Grammar: Functional Approaches

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Abstract
The term ‘functional’ or ‘functionalist’ has been applied to any approach to grammar that puts
the primary emphasis on explanation in terms of factors outside the formal structure of language.
The four most significant functional approaches can be characterized in terms of the types of
functional explanations that are put forward, and the position taken vis-à-vis formalist
explanations of grammar. More recently, a dynamic, usage-based approach to the functionalist
analysis of grammar has been developed.

Keywords: cognitive linguistics, competing motivations, discourse analysis, economy, exemplar
model/theory, formalism (linguistic), functionalism (linguistic), iconicity, language change,
optimality theory, processing, prototypes, sociolinguistics, typology, usage-based model

1 Introduction
The term functional or functionalist has a meaning in linguistics distinct from the use of the term
found in anthropology, sociology or philosophy. In linguistics, a functional analysis is an
analysis of linguistic structure that puts the primary emphasis on explanation in terms of factors
outside the structural form, such as meaning or the function of language in discourse. Functional analysis is in contrast to formal analysis, which is an analysis of linguistic structure that puts the primary emphasis of explanation on principles defined purely in terms of structural form. The term functionalist has been applied to any school of grammatical analysis which argues for the primacy or centrality of functional explanations over formal explanations. Such a broad characterization of functionalism in linguistics, of course, requires further elaboration. We begin by illustrating the commonest types of functional explanations, and then turn to different schools of linguistic theory that call themselves functionalist.

2 Types of Functional Explanations
There are three types of functional explanations that usually are distinguished in the functionalist linguistic literature: processing, cognitive, and discourse or information structure explanations.

2.1 Processing Explanations
Processing explanations make reference to models of the production and comprehension of utterances. A processing explanation argues that some aspect of grammatical structure is due to limitations on the human ability to produce or comprehend the structure.

Processing explanations typically are employed to account for two sorts of linguistic facts. One is the relative frequency of a particular grammatical structure across the world's languages. For example, it has been observed that suffixes are on the whole more frequent than prefixes (or more complex alterations of word forms) in the world's languages. A processing explanation has been proposed for the suffixing preference. It is hypothesized that speakers process word stems before their inflections. Psycholinguistic experiments imply that the beginning of a word is most salient, hence the word stem should ideally occupy the initial position; the ends of words are the next most salient, hence inflections should ideally occupy the final position.
The second sort of phenomenon for which processing explanations are employed is to account for degrees of acceptability of a construction in a single language. For example, in English, subordinate clauses embedded in the middle of a clause are relatively less acceptable than subordinate clauses embedded at the end of a clause: compare *I know the boy that owned the cat that caught your parakeet* to *The parakeet that the cat that the boy I know caught died*. This fact has been explained as a consequence of the difficulty in interpreting the latter sentence's center-embedded clauses. In fact, it is grammatical in English to move a relative clause from the middle of a clause to the end under certain circumstances: *A woman contacted me who I had shared an apartment with during my last year at college.*

Processing explanations have been proposed for constraints on certain types of syntactic structures, constraints on patterns of morphemes within words, and on sound patterns. The latter explanations typically are described in terms of ease of articulation or ease in discrimination (in speech perception). Processing explanations for syntax and morphology, especially in explaining differences in cross-linguistic frequency of word order and morpheme order, are particularly associated with the work of J. Hawkins (e.g. Hawkins 2004).

### 2.2 Cognitive Explanations

*Cognitive* explanations generally make reference to the conventional meaning of a word, inflection or syntactic construction (e.g. Bybee 2010, Tomasello 1998/2003). A cognitive (semantic) explanation of a grammatical phenomenon essentially hypothesizes that some or all aspects of the analysis of the grammatical phenomenon make reference to conventional semantic properties. For example, some languages have plural inflections for all count nouns, while other languages restrict plural inflections to only nouns referring to animate beings, still others to only nouns referring to humans. This variation is built on a general ranking or hierarchy of nouns
according to the semantic class of their referents: human<animate<inanimate. The description of
the constraint on the occurrence of the plural inflection in each language, and the cross-linguistic
pattern of constraints, requires reference to the semantic classes of entities denoted by the noun,
described in terms of animacy.

Cognitive explanations, like processing explanations, have been used to describe both
grammatical constructions in particular languages and also patterns of cross-linguistic variation.
The example of the animacy hierarchy in the preceding paragraph illustrates both sorts of
explanations. It hypothesizes that the distribution of the plural inflection in any particular
language will make reference to the semantic class of the entity denoted by the noun. It also
hypothesizes that the cross-linguistic variation in the distribution of the plural inflection is
subject to the hierarchical ranking of animacy categories given in the preceding paragraph. In
recent cross-linguistic research, explanations of cross-linguistic patterns have been offered in
which the patterns of occurrence of a construction are mapped onto a single semantic or
conceptual space applicable to all languages.

Some cognitively oriented functionalists make a stronger claim about the relationship between
grammatical form and semantic function, namely that certain grammatical categories are better
described in semantic terms. This hypothesis will be discussed below on the contribution of
cognitive linguistics to functionalism.

2.3 Discourse (Information Structure) Explanations

Discourse explanations make reference to the organization and presentation of information in
discourse, that is, the structuring of information for the purpose of communication. Such
explanations are called discourse explanations by some functionalists, and information structure
explanations by other functionalists. For example, the English active and passive voice
constructions (*The car hit the tree* vs. *The tree was hit by the car*) both describe the same event and participants, but differ in which participant is encoded as the subject of the construction. It has been argued (based on naturally occurring examples) that the participant that is more topical is encoded as subject. Another example is the choice of construction in response to a question such as *Wasn’t that incredible when Mary called the boss a pig?* One can respond with *Yeah, it really shocked me that she called him that*, but not with *Yeah, what really shocked me was that she called him that*. The unacceptable response uses the pseudocleft construction, and the pseudocleft construction is acceptable only if the information ‘something really shocked me’ is already in the hearer’s consciousness. It is not in this case, and hence is unacceptable.

As with processing and cognitive explanations, discourse functional explanations have been offered both to explain restrictions on the acceptability of specific constructions in particular languages, and to explain the frequency of distribution of particular linguistic features across languages. Examples of the former were given in the preceding paragraph. An example of the latter is certain patterns of word order. In the overwhelming number of languages, the subject precedes the object in the most common order of elements in a clause. It has been proposed that the reason for this asymmetry is that the subject tends to be the topic, and the most common discourse pattern is for the topic to precede the ‘comment,’ or at least other less topical participants.

### 3 Schools of Functionalist Analysis

One of the most fundamental issues that divides schools of linguistic theory is: what is the relationship between linguistic form and linguistic function? The relationship is not at all straightforward. Also, depending on the position that a linguist takes on the relationship between form and function, certain additional hypotheses have to be made in order to accommodate
linguistic facts. These hypotheses have to do with aspects of language not directly connected to the form-function relationship, such as the organization of grammatical knowledge in a speaker's mind, the nature of semantics, and the role of cross-linguistic evidence. Since these additional hypotheses are closely associated with various schools of functionalist analysis, they will be discussed here.

3.1 Functionalism and Formalism
Functionalist schools generally set themselves up as contrasting with the formalist approach, associated most strongly with N. Chomsky, but also advocated by other linguists who reject some of Chomsky's more specific claims about syntax. A purely formal explanation of a grammatical phenomenon makes reference exclusively to properties of grammatical form or structure. With respect to grammatical structure, a formal explanation of some pattern of sentence structure will make reference only to syntactic categories and structural relationships between the elements of a sentence, and not to the meaning of the words, inflections or constructions of that sentence, their discourse function, or their production and comprehension in language use. With respect to word structure, a formal explanation will make reference only to morphological categories and relations between roots and affixes, and not to aspects of the meaning and use of word forms. With respect to sound structure, a formal explanation will make reference only to the structure of the sound system independent of its articulatory and auditory realization.

The concept of a formal explanation is closely associated with the theoretical position that the organization of grammatical knowledge in a speaker's mind is divided into components which separate a linguistic form from its conventional meaning and use in discourse. A typical model describes grammatical knowledge as being compartmentalized into phonological, syntactic and
semantic components. The phonological component is separated from its phonetic realization, and the syntactic component is separated from its semantic interpretation. Linguistic form is linked up to its phonetic realization or semantic interpretation, eventually: formal models have rules linking syntax to semantics and phonology to phonetics. The formalist hypothesis does however imply that linguistic form is organized in a purely formal way to a high enough degree that it can be described best as existing in separate components. That is, the formal analysis of grammatical structure is self-contained relative to functional factors.

Functionalist approaches to language challenge or reject the formalist model of the relationship between form and function to varying degrees. However, all functionalists accept that not all aspects of grammatical structure can be accounted for by meaning and use. There will always be some degree of arbitrariness in language structure, where arbitrariness is intended to mean not wholly explainable in terms of language function. The question is, how much arbitrariness is there in language structure, and to what extent does the arbitrary aspect of language structure form a self-contained system? Different functionalist schools give different answers to this question.

3.2 Autonomous Functionalism

The closest approach to formalism which calls itself functionalist can be called autonomous functionalism. Autonomous functionalism argues that the number of properties of grammatical form that are explainable solely in grammatical terms are considerably fewer than most formalist theories assume. In particular, the restrictions on the use of particular constructions are sought in functional properties, whether cognitive, processing or discourse-functional. To take a simplified example: in the There-construction (as in There is a bird in the bushes), a noun phrase with an indefinite article (a bird) is acceptable but one with a definite article usually is not (compare
*There is the bird in the bushes*. A plausible explanation for this restriction is that the *There-* construction is used to introduce a new referent into the discourse, but definite noun phrases describe referents already known to both speaker and hearer. This would be an autonomous functionalist analysis of the restriction.

However, even in an autonomous functionalist approach, the rules governing the formation of the construction itself, such as the fact that *There* is the first element followed by a form of *be*, are considered to be purely formal. Autonomist functionalists focus their research efforts on accounting for as many of the constraints on the construction as possible in terms of functional properties, while leaving the basic structure of the construction for formalist analysis. The autonomist functionalist research program is found in the work of S. Kuno, E. Prince, G. Ward, and their students and associates. Their explanations generally appeal to properties of information structure rather than semantic properties. Because they accept the basic structural analyses of formalist approaches, autonomous functionalists generally do not reject the view that linguistic knowledge in a speaker's mind is organized into components. Instead, they have proposed that there is another component, the information structure component, which should be included along with the syntactic and semantic components.

In fact, many functional analyses of specific constructions in more radically functionalist approaches to language are actually autonomous functionalist analyses, that is, they account for the restrictions on syntactic constructions in terms of the meaning and use in discourse of the construction. We may call these autonomous functional analyses in whatever sort of functionalist approach they are found in. That is, autonomist functionalist analyses of particular constructions are not incompatible with more radical functionalist approaches.
3.3 Mixed Formalism/Functionalism
Another sort of approach, not clearly identifiable with any particular school of linguistic theory, but sometimes called functional, challenges the hypothesis of a sharp separation between the use of formal or functional properties to describe grammatical constructions. In these theories, the description of both the structure and the constraints on a construction can mix formal and functional properties. Two schools, Functional Discourse Grammar of S. Dik and K. Hengeveld and associates, and Role and Reference Grammar of R. Van Valin and associates, both use formal and functional properties (typically semantics, but also information structure) to describe the grammatical structure of sentences as well as the constraints on them. In addition, many grammatical descriptions of languages informally describe both syntactic and semantic properties of constructions without implying any sharp division between the two.

3.4 Typological Functionalism
As was noted above, cognitive, processing and discourse explanations have been offered for patterns of cross-linguistic variation as well as in the analysis of the grammars of individual languages. A school of linguistic theory known as typology has arisen which focuses on cross-linguistic variation and its limits (see, for instance, Comrie 1989, Croft 2003, Givón 2001, Greenberg 1990). Much cross-linguistic variation appears to be built on the base of general functional patterns, as illustrated above for cognitive, processing, and discourse explanations. This observation has led some typologists to argue that all cross-linguistically verified universals of language are susceptible to functional explanation in this way. This approach to analysis is called typological functionalism or the functional-typological approach.

Typological functionalism makes a stronger claim than the schools described in the preceding sections. The autonomous functionalist approach assumes that there still remains a significant amount of syntactic structure that can be described in terms of a self-contained set of rules
(which are further assumed to be in part language-universal). The mixed formal-functional theories do not assume that formal principles governing syntactic structure are self-contained, but those theories allow for the possibility that there are formal properties of languages that are universal for all languages. The typological functionalist approach hypothesizes that any universal generalizations about linguistic structure are ultimately explained in functional terms. The typological functionalist approach does not, in fact cannot, assume that the structure of a particular language's grammar is entirely explainable in functional terms. For instance, one example given above was that the occurrence of a plural inflection on nouns could be accounted for by the hierarchy human<animate<inanimate. The semantic hierarchy is universal, but each language applies the hierarchy to the distribution of the plural inflection in its own way, that is, one cannot predict what semantic class a language will extend (or restrict) its plural inflection to. That is, the exact class of nouns allowing a plural inflection is partly arbitrary, although it is partly explainable in terms of the semantic hierarchy: if the language allows plural inflection for animate nouns, it will allow plural inflection for human nouns. This sort of explanation of a linguistic phenomenon is sometimes described as motivation, in contrast to a set of rules that exhaustively predicts the forms that would be found.

A typological functionalist analysis must allow for some degree of arbitrariness in accounting for cross-linguistic patterns. If there were no arbitrariness, all languages would be alike in their grammatical structure; and they are not. But the typological functionalist approach hypothesizes that the arbitrary aspects of language structure are language-specific, and that any universal generalizations about linguistic structure are ultimately explained in functional terms. An important element of typological functional explanations is the hypothesis of iconicity or iconic motivation, in which grammatical structure is hypothesized to reflect semantic or
conceptual structure to some degree. For example, the closer grammatical relationship between verb and object as opposed to verb and subject in many languages is attributed to the closer semantic relationship between states of affairs and the participant usually encoded as the object. Iconic motivation can be used to account for grammatical structure itself, not just constraints on grammatical structures. In this respect, typological functionalism represents a more radical functionalist approach than autonomous functionalism.

3.5 Cognitive Linguistics and Functionalism

*Cognitive linguistics* (e.g. Lakoff 1987, Langacker 2008, Talmy 2000) is a broad school of linguistic theory that is usually called functionalist. Cognitive linguistics, as its name indicates, focuses on cognitive (semantic) explanations for grammatical structure. Cognitive linguistics has contributed a number of ideas to other functionalist approaches that are relevant to assessing functional approaches.

Cognitive linguistics has proposed a model of grammatical knowledge, construction grammar, that offers an alternative to the formalist model in which form and function (semantics and information structure) are separated in distinct components (Croft 2001, Goldberg 2006). Construction grammar hypothesizes that knowledge of syntax involves the knowledge of individual constructions which combine formal properties (syntactic structures, morphological inflections) and functional ones (semantics and discourse function). For example, the ditransitive construction *[X Verb Z Y]*, as in *Marilyn sent Gina a book*, specifies not only the syntactic structure of the construction but also the semantic relationships among the participants, such as the fact that Z comes to possess Y. Constructions are organized in a network of grammatical knowledge in a speaker's mind. More broadly, grammatical knowledge is organized as a system of signs or symbols, consisting of form (the signifier) and function (the signified). A model
organizing grammatical knowledge in terms of constructions/symbols/signs allows for a direct statement of functional properties that are relevant to particular grammatical constructions and other grammatical units.

Cognitive linguistics argues that semantics involves conceptualization or construal of an experience by a speaker for the purposes of linguistic communication. For example, an English count noun can be used in a mass noun grammatical context, as in *There was a huge Buick there; just acres of car* (attested example). The noun *car*, normally denoting an individuatable object, is construed to denote the size dimension, which is unbounded. These and other examples indicate that the English count noun-mass noun distinction has at least some semantic basis. Cognitive linguists also accept that some alternative construals are conventionalized, such as *chicken* (meat, mass noun) vs. *chicken* (live bird; count noun). Nevertheless, the conventionalized grammatical distinction conforms to the semantics of count noun vs. mass noun: a live bird is an individuatable entity, while meat is a unbounded substance.

Conventionalized construals are of course partly arbitrary (see below); but the semantic regularity of both conventional and novel construals has led cognitive linguists to argue that even grammatical categories such as ‘noun’ and ‘subject’ are susceptible to a cognitive semantic explanation. That is, a grammatical category such as ‘noun’ encodes a construal of an entity in a certain way, which can be discerned by the occurrence of particular word roots directly as nouns, and in the semantic changes that occur when a non-noun root is used as a noun, or can be morphologically derived as a noun.

Finally, cognitive linguistics has developed a model of categorization which has in turn been exploited by functionalist linguists. A classical view of meaning is that the meaning of a word, inflection or grammatical category must be a single definition that will cover all and only the
appropriate uses of the word or category. Cognitive linguists have argued that many word and category meanings can be described in terms of polysemy, that is, distinct but semantically related meanings. For example, the meaning of over in *The bird flew over the hill* (path of motion) is distinct from its meaning in *The house is over the hill* (location), but they are related systematically. More specifically, cognitive linguists (drawing on research by psychologists) have suggested that many polysemous categories have one meaning that can be considered central or basic, called the category's prototype. Cognitive and other functionally oriented linguists have argued that many if not all grammatical categories are in fact polysemous, and many of these categories have a semantic/discourse-functional prototype which is found to be valid across languages (see *Linguistics: Prototype Theory*).

### 3.6 Functionalism and the Dynamic Approach to Grammar
Grammatical structure is commonly assumed to exist in speakers' minds. However, grammatical structure is also directly involved in social interaction in language use, and language use is central to accounting for language acquisition, language variation and language change. In the more dynamic process of language acquisition and language change, functional factors have been argued to play a role.

In both language acquisition and language change, it has been argued that competing motivations among functional principles play a major role. The idea of competing motivations is that (functional) principles may come into conflict such that there is no grammatical system that satisfies all of the functional principles. As a result, change occurs over time in acquisition and in the history of a language, and the languages of the world exhibit structural diversity even though their speakers' linguistic behavior conforms to the same functional principles. (Competing
motivation models do not presuppose that the competing principles are functional, and in fact competing motivation models are now used by many formalists; see below).

The most general and commonly offered example of competing motivations is that between economy and iconicity (see Linguistics: Iconicity). *Economy* is the principle that a speaker uses the least effort necessary to express himself or herself. For example, English leaves the singular number of nouns unexpressed: *book* vs. *book*-s. Economy is considered to be a speaker-oriented functional principle: its influence on language is for the benefit of the speaker. *Iconicity* is, in part, the principle that all of the relevant parts of the meaning conveyed are in fact conveyed by grammatical elements in the utterance (words, inflections, etc.). For example, in some languages, both the singular and the plural of a noun are expressed by overt suffixes. This aspect of iconicity is considered to be hearer-oriented: any aspect of meaning left out by the speaker may not be recoverable by the hearer. Economy and iconicity compete with each other: a linguistic expression that is economical will not be iconic (since it leaves some elements of meaning unexpressed), and an expression that is iconic will not be economical (since certain elements of meaning are not left unexpressed). Hence, across languages, there is diversity in the expression of the category of number, and languages change from one form of expression of number to another over time.

Competing motivations models have been proposed in language acquisition (Bates and MacWhinney 1989) and in language change (Haiman 1985). More recently, some functionalist linguists (P. Hopper, R. Langacker, J. Bybee, W. Croft) have emphasized the dynamic character of language in ordinary use, and have argued that a speaker's grammatical knowledge should not be considered to be as static and immutable as is usually believed. They argue that a speaker's grammatical knowledge is not a tightly integrated system, but rather a more loosely structured
inventory of conventionalized routines that have emerged through language use. The empirical research of the functionalist linguists who advocate this view has focused on the role of frequency of use on the entrenchment of grammatical knowledge, and on inductive models of abstracting grammatical knowledge from exposure to language use, both in acquisition and in adult usage.

These functionalists have argued for a usage-based or exemplar-based view of grammatical representation, in part following recent proposals in phonology. In the exemplar view, all tokens of grammatical units (words, constructions, etc.) to which a speaker has been exposed are at least initially stored as part of the mental representation of that grammatical unit, as a cloud of exemplars. The exemplars are structured qualitatively by dimensions of conceptual space (analogous to phonetic space), and processes in memory lead to their consolidation, entrenchment and decay. These processes are dynamic processes that lead to changes in grammatical representation in the lifetime of an individual speaker.

4 Directions and Prospects for Functional Approaches to Grammar

Taken as a whole, functional approaches to grammar are widely practiced in linguistics. Nevertheless, there are important divisions between different schools of functionalist theory and between functionalists and formalists.

A common misunderstanding (among formalists in particular) is the belief that functionalists do not accept the existence of arbitrariness in language, that is, that not all aspects of grammatical knowledge are explainable by functional principles. There is no functionalist that holds that view. However, many functionalist theories have not developed a model of the representation of grammatical form, instead focusing their attention on the analysis of functional domains and their role in accounting for grammatical structure. There are significant exceptions to this
observation, notably the mixed formal/functional theories, Bybee’s model of lexical and morphological representation, and construction grammar in cognitive linguistics. Construction grammar is gaining a wider audience, and some functionalists are beginning to develop more detailed models of grammatical structure that are compatible with functionalist theories.

A significant split in functionalism is between those who are more cognitively oriented, focusing their attention on cognitive explanations, and those who are more discourse oriented. These two functionalist approaches have largely gone their own ways, developing models of language meaning (cognitive linguists) and language in use (the discourse functionalists). However, there are some functionalists such as T. Givón and W. Chafe whose work draws on both cognitive and discourse models. Usage-based models integrate cognition and discourse, in that there is a feedback relationship between the mental representation of linguistic knowledge and language use. The two approaches are inherently compatible: language must be understood from both a psychological and a social-interactional perspective.

Functionalist approaches to language generally have also neglected research in sociolinguistics (see Sociolinguistics). Sociolinguistics begins with the hypothesis that language is a dynamic, variable phenomenon, and argues that factors outside linguistic form, namely social parameters, account for variation and change in language. In both of these respects, sociolinguistics shares theoretical assumptions in common with functionalism. The increase of research on social-interactional factors and on relative frequency of use in functionalist research may lead to an integration of social with other functional factors in a social-functional theory of linguistic variation and change.

A rapprochement between functionalism and formalism is less likely, because the two differ in fundamental assumptions about the nature of language and the relation between form and
function. There are some respects in which practical research is converging among formalists and functionalists, however. For instance, competing motivations as a mechanism of analysis is now widely used in formalist theories under the name of *Optimality Theory*. The rise of computer-aided corpus research has led to a convergence in interests on naturally occurring language and the role of usage in grammatical structure. Some formal semanticists have made reference to prototypes and polysemy, and some semanticists working in generative grammar also give conceptualization a significant role in analysis.

**Cross-references:**

*Included in text from original version:* Iconicity in Linguistics, Optimality Theory, Prototype Theory

*Cross-references from table of contents or from original version:* Functionalism, History of; Functionalism in Anthropology; Functionalism in Sociology; Generative Grammar; Grammaticalization; Iconicity in Linguistics; Language Acquisition; Linguistic Typology;

**References**


**Relevant Websites**

Association for Linguistic Typology: http://www.linguistic-typology.org/