt</i>)			
— active	—	SURFACE SUBJECT	SURFACE OBJECT
— passive	—	PERJECT*	SURFACE SUBJECT

* = Tesnière's 'contre-sujet,' often referred to simply as 'agent phrase,' although this is often semantically inappropriate.

Figure 3 Correlation of English valency and surface functions.

general rule of sentence structure but is demanded by such meteorological verbs, it is a required (though empty) elaborator.

A summary of the relationships between valency functions and surface form in English meteorological sentences, ordinary intransitive, and transitive sentences, both active and passive, is given in [Figure 3](#).

Trivalent verbs of the indirect object type discussed (like *offer* and *give*), also appear in two virtually synonymous formats in English, as exemplified by:

(25) Alfred handed that Bible to Charles.

(26) Alfred handed Charles that Bible.

These two formats can be regarded as variant realizations of the same valency pattern, with the indirect object appearing either after the object and with a preposition (as in (25)) or before it and without a preposition (as in (26)). Each version gives rise to a different passive sentence (*That Bible was handed . . . / Charles was handed . . .*).

Different Links between Elaborators and Semantic Roles

Rather different in its valency implications is the kind of obligatorily reflexive verb exemplified by *absent oneself* in (27), compared with the incidentally reflexive verb of (28):

(27) Alice absented herself from the meeting.

(28) Alice criticized herself at the meeting.

Since a nonreflexive object is impossible with the verb *absent*, the *herself* of (27) is an empty elaborator that cannot be said to express an independent semantic role beyond that of the subject, which in this case can be described as agent. In (28), on the other hand, *herself* has the role of patient (or affected entity),

with the subject again having the role of agent. But in both cases, the reflexive pronoun fulfills the valency function of object, a (prepositionless) noun phrase immediately following the lexical verb, so that both verbs can be regarded as bivalent.

This view of the valency of reflexive verbs differs from that of Tesnière, who saw reflexive verbs as manifestations of a different kind of verbal voice, the so-called recessive (French *récessif*), which reduced the valency of a verb by one, so that bivalent verbs like *lever* 'raise,' or *ouvrir* 'open (transitive)' become monovalent when reflexive (*se lever* 'rise, stand up,' *s'ouvrir* 'open (intransitive)'). Although this view is an interesting one, it is something of an oversimplification.

In fact, reflexive verbs in French (and many other languages, including German), seem to have at least four possible different kinds of status. A first group of verbs, like *se laver* 'wash oneself' or *se critiquer* 'criticize oneself' are ordinary transitive verbs that can have a reflexive object as an alternative to a normal one, but the reflexive one has no special significance for verb valency. A second group of verbs, like *s'absenter* 'absent oneself' or *se souvenir (de)* 'remember,' do not have a nonreflexive use, and thus the reflexive pronoun is an empty elaborator, even though an essential one, rather similar to the *es* of German *Es regnet* (discussed in the section Levels of Analysis). Thirdly, there are verbs like *douter/se douter* 'doubt/imagine, suspect' or *résoudre/se résoudre (à)* 'solve/decide,' which have both a non-reflexive and a reflexive use, but where the semantic difference is too great for them to be simply counted as the same verb; in fact, reflexivization is used almost like a device of word-formation for producing a new lexical item, one that has to count as a compulsorily reflexive verb. Finally, there are verbs like *ouvrir* and *vendre*, for which the reflexive pattern is used to convey the idea that the subject is semantically the

patient (and hence also object), and that there is no explicit agent, which is why the patient has to fill the subject position too, as in *La porte s'ouvre* 'The door opens (itself).' This reflexive use truly is a way of coping with a reduced number of semantic roles and gives rise to 'polyvalency,' that is, a verb displaying an equivalent meaning in two quite different grammatical uses.

Tesnière also recognized syntactic devices for increasing the valency of verbs, such as French causative constructions with *faire*. English causative constructions with *have*, *make*, *cause*, etc. preserve subject and object functions in the embedded infinitive clause of sentences like those of (29) and (30) below, so that *Alfred* remains the subject and *Balzac* the object of the verb (*to*) *read*, just as they would have been in a full sentence with the same content (*Alfred reads Balzac*, for instance):

(29) John had Alfred read Balzac.

(30) John caused Alfred to read Balzac.

In French, on the other hand, *faire* seems to combine with infinitives to form complex verbs like *faire mourir* 'have . . . die,' *faire apprendre* 'have . . . learn,' and *faire donner* 'have . . . give' to give sentences like the following (adapted from Tesnière), in which *Jean* is introduced as the causer or instigator and as subject of the whole *faire* + verb complex, displacing *Alfred* from subject position:

(31) Jean fait mourir Alfred.
(cf. Alfred meurt.)

(32) Jean fait apprendre le bulgare à Alfred.
(cf. Alfred apprend le bulgare.)

(33) Jean fait donner la Bible à Charles par Alfred.
(cf. Alfred donne la Bible à Charles.)

As Tesnière pointed out (1966: 260–262), French requires that the displaced subject should occupy the next available place down the hierarchy, starting with the object (= second actant) as in (31), going on to the indirect/ prepositional object (= tierce actant) as in (32), and going on as far as the agent phrase (= quatrième actant) as in (33).

Other languages have different ways of dealing with the valency of causative relationships. One possibility is to allow polyvalency in such a way that the same verb may be used intransitively and transitively in a causative sense without change of form, as with the many so-called ergative verbs of English, which typically refer to a change of state or position. Verbs such as *break*, *cook*, *open*, *boil*, and *sink* have a monovalent use as in (34) below, beside a bivalent one with a causative meaning as in (35):

(34) The glass broke.

(35) John broke the glass.

With such verbs, the subject of the intransitive pattern and the object of the transitive pattern have the same semantic role of 'patient affected,' while the transitive subject has the role of 'agent.'

An alternative way of dealing with different constellations of elaborators with semantic roles is by marking the particular valency pattern by means of derivational morphology, i.e., having a related verb derived with an affix to create a verb of different valency: the German prefix *be-*, for instance, often has the effect of converting an intransitive verb into a transitive one, as in the pairs *arbeiten/bearbeiten* 'work/work on, process' and *enden/beenden* '(come to an) end/(bring to an) end, complete'. Swahili has a range of suffixes that work in a similar way:

<i>-w(a)</i>	dynamic passive	e.g., <i>-vunjwa</i> 'be(come) broken'
<i>-ik(a)/-ek(a)</i>	stative passive	e.g., <i>-vunjika</i> 'be/ remain broken'
<i>-an(a)</i>	reciprocal	e.g., <i>-pendana</i> 'see each other'
<i>-i(a)/-e(a)</i>	applicative	e.g., <i>-letea</i> 'bring to (someone)'
<i>-sh(a)/-z(a)/-ny(a)</i>	causative	e.g., <i>-angusha</i> 'make fall = drop'

All of these Swahili suffixes give rise to sets of related verbs with different constellations of elaborators with semantic roles, but these constellations are of different kinds. The applicative and the dynamic passive (like the English passive) reassign elaborators: the object in the applicative corresponds to a normal preposition phrase; the subject in the dynamic passive corresponds to a normal object. The stative passive involves reassignment of the object to subject position but loss of the original subject. The reciprocal reduces bivalent subject-object structure to a simple monovalent one. The causative and the applicative increase the valency: the causative includes a new 'instigator' subject, downgrading the normal subject to object, while the applicative introduces a new 'indirect patient' as object, downgrading the normal object to a kind of secondary object.

Patterns Involving a Transcategorical Quasitransformational Relationship

Apart from the regular, transformational relationships that we find between active and passive structures or

in other cases of polyvalency, there are some more distant and less regular cases of valency pattern relationships that need to be considered. These are cases in which not simply the elaborators of the verb are reconfigured in some way, but ones in which the verb itself is involved in the restructuring. Unlike active-passive and similar regular transformational relationships, these partly irregular relationships are like word-formation patterns in their partial unpredictability, so that it would be reasonable to refer to them as ‘quasitransformational’ patterns of correspondence.

Consider the following examples:

- (36) Alfred greatly enjoyed the music.
 (37) Alice really loved Mozart.
 (38) Alfred derived great enjoyment from the music.
 (39) Alice really was in love with Mozart.

The sentences of (36) and (37) are simple bivalent structures with subject and object as verb elaborators, whereas their quasi-synonymous kindred sentences, (38) and (39) respectively, involve a different pattern. In this more complex structure, a semantically lightweight verb is used, pushing the verb’s meaning into an elaborator position, object position in the case of (38) and noun phrase within a prepositional predicative in (39). Although the valency of the simplex verbs *enjoy* and *love* is identical (i.e., they are both bivalent, with a ‘mental processor’ subject and a ‘mental focus’ object), the corresponding nouns (*enjoyment* and *love*) participate in quite different patterns and are anything but interchangeable. In Allerton (2002), sentences like those of (38) and (39) are said to involve ‘stretched verb constructions,’ and the relationship of their structure to that of their kindred simpler ‘unstretched’ structure is represented by marking the functions of their elaborators with the capital letters used already (S, O, etc.) and by attaching to every descriptive category an oblique stroke (or ‘slash’) followed by a lowercase letter indicating the corresponding element in the equivalent ‘unstretched’ structure. Elements that have no correlate in the simple verb structure are labeled as .../ø. Sentences (38) and (39) could be represented at a valency level as (38x) and (39x) respectively:

- (38x) Alfred derived great enjoyment from the music.
 $S/s + V/\emptyset + O/v + P\ddot{O}/o$
 (39x) Alice really was in love with Mozart.
 $S/s + V/\emptyset + PD/v + P\ddot{O}/o$

The collocation *derive enjoyment from* has a meaning that is not essentially different from *enjoy*, so

that semantically such correspondences obtain. But grammatically, even at the deeper valency level, *derive* is a verb and *enjoyment* is a noun. Such quasi-transformational relationships between ‘kindred’ constructions are therefore semantic in nature but need to be recognized as involving a grammatical correspondence that is transcategorial. The existence of stretched verb constructions gives the speaker a wide choice between different verbal construction types to express broadly the same meaning, as the further examples of (40) show.

Each of the options given in (40a)–(40f) represents a different grammatical structure, with a different relationship to the underlying sentence (40), which has the action expressed by a verb. Compared with the simplex structure of (40), the eventuality type named by the verb has been ‘moved’ into a verb elaborator position (predicative or prepositional object or object) and there have been reallocations of the verb elaborators themselves. In the structure of (40b), a ‘former’ object has been downgraded to the position of a prepositional phrase qualifier (PQ) of a verb elaborator, which in this case is a nominal predicative (ND):

- (40) The child helped the teacher.
 $S + V + O$
 (40a) The child was helpful to the teacher.
 $S/s + V/\emptyset + AD/v + P\ddot{O}/o$
 (40b) The child was a helper of the teacher.
 $S/s + V/\emptyset + ND/v < PQ/o >$
 (where the ND is agent-oriented)
 (40c) The child was a help to the teacher.
 $S/s + V/\emptyset + ND/v + P\ddot{O}/o$
 (where the ND is process-oriented)
 (40d) The child was of help to the teacher.
 $S/s + V/\emptyset + PD/v + P\ddot{O}/o$
 (40e) The child came to the help of the teacher.
 $S/s + V/\emptyset + P\ddot{O}/v + P\ddot{O}/o$
 (40f) The child gave help to the teacher.
 $S/s + V/\emptyset + O/v + IO/o$

What all stretched verb constructions share is the way the process of helping is signaled by an adjective or noun rather than the verb. The verb in such constructions has been variously described as a light or thin verb, or as a support verb, because its semantic contribution is so weak. In English stretched verb constructions with a copular verb, the standard verb is of course *be*, but otherwise, the verb seems to have been selected from a limited list of possibilities: intransitive patterns like (40e) have *come*, *go*, *put*, *meet*, and *provide* or some such similar verb, while in transitive ones like (40f) the most common verb is

make, with *carry out*, *feel*, *get*, *give*, *have*, *provide*, *receive*, *suffer* and *take* also being frequent.

Adjective and Noun Valency

Although Tesnière confined valency to verbs, it has been naturally extended to adjectives and nouns by later valency grammarians. Predicative adjectives combine with copular verbs to form a unit that has many features in common with verbs, including similar valency requirements, for instance, *be afraid (of)* can be compared with *fear*. Admittedly the adjective (phrase) *afraid (of)* can be regarded as an elaborator of the verb *be*; and it is true that predicative adjective phrases occur with various verbs other than *be*, such as *become*, *remain*, *seem* (not to mention the trivalent *make (someone/something ...)*, *keep (someone/something ...)*, etc.), and thus involve a second order valency. On the other hand, the adjective's valency extends beyond what is normally termed adjective complementation, as in *afraid of the dark*, to cover the subject of its companion verb. An adjective like *afraid*, for instance, requires an animate subject with the role of experiencer. Other predicative adjectives have requirements that link subjects with other elaborators, as the following examples demonstrate:

- (41) Alfred is similar to Alice.
- (42) Alice and Alfred are similar (to each other).
- (43) [Alice is mad about cars.] Alfred is similar.

Clearly *similar (to)* implies two entities, but these can be referred to in three different patterns: in (41), one entity is the subject and the other occurs as a (following) elaborator of the adjective; in the (42) pattern, which involves a reciprocal meaning, the subject must be plural, and the adjective's elaborator is freely omissible; in the (43) pattern, finally, the elaboration of the adjective has to be supplied from the context (just like the object of the verb *watch*, discussed in the section An Essential Distinction: 'Actants' versus 'Circumstances'). The elaboration patterns of such adjectives thus cannot be adequately described without reference to the subject.

Most English adjective elaborators are like verb elaborators in that they follow the word they elaborate. There is, however, one important difference: while the majority of verb objects have no preposition in English, virtually all adjectives do require a preposition before their complement (the one clear exception being *worth*). As in the case of prepositional verbs, the adjectives each select a particular preposition, in an often arbitrary way, for example, *keen on*, *eager for*, *dependent on*, *independent of*, *free of/from*. Sometimes the adjective's choice of preposition

agrees with that of a corresponding verb, sometimes the verb has a different preposition, or no preposition at all:

- (44) Alice was hopeful of success.
(cf. Alice hoped for success.)
- (45) Alice was hungry for power.
(cf. Alice hungered for power.)
- (46) Alice was desirous of wealth.
(cf. Alice desired wealth.)

Adjectives with more than one elaborator are relatively rare but can be found, for example, *responsible to (someone) for (something)*.

In case languages, some elaborators of adjectives occur without a preposition, but instead, they occur in a particular case form required by the adjective. In German, this case is most commonly the dative, and such elaborators most commonly precede the adjective, as in (47) below; on the other hand, *anders* 'different', is complemented with the case-neutral subordinator *als*, which follows, as in (48):

- (47) Alfred ist seinem Bruder sehr ähnlich.
(cf. Alfred is very similar to his brother.)
- (48) Alfred ist ganz anders als sein Bruder.
(cf. Alfred is quite different to/from his brother.)

(Note that *sehr* 'very' and *ganz* 'quite' are free modifiers and thus strictly outside adjective valency; the preference for the one or the other in these cases is determined semantically rather than lexicographically.)

Noun valency is comparable with adjective valency, particularly for nouns derived from adjectives, though the selection of prepositions in noun complements, too, only partly corresponds to that in related words (i.e., adjectives and verbs), as illustrated by these examples:

- (49) Alice's dependence on her parents (was obvious).
(cf. Alice was dependent on her parents.
Alice depended on her parents.)
- (50) Alfred's pride in the project (was obvious).
(cf. Alfred was proud of the project.
Alfred prided himself on the project.)

Noun valency therefore also needs to be specified independently. It even has special features of its own. In the first place, there are many nouns without a corresponding verb or adjective that take a complement, for example, *daughter (of...)*, *president (of...)*, *headquarters (of...)*, *advantage (of...)*, *appetite (for...)*. A second point made clear by the above examples is that of the English *of*, which often counts as the equivalent of a genitive case in case languages,

is the favored preposition; thus an *of* noun complement often corresponds to the simple object of a transitive verb (without a preposition), for example, *bombardment/defence/siege of the castle* (cf. *bombard/defend/besiege the castle*), although even here there are exceptions, such as *attack on the castle*. The most striking feature of noun valency, however, is the fact that the item corresponding to the subject of a verb, particularly of a transitive one, can appear in a language like English as a possessive determiner (i.e., in place of an article), as an alternative to its occurrence as a prepositional complement, as the following examples show.

- (51) a/the defeat, a/the collapse [simple *determiner* + NOUN]
 (52) Alfred's collapse, the collapse of Alfred, *the collapse by Alfred.
 (53) Bernard's defeat (?by Alfred), the defeat of Bernard by Alfred,
 Alfred's defeat of Bernard, *the defeat of Alfred of Bernard

Although complex interrelationships are involved in the above, and borderlines are not always clear, it can be said that *by* complements normally correspond to transitive subjects, possessives to transitive or intransitive subjects (and occasionally objects), and *of* phrases to intransitive subjects or to objects. Furthermore, two complements of the same kind are not allowed.

Embedded Clauses as Part of Valency

Many verbs, adjectives, and nouns, besides their normal valency patterns involving phrases (whether nominal, prepositional, or adjectival) also allow complementation with finite or nonfinite clauses. Alongside phrasal complementation like *Alice wanted a holiday* or *Alice realized her mistake*, verbs like *want*, *anticipate*, or *realize* also permit clausal complementation as in (54), (55), and (56) respectively:

- (54a) Alice wanted to go to Switzerland.
 (54b) Alice wanted Angela to go to Switzerland.
 (55a) Alice anticipated going to Switzerland.
 (55b) Alice anticipated Angela('s) going to Switzerland.
 (56a) Alice realized that she had made an error.
 (56b) Alice realized how she had gone wrong.

It is part of the valency of the verb *want*, as shown by (54), that it can occur with an elaborator in the form of an infinitive clause (54a), with the further possibility (54b) of specifying a different subject (here *Angela*) for this infinitive. The verb *anticipate*, on the

other hand, though impossible with the infinitive, is natural with a gerund construction, as in (55a), and it may have a different subject specified either with a plain noun phrase (*Angela*) in informal English or with a possessive noun phrase (*Angela's*) in formal English. The verb *realize* is impossible with both infinitive and gerund but does occur with a finite clause, either declarative as in (56a) or interrogative as in (56b), although some verbs prefer either the one or the other (e.g., *admit*; *enquire*). Both nonfinite and finite clausal complementation can be regarded as cases of 'embedding,' that is, downgrading of a sentential structure to play a lower level role as a verb elaborator. Some verbs are restricted to clausal complementation: the verb *condescend*, for instance, always requires a following infinitive.

Verbs need to be lexically specified for the types of clausal elaborator they accept, and this requirement involves a number of factors. A first point is the possible verb-form in the embedded clause, i.e., whether it is an infinitive, a gerund, or a finite verb, allowing for the fact that some verbs permit two, or even (as in the case of the verb *intend*) all three of these verb forms. A second consideration is the question of a subject for this verb in the elaborator clause. Finite clauses always have an overt subject, but in a nonfinite clause, a subject may be required, permitted, or impossible, cf.

1. impossible subject, e.g., *Alfred offered (*me) to open the meeting.*
2. permitted subject, e.g., *Alfred intended (me) to open the meeting.*
3. required subject, e.g., *Alfred caused me to open the meeting.*

Nonfinite clauses without an overt subject are understood to have the same subject as the preceding verb.

A noun phrase preceding an infinitive or gerund clause elaborator may therefore be the subject of the verb, but it does not have to be. In fact, there are three possibilities for a noun phrase intervening between the main verb and an elaborator infinitive:

1. the (indirect) object of the first verb, with no connection with the second verb, e.g., *Alice promised me to open the meeting.* (This construction in English seems to be limited to the verbs *promise* and, in one particular use, *ask*.)
2. the object of the first verb and simultaneously the subject of the second verb, e.g., *Mary persuaded me to open the meeting.* (Cf. the impossibility of **Mary persuaded the meeting to be opened by me.*)
3. the subject of the second verb, with no relation to the first verb, e.g., *Mary wanted me to open the*

meeting. (Cf. the virtually synonymous passivized *Mary wanted the meeting to be opened by me*.)

A further complication involves the precise status of the subject of the finite verb. Consider the examples:

(57) Alfred hoped to entertain the audience.

(58) Alfred happened to entertain the audience.

Sentence (57) is similar to (54a), but (58) is rather different in that, although apparently the subject of the verb *happen* is simply *Alfred*, it seems semantically more appropriate to identify the subject as the whole discontinuous infinitive clause *Alfred ... to entertain the audience* (cf. the sentence *It happened that Alfred entertained the audience*). It is often suggested, for instance, by Huddleston and Pullum (2002: 1194–1198), that such sentences should be described as having a ‘raised’ subject, in the sense that the noun phrase *Alfred* has apparently been extracted out of its position of subject of the nonfinite verb *entertain* and superficially promoted to the level of subject of the main clause verb *happen*. One problem with this analysis is that it seems to assume that the embedded clause *Alfred to entertain the audience* would naturally occur in a position after the main verb *happen*, which is not the typical position for the subject. Another approach is to regard (58) as involving a kind of compound verb *happen to entertain*, in which *entertain* is the semantic head, but *happen* is the syntactic main verb.

Something similar is found in the following:

(59) It seems/seemed that the pianist entertained the audience.

On the face of it, such a sentence looks like a case of extraposition, i.e., a structure formed when a clausal subject is replaced by *it* and postponed till the end of the sentence (as in *It annoyed me that he left early*). But an ‘unextraposed’ version of this sentence is ungrammatical:

(59x) *That the pianist entertained the audience seemed.

Sentences like (59) may therefore have to be regarded as an additional sentence pattern, requiring an empty *it* subject and an obligatory *that*-clause. After all, empty *it*-subjects of a different kind are required anyway for meteorological verbs like *rain* (see the section ‘Levels of Analysis’).

Finally, all the above points concerning verbs with embedded clauses as elaborators apply equally to adjective and noun complementation, as these phrases show:

able to speak French, capable of speaking French, confident that she could speak French; a tendency to speak French, a habit of speaking French, the fact that she spoke French.

The Limits of Valency

Verbs, adjectives, and nouns are the three major lexical word classes for which the concept of valency is clearly appropriate and for which detailed language studies have been made and preliminary dictionaries compiled. An important issue is whether the concept be extended further, beyond the occasional adverb directly derived from an adjective and copying its valency (e.g., *independently of Alfred*). Transformational grammarians have suggested grouping together spatiotemporal adverbs and prepositions respectively as intransitive and transitive particles (or ‘prepositions’ in a new sense), transitive ones involving complementation with noun phrases and prepositional phrases. This insight could be applied to valency to give a classification something like the following particles (or ‘prepositions’ in a broader sense):

1. *zero-valent*: nearby, home; soon, previously
2. *monovalent* (obligatory simple object): at, to, from, towards; during
3. *monovalent* (omissible simple object): in, above, off; after, before
4. *monovalent* (omissible prepositional object): out (of), in front (of)
5. *bivalent*: between (... and ...)

But there are problems with such an analysis: for instance, whether the situated entity (the subject or object of the sentence) should be included as a further elaborator, thus increasing all the above valencies by one; whether *out of* (or *away from*) really contains two words of the same word class particle/‘preposition’ (albeit of different subclasses); whether *above* and *out* (etc.), in their unaccompanied uses always imply an omitted object.

Although the application of valency grammar can thus be extended, it is not really intended to account for the whole of a syntactic system, any more than Fillmore’s ‘case grammar’ (see **Case Grammar**). Valency is a matter of the subcategorization of lexical categories, and therefore in a strict sense would exclude:

1. coordinate structures, which are treated separately both by Tesnière (under the heading of the French term *jonction*) and by Hudson in his *Word grammar* (where they are basic and not derived from word-word relations)

2. grammatical ‘specifiers,’ such as auxiliaries and (nonpossessive) determiners, which although treated as dependents (or even governors) by many dependency grammarians, were regarded by Tesnière as involving a different relationship to main verbs and nouns respectively – a view still valid today
3. ‘subordinators’ in Tesnière’s interpretation, which embraced prepositions and subordinating conjunctions, these being for him convertors (French *translatifs*), of noun phrases or clauses to adverbial or adnominal function, e.g., adverbial (*Alfred arrived before the concert/before I arrived*; adnominal (*Alfred liked the book in the window/which he’d seen in the window*) – again a theoretically tenable position.

Valency can thus evidently be included in a dependency grammar; for Engel (1977: 116), in fact, valency is simply a matter of dependency on subclasses. Equally valency can be incorporated into a functional grammar or a functionally enriched constituency grammar, albeit under a different rubric. Furthermore, valency characteristics have, in recent years, increasingly been incorporated into dictionary entries, and improved specialist valency dictionaries are being prepared (for instance, the Augsburg project for English, initiated by T. Herbst and D. Heath). For a number of years now, too, language departments of the University of Ghent have collaborated in the Contragram Group, which is currently compiling a contrastive valency dictionary. Similar projects have also been at work in China, Denmark, Japan, Korea, and Spain, just to mention some found on an Internet search. Abel *et al.* (2003) discussed the issues involved in specifying verb valency in an electronic learner’s dictionary. Such ongoing work makes it clear that, despite any theoretical differences within valency theory or beyond it, its concepts are as valid as ever today. Valency relationships must find a place in every complete grammatical description.

See also: Case Grammar; Construction Grammar; Dependency Grammar; Functional Discourse Grammar; Systemic Theory; Word Grammar.

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