

## How Modern linguistics can help us to reconstruct the compositional history of Pāṇini's grammar

### 1. The functioning of Pāṇini's *kāra*-device

Generally speaking, *kāra* categories roughly correspond to what today's linguists call *semantic roles* or, to some extent, even to the *macro-roles* (for these notions see Van Valin and Lapolla 1997: chap. 4). The *kāras* are six in number and have essentially semantic definitions, though the most important *kāra*, i.e. the so-called *karṭr* 'agent', could be considered, from a certain point of view, more similar to a syntactic entity, namely the subject, since it is defined as *svatantra* 'the independent one' (for a detailed discussion of possible modern equivalents for Pāṇinian syntactic categories in the light of modern Functionalism see Keidan forthcoming b). Besides the *karṭr*, the other *kāra* categories, listed in the traditional order, are: *apādāna* 'source', *saṃpradāna* 'receiver', *kaṛaṇa* 'instrument', *adhikaraṇa* 'location' and *karman* 'patient'. Each *kāra*, it is taught, has many possible morphological expressions. Interestingly, the finite verbal terminations are considered one such possibility, but we are more interested here in the other possible expression, namely the nominal case-form endings called *vibhakti*. The latter are similar to our grammatical cases, except for the fact that their nomenclature is purely formal and gets rid of any semantic reference. The *vibhakti* terms are based on their serial number within the standard sequence of cases: *prathamā* 'first', *dviṭyā* 'second', *trīṭyā* 'third', *caturthī* 'fourth', *pañcamī* 'fifth', *ṣaṣṭī* 'sixth' and *saptamī* 'seventh', corresponding, respectively, to *nominative*, *accusative*, *instrumental*, *dative*, *ablative*, *genitive* and *locative*. Each *kāra* has a standard or "canonical" *vibhakti* realization: thus, the *karṭr* is taught to be primarily expressed by the instrumental case, the *karman* by the accusative, etc. Notice, however, that, besides a certain privileged status of *kāras*' canonical *vibhakti* realizations, there is no one-to-one relationship between *kāra* roles and the *vibhaktis*: each *kāra* may be expressed by more than one case-form; similarly, each *vibhakti* expresses several semantic functions, not even limited to *kāras*.

Thus, Pāṇini's most brilliant achievement in the field of syntax amounts exactly to this treatment of semantic categories as separate entities with respect to their morphological realization. Such a clear-cut differentiation of the two sides of the language—the plane of forms and the plane of functions—remains unparalleled in any other ancient grammatical tradition, and has been fully attained by western linguistics only in the last few decades, particularly, as far as the sentence arguments realization is concerned, after the formulation of the Deep Case theory by Ch. Fillmore (1968).

However, if we take into account not only the definitions of the *kāra* categories, but also the other rules of this section, where the primary definitions are emended and enlarged, the situation changes: the separation between the forms and the functions becomes far less accurate and rigid. The general tendency in this respect was to identify the *kāras* with their canonical *vibhakti* realization and, eventually, to replace completely the former with the latter. This is what happened, according to Joshi and Roodbergen's (1983) analysis, to the *taddhita* section where the *vibhakti* terms are used as if they were equivalent to the *kāras* 'semantic roles', in order to indicate the semantic constraints on compound formation. In the *taddhita* section even the *vibhakti* terms seem to be disclaimed: instead, inflected pronouns are used in order to denote their own case-form category, and therefore the related semantic role, as a constraint to the application of certain secondary nominal suffixes.

It must be stressed that the abovementioned approaches to one and the same linguistic material—namely, the morphological coding of sentence arguments—are so antithetical as to induce the hypothesis of a possible difference in the authorship. The separation of the forms and the functions represents a revolutionary paradigm change in linguistics that should not be

underestimated. A sudden abdication of this principle must be considered strong evidence for textual interpolation. Thus, my claim is that the present text of the *Aṣṭādhyāyī* is to be analyzed in different theoretical strata put together only in a later period lying between Pāṇini's time and the earliest extant ancient commentary, namely the *Mahābhāṣya* of Patañjali. Indeed, it seems impossible for one and the same author to have adopted so many contradictory positions inside one and the same grammatical treatise.

## 2. Theoretical layers in the syntactic rules of the *Aṣṭādhyāyī*

What follows is a mere listing of the relevant theoretical layers. The listing itself does not imply very much regarding the relative chronology of the corresponding textual strata. However, the succession of the list entries is obviously not random, and could be taken as a preliminary approximation of the historical development of the *Aṣṭādhyāyī*.

The *first* and most “primitive” layer, which can be called the “proto-*kāraka* layer”, corresponds to the *kāraka* terms in their “etymological” or “everyday” meaning. Already the ancient tradition considers them borrowings that Pāṇini inherited from some *pūrvācāryas* ‘preceding authors’ of whom we know little. Genuine Pāṇinian terminology, indeed, is usually made of meaningless marks and abbreviations. The etymological meanings of *kāraka* terms vaguely recall the semantic definition of the relating *kāraḥ*. Hypothetically, in a pre-Pāṇinian period, the *kāraka* terms were conceived as self-explanatory (as similarly the European case nomenclature), and were probably used for both semantic and morphological categories, i.e. semantic roles and grammatical cases, with no clear distinction yet between the two planes of the language.

The *second* layer corresponds to the standard *kāraka/vibhakti* framework. Pāṇini takes the pre-existing *kāraka* terms, gets rid of their “etymological” interpretation, gives them some abstract, clear-cut, but still semantic definitions, and puts them into correlation with *vibhaktis*. The latter are given their “numbering” names, and put into a special section of the grammar where all their uses are listed. Thus, the opposition between semantics and morphology is, for the first time in history, clearly stated and observed (notice that such level of sophistication has been reached by western linguists only in the second half of the 20<sup>th</sup> century).

Let us take as an example the definition of *karṭṛ* ‘agent’ (or ‘actor’, if we accept the view of *kāraḥ* as macro-roles), which is qualified as *svatantra* ‘self-standing, independent’. This definition has generated long-standing debates among traditional Indian grammarians, but could simply be an attempt to provide a more general definition of this semantic role, going beyond the literal meaning of ‘doer’. Only with such a broadened definition could some peripheral semantic roles, such as experiencer (i.e., the one who experiences a feeling), be subsumed into the greater category of the macro-role. The *karṭṛ* is expressed by either *kr̥t* ‘primary suffixes’, such as the suffix *-aka*, or finite verb endings, such as the 3<sup>rd</sup> singular active *-ti*, or some *vibhakti* ‘nominal case-form’, primarily the *tr̥tīyā* ‘third one’, i.e. the instrumental case, but sometimes also by the *ṣaṣṭhī* ‘sixth one’, i.e. the genitive case.

Soon after the establishment of the *kāraka/vibhakti* device the definitions of *kāraka* started to be emended and enlarged, partly because the original general and abstract sense of the primary definitions was not understood anymore. Thus, the degradation of the theory of *kāraḥ* began. Initially this process did not result in a change of the theoretical approach, since the *kāraḥ* were still conceived as semantic categories, not yet fused with morphological ones. However, already Patañjali noticed that such rules were useless, since the additional semantic definitions could be metaphorically deduced from the primary ones. For example, at some point, the ancient commentators disregarded the real sense of Pāṇini's definition of *karman* as *īpsitatama* ‘the most desired’ (which, in its original formulation, was probably intended as

something similar to what modern linguistics calls *undergoer* macro-role). They started to interpret this *sūtra* in its literal sense, thus implying an excessively restrictive characterization of this macro-role. Therefore two *sūtras* were added (1.4.50–51), in order to provide a better definition thereof (it was stated, e.g., that the undergoer happens also to be ‘undesired’). It has been convincingly suggested by Butzenberger (1995) that this interpolation was made under the influence of the *mīmāṃsāka* tradition and its terminology.

The *third* theoretical layer surfaces in those rules where the *kāraka* categories are identified with corresponding canonical *vibhakti* realizations. At the beginning it was only an implicit tendency, and the *kāraka* terms were still in use, though the distinction between semantics and morphology was being blurred. At this stage, given a certain primary semantic definition of a *kāraka*, some rules were added where the semantic definition of a *kāraka* was changed and/or the *kāraka* category assignments underwent a modification depending on a certain case-form governed by some verb that had to be accounted for. On the contrary, within the standard *kāraka/vibhakti* framework, all such cases would have been treated in the *vibhakti* section, simply as alternative expressions of a given *kāraka*.

Let us analyze the *sūtra* 1.4.43 *divaḥ karma ca* as an example. It describes the fact that the verb *div* ‘to gamble’ can optionally code with the accusative—instead of instrumental—the argument corresponding to ‘what is gambled with’. In the view of the standard *kāraka/vibhakti* framework, it would be simply a case of alternative coding of a *kāraka*, to be taught in the *vibhakti* section. According to the commentators, instead, the *sūtra* means that, with the verb *div*, what seems a *karaṇa* may also be optionally classified as *karman*. The implicit reasoning here seems to have been the following. a) The instrument of an action is primarily classified as *karaṇa* by 1.4.42 *sādhakatamaṅ karaṇam*; b) the verb *div* exhibits an argument matching the semantics of the *karaṇa* category; c) the canonical *vibhakti* realization of the *karaṇa* is the instrumental case by 2.3.18 *kartṛkaraṇayos tṛtīyā*; d) the *karaṇa* argument of the verb in question, however, may also be coded by the accusative; e) the accusative case is taught to be the canonical realization of another *kāraka* category, namely *karman* by 2.3.2 *karmaṇi dvitīyā*; f) ergo, the semantics of an instrumental argument must be classified, limited to the verb *div*, as belonging to the category of *karman* instead of *karaṇa*. In other words, according to this new approach, whatever stands in the accusative case-form must be automatically considered a *karman*. Therefore, the privileged one-to-one relationship between a *kāraka* and its canonical realization brought about a complete fusion of these two planes of the language.

It may be noted that many of the *sūtras* pertaining to this theoretical layer also exhibit some of the features listed at §2 above that substantiate their interpolated origin. Thus, exactly half of them are not mentioned in Patañjali’s *Mahābhāṣya*. The *sūtra* 1.4.38 uses a non-standard terminology: only here the term *upasṛṣṭa* is used to denote a ‘prefixed verb’ (Sharma 1990: 249). *Sūtras* 1.4.34, 1.4.39 and 1.4.40 rely completely on otherwise unattested verbal meanings.

The *fourth* layer is the one to be found in the sections devoted to *samāsa* ‘compounding’, and in some other rules, where the *kāraka/vibhakti* distinction seems to be completely abandoned. While *kārakas* are not mentioned at all, the *vibhakti* terms are used here in order to express semantic functions totally undistinguishable from the corresponding morphological classes. Effectively, every *kāraka* is indicated by its canonical *vibhakti* realization. The *vibhakti* terms are used as such, or in composition with the word *arthe* ‘in the meaning of’. Thus, the *sūtra* 2.1.37 *pañcamī bhayena* teaches the formation of compounds whose first member is intended in the sense conveyed by the *pañcamī* ‘fifth case’ (i.e. ablative), hence the *apādāna* ‘source’ semantic role (e.g. *caurabhayam* ‘fear of thieves’).

The *fifth* layer is the one attested in the *taddhita* section as well as in some of the *paribhaṣūtras* ‘meta-rules’ of the grammar. Here, even the *vibhakti* terms are no longer in use. In order to refer to both semantic roles and case categories inflected pronouns are used: they indicate “iconically” their own case category, which, in its turn, refers to the corresponding semantic role (as in the preceding layer). A good example is that of the *paribhaṣūtras* defining the metalinguistic case-forms. Thus, *sūtra* 1.1.67 *tasmād ity uttarasya* defines the “left context ablative” (referred to as *tasmād* ‘from that’); *sūtra* 1.1.66 *tasminn iti nirdiṣṭe pūrvasya* defines the “right context locative” (referred to as *tasmin* ‘in that’).

Interestingly, this layer is paralleled in the western grammatical tradition. Inflected indicative or interrogative pronouns symbolizing the corresponding case-forms have been used as a descriptive and didactic means starting from Ancient Greek and Latin grammarians (see Belardi, Cipriano 1990: chap. III), up to modern times. Even today, the case-forms are sometimes taught as “answers” to some “questions”, which the pupils are supposed to know by heart. Thus, B. Liebich (1886: 209, 215) glossed the *kāraka* categories precisely in this way: «Das *karman* antwortet daher auf die fragen ‘wen’ oder ‘was’ und bei der bewegung auf die frage ‘wohin’»; «Das *sampradāna* antwortet daher auf die fragen ‘wem’ oder ‘für wen’», etc.

Regarding the post-Pāṇinian developments, it must be noted that the idea of a radical *kāraka/vibhakti* distinction was often partly or completely disregarded within the grammatical schools which arose outside the strictly Pāṇinian tradition (see Butzenberger 1995: 54). For instance, in Candragomin’s grammar, the *vibhakti* categories and terminology prevailed for both morphology and semantics (as in our fourth layer). On the other hand, in the *Kātantra* tradition a more etymological interpretation of *kāraka* terms was restored (similarly to our first layer). For example, the *karman* is defined here by the *sūtra* 2.4.13 *yat kriyate tat karma* ‘what is being done that is *karman*’ (since the latter is a passive formation from the root *kr* ‘to do’). Eventually, an intelligent synthesis of Pāṇini’s *kāraka/vibhakti* device is to be found in the *Saddanīti*, an indigenous grammar of Pāli. Thus, the *sūtra* 551 defines the patient role as follows: *yaṃ kurute yaṃ vā passati taṃ kammaṃ* ‘what is done or seen is *karman*’. Here, the semantic definition of this meta-role is “demystified”, resulting simply in a summation of its most frequent components: the patient and the so-called *stimulus* (something that is perceived by our senses).

The question of authorship may arise regarding the different theoretical layers listed above. It must be noted that their theoretical “quality” is varying: the second layer seems to be the most complex and sophisticated, while the subsequent ones represent a continuous degradation of the original theory. So where should we collocate Pāṇini in this respect? Since we do not know much about Pāṇini’s dates (which is still an open question, notwithstanding all the hypotheses thus far proposed in this regard, see the “Introduction” chapter to Joshi, Roodbergen 1976), I feel justified in arbitrarily identifying his authorship with the abovementioned second theoretical layer, as homage to the great prestige Pāṇini has had through many centuries in Indian grammatical thought.

### **3. Possible causes of the interpolations**

A grammar can change mainly for two reasons: the evolution of the language that it describes, or the evolution of the theoretical ideas regarding the description itself. Both these circumstances may have appeared in the case under consideration.

Thus, on the one hand, the passage from the first to the second layer, when the *kāraka/vibhakti* framework had been established presumably by Pāṇini, represented a revolutionary advance in the description. The subsequent layers might be at least partly explainable by an increasing misunderstanding of Pāṇini’s original ideas (already starting, for

instance, with the supplementary semantic qualifications added to the second layer in order to clarify some *kāraka* definitions that no longer appeared intelligible).

On the other hand, the evolution of some important facts of language may also have played a role. Some grammatical phenomena that could be inexistent or excessively peripheral and therefore irrelevant in Pāṇini's time, became more pertinent in the subsequent periods. One such feature that strongly challenged the standard *kāraka/vibhakti* device was the rise in Sanskrit of many subject-related phenomena, namely voice transformations and valency derivation. Now, an explicit delineation of the grammatical relations is completely lacking in the original *kāraka* theory. However, the subsequent theoretical layers within the *Aṣṭādhyāyī*, and even more some theories of ancient commentators, went clearly in the direction of a gradual and tacit rejection of the semantic-based *kāraka* category in favour of a more syntacto-centric categorization similar, though not identical, to that of the grammatical relations (for a detailed account of how voice and derivation phenomena can explain grammarians' theory of the "agentness" of all *kāra*kas see Keidan forthcoming a). Furthermore, the later origin of the *taddhita* and *samāsa* sections of the *Aṣṭādhyāyī*, claimed by Joshi and Roodbergen (1983), may be substantiated if we think of the increasing importance assumed by compounding and secondary affixation in Late—i.e. post-Vedic—Sanskrit.

#### 4. Concluding remarks

As pointed out by A. A. Zaliznjak (2007), the linguistic evidence can easily be underestimated or disregarded by non-specialists in the field of linguistics. Indeed, the hypotheses I suggest in the present paper might seem unpersuasive to many traditional indologists and specialists in Pāṇini's grammar (as Cardona's critique against Joshi and Roodbergen's hypothesis shows). However, no linguist would deny that the distinction between semantic roles and case-form categories is such a revolutionary approach that a "backwards trip" would be virtually unimaginable for one and the same author. Therefore, I think that a theoretical stratification inside the received *Aṣṭādhyāyī* must be considered, unless a possible critical edition of its text, based on the collation of the extant manuscripts, would disallow such a hypothesis.

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