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# Verb Meaning and the Lexicon

**A First-Phase Syntax**

Gillian Catriona Ramchand

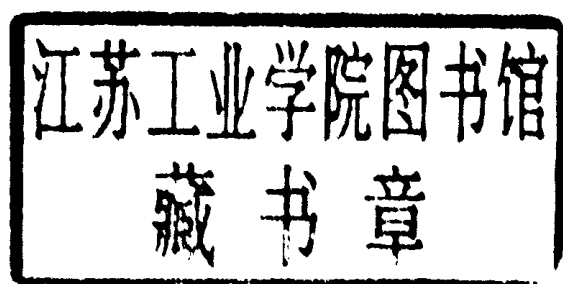
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# VERB MEANING AND THE LEXICON

A FIRST-PHASE SYNTAX

GILLIAN CATRIONA RAMCHAND

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# *Abbreviations*

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The following abbreviations are used in the glosses:

ACC	accusative case
CAUSE	causative
CLASS	classifier
DAT	dative case
DEC	declarative
DIR	directional marker
ERG	ergative case
F	feminine agreement
FUT	future tense
IMP	imperfective
INF	infinitival form
INSTR	instrumental case
LOC	locative marker
M	masculine agreement
NOM	nominative case
OBL	oblique case
PASS	passive
PAST	past tense
PERF	perfective
PERFPART	perfect participial form
PL	plural agreement
PRES	present tense
PROG	progressive
SG	singular agreement
TOP	topic
1	first-person agreement
3	third-person agreement

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# 1 *Introduction*

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Classical generative grammar partitions linguistic competence into three basic components: lexical knowledge, phrase structure rules and transformational rules (Chomsky 1965, 1981). One of the fundamental debates over the years, and one which is still alive today, concerns the division of labour between information and processes that reside in the lexicon and those rules and processes that are part of syntax.

In this book, I explore a view of the architecture of grammar whereby the lexicon is eliminated as a module with its own special primitives and modes of combination. By this, I do not intend to deny that there are items within the language that need to be listed/memorized, or that they are associated with grammatical information. Rather, I will seek to claim that to the extent that lexical behaviour is systematic and generalizable, this is due to syntactic modes of combination and not to distinct lexicon-internal processes (Hale and Keyser 1993, etc.). The general ideology is not novel; I am attempting to implement an old idea in the light of current, accumulated knowledge concerning the nature of 'lexical' generalizations and patterns. In pursuing, as I will, a radically unstructured view of the lexicon, I engage with recent ideas of constructionalism (Goldberg 1995, Marantz 1997b, Borer 2005) and make my own proposal based on what I take to be the core empirical issues of 'thematic' roles, event structure (aktionsart) and selection.

One of the things I will take for granted in this work is that human beings' linguistic competence includes, minimally and crucially, a (linguistically specific) combinatorial system.<sup>1</sup> It is this combinatorial system that I will be referring to with the term 'syntax', and I will assume that the system itself is universal, in

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<sup>1</sup> Here I also wish to abstract away from the debate concerning whether this combinatorial system is representationally innate in the sense of all the basic knowledge existing in a hardwired repository of brain structure, or whether it emerges inexorably as a result of the learning strategies abstractly encoded in a language acquisition device. In fact, it is not even relevant to my argumentation whether the combinatorial system that emerges is specific to language, or whether it is part of a more general human symbolic capacity.



## 2 Introduction

the sense of underlying all instantiations of human language. Under the view I will be pursuing here (and one that is implicit in much work within minimalist syntax, and even earlier), this is the *only* linguistically relevant combinatorial system that there is, i.e. we are dealing with only one set of primitives and one set of operations.

Two distinct types of lexical information have always been recognized: unstructured encyclopedic information with its infinitely variable web of association and nuance; and the grammatically relevant, more systematic, class of information that interfaces with the syntactic system (Chomsky 1965, Jackendoff 1983). The classical assumption has been that two such types of meaning coexist in a module that is termed 'the lexicon', with the latter level being the linguistically relevant 'subset' of the former (cf. Levin and Rappaport Hovav 1995, Levin and Rappaport 1998).

Taking the existence of a lexical module of some sort for granted, many early generativist debates were concerned with the location within the grammar of particular sorts of linguistic generalizations, i.e. whether they should more properly be considered 'lexical' or 'syntactic' (see Chomsky 1970 for foundational early discussion, as well as later debates staged in Baker 1988 and Belletti and Rizzi 1988 vs. Alsina 1992 and Bresnan and Moshi 1990). Importantly, claiming that there are generalizations that can only be stated at the level of lexical information is different from merely accepting that lexical items possess syntactic information, hence the debate. In general, some theories such as LFG sought to establish the validity of separate modules with their own primitives and modes of combination, linked by correspondence rule (Bresnan 1982); whereas GB theory and its descendants took the view that the lexicon should be seen as the repository of essentially idiosyncratic/memorized information with no independent combinatorial primitives (Di Sciullo and Williams 1987, Chomsky 1981). It is a version of the latter position that I will be arguing for in this book, although the details prove stickier than one might imagine if one is intent on not begging the important questions.

The main challenge to the unstructured lexicon view has always been the existence of thematic, or argument-structure generalizations,<sup>2</sup> captured in GB theory via the D-structure level of representation, or by Hale and Keyser via L-syntax (an encapsulated syntax for the building of lexical items). In more recent minimalist work (Chomsky 1995, 2000), presumably no such additional

---

<sup>2</sup> I am concerning myself purely with syntax here. Lexical phonology, if it exists as a set of operations distinct from postlexical phonology, might constitute another such challenge. I will assume optimistically, for the purposes of this book, that those challenges can also be overcome.

level of representation can exist, but the operation of ‘initial’ Merge is potentially available as a locus for these generalizations. Since this operation is triggered by selectional features (Chomsky 1995), capturing generalizations at this level will depend on the nature of the features involved, and the nature of selection and insertion of lexical items.

The key here is therefore the features on lexical items and how they might be deployed to create selectional generalizations. One approach to the problem is to deny that such selectional generalizations exist. This is the view most recently taken by Marantz (1997b) and (1998, 2005), whereby lexical items possess no syntactically relevant information that could constitute a constraint on their insertion possibilities (not even category information). The actual limits on variability reported in more standard accounts would then have to be due to limits based on real-world knowledge and convention (extralinguistic). While I will be sympathetic to the attempt to void the lexicon of argument-structure information and processes, I will still seek to encode some notion of selectional information that constrains the way lexical items can be associated with syntactic structure (so in this sense I will consider myself responsible for at least some of the data cited by the lexicalist camp, e.g. Levin and Rappaport 1998, Reinhart 2002).

In order to frame the particular proposals of this book more concretely, it is useful to compare schematic versions of the architecture of the grammar with respect to the lexicon that have emerged either explicitly or implicitly over the years. My descriptions of the main options are not necessarily specific to a particular researcher, although I will attempt to associate the different abstract positions with various prominent proposals in the literature. Every individual proposal has its own subtleties and makes specific decisions about implementation, which I will abstract away from here. The purpose in what follows, rather, is to characterize the extreme options in an idealized way, in order to clarify what is at stake, and to contextualize the view I will develop in this book.

The core questions that any theory of the lexicon must address are the following:

- (i) Is the lexicon a ‘module’ of the grammatical system, with its own designated primitives and operations?
- (ii) If the answer to (i) is yes, what is the division of labour between ‘lexical’ operations and the recursive/generative syntactic computation (which must exist, by hypothesis)?<sup>3</sup>

---

<sup>3</sup> See, for example, Wasow (1977) for an argument for the lexicon-internal treatment of passive, and Dubinsky and Simango (1996) for a discussion of adjectival passives in English and Chichewa, also Marantz (2001) for a recent reassessment.

- (iii) What is the relationship between lexical information and nonlanguage dedicated parts of the mind/brain?

According to a common-sense standard view of lexical entries, lexical items used in language contain both language-specific and non-language-specific memorized information. I represent a possible listing in the toy lexical entry in (1).

- (1)
- |  |
|--|
| RUN  |
| / r ∧ n /  |
| Verb, < 1 >  |
| +dynamic; –telic   |
| argument 1: Theme; argument 1: animate                     |
| <i>continuous directed motion undergone by &lt; 1 &gt;</i> |
| <i>motion involves rapid movement of legs,</i>             |
| <i>no continuous contact with ground</i>                   |
| ⋮  |
| <i>Associations: exercise, boredom, heart attacks</i>      |

In principle, anything can be memorized; nevertheless, certain lexical entries do not exist in natural language. For example, lexical entries where the agentive instigator of an action is realized as the direct object, while the passive undergoer comes out as the subject, do not seem to be attested. This kind of pattern is clearly not arbitrary. The generalizations about thematic linking to grammatical function, and the fact that intransitive verbs with ‘more agent-like’ arguments behave linguistically differently from intransitive verbs with more ‘patient-like’ arguments (the unaccusative hypothesis, Perlmutter 1978), are generalizations we would like our theory of grammar to capture. There are two clear strategies for implementing the generalizations we need:

- (I) The **lexical–thematic** approach, which allows for the semantic classification of role types within the lexicon, readable by a ‘linking’ theory that places these different roles in different places within the structure. In this approach, the relevant information is *projected from the lexicon*. Under this view, the lexicon is a ‘submodule’ of the language faculty since it has its own distinct primitives and modes of combination.
- (II) The **generative–constructivist** approach which allows free building of syntactic terminals, but allows general encyclopedic knowledge to mediate whether a particular lexical item may be inserted in those

terminals or not (Borer 2005, Marantz 2001). Under this view, the lexicon is *not* a submodule, since it contains no grammatically relevant information or processes.

## 1.1 Capturing argument-structure generalizations

### 1.1.1 The lexical–thematic approach

If we embark on the first strategy, and take the lexicon to be a genuine module dealing with argument structure, then the linguistically relevant part of the lexical entry looks perhaps as follows (with more or less internal structuring) (2).

- (2)     RUN;   V  
          <1>  
          Theme

However, the most important challenge when pursuing this view lies in stating the correspondence or linking rules between the lexical module and its internal structuring and the syntactic module and its internal structuring. One traditional way of doing this includes postulating the existence of a ‘thematic hierarchy’ which mediates the assignment of thematic participants to grammatical function or structural position. Some examples of thematic hierarchies are shown in (3) and (4) below, with examples of rules of argument realization in (5) taken from Larson (1988).

- (3)     Larson (1988)  
          AGENT < THEME < GOAL < OBLIQUES(manner, location, time)
- (4)     Grimshaw (1990)  
          Agent < Experiencer < Goal/Source Location < Theme
- (5)     *Principle of Argument Realization 1* (Larson 1988)  
          If  $\alpha$  is a predicate and  $\beta$  is an argument of  $\alpha$ , then  $\beta$  must be realized within a projection headed by  $\alpha$ .
- Principle of Argument Realization 2* (Larson 1988)  
          If a verb  $\alpha$  determines  $\theta$ -roles  $\theta_1, \theta_2 \dots \theta_n$ , then the lowest role on the Thematic Hierarchy is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

It is important to note that there has not been consensus on the number and types of thematic relations the theory should employ, nor on the exact nature

of the thematic hierarchy involved. Dismay at the lack of reliable and objective linguistic diagnostics led at least one researcher, Dowty (1989), to despair of the enterprise altogether. Dowty himself offered a more flexible alternative to thematic generalizations in his 1990 article, advocating a more fluid kind of linking based on the relative weighting of a number of different proto-properties. These are listed in (6) below.

(6) *Dowty's proto-roles (1990)*

Contributing properties for the *Agent Proto-role*

- (a) volition
- (b) sentience (and/or perception)
- (c) causes event
- (d) movement
- (e) referent exists independent of action of verb

Contributing properties for the *Patient Proto-role*

- (a) change of state (including coming into being, going out of being)
- (b) incremental theme (i.e. determinant of aspect)
- (c) causally affected by event
- (d) stationary (relative to movement of Proto-agent)
- (e) Referent may not exist independent of action of verb, or may not exist at all.

*Dowty's argument selection principle (1990)*

The argument of a predicate having the greatest number of Proto-agent properties entailed by the meaning of the predicate will, all else being equal, be lexicalized as the subject of the predicate; the argument having the greatest number of Proto-patient properties will, all else being equal, be lexicalized as the direct object of the predicate.

In fact, this is even more of a retreat than it appears to be, since the principle of argument selection given above cannot be seen as a fact about the synchronic computational system (since, plausibly, decisions about what gets to be the 'subject' are not computed on-line or subject to variability in cases of 'ties'), nor as a fact about memory (if one assumes that memory does not calculate, but merely retrieves information). Dowty's principle basically gives up the idea that the generalizations we see should be represented in the core grammar – the properties he gives must have the status of general cognitive tendencies which ultimately underlie how various concepts tend to get lexicalized (memorized) in natural language. Dowty's proto-roles are nevertheless interesting and instructive, because they are the ones that he judged to be most

criteria of linguistic behaviour. As we will see, I will argue that these general properties (as opposed to thematic role labels) are in fact the right level of abstractness for stating systematicities concerning the mapping between syntax and semantics.

One further view on thematic linking is worth mentioning here, that of Baker (1988) and subsequent work. In Baker's view, thematic roles are linked to structure/grammatical function not via a relative ranking system as in theories employing the thematic hierarchy, but in a more *absolute* sense. In other words, each type of thematic role has its own special structural position that it is associated with.

- (7) *The Uniformity of Theta Assignment Hypothesis (UTAH)*  
 Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. (from Baker 1988: 46)

In recent work, Baker (1997) claims that the notion of thematic role that is relevant for this principle is somewhat more abstract than the traditional list, but rather contains such thematic categories as: Agent (specifier of the higher VP of a Larsonian structure), theme (specifier of the lower VP of a Larsonian structure), Goal/Path (complement of the lower VP). Still, the principle (and, in fact, many systematic principles of linking) receives its major challenges from data pairs such as (8), (9) and (10) below, where apparently identical thematic configurations are differently aligned in the syntax.

- (8) *Experiencer object vs. experiencer subject*  
 (a) Wolves frighten John.  
 (b) John fears wolves.
- (9) *The dative/double object alternation*  
 (a) John gave the book to Mary.  
 (b) John gave Mary the book.
- (10) *The spray-load alternation*  
 (a) Bill loaded the cart with hay.  
 (b) Bill loaded hay on the cart.

A lexical theory containing linking principles such as those described above essentially has three main options in dealing with such flexibility. The first option is to make the linking principles themselves flexible and nondeterministic. This is in a sense the option taken by Dowty (1990) and certain versions

of LFG (cf. Bresnan 2001). The second option is to claim that the (a) and (b) sentences above involve the same underlying configurations, but at least one of them involves a nontrivial syntactic derivation. This, for example, is the option taken by Larson (1988) in his treatment of the double object alternation, and the solution advocated by Baker (1997) for one set of alternations as well. The extent to which this general strategy is plausible will depend on the syntactic principles at stake being independently justifiable, and not ad hoc additions to the syntactic tool box merely to save the UTAH and its kin. The third strategy, of course, is to claim that the thematic roles in the (b) sentences are actually different from those in the (a) sentences (cf. Oehrle 1976, Pesetsky 1995 for the double object construction). This is in fact the claim Baker (1997) makes for the 'spray-load' alternation, although not for the 'double object' alternation. The success of this strategy revolves around resolving the tension between the need to use fairly abstract thematic labels to capture the natural classes which exist but which are nevertheless subtle enough to distinguish between thematic relationships in the closely related pairs above.

Thus, assuming a lexicon which contains at least some annotations from a syntactic vocabulary encompasses a wide range of theories from different ideologies, I think it is possible to distinguish two clear extremes.

(i) *The static lexicon*

The lexicon contains argument-structure information which correlates in a systematic and possibly deterministic way with syntactic structure. The lexicon has its own vocabulary, but there are no lexicon-internal manipulations prior to insertion. Syntactic transformations can alter the manifestation of a particular set of lexical information in a sentence.

(ii) *The dynamic lexicon*

The lexicon contains argument-structure information which correlates in a systematic and possibly deterministic way with syntactic structure. The lexicon has its own vocabulary, as well as lexicon-internal manipulations prior to insertion. Syntactic transformations to account for alternations are kept to a minimum.

Both types of approach necessitate a linking theory because each module uses a different vocabulary, but independent differences also arise relating to whether that linking is assumed to be deterministic and absolute, deterministic and relative, or even one which involves optionality (nondeterministic). I take Baker (1988) to be a representative of the (deterministic) static lexicon

view, with Levin and Rappaport Hovav (1995) being proponents of the dynamic lexicon view.

Flexibility in verbal meaning exists on the level of aspectual specification as well, prompting the postulation of lexicon-internal processes such as ‘template augmentation’ (cf. Levin and Rappaport Hovav 1995) and event-type shifting (van Hout 2000a, 2000b).

Thus, while there are many differences of approach within this broad class of theories, the very notion of ‘linking theory’ presupposes that two distinct vocabularies from two distinct modules are being connected. Which ‘rules’ and ‘transformations’ exist in one or the other, or indeed both modules (the lexicon and the syntax), constitutes an important debate in the context of this kind of architecture, and has a direct impact on the nature of the labels and natural classes proposed for the thematic roles as listed in the lexicon. In this book, I will pursue the view that there is only one module where rules and transformations can be stated (I will call this the narrow syn-sem computation). However, the patterns uncovered through these classic debates will form much of the descriptive base for the proposal, and the general intuition behind the UTAH, which correlates structure with meaning fairly directly, will be present in the implementation. The bottom line is that lexical theories must either invoke ‘lexicon-internal’ processes, or tolerate massive stipulated homonymies. To the extent that the processes that need to be assumed can actually be elegantly captured in the syntax, it should be preferable on grounds of parsimony to assume only one such system if we can get away with it.

### 1.1.2 Generative-constructivist approaches

Under an extreme constructivist view, lexical roots contain *no* syntactically relevant information at all; they are just bundles of cognitive and encyclopedic information. Consider the revised ‘lexical entry’ below in (11).

(11)

<p>RUN</p> <p><i>continuous directed motion undergone by animate entity</i></p> <p><i>motion involves rapid movement of legs,</i></p> <p><i>no continuous contact with ground</i></p> <p style="text-align: center;">⋮</p> <p><i>Associations: exercise, boredom, heart attacks etc.</i></p>
--

The complete lack of syntactic or argument-structure information on the file card makes it in principle compatible with many different syntactic frames.



Thus, Borer (2005) offers the following range of examples for the English verb *siren* (which significantly is also compatible with nominal syntactic structure).

- (12) (a) The fire stations sired throughout the raid.  
 (b) The factory sired midday and everyone stopped for lunch.  
 (c) The police sired the Porsche to a stop.  
 (d) The police car sired up to the accident.  
 (e) The police car sired the daylights out of me. (from Borer 2005)

The well-known problem with this view is of course the fact that argument-structure flexibility is *not* as general as it would suggest. For example, some intransitive verbs resist causativization (13a), and others resist telic augmentation (13b):

- (13) (a) \*John slept the baby.  
 (b) \*John watched Mary bored/to boredom.

How does one account for this kind of selective behaviour in a theory where the lexical item contains nothing written in the syntactic vocabulary? For Borer (2005) the (only internally consistent) answer is given: convention, habits of speech and real-world knowledge make certain combinations of root plus syntactic/functional information unusable or infelicitous.

Under the Borerian and Marantzian views, the distinction between lexical and functional categories hardens, lining up with real-world vs. linguistic meaning respectively. The root is the only lexical category under these views, although ironically, of course, it does not even carry category information. All category information and linguistically manipulable meaning come from the functional structure that sits on top of the root. Once again, there are many versions of this position out there in the literature, with slightly different choices of functional projections and labels for any particular effect. In Borer's structure, there is an aspectual quantity phrase that sits on top of the VP and is responsible for both telicity and object quantity effects. In Travis's work, there is an event phrase (EP) higher than VP and an aspectual phrase (AspP) sandwiched in between Larsonian VP shells, the latter of which is correlated with telicity (Travis 2000). In Ritter and Rosen (1998), there is an initiational aspectual projection on top of TP, and a delimitational aspectual projection in between TP and VP. The general approach also varies with respect to how much information is allowed to the lexical root and how much is relegated to the functional structure. In Kratzer (1996), the lexical root contains information about the internal argument, but the external argument is introduced by a hierarchically superior functional head *v*. The idea of little *v* in its turn has had many proponents, different types of external