Parts of speech and syntactic categories. 'Cognition' vs. 'grammar'?

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1. The main thesis of the volume is clearly stated at the outset: "(…) this book not only aims to point out that the traditional parts of speech and their descriptions have little to do with syntactic categories, but also to develop an explanation as to why they repeatedly play a role in the context of the description of syntactic categories" (p. 10). What, then, is a syntactic category, if it does not coincide with a specific part of speech? "A syntactic category is the set of linguistic items that can occupy the same positions in the structure of the sentences of a given language" (p. 8). This definition raises the further question of what a 'linguistic item' is; the author's response is the following one: "Linguistic items whose membership of syntactic categories is to be determined can be of various kinds. To begin with, they can be words. However, they can also be larger or smaller units, that is, phrases or morphemes" (p. 9). The primary aim of the book is therefore "to provide an overview of the identification and description of syntactic categories in various linguistic theories" (p. 9), as well as to evaluate "the theories under consideration with regard to their ability, or at least their potential, to describe syntactic categories, i.e. to describe category membership in such a way that by applying the means provided by the particular grammar the items categorized are placed in appropriate positions" (ibid.).

With the exception of those dealt with in Ch. 2, entitled "The traditional parts of speech", all linguistic theories investigated by the author belong to contemporary linguistics: American Structuralism (Ch. 3); Chomsky's early generative grammar, from Chomsky (1957) through to Chomsky (1965; the so-called "standard theory"), discussed in Ch. 4; Chomsky's Principle and Parameter Theory (PPT) and Minimalist Program (MP), which are covered in Ch. 5; two "formally-oriented" approaches, both stemming from the Chomskian trunk, but

alternative to it, namely Lexical Functional Grammar (LFG) and Head-Driven Phrase Structure Grammar (HPSG), investigated in Ch. 6; Langacker's Cognitive Grammar (Ch. 7); Anderson's Localist Case Grammar (Ch. 8), and, finally (Ch. 9), several "typologically-oriented" approaches. Ch. 10 provides a summary of the preceding chapters and states the results of the inquiry. The present review is organized as follows: in the subsequent section the contents of the volume will be presented and analyzed, reproducing, in many cases, the author's own formulation; in section 3, some specific points of the work will be critically examined.

2. Leaving aside for a moment Ch. 2 (which will be dealt with in the next section), let's proceed to a presentation of the main points of the subsequent chapters. Ch. 3 starts from Boas, Sapir, and Bloomfield. Boas' recommendation of not basing the syntactic categories of American Indian languages on those of European languages "was first taken up by Boas's student Edward Sapir (…) and by Leonard Bloomfield" (p. 33), "the father of American Structuralism". American structuralists "for the first time, developed a concept of syntax as a linear and hierarchical arrangement of elements (…). Accordingly, it is in this context that for the first time genuinely syntactic categories were identified" (ibid.).[1] The bulk of the chapter deals with C.C. Fries' (1952) and Z.S. Harris' (1946; 1951) attempts at defining syntactic categories on the basis of distributional criteria. According to the author, both approaches suffer from several defects, the foremost of which is that of not having clearly distinguished between 'syntactic category' and 'part of speech'. Fries' treatment, for example, suffers from two basic defects, namely: 1) "almost all of the categories are lists of words that can replace each other in the positions tested, but not necessarily in other positions" (p. 49); 2) "Fries tested only words from his corpus to identify categories", and this "leads to problems of a different nature", e.g. "it is not clear how Fries would have classified, for example, *former*, *present*, or *southern*, had they occurred in his corpus, since these can only be inserted in the first, the prenominal position but not in the second predicative one" (ibid.). The author's view could therefore be summarized by saying that American Structuralism began the correct approach to syntactic categories, which have not to be identified with the parts of speech and must be defined on a distributional basis. Such a new approach, however, was neither consistently nor fully developed.

In Ch. 4, the reconstruction of the shaping of Chomsky's thought in the 1950s is only based on what Chomsky himself states in his

introduction to the published version (Chomsky 1975) of *The Logical Structure of Linguistic Theory*; nevertheless, it appears detailed and essentially correct. One critical remark, however, has to be made about the explanation given of the term 'generate', which, according to the author, "includes both the process of production and of analysis, which means that the grammar is neutral with respect to speaker and hearer" (p. 59). The inference drawn (namely, that "the grammar is neutral with respect to speaker and hearer") is surely correct, but it does not derive from its premise (i.e., that 'generate' "includes both the process of production and of analysis"): according to Chomsky, the "neutrality" of grammar is actually due to the fact that it "does not tell us how to synthesize a specific utterance; it does not tell us how to analyze a particular given utterance" (Chomsky 1957: 48). Hence, the grammar is not neutral because it accounts both for the process of the production of a sentence and for that of its comprehension, but just for the opposite reason: it does not aim at accounting for either of them (and neither do Rauh's references, namely Chomsky [1965: 9] and Chomsky [1975: 37] allow for such an interpretation). Nevertheless, the description of the relationships between Chomsky and Harris reads as entirely correct. Rauh states that "there is a great similarity between Harris's description of sentences and Chomsky's model" (namely, that of Chomsky 1957) and that "[t]he only difference seems to be that Harris's bottom-up procedure is simply reversed and cast as a rule-system that operates top-down" (p. 63). Despite these formal similarities, however, the two linguists' methods for discovering syntactic categories are fundamentally different, and this brings about two radically different inventories of them: "Harris's method identifies categories empirically on the basis of observed data of a particular language and employing distributional analysis. (…) Chomsky, on the other hand, postulates *a priori* a relatively small number of categories whose distribution is related to an abstract, underlying level described by means of phrase-structure rules and whose distribution in the surface structure is derived by means of transformational rules" (p. 69).

Chomsky's method for individuating 'deep' categories is, therefore, not a distributional one. Rather, it is similar to that of Port-Royal *Grammaire générale et raisonnée*: Chomsky "considers the base component of the grammar to be the universal part, the part which is relevant for the meaning of sentences and which represents the deep structure of the sentences of all languages. The diversity of languages is thus a matter of the derived surface structure of sentences and due to the idiosyncratic properties of lexical items and to the trans-

formational rules" (pp. 72-3). According to the author, this treatment of the syntactic categories within Chomsky's "standard theory" is open to (at least) two criticisms: "[f]ormulated as questions, the first is whether the categories introduced by the phrase-structure rules are indeed universal and the second is whether every lexical item of a language can be assigned to one of the categories identified" (p. 77). The author's answer is negative in respect of both questions: deep structure categories are surely not universal (e.g., not all languages have prepositions, but some of them have postpositions and other no adpositions at all) and there exist lexical items which are traditionally assigned to one and the same part of speech, but whose syntactic behavior is clearly different (e.g., the class traditionally known as "adverbs"). The scientific program represented by Generative Semantics and by Fillmore's Case Grammar attempted at overcoming such difficulties, trying "to reduce the number of underlying syntactic categories to those categories specified in predicate logic and to equate them with these in order to demonstrate their truly universal character" (p. 79); this program, however, "must be said to have failed" (ibid.), as has long been recognized, one could add.

Ch. 5 is devoted to the developments of the Chomskian program following the standard theory, namely the PPT and the MP. As is well known, a special characteristics of such more recent Chomskian approaches is the adoption of a 'modular' point of view, namely the assumption that grammar is not a global system, but breaks down into different components, or 'modules' (X-bar theory, θ-theory, Case theory, etc.), which interact with each other to bring about actually observed utterances. As might be expected, among such modules X-bar theory is the one most deeply discussed, since it actually represents the most consistent attempt, within the Chomskian program, at giving a theoretically-grounded inventory of syntactic categories.[2] X-bar theory was initially presented in Chomsky (1970), whose composition can in fact be traced back to 1967; some antecedents of it can be found in Harris' (1946) system of 'raised numbers' (for more information, see e.g. Graffi 2001: 288-290). Chomsky (1970) suggests an analysis according to the X-bar schema only for three syntactic categories, namely NP, VP and AP (this last only as a hint), but the basic principles of the theory are already laid down there, namely: all major phrasal categories share the same hierarchical structure, i.e. head (X), head + complement (X') and specifier + X' (X");[3] heads of phrasal categories have to be analyzed into binary features. These basic insights were developed during the 1970s by Jackendoff (1973; 1977) and by Emonds (1976: 12-20). These scholars also extended the X-bar schema

also to PP (and Jackendoff 1977 to "minor" categories as well, namely particles, articles, quantifiers, degree words, and adverbs). Analysis of syntactic categories in terms of features received its "canonical" formulation in Chomsky (1981: 48): "(…) we have a system based on the features [±N], [±V], where [+N, - V] is noun, [-N, +V] is verb, [+N, +V] is adjective, and [-N, -V] is preposition". Only four categories, therefore, were considered as traceable to the X-bar schema: no explicit mention was made of Jackendoff's "minor" categories. Moreover, such a schema was implicitly considered inapplicable to clausal categories: the category S (=sentence) was analyzed as formed by the three constituents NP, INFL(ection) and VP; and a further category, S', introduced in Bresnan (1970), was still analyzed as in that work, namely as constituted by the category COMP(lementizer) + S.[4] Research within the PPT framework during the 1980s brought about essential changes in this framework. X-bar schema was extended to clausal categories in Chomsky (1986): S was analyzed as a projection of a I(NFL) head, namely I(NFL)" = [NP[I'I[VP V…]]], and S' as a projection of the category C(OMP), namely C" = […[C'C[I"]]] (cf. Chomsky 1986: 3). This innovation was highly significant: the inventory of heads was no longer limited, as before, to (a subset of) the traditional "parts of speech", but it was extended also to "minor" categories (such as complementizers or modal verbs) and even to bound morphemes in Bloomfield's sense (such as the verbal inflection). Such categories were dubbed 'functional' categories, a label which had (and has) nothing to do with functionalism, but only serves to oppose them to the 'lexical' ones, namely N, V, A, and P. The inventory of functional categories substantially increased shortly after the appearance of Chomsky (1986): the first of such new categories was Abney's (1987) D(eterminer), which heads a D(eterminer) P(hrase). In Rauh's own words (p. 105), according to Abney "members of functional categories form closed classes. (…) In contrast, (…) members of lexical categories form open classes, are independent, have descriptive content which relates to the world, and they θ-mark their complements". In the author's view, this increase of syntactic categories had welcome results: for example, it was shown (by the author herself; cf. Rauh 1996, 1997, 2002) that the traditional "prepositions" actually belong to three distinct syntactic categories: 'lexical', 'grammaticalized' or 'semilexical', and 'governed' or 'selected' prepositions (cf. p. 119). In a similar vein, "members of the category N also divide into different syntactic categories depending on the presence or absence of the referential argument <R>" (p. 120). Another welcome result was the 'Mirror Principle', formulated by Baker (1985; 1988), "according to which the hierarchical order of func-

tional categories mirrors the order of inflexional affixes, or, more generally, the specified order of the corresponding features on the lexical head" (p. 127). The concrete, observable categories of inflectional morphology are therefore accounted for by the abstract functional categories of syntax.

Despite such important results, some problems remained for the PPT framework: in particular, "since functional categories are not subject to projection principle, they are not licensed in D-structure and therefore not represented" (p. 128). As a consequence, "[t]he Mirror Principle, Head-Head Agreement, and Spec-Head Agreement, or the generalized licensing principle all formulate well-formedness conditions on structures but do not determine how they come about" (p. 129). The situation substantially improved with the appearance of the Minimalist Program (MP), "[d]ue to a changed computational system and due to the introduction of the numeration as a 'mediator' between the lexicon and the computational system (…) Entering or leaving the numeration, optional features are added to the lexically specified feature representations of the items, as, for example, number and Case features in the case of N-categories or number, person, or tense features in the case of V-categories" (p. 145). "Due to the operations Merge, Move, and Checking, in this model, as opposed to PPT, neither a specification of members of functional categories for 'categorial' features like [+N, -V] – or alternatively [N] – is necessary, nor a specification for features like [F1], [F2], etc. These features can be dispensed with because only those functional features are successfully checked in extended projections of lexical heads which match the latter's own features, and because the Checking procedure step by step follows the order of these features" (p. 146).

The author's reconstruction of the progress in the treatment of syntactic categories from Standard Theory to MP through PPT can therefore be summarized as follows: the Standard Theory implicitly assumed that syntactic categories were language universal and language particular at once, and this was a major problem; PPT solved it by assuming that "it is not categories that are claimed to be universal, but rather features, principles, and operations. (…) In feature-based descriptions, features of two traditional categories may form the basis of a new category of its own" (p. 147). A consequence of this new approach was the assumption of new syntactic categories, namely functional categories, whose status and role, however, were not yet defined in a wholly adequate way: the solution to this latter problem was found within the MP, where the role of features defining both functional and lexical categories as well as their relationship with the

computational system was definitely established. A result of this process of revising and rethinking the nature of syntactic categories is that they are no more identified with the traditional parts of speech: "parts of speech do not represent syntactic categories, even though this is claimed again and again (…) and even though this was suggested by the phrase-structure rules of early Generative Grammar" (p. 148). Nevertheless, some problems remain, namely "the representation of features is hardly structured. (…) For example, how are features like [±tense] and [±past], the former being distinctive as a categorial feature in English, the latter not, formally distinguished? A solution better than just a hierarchical order is provided by LFG and HPSG" (p. 149). Ch. 6 therefore deals with Bresnan's (and her associates) L[exical] F[unctional] G[rammar] and with Pollard's and Sag's (as well as others') H[ead-driven] P[hrase] S[tructure] G[rammar].

Actually, the author's assessment of the LFG treatment of the question of syntactic categories does not seem especially favorable: "it should be noted that in LFG the feature-based descriptions of syntactic categories presented by Bresnan *de facto* do not describe syntactic categories" (p. 169). Her assessment of HPSG is wholly different: "HPSG in principle achieves what Harris failed to accomplish in the framework of American Structuralism (…), namely a description of syntactic (surface) categories which predicts the syntactic behaviour of their members" (p. 199). Sketching a comparison between HPSG on the one hand and PPT and MP on the other, the author remarks that "[w]hat the approaches have in common is that in each case the description of syntactic categories is based on features which interact with syntactic principles or rules. (…) Differences between the three approaches concern the type of feature, their motivation, and their organization, depending especially on the architecture of the model of grammar and thus on the particular theoretical concepts on which it is based" (p. 201). According to the author, the three approaches nonetheless share an essentially "Aristotelian" way of conceiving syntactic categories, according to which "only those items that are specified for the same features belong to the same syntactic category, for it is only then that the interaction of principles and rules enable these items to assume the same positions within sentential structures and hence have the same distribution. This implies that the features for category membership are both necessary and sufficient. And this corresponds to the classical definition of categories that goes back to Plato and Aristotle (…)" (pp. 203-4).

After discussing formally-oriented theories, such as PPT, MP, or HPSG, the book goes on to deal with semantically-based and func-

tionally oriented ones. Ch. 7 is devoted to "Notional approaches to syntactic categories". According to the author, such approaches are of three different kinds. One of them, represented - among others - by J. Lyons, assumes "a correspondence of ontological and syntactic categories": hence, "the syntactic category 'noun' is associated with entities such as persons and things, the category 'verb' with actions (including events and processes), the category 'adjective' with properties, and the category 'preposition' with relations (cf. Lyons 1977: 441)" (p. 211). "Another way to solve various problems of linking syntactic and ontological categories is proposed by Jackendoff (…) In identifying semantic categories, Jackendoff does not proceed from the real world but from a projected world that is based on conceptual structures and encoded in language" (p. 212). The third kind of approach (especially widespread among 'functionalist' linguists) "is based on an identification of syntactic categories and semantic functions. (…) Croft (e.g., 1984, 1990, 1991) reduces these functions to the three functions 'referring', 'predicating', and 'modifying', which he calls 'pragmatic'. In his view, they correlate with the syntactic categories 'noun', 'verb', and 'adjective', having the semantic classes 'object', 'action', and 'property' as their correlates" (pp. 213)".

The rest of the chapter is devoted to Langacker's Cognitive Grammar. The author considers Cognitive Grammar as belonging to the second group of "notional approaches" listed above: "[a]s far as the semantic characterization of individual grammatical categories is concerned, it must be remembered that Cognitive Grammar does not consider ontological aspects but is concerned with conceptualizations" (p. 238). As is well known, the notions of 'basic grammatical category' and of 'prototype' play a key role in this grammatical theory: "Langacker identifies nouns, verbs and prepositions as examples of 'basic grammatical categories' (1990: 16), describing each of them as abstract schemas on a semantic basis, that is, nouns as [[THING]/[…]], verbs as [[PROCESS]]/[…]], and prepositions as [[ATEMPORAL RELATION]/[…]]" (p. 226); "the prototypical encoding of a prototypical activity is represented by an active transitive sentence that expresses the involvement of two participants whose roles are those of agent and patient" (p. 233). Langacker (e.g., 1987: 4) presented Cognitive Grammar as a radical alternative to "the generative tradition", despite the fact that "[a]t first glance, prototypical grammatical constructions in Cognitive Grammar are comparable to structures that are also described or constructed in the PPT, the MP, and the HPSG. (…) However, there is a major difference between the structures of the PPT, the MP, and HPSG on the one hand, and those of Cognitive

Grammar on the other, since in the approaches of the first group these are syntactic structures which are ordered hierarchically and linearly, whereas they are semantic structures in Cognitive Grammar whose hierarchical order is described at the semantic pole. The linear order, which is relevant for syntactic structures, is described in Cognitive Grammar at the phonological pole" (p. 251). One could remark that this last qualification also holds for the MP, at least in its most recent versions, so the question of the actual similarity of such apparently different approaches is still open.

The author's assessment of Langacker's account of syntactic categories is somewhat negative: "(…) syntactic categories are not fully identifiable and describable either, which first of all applies to prototypical grammatical constructions. If, however, this applies to prototypical grammatical constructions, (…) it applies even more to those that are non-prototypical (…). Moreover, this implies that the number of syntactic categories will likewise increase infinitely. As a result, syntactic categories can ultimately not be identified and described in Cognitive Grammar, something which Langacker does not consider a deficiency of this approach but rather a feature of natural languages" (pp. 257-8). "However, a significant objection is that the stable portion of a natural language, which guarantees problem-free communication between speakers of this language, is far greater than the portion that is variable. (…) What is much more serious is the lack of an adequate basis for the description of grammatical categories and constructions" (p. 258). Cognitive Grammar, therefore, does not seem to the author to be empirically adequate as a description of human language syntax.

Ch. 8 deals, as was already said, with one model of Case Grammar, namely that worked out by John Anderson (e.g., 1971, 1997, 2006). If the author, on the one hand, praises this approach quite highly, on the other she does not spare it some critical remarks. One of Anderson's achievements is to have pointed out that "a distinction must be made between 'lexical classes' or 'word classes' and 'syntactic categories' (cf. 1997: 12)" (p. 269). He further points out that "the 'basic word classes' or 'primary categories' do not suffice to describe all word classes of English, but only the notionally central ones. He additionally identifies and describes '"intermediate" primary categories (1997: 105), i.e. those situated between verbs and nouns, between verbs and adjectives, and between adjectives and functors, each contributing to the formation of a continuum" (pp. 271-2). What the author finally stresses is that "these word classes do not correspond to the traditional parts of speech. Even where the same labels

are used, such in the case of *adjective*, they are not identical. It is rather the case that, taking their distribution into consideration, the elements of the traditional parts of speech are assigned to different word classes" (p. 278). Anderson's classification of syntactic categories is not free of flaws, however. For example, "Anderson follows the traditional view, which undervalues prepositions (…) and assigns them to the closed class of function words rather than to the open class of content words. Other linguists assume that prepositions represent a lexical rather than a functional category" (p. 301). On this matter, the author (pp. 301-2) refers to her own research, which argues for a threefold distinction of prepositions (see above). "In spite of this criticism, which does affect a central area of his approach, Anderson is the linguist among all those considered in this book who has provided the most detailed and the most valuable insights into the syntactically relevant properties of lexical items" (p. 312). As a matter of fact, "(…) the number of syntactic categories far exceeds the number of the traditional parts of speech" (p. 318). Syntactic categories are defined by "feature representations of lexical items together with the syntactic principles and rules" (p. 319). "This implies that each feature of such a feature representation is relevant to category definition. (…). In other words, the structure of a syntactic category can only be a classical not a prototypical one" (ibid.). This opposition between the "classical" structure of actual syntactic categories and the "prototypical" one of the traditional parts of speech is the main tenet of Rauh's volume, as will be seen in what follows.

Among the different typologically and/or functionally oriented approaches discussed in ch. 9, special attention is given to Simon Dik's Functional Grammar (FG) and to Role and Reference Grammar (RRG), but also other approaches are taken into consideration, in particular some of those devoted to the typological analysis of the system of parts of speech. One of them is Schachter's (1985) article, where some allegedly distributional criteria for identifying and describing parts of speech are proposed. According to Rauh, Schachter's concept of distribution deviates considerably from the American structuralists' (especially Harris') original sense: "[w]hat Schachter identifies as distributional properties are instead selective properties, for example the relative positions of subject, verb, and object in the basic word order (of English) to distinguish nouns and verbs (…) There are no statements concerning distribution that refer to whole sentences as domains" (pp. 327-8). The criterion of syntactic functions, in its turn, "serves to identify only some but not all of the parts of speech" (p. 328). Schachter's third criterion, namely "specification for mor-

phological or syntactic categories, is also not consistently applied. It is not applicable at all to most of the closed classes" (ibid.). Other typological approaches to the problem of syntactic categories suffer, in the author's view, from the same defect: namely they show a confusion between 'syntactic category' and 'part of speech'. This applies to works such as Croft (2001), and others (e.g., Gil 2000, Haspelmath 2001 or Sasse 1993). However, certain other approaches, belonging to the generative framework, such as Baker (2003) or Borer (2005a, b), adopt a more sophisticated analysis. "Bakers' claim that category membership of the members of a lexical category is not specified in the lexicon but rather determined by syntactic configurations links his approach to those that Borer subsumes under the label 'neo-constructionist models' (2003: 32). (…) They share with Baker's approach the claim that specification for a lexical category is a matter of syntax. They differ from his approach, however, in assuming that lexical-category membership is determined by units of grammatical formatives or functional categories" (pp. 341-2). Some similarities with Borer's approach is seen by the author also in Himmelmann's (2008) analysis of lexical categories in Tagalog. Rauh's conclusion is that "[a]ll of these approaches argue in favour of categorization exclusively in the syntax. However (…) [i]t is doubtful whether such approaches will ever be able to describe the total lexical inventory of an individual language including the forms that are the result of grammaticalization processes and exhibit properties of both lexical and functional categories or items that form 'intermediate primary categories' as described by Anderson" (p. 345).

Concerning FG, the author remarks that, "[o]f the linguistic theories discussed in this book", it "is the only one that does not assume hierarchical structures for the syntactic description of sentences" (p. 355). In her view, this "is a general deficit of FG and therefore genuine syntactic categories can be neither identified nor described. This problem does not arise in Role and Reference Grammar" (p. 358). However, also this last theory does not appear to provide a fully adequate treatment of syntactic categories: "(…) it is in particular Van Valin's proposed distinction between syntactic and lexical categories which in its present version gives the impression of not having been fully worked out (…). The reason for this is that on the one hand it is postulated that positions in the syntactic structure of sentences can be filled by various lexical categories and that on the other hand these positions receive a particular categorial specification because the semantic representation of a sentence as a whole is constructed in the lexicon" (p. 382).

Closing her overview of the analyses of the notion of 'syntactic category' across the different typological frameworks, the author remarks that "(…) in language typology linguistic items are initially categorized without taking genuinely syntactic properties into account" (p. 383), whereas "(…) more recent work in language typology does consider syntactic facts and identifies genuine syntactic categories as a central concern. (…) In this view, syntactically neutral items are inserted into slots in syntactic sentence structures, and only then do they yield syntactic categories" (p. 384). "For an evaluation of the appropriateness of this view, two matters must be clarified. The first concerns how the syntactic structures are created whose slots determine the syntactic category membership of lexical items, and the second is whether in this way all of the items in a language are syntactically categorized, i.e. whether each item is assigned its appropriate position" (ibid.). According to the author, none of the approaches discussed (namely, Baker's, Borer's, Himmelman's, Van Valin's RRG) offers a fully satisfactory solution to these questions.

The concluding chapter (10) opens with the restatement of the definition of 'syntactic category' given at the beginning of the book: "syntactic categories are sets of items in a language that can assume the same positions in the syntactic structures of the sentences of this language" (p. 389). The importance of the analysis of the syntactic categories in terms of features introduced by the PPT is stressed again: "in the PPT (…) [w]hat is important is the specification of individual items for syntactically relevant features and feature combinations. Items that share such features or feature combinations form a syntactic category" (p. 392). According to the author, "the essential innovations of the PPT regarding the identification and description of syntactic categories are reflected not only in the MP, but also in HPSG and LFG, as well in Anderson's Localist Case Grammar, and, to a certain extent, even in Langacker's Cognitive Grammar", although, "as can be expected, since different models of grammar are based on different conceptual designs, the feature and thus the feature combinations considered relevant and the syntactic or the grammatical principles, schemas, or rules vary" (p. 393). The essential outcome of the whole discussion is that "syntactic categories and the traditional parts of speech represent two fundamentally distinct types of categorization. (…) Consequently, the set of syntactic categories far exceeds the set of the traditional parts of speech" (p. 395). The essential difference between parts of speech on the one hand and syntactic categories on the other would therefore lie in the fact that the former, but not the latter, are described not in the classical, "Aristotelian", way, but

by resorting to the notion of 'prototype': "Category membership can be determined either on the basis of a fixed set of criterial features or on the basis of family resemblances to a prototype. Thus, though the traditional parts of speech do not satisfy the conditions for the first type of category, they seem to satisfy those for the second type. (…) Since syntactic categories are necessarily categories of the first type (cf. section 8.6), this is further evidence of the fact that parts of speech cannot be syntactic categories" (p. 396).

Parts of speech are therefore 'cognitive' categories and they are 'prototypical' in the sense that they "have fuzzy boundaries with smooth transitions" and "are perceived as distinct units on the basis of their prototypes, which unite most of the representative properties" (p. 398). It would seem that the author assigns to them a status analogous to that of categories of "naïve biology": "[l]ike the development of cognitive categories structuring the domain of plants by categorizing items of this domain in biology classes, cognitive categories are developed in language classes which structure the domain of the vocabulary of languages by categorizing items of this domain. And here too the prototypical structure of categories satisfies the two opposing cognitive principles, the principle of cognitive economy and the principle of maximal information" (pp. 398-9). This view of the parts of speech also accounts, according to the author, for the fact that their inventory has generally been established as containing more or less eight members: Miller (1956) has shown that it is "the magic number seven (…) – more specifically plus or minus two – which humans can remember and represent in their minds without difficulty. Since the number of parts of speech generally identified is within this range, this is further evidence for the claim that they represent cognitive categories" (p. 399). Actually, not every grammatical tradition assumes that there are eight parts of speech (or seven, plus or minus two): for example, Arab linguists assumed only three parts of speech, namely noun, verb and particle (and this classification was taken up by Sánchez in 16th century Europe). This possible objection, however, does not impinge on the author's argument, since she assumes that "like the cognitive categories investigated by Rosch et al., the parts of speech are culturally dependent" (ibid.). Our system of parts of speech dates back to Greek grammarians of the Antiquity and therefore is suited to Indo-European languages: "[i]f the parts of speech had originally been described with respect to languages like Tagalog, the result would have been completely different" (ibid).

This last assumption, namely that parts of speech, as with any cognitive category, are "culturally dependent", can give rise to some

doubts, since an alternative position would rather maintain that cognitive categories, being a part of the human endowment, are actually universal: this topic, however, would lead us too far afield. Rather, we would like to briefly discuss the author's reference to Miller's article about the "magical number seven". According to her presentation, Miller's basic result was that this number, "occurring again and again in fairy tales, myths, and other contexts (…) is related to human information processing" (p. 399). Millers' conclusion was however rather different: all such facts as those mentioned by Rauh, as well as several others (e.g. "the seven wonders of the world, the seven seas, the seven deadly sins", etc. but also "the seven point rating scale, the seven categories for absolute judgment, the seven objects in the span of attention, and the seven digits in the span of immediate memory") are suspected by him of being "only a pernicious, Pythagorean coincidence" (Miller 1956: 96). Of course, Miller's results can also be interpreted in a different way from his own: moreover, the assumption that the parts of speech listed within the Western grammatical tradition are eight simply because the "magical" number seven ("more specifically plus or minus two") in itself could account for a variety of mental processes is open remains highly debatable. Furthermore, that there are eight parts of speech was not agreed on by every scholar, as will be seen in the next section of the present review.

3. Rauh's volume offers a detailed presentation of the treatment of syntactic categories by several contemporary linguistic theories. Such theories are, in the overwhelming majority of cases, well presented and correctly assessed, so that the work actually offers more than its title announces, namely it provides a useful introduction to contemporary linguistic theories, and not only to the notion of syntactic categories in itself. [5] On the other hand, some criticisms can be raised against her work, both from the historical as well from the theoretical point of view.

As was said at the beginning, the treatment of the parts of speech within traditional grammar is the subject of ch. 2. The starting point, as one would expect, is the work where a system of eight parts of speech was initially presented: the *Téknē grammatiké* traditionally ascribed to the Alexandrian philologist Dionysius Thrax (II-I century BC).[6] Immediately after the presentation of the *Tékhnē grammatiké*, two 19th century grammars are introduced: Diez (1836-44) and Mätzner (1880-85). One might ask why just two such texts have been selected, which, moreover, are of a very different nature: while the former is a historical-comparative grammar of the Romance

languages, the latter is a descriptive grammar of English. Whatever her reasons may be, the author finds in Diez's text an approach to the parts of speech which is very close to Dionysius', namely a morphologically-based one;[7] in contrast, the author remarks (p. 24), "Mätzner's identification of the parts of speech in Modern English (…) is first based on semantic properties to which – where possible – morphological properties are added". Furthermore, the author suggests: "Although the approach in his grammar clearly follows the tradition founded by Dionysius, it cannot be excluded that Mätzner's definition of the parts of speech in English was influenced by a different tradition of grammatical description" (ibid.). And in fact, according to the author, "in addition" to the grammatical tradition of the study of language, namely that deriving from Dionysius (or his predecessors, the Alexandrian philologists of the III-II century BC), "a second tradition was developed in classical Greece which had completely different aims" (p. 24), this "second tradition" being that "initiated by the Sophists in the fifth century BC", and "continued by Plato (429-347 BC), Aristotle (384-322 BC) and the Stoics. It finally reached its peak in the seventeenth century with the famous Port Royal grammar" (p. 25). The author's conclusion about traditional grammar is that "the traditional parts of speech were not described as syntactic categories, neither when they were originally applied to Greek, nor later in their application to other languages. This naturally also holds for the parts of speech in philosophically-oriented grammars which described them as universal categories on a semantic basis" (p. 30).

This conclusion may be sound, especially given the view that the author holds about the notions of 'syntactic category' and 'part of speech', which has been presented in section 2 of the present review. The picture of traditional grammar which is suggested by the author is, however, rather unsatisfactory. Of course, one would not expect from this volume a detailed presentation of all traditional theories about parts of speech: this is surely not its aim, nor its subject. However, if this historical introduction aims to be useful, it should offer a more faithful picture of the facts, and it should not limit itself only to the works and the scholars it quotes. This especially concerns the "two different traditions" within the doctrine of parts of speech, a grammatical and a philosophical one, respectively. First of all, it sounds somewhat inappropriate to speak of a "second tradition" when referring to the philosophical tradition of the studies of language: this line of enquiry started well in advance of the grammatical tradition, as the chronological data quoted by the author herself clearly indicate (Plato and Aristotle are three centuries older than Dionysius Thrax).

Moreover, it is certainly true that the two traditions had quite different aims: but such a statement might suggest that no link ever existed between the philosophical and the grammatical traditions, while it is well known (at least since Steinthal's [1890] history of Greco-Roman linguistics) that the Alexandrian philologists heavily depended on the Stoics' description of syntactic categories. What is still more important is that the two traditions did not always remain completely detached from each other, as it may seem from what the author says about "the program" of Port-Royal *Grammaire générale et raisonnée* (1660, whose original edition is anonymous, but which was written by A. Arnauld and C. Lancelot); this program, in her words, "indicates a completely different approach to that of the *Tékhnē grammatiké*" (p. 26). And, as a matter of fact, the author herself states on the following page that "Arnauld and Lancelot list exactly those parts of speech identified in the *Tékhnē grammatiké* (…). However, these parts of speech are defined on a completely different basis". The almost total overlap of Dionysius' and Arnauld and Lancelot's inventories of parts of speech is by no means accidental, as might appear from such wording, nor were the Port-Royal linguists the first ones to adopt "a completely different basis" to define them. As a matter of fact, the philosophical and the grammatical traditions had already met during the Middle Ages, especially in the works of the so-called "Modists" (at the end of the 13th and at the beginning of 14th century), whose main aim was precisely that of giving a metaphysically based definition of the eight parts of speech as listed by Latin grammarians (especially, Donatus and Priscian): and their list was inherited, with some small change (essentially, the elimination of the article and the addition of the interjection), from Dionysius' one. "Therefore, it cannot at least be excluded that the identification of the parts of speech in the Port-Royal grammar was greatly influenced by the tradition of the *Tékhnē*" (p. 28): it cannot be excluded, since it is well known. The semantic approach to the definition of the parts of speech gained increasing success when modern languages were taken into account, as they had scanty inflectional morphology. On the other hand, 19th century historical-comparative linguistics, which mainly focused on phonological and morphological phenomena, continued to adopt essentially morphological definitions of parts of speech, namely those stemming from the grammatical tradition; this approach was also fostered by the fact that historical-comparative linguistics mainly dealt with ancient phases of Indo-European languages, where inflectional morphology is still rich. Therefore, Diez and Mätzner's different approaches do not resemble two different traditions because such traditions are independent from each other, but because each of the two

different kinds of grammar find the morphological vs. the semantic approach most appropriate for its own goals.

A still greater defect of the author's presentation of the traditional approaches to the classification of the parts of speech lies, however, in her implicit assumption that traditional grammar always assumed that their number amounts to eight (namely, in the range of plus or minus two with respect to Miller's "magical number" seven). As has been said at p. 347, above, Sanctius (Francisco Sánchez de las Brozas) in his *Minerva seu de causis linguae latinae* (1587) maintained that the parts of speech are no more than three: Sanctius was possibly influenced by the Arab grammarians, hence his position would not represent a counterexample to Rauh's assumptions, according to which parts of speech (as with any other cognitive category) are "culturally dependent". However, Sanctius' case is by no means unique: as can easily be detected from the detailed histories of grammar during the Modern Age, such as the classic Jellinek (1913-14), or the more recent Padley (1985; 1988), across the centuries several other inventories of parts of speech were proposed which did not fall within the range from five to nine (namely, plus or minus two from the "magical number seven"). The abandonment of the traditional system of eight parts of speech is further witnessed by some linguists of the 19th and 20th centuries. One of them is Jespersen, who lists only five parts of speech (or "word classes"), namely 'substantives', 'adjectives', 'pronouns', 'verbs' and 'particles', with the addition that the first two "may be classed together as «nouns»" (Jespersen 1924: 91).[8] In the English grammatical tradition, one can quote the list of parts of speech in Quirk et al. (1972: 44-45), which contains ten members: the 'demonstrative' (*that*, *this*) is considered a class in itself. In the revised and updated version of this work, the proposed inventory of parts of speech becomes more complex: first, "closed classes" of words are listed, namely 'preposition', 'pronoun', 'determiner', 'conjunction', 'modal verb' and 'primary verb' (*be*, *have*, *do*); then, "open classes", i.e. 'noun', 'adjective', 'full verb' and 'adverb'; finally, "two lesser categories" are added to this list, namely numerals and interjections (cf. Quirk et al. 1985: 67-68). As can be seen, the total of parts of speech would amount to 12. Last but not least, the view of parts of speech held by Hermann Paul should be remembered, who conceives them as a "continuum" (to employ today's terminology): "there are plenty of intermediate steps, by means of which a gradual passage is possible from one class to the other" (Paul 1909: 355, my translation).[9]

These references may appear to be as rather pedantic: after all, the volume which is being reviewed is not a history of grammar, but a work in theoretical linguistics. They are useful, however, to show that

the assumption of an eight part inventory of parts of speech is by no means necessary. And this leads us to the theoretical point we want to touch on, namely the author's view of parts of speech as "cognitive categories", opposed to the real "syntactic categories". As will be remembered, the author maintains that parts of speech are cognitive categories in the sense of Rosch (1978), hence they have a prototypical structure; on the contrary, syntactic categories are "Aristotelian" categories, namely they are defined in terms of necessary and sufficient conditions (which do not apply to "cognitive" categories). In this connection, I would ask two questions. The first one relates to the opposition between "prototypical" and "classical" categories: is it really well-founded? The second one concerns the labeling of parts of speech as "cognitive" categories ("parts of speech not only have a prototypical structure like the cognitive categories investigated by Rosch (…) but are cognitive categories", p. 396): this seems to imply that syntactic categories, unlike parts of speech, are not cognitive categories. But then it could rightly be asked: if they are not cognitive categories, which kind of categories are they?

As far as the first question is concerned, we can observe that the distinction between "prototypical" and "classical" categories does not seem to be as neat as is commonly assumed. In an important study devoted to the relationship of human language and cognition, Reboul (2007: 94) remarks that also the theory of prototypes is actually based on the notion of 'feature' (*trait*): "la ressemblance entre deux objets dépend du plus ou moins grand nombre de propriétés – le terme technique de la théorie du prototype, comme celui d'un bon nombre de théories modernes de la ressemblance, est *trait* – que partagent les deux objets en question". This might suggest a further question, concerning the notion of prototype, namely if it, far from being a new and illuminating one, rather hides an actual difficulty of classification. Such a problem is, of course, too large to be even tentatively answered within the present review: although possibly, the reflections which follow can offer some hints.

I now turn to the second question raised above, namely the status of the notion "cognitive", which the author seems to apply to the parts of speech, but not to syntactic categories in her sense. One can first observe that such a distinction is hardly tenable within a Chomskian perspective: Chomsky has repeatedly stressed that we have not to distinguish between "psychologically real" and "psychologically unreal" linguistic categories and/or theories, but between true and false ones (cf., e.g., Chomsky 1980: 107-109). Of course, Chomsky's position is not shared by everybody: for example, Montague Grammar, Relational

Grammar and HPSG are explicitly disinterested with regard to the "psychological reality" of their constructs, to which they assign a purely formal status. Possibly, Rauh shares such a view: but, in this case, it would have been advisable for her to state as much explicitly. I do not think that this is her real position, however: rather, I think she has in mind something analogous to the distinction between 'ingenuous' (or 'naïve') and 'theoretical' concepts which I argued for in Graffi (1991) and which I briefly restated in my introduction to Graffi (2001). In a nutshell, I maintained that there exist a set of concepts (like 'word', 'sentence', 'word group', etc.) which are independent of any theory, and which were therefore dubbed 'ingenuous', in the etymological sense of "native", "inborn". Each of them can be redefined in a given theoretical framework. For example, the ingenuous concept of 'sentence' has a very different theoretical interpretation, say, in the PPT on the one hand, or in RRG on the other (cf. p. 103 and pp. 366-7 of the volume which is currently being reviewed). I also introduced a further distinction between what I called 'ingenuous concepts$_1$' on the one hand and 'ingenuous concepts$_2$' on the other: while the former ones are ingenuous in the etymological sense defined above, the latter are ingenuous in the sense of the ingenuous (or "naïve") set theory, namely in the sense that they may bring about paradoxes, or, at least, inadequacies. This especially happens when 'ingenuous concepts$_1$' are naively interpreted as theoretical ones. Coming back to Rauh's view of "cognitive" categories, I think that it could be translated into my own terms by saying that she considers both the parts of speech and their inventory as 'ingenuous concepts$_1$', namely as notions that any speaker of any language has at their disposal, like the "cognitive categories structuring the domain of plants" (cf. above): that is to say, they would intuitively recognize that words belong to different categories and, furthermore, that the number of these categories amounts to eight (plus or minus two). My view is different: the only 'ingenuous concept$_1$' is that words belong to different classes, whose number (eight, plus or minus two), however, is no concept of this kind; rather, it is an 'ingenuous concept$_2$', because it assumes as an empirical fact what is nothing more than a theoretical hypothesis, held by many linguists, but not all, and which is not shared by every linguistic tradition. What to do, then, with the traditional inventory of parts of speech reformulated in terms of "prototypical categories" and "continua"? Simply to consider them as more recent versions of 'ingenuous concepts$_2$' and to replace them with more sophisticated approaches, like the analysis of syntactic categories in terms of features. Therefore, the "two fundamentally distinct types of categorization" (see above) on which the

traditional eight ("more or less two") parts of speech, on the one hand, and syntactic categories, on the other, are based, are accounted for not by their different nature ("cognitive" vs. "not cognitive"), but by their different epistemological status: the former classification is a type of 'ingenuous concept$_2$', the second of 'theoretical concept'.

These remarks, however critical, have been made possible only because they have been suggested by Rauh's volume, the interest and the importance of which cannot be denied, both for its theoretical deepening of the notion of syntactic category, and, more generally, for its analysis and adequate assessment of several contemporary theories of syntax.

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Notes

[1]   It could be added that the concept of syntax "as a linear and hierarchical arrangement" was being worked out also by Tesnière more or less in the same years (namely, the 1930s and the 1940s): Tesnière's book, however, was published only posthumously (Tesnière 1959), and therefore the priority of American structuralists can reasonably be assumed.

[2]   One can remark that the most recent theoretical proposals about phrase structure, such as those contained in Chomsky (2008), which involve a radical revision and simplification of X-bar theory, are not dealt with by Rauh. This is possibly due to the fact that such proposals do not actually imply any new syntactic category; a short reference, however, could have been useful.

[3]   It therefore sounds strange when one reads on p. 88: "In the 1981 model, projections are restricted to the head and its complements"; actually, three levels of projection were already assumed from the 1970s (as the author implicitly admits on p. 94).

[4]   Only in this case is it therefore adequate to say that in the 1981 model, projections are restricted to the head and its complements. See the preceding note.

[5]   We list a few passages of the book which need emendation.

–   P. 9, l. 9: Radford (1997) is quoted, but it is not specified if the reference is to Radford (1997a) or to Radford (1997b), both of which are quoted in the final list of references.

–   P. 21 ff.: Diez's *Grammatik der romanischen Sprachen* did not appear between 1836 and 1838, but between 1836 and 1844. Furthermore, it consists of three volumes, not two as indicated in the list of references (p. 407).

–   P. 87, section 5.2.2.: the terms 'c-selection' and 's-selection' are introduced without any explanation. It would be better, at the very least, to use the full forms 'categorial selection' and 'semantic selection', if the intended audience is not limited

to specialists in the PPT. The same remark also applies to the acronym EPP introduced on p. 88 without any indication of its meaning (i.e., 'Extended Projection Principle') and to the term 'converge' (p. 135), whose technical value within the MP is not explained.

— P. 215: J. R. Taylor (2002) and Radden and Dirven (2007) are missing from in the final list of references.

— P. 255, fn. 16: van Langendonck (1995) is missing from in the list of references.

— P. 279, l. 6: the Latin phrase is not *mutatis mutandi*, but *mutatis mutandis*.

— P. 386, ll. 10 to 7 below: "first case" and "second case" have to be interchanged.

— List of references, p. 404, item Bybee, J. and Pagliuca, W. (1987): not "Coruba", but "Carruba".

— Id., p. 405, item Chomsky (1975): the 'Amherst Lectures' are not a reprint of 'Questions of Form and Interpretation', but the mimeographed version of the notes taken by some attendants of Chomsky's lectures at 1974 LSA Summer School, held in Amherst.

— Id., p. 406: the actual places and publisher of Corver & van Riemsdijk (2001) are not The Hague: Mouton, but Berlin: Mouton de Gruyter.

— Finally, "Port Royal" must be hyphenated throughout the volume.

[6]   We wrote "traditionally" since some modern scholars, starting with Di Benedetto (1958-59), but see also Matthews (1994), contest the ascription of the treatise to Dionysius, and maintain that its composition is actually much later, between 3rd and 4th century AD. The author does not discuss this problem, which is essentially irrelevant with respect to her interests and aims. However, some critical remarks have to be made concerning the way in which some of Dionysius Thrax's definitions are rendered: "1. A Noun is a *declinable* part of speech" etc. (p. 17): the original Greek term is *ptōtikón*, namely "inflected for case" (idem for the definition of the article, p. 18). "2. A Verb is an *indeclinable* word" etc. (ibid.): the original Greek term is *áptōtos*, namely "caseless" (actually, the Greek equivalent of 'indeclinable' is *ákliton* [masc. *áklitos*], which occurs in the definition of the adverb, and which is also translated by the author as 'indeclinable'). From these renderings, one could therefore conclude that Dionysius opposed noun and verb by means of the property of declension, while they were actually distinguished by means of those of case (present in nouns, absent in nouns) and of tense (absent in nouns, present in verbs).

[7]   It is also suggested by the author (p. 22, fn. 14) that, since Diez's subdivision of parts of speech into inflecting and non-inflecting ones and the further subdivision of the former class into "those subject to declension and those subject to conjugation is similar to the classification of the parts of speech by Varro (…) there was some influence from this source". It would seem that no grammarian between Varro (I century b.C.) and Diez (XIX century a.D.) had traced such a distinction, which, on the contrary, was quite standard, at least since Priscian (V-VI century a. D.). See, e.g., Priscian (*Institutiones grammaticae*, in Hertz 1855-58, vol. 2, pp. 182-3), who states that nouns, pronouns and participles show distinctions of number, case and gender; verbs and pronouns, distinctions of person and number; verbs and participles, distinctions of tense; while prepositions, adverbs, conjunctions and interjections "do not have any declination".

[8]   One could also add that Jespersen's reclassification of adverbs, prepositions and conjunctions into 'intransitive' and 'transitive' prepositions deserved a place in Rauh's volume, which, as has been said, devotes considerable space to the notion of preposition.

[9]   I quote this work from its fourth and penultimate edition (1909), which is the most directly available to me. It differs from the fifth and last edition (1920) only for some minor details.

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