1 *Theories of grammatical category*

1.1 Introduction

In this first chapter, we will review some preliminaries of our discussion on parts of speech and on the word classes they define. As in the rest of this monograph, our focus will be on lexical categories, more specifically nouns and verbs. Then I will present a number of approaches in different theoretical frameworks and from a variety of viewpoints. At the same time we will discuss the generalizations that shed light on the nature of parts of speech, as well as some necessary conceptual commitments that need to inform our building a feature-based theory of lexical categories.

First of all, in Section 1.2 the distinction between 'word class' and 'syntactic category' is drawn. The criteria used pre-theoretically, or otherwise, to distinguish between lexical categories are examined: notional, morphological and syntactic; a brief review of prototype-based approaches is also included. Section 1.3 looks at formal approaches and at theories positing that nouns and verbs are specified in the lexicon as such, that categorial specification is learned as a feature of words belonging to lexical categories. Section 1.4 introduces the formal analyses according to which categorization is a syntactic process operating on category-less root material: nouns and verbs are 'made' in the syntax according to this view. Section 1.5 takes a look at two notional approaches to lexical word classes and raises the question of how their insights and generalizations could be incorporated into a generative approach. Section 1.6 briefly presents such an approach, the one to be discussed and argued for in this book, an account that places at centre stage the claim that categorial features are interpretable features.

1.2 Preliminaries to a theory: approaching the part-of-speech problem

As aptly put in the opening pages of Baker (2003), the obvious and fundamental question of how we define parts of speech – nouns, verbs and

adjectives – remains largely unresolved. Moreover, it is a question that is rarely addressed in a thorough or satisfactory manner, although there is a lot of stimulating work on the matter and although there is no shortage of both typological and theoretical approaches to lexical categories. In this book I am going to argue that we can successfully define nouns and verbs (I will put aside adjectives for reasons to be discussed and clarified in Chapter 2) if we shift away from viewing them as broad taxonomic categories. More specifically, I am going to make a case for word class categories as encoding what I call *interpretive perspective*: nouns and verbs represent different viewpoints on concepts; they are not boxes of some kind into which different concepts fall in order to get sorted. I am furthermore arguing that nouns and verbs are ultimately reflexes of two distinctive features, [N] and [V], the LF-interpretable features that actually encode these different interpretive perspectives.

The theory advanced here gives priority to grammatical *features*, to categorial features more precisely. As mentioned, it will be argued that two unary categorial features exist, [N] and [V], and that the distinct behaviour of nouns and verbs, of functional elements and of categorially mixed projections result from the syntactic operations these features participate in and from their interpretation at the interface between the Faculty of Language in the Narrow sense (FLN) and the Conceptual–Intentional systems. The feature-driven character of this account is in part the result of a commitment to fleshing out better the role of features in grammar. Generally speaking, I am convinced that our understanding of the human Language Faculty will advance further only if we pay as much attention to features as we (rightly and expectedly) do to structural relations. True, grammatical features, conceived as instructions to the interfaces after Chomsky (1995), will ultimately have to be motivated externally – namely, by properties of the interfaces. However, we know very little about these interfaces and much less about the Conceptual–Intentional systems that language interfaces with. So, we cannot be confident about what aspects of the Conceptual–Intentional systems might motivate a particular feature or its specific values, or even its general behaviour. To wit, consider the relatively straightforward case of Number: we can hardly know how many number features are motivated by the Conceptual–Intentional systems to form part of the Universal Grammar (UG) repertory of features – that is, without looking at language first. More broadly speaking, it is almost a truism that most of the things we know about the interface between language and the Conceptual–Intentional systems, we do via our studying *language*, not via studying the Conceptual–Intentional systems themselves.

However, having thus mused, this monograph, a restrictive theory of categorial features, sets itself somewhat humbler aims. In a nutshell, I believe that a conception of categorial features as setting interpretive perspectives, a view that can be traced back at least to Baker (2003), combined with a *syntactic decomposition* approach to categories, as in Marantz (1997, 2000) and elsewhere, can achieve a very broad empirical coverage. This is more so when such a theory incorporates valuable insights into parts of speech from the functionalist-typological literature and from cognitive linguistics. The theory here captures not only the basic semantics of nouns and verbs, but also their position in syntactic structures, the nature of functional categories and the existence and behaviour of mixed projections. It also makes concrete predictions as to how labels are decided after Merge applies – that is, which of the merged items projects, the workings of recategorization and conversion, and the properties of mixed projections.

1.2.1 *On syntactic categories and word classes: some clarifications*

Rauh (2010) is a meticulous and very detailed survey of approaches to syntactic categories from a number of theoretical viewpoints. In addition to the sheer amount of information contained in her book and the wealth of valuable insights for anyone interested in categories and linguistic theory in general, Rauh (2010, 209–14, 325–39, 389–400) makes an important terminological distinction between parts of speech (or what we could call 'word categories') and syntactic categories.[1] Roughly speaking, syntactic categories are supposed to define the *distribution* of their members in a syntactic derivation. On the other hand, parts of speech correspond to the quasi-intuitively identified classes into which words fall. In this sense, members of a part-of-speech category/word class may belong to different syntactic categories; consequently, syntactic categories are significantly finer-grained than parts of speech. As this is a study of a theory of word class categories, I think it is necessary to elaborate by supplying two examples illustrating the difference between parts of speech and syntactic categories.

Since the late 1980s Tense has been identified in theoretical linguistics as a part of speech, more specifically a *functional category*. However, finite Tense has a very different syntactic behaviour, and distribution, to those of *to*, the infinitival/defective Tense head. Hence, infinitival/defective *to* can take PRO subjects, cannot assign nominative Case to subjects, and so on. Thus, although

[1] A distinction already made in Anderson (1997, 12).

both future *will* and infinitival *to* belong to the same part of speech, the category Tense, they belong to different *syntactic* categories, if syntactic categories are to be defined on the grounds of distribution and distinct syntactic behaviour.

Of course, one may (not without basis) object to applying distinctions such as 'part of speech' versus 'syntactic category' to functional elements. However, similar considerations apply to nouns – for example, proper nouns as opposed to common ones, as discussed already in Chomsky (1965). Proper and common nouns belong to the same part of speech, the same word class; however, their syntactic behaviour (e.g., towards modification by adjectives, relative clauses and so on) and their distribution (e.g., whether they may merge with quantifiers and determiners ...) are distinct, making them two separate syntactic categories. This state is, perhaps, even more vividly illustrated by the difference between count and mass nouns: although they belong to the same word class, Noun, they display distinct syntactic behaviours (e.g., when pluralized) and differences in distribution (e.g., regarding their compatibility with numerals), as a result of marking distinct formal features.[2]

The stand I am going to take here is pretty straightforward: any formal feature may (and in fact does) define a syntactic category, if syntactic categories are to be defined on the grounds of syntactic behaviour and if syntactic behaviour is the result of interactions and relations (exclusively *Agree* relations, according to a probable hypothesis) among formal features. At the same time, only *categorial* features define word classes – that is, parts of speech. This will turn out to hold not only for lexical categories like noun and verb, as expected, but for functional categories as well.

Henceforth, when using the term 'category' or 'categories', I will refer to word class(es) and part(s) of speech, unless otherwise specified.

1.2.2 Parts of speech: the naïve notional approach

Most of us are already familiar with the *notional* criteria used in some school grammars in order to define parts of speech. Although these are typically relatively unsophisticated, notional criteria are not without interest. Furthermore, there are cognitive approaches that do employ notional criteria with interesting results, Langacker (1987) and Anderson (1997) being the most prominent among them. Indeed, contemporary notional approaches can turn out to be germane to the project laid out here, as they foreground salient

[2] An anonymous reviewer's comments are gratefully acknowledged here.

criteria of semantic interpretation in their attempt to define parts of speech; such criteria are central to any approach seeking to define parts of speech in terms of their interpretive properties as classes.

Let us now rehearse some more familiar and mainly pre-theoretical notional criteria employed to define nouns and verbs and to distinguish between them. So, typically, notional criteria distinguish between nouns and verbs as follows:

(1)

NOUN	VERB
'object' concept	action concept
'place' concept	'state' concept
abstract concept	

Counterarguments are not hard to come up with and criticism of something like (1) is too easy, the stuff of 'Introduction to Linguistics' courses. Let us, however, first of all observe that the state of affairs in (1) reflects both a notional and (crucially) a *taxonomic* approach to categories. This notional and taxonomic definition of categories – that is, deciding if a word goes into the 'noun' box or the 'verb' box on the basis of its meaning – is indeed deeply flawed and possibly totally misguided. Consequently, yes, there are nouns and verbs that do not fall under either of the above types: there are nouns that denote 'action' concepts, such as *handshake*, *race*, *construction* and so on. And we can, of course, also say that some verbs 'denote abstract concepts', such as *exist*, *emanate* or *consist* (*of*).

Still, as already mentioned, we need to make a crucial point before disparaging notional approaches: the table in (1) employs notional criteria to create a rigid taxonomy; it therefore creates two boxes, one for a 'Noun' and one for a 'Verb', and it sorts concepts according to notional criteria. Which of the two decisions, using notional criteria to sort concepts or creating a rigid taxonomy, is the problem with the classification above? The answer is not always clear. Research work and textbooks alike seem to suggest that the problem lies with employing notional criteria: they generally tacitly put up with the rigid taxonomic approach. An example of this is Robins (1964, 228 et seq.) who advises against using 'extra-linguistic' criteria, like meaning, in our assigning words to word classes. However, the notional criteria are anything but useless: Langacker (1987) and Anderson (1997), for instance, return to them to build a theory of parts of speech – we will look at them in more detail in Section 1.5.

Equally importantly, when considering notional conceptions of categories, we need to bring up the observation in Baker (2003, 293–4) that concepts of particular types get canonically mapped onto nouns or verbs cross-linguistically; see also Acquaviva (2009a) on nominal concepts. Two

representatives of types of concepts that canonically get mapped onto a category are object concepts, which are mapped onto 'prototypical' nouns (e.g., *rock* or *tree*), and dynamic event concepts, which are mapped onto 'prototypical' verbs (e.g., *buy*, *hit*, *walk*, *fall*), an observation made in Stowell (1981, 26–7). Contrary to actual or possible claims that have been made in relation to the so-called 'Nootka debate', no natural language expresses the concept of rock, for instance, by using a simplex verb. Put otherwise, not all nouns denote objects but object concepts are encoded as nouns (David Pesetsky, personal communication, September 2005). So, maybe it is necessary to either sharpen the notional criteria for category membership or recast them in a different theoretical environment, instead of summarily discarding them.

1.2.3 Parts of speech: morphological criteria

Pedagogical grammars informed by 100 years of structural linguistics typically propose that the noun–verb difference is primarily a morphological one, a difference internal to the linguistic system itself. In a sense, this is the exact opposite of notional approaches and of all attempts to link category membership to ontological or, even, modest semantic criteria. This is a point of view that many formal linguists share (cf. Robins 1964, 228 et seq.), at least in practice if not in principle. However, this approach to parts of speech goes much further back, to *Tēkhnē Grammatikē* by Dionysius Thrax and to *De Lingua Latina*, by Marcus Terentius Varro, who was Dionysius' contemporary. In both works, 'division into parts of speech is first and foremost based on morphological properties . . . the parts of speech introduced . . . are primarily defended on the basis of inflectional properties' (Rauh 2010, 17–20). A contemporary implementation of these old ideas is illustrated in the table in (2), where the distinction between noun and verb is made on the basis of inflectional properties.

(2)

NOUN	VERB
number	tense
case	aspect
gender	agreement[3]

Of course, here too, some semantic interpretation is involved, albeit indirectly: for instance, the correlation of nouns with number, on the one hand, and of verbs with tense, on the other, does not appear to be accidental – or, at least, it

[3] Agreement with arguments, subjects most typically.

should not be accidental, if important generalizations are not to be missed. Both number morphology and tense morphology, characteristic of nouns and verbs respectively, have specific and important *semantic* content: they are unlike declension or conjugation class morphology, which are arbitrary, Morphology-internal and completely irrelevant to meaning.[4] We have also to set grammatical case aside, which appears to be the result of processes between grammar-internal features, and agreement with arguments, which is a property of the Tense head or of a related functional element. Having done thus, the interesting task underlying a (simplified) picture like the one in (2) is to understand *why* the remaining generalizations hold:

a. Nouns exclusively pair up with Number, a category about individuation and quantity.
b. Verbs exclusively pair up with Tense, a category about anchoring events in time.[5]

I think that the above generalizations are strongly indicative of deeper relationships between the lexical categories of noun and verb and the functional categories of Number and Tense respectively, relationships that go beyond Morphology. Moreover, I will argue that these are relationships (noun–Number and verb–Tense) which actually *reveal* the true nature of the semantic interpretation of lexical categories.

1.2.4 *Parts of speech: syntactic criteria*

As implied above, an assumption tacitly ('in practice if not in principle') underlying a lot of work involving some treatment of categories is that the noun–verb difference is one concerning purely the linguistic system itself. One way to express this intuition is by claiming that the noun–verb difference is exclusively and narrowly *syntactic*, in a fashion similar to the difference between nominative Case and accusative Case. For instance, we could claim that the fundamental difference between nouns and verbs is that nouns project no argument structure, whereas verbs do (Grimshaw 1990). Given the complications that such an approach would incur with respect to process nominals, one could alternatively appeal to a similar, or even related, intuition and

[4] Gender systems typically fall somewhere in between (Corbett 1991).
[5] Nordlinger and Sadler (2004) and Lecarme (2004) argue that nominals (certainly encased inside a functional shell) can be marked for independent tense – that is, bear a time specification independent from that of the main event (and its verb). However, Tonhauser (2005, 2007) convincingly argues against the existence of nominal Tense, taking it to be nominal Aspect instead.

rephrase the noun–verb distinction along the terms of whether the expression of their argument structures is obligatory or not:[6]

(3)

	NOUN	VERB
Obligatory expression of argument structure?	no	yes

Of course, there are serious complications regarding a generalization like the one in (3), and we will review some of these complications in Chapter 6 when we investigate mixed projections and nominalizations more closely. However, (3) has the look of a nice concrete difference, readily expressible and sufficiently fundamental. Having said that, in relatively recent approaches to argument structure, beginning with Hale and Keyser (1993, 2002), through Kratzer (1996) and all the way to Ramchand (2008), Pylkkänen (2008) and elsewhere, argument structure has no longer been viewed as the direct unmediated projection of lexical properties of the verb, as the result of the celebrated Projection Principle. On the contrary, the growing trend is to have arguments hosted by functional categories: for instance, Agents, as in *Carla built a shed*, are by now commonly understood as the specifiers of a Voice category (Kratzer 1996). In other words, argument structure is currently understood as functional structure that *somehow* reflects or translates lexical properties of the verb.

The above and other complications notwithstanding, the obligatory expression of argument structure is something that characterizes the projections *containing a verb*, unlike those that contain a noun. Having said that, it would be desirable if this difference could in turn be somehow derived, instead of standing as an irreducible axiom. One motivation for this is that the (non-) obligatory expression of argument structure also plays a very significant role in our discussion of adjectives and, even more so, of adpositions: adjectives seem to possess some kind of argument structure, especially when used predicatively, whereas adpositions seem to *be* pure argument structures of some sort – matters we will come back to in Chapter 2.

1.2.5 An interesting correlation

Setting up a broad framework of assumptions in which a theory of categorial features will be developed, I have reaffirmed the understanding that, in its

[6] Fu, Roeper and Borer (2001) influentially explain away such 'complications' by claiming that process nominals contain verb phrases (VPs). Certainly, the expression of argument structure in nominals can be a more intricate affair than Indo-European facts suggest: Stiebels (1999) discusses Nahuatl, a language where all sorts of derived nominals, not just those with an event reading, express their argument structure via affixes common with their base verbs.

naïve version, the notional–taxonomic definition of parts of speech is fallacious, with an emphasis on the problematic character of parts of speech as *taxonomies*. At the same time, it has also been suggested, albeit in a tentative fashion, that we would nevertheless have to vigorously seek criteria of a conceptual/semantic nature in our endeavour to capture the noun–verb distinction, as opposed to purely morphological or syntactic – that is, grammar-internal – ones. This desideratum makes a lot of sense, at least intuitively speaking, given that the distinction between noun and verb seems to matter for interpretive reasons. It also appears that the noun–verb distinction would reflect some sort of conceptually significant difference regarding the very elements in the clause that are nouns or verbs – something that can hardly be claimed about, say, the difference between Nominative and Accusative. I think that we must regard the noun–verb distinction as one reflecting conceptually significant differences, if important generalizations are not to be missed: recall that the vast majority of words for physical objects are nouns cross-linguistically; object concepts (*tree*, *rock*, *stick* etc.) are mapped onto nouns. Of course, not all nouns denote concepts of physical objects. Baker (2003, 290–5) discusses this generalization in an insightful way, crucially adding that the nouns *rock* and *theory* cannot belong together in any conceptual taxonomic category, despite their both being nouns, following here the discussion in Newmeyer (1998, chap. 4). However, what Baker does not mention is this: the fact that *rock* and *theory* are both nouns is an argument against the taxonomic aspect of the naïve notional approach, not against using notional–semantic criteria to define categories – compare Acquaviva (2009a), to which we will return in Chapter 4.

So, there appears to exist a correlation, after all, between object concepts and nouns, as well as dynamic action concepts (*hit*, *run*, *jump*, *eat* etc.) and verbs. How can such a correlation be captured?

1.2.6 Prototype theory

In the functional–typological methodological tradition, categories are viewed as *prototypes*. In work by Givón (1984, chap. 3) and Croft (1991) categories are conceived as prototypes occupying fuzzy areas along a continuum of temporal stability, after Ross (1973). In this line of research, lexical categories like nouns, adjectives and verbs are understood to differ with respect to their *protypical time stability*. Hence, prototypical nouns are the most time-stable, whereas prototypical verbs are the least time-stable; prototypical adjectives lie somewhere in between. Put slightly differently: nouns are the most time-stable category, verbs the least time-stable one, with adjectives in between. Baker

(2003, secs. 1.1–1.3) elaborates on the issues with this approach and with the prototypical approach in general, principally along the lines of prototypes *predicting* very little. Thus, a verb like *persist* encodes time-stability by definition, whereas a noun like *tachyon* has time-instability encoded in its meaning. Of course, the existence of nouns like *tachyon*, which express non-time-stable concepts does not contradict protypicality: *tachyon* would qualify as a non-protypical noun. Similar facts hold for non-prototypical verbs expressing more or less time-stable concepts. This is precisely the problem of what prototype-based theories of word classes actually *predict*. Consider, for instance, the mid-section of the time stability continuum, where non-prototypical relatively time-stable 'verbal' concepts, non-prototypical relatively non-time-stable 'nominal' concepts and 'adjectival' ones (between nouns and verbs, by definition) co-exist: the question is what conceptual mechanism decides which category concepts populating that middle area are assigned to? Is category-assignment performed at random? This is a matter that Rauh (2010, 313–21) also raises, although departing from a slightly different set of theoretical concerns; she goes on to argue for discrete boundaries between categories.

A more interesting issue is one mentioned above: prototypical (like *rock*) and less prototypical (like *theory*) nouns and prototypical (like *buy*) and less prototypical (like *instantiate*) verbs all behave in the same fashion as far as *grammar itself* is concerned (Newmeyer 1998, chap. 4). Clearly, to the extent that prototypicality matters for the mechanism of the Language Faculty per se, and to the extent that prototypicality is reflected on the *grammatical* behaviour of nouns, verbs and adjectives, prototype effects spring from factors external to the syntax.[7]

The limited role of prototypicality as far as the grammar-internal behaviour of more prototypical or less prototypical members of a category is concerned is acknowledged in Croft (1991, 2001), who argues that prototypicality correlates with two kinds of markedness patterns across languages. First, prototypicality correlates with *structural* markedness, in that items deviating from the semantic prototype (e.g., referential expressions that denote events, like *handshake* or *wedding*, or object-denoting words used as predicates, like *ice* in *The water became ice*) tend to occur with additional morphemes. Interestingly, this is a generalization about the functional layer *around* an event-denoting noun or an object-denoting predicate, not about the lexical elements themselves.

[7] I am grateful to a reviewer for this discussion.