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THE KĀRAKA-VIBHAKTI DEVICE AS A HEURISTIC TOOL FOR THE COMPOSITIONAL HISTORY OF PĀṆINI'S AṢṬĀDHYĀYĪ

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This paper discusses the possibility of textual stratifications in Pāṇini's *Aṣṭādhyāyī*. I have considered some theoretical inconsistencies found in the grammar as strongly discriminating features in this respect. Particularly, the way in which semantics and morphology of the predicate arguments are treated varies remarkably throughout the grammar, ranging from a fairly sophisticated system of *kārakas* (proven to be equivalent to semantic macro-roles nowadays) vs. *vibhaktis* (case-form categories), to the simple inflected pronouns used in order to symbolize their own case-form category. On this ground a hypothetical reconstruction of the compositional history of Pāṇini's *Aṣṭādhyāyī* is proposed.

1. PĀṆINI'S KĀRAKA-VIBHAKTI DEVICE AND ITS SIGNIFICANCE

ONE of the most interesting, insightful and striking achievements of the Ancient Indian grammatical tradition (named *pāṇiniya vyākaraṇa* 'grammar of Pāṇini' after its semi-legendary founder) is the theory of *kārakas* and *vibhaktis*, i.e. an analytic device for the syntactic and semantic description of the simple sentence. Pāṇini's approach anticipated some of the contemporary linguistic theories. Specifically, his *kāraka-vibhakti* device was paralleled in the West only a few decades ago, when L. Tesnière's (1959) theory of actancy and Ch. Fillmore's (1968) Deep Case theory appeared. Moreover, Pāṇini's attempt to hold apart forms and functions in the language analysis is even more consistent and complete than what is to be found in many modern approaches.¹ Particularly, the term *kāraka* refers to the semantic content (or *function*), more precisely the semantic role of a verbal argument, while *vibhakti* corresponds to the morphological *form* of this argument. The *kārakas* are given some abstract semantically grounded definitions; on the other hand, morphology is considered by Pāṇini in a purely formal way. Case-forms *per se* do not have any functional definition and are introduced as a means of expression of general semantic categories. The two planes of language are correlated by grammatical rules which are stated explicitly by Pāṇini. The *kāraka/vibhakti* distinction is what makes Pāṇini's grammar so powerful, not

¹ This is especially true in the case of the Generative grammar. From Chomsky's (1957) seminal work up to his later publications he always aimed at describing the grammar on the ground of formal structures only, while considering the semantic content fully inferable from syntax.

only as a means of description of Sanskrit, but even as a possible framework for a cross-linguistic analysis. It is not by chance that this device has been successfully used for the description of some very different languages, including those with the ergative alignment.²

The basic semantic definitions of *kāraka* categories are provided in what I shall call the “definitional *sūtras*” of the *Aṣṭādhyāyī*. Each of them is followed by a number of rules containing additional, loosely defined characterizations of the main *kārakas*. Such rules will be termed “exceptional *sūtras*”. Then, in different sections of the grammar, it is taught how these semantic categories can be expressed by morphological means, for instance: verbal endings, primary and secondary derivative suffixes, compounding and nominal case-forms. The latter are our concern here and can be found in the “case-form *sūtras*”.

In the present paper I wish to show that there is a strong theoretical disparity between the definitional rules of the *kāraka* section of the *Aṣṭādhyāyī* and a great number of remaining rules of the grammar, from the exceptional *sūtras* to some sections where semantics of the verbal arguments is treated directly or quoted indirectly. In my opinion, this disparity should not be underestimated. The brilliant mind that invented the *kāraka* / *vibhakti* distinction would never put a highly sophisticated description system of syntax alongside far less insightful and totally inconsistent passages relating to the same topic. In my opinion this discrepancy can be used as a clue for the isolation of interpolated passages in the text of *Aṣṭādhyāyī*, which is the ultimate goal of the present discussion.

The approach that I am adopting has been termed “secondary textual criticism” by Aklujkar (1983), the “primary” one being the critical edition of the *Aṣṭādhyāyī*, based on the extant manuscripts. The secondary textual criticism consists in postulating hypotheses regarding the compositional history of an ancient text on the ground of some extra-textual characteristics, instead of what emerges from the textual edition thereof (which, in our case, is wholly absent).³ In this way, I am obviously distrustful of the dogma of the “textual integrity” of the *Aṣṭādhyāyī*, which is very widespread among Pāṇinian scholars and goes back to ancient times. According to this traditionalist point of view, Pāṇini’s grammar is also considered perfect in its structure, with no contradictory rules or other inconsistencies, with no interpolated passages at

² Grammars of Tibetan and Kashmiri (two ergative languages) based on – or at least inspired by – Pāṇini’s framework are well known, see HOOK 1984, VERHAGEN 2001, KAUL & AKLUJKAR 2008. Similarly, FRANKE 1890 demonstrates the applicability of the *kāraka* device to Aśokan Prakrits. This while the traditional (i.e., pre-functional) European approach failed completely in describing the ergative typology.

³ A critical edition of the *Aṣṭādhyāyī*, based on the comparison of different manuscripts, is still a desideratum: almost no significant step in this direction has been made since Kielhorn (1887: 178) explored such a lack. However, there is currently a team of scholars working on the critical edition of the *Kāśīkāvṛtti* (i.e. the most ancient indigenous commented redaction of Pāṇini’s grammar in its entirety). Some preliminary results are illustrated in HAAG & VERGIANI 2010.

all, and is also supposed to have been transmitted perfectly – first orally and only later in written form – from the author’s original version up to the present day.⁴

Until now, only a few scholars have seriously attempted to question this dogmatic approach. I should like to cite here the following papers: BIRWÉ 1955; 1966 where some general philological criteria for the identification of interpolations in the *Aṣṭādhyāyī* are suggested; a proposal of BAHULIKAR 1972 involving the *kāraka* section; a more recent attempt to suggest the interpolation criteria and to reconstruct the compositional history of some parts of the grammar made by JOSHI & ROODBERGEN 1983; finally a hypothesis of BUTZENBERGER 1995 suggesting the spurious nature of some of the *kāraka* definitions. For my part, I intend to investigate the compositional history of the *sūtras* belonging to the thematic section of *kāra*kas (headed by s. 1.4.23 *kārake* and going up to s. 1.4.55). As a general principle, I have considered the text of the *Aṣṭādhyāyī* as the only relevant data, dispensing with all later commentaries (cf. BAHULIKAR 1973: 80). I am also tacitly following the heuristic criteria proposed by the abovementioned scholars, the most important clue being the theoretical inconsistency of a passage with regard to the rest of the grammar (particularly well argued in JOSHI & ROODBERGEN 1983).

2. CLASSIFICATION OF THE RELEVANT SŪTRAS

In this section I propose a formal classification of the “syntactic” *sūtras* of the *Aṣṭādhyāyī*. In fact, differences in the functioning of the *sūtras* often correlate with variations in their shape and composition. The first group of *sūtras* to be analysed is that of the definitional rules. The *kāraka* categories are six in number, and have the following names: *apādāna* ‘source’, *saṃpradāna* ‘receiver’, *kaṛaṇa* ‘instrument’, *adhikaraṇa* ‘location’, *karman* ‘patient’ and *kartr* ‘agent’ (this is the order in which they are introduced in the grammar). As I shall argue further (see Section 5), *kāra*kas are quite similar to modern semantic (macro)roles, the names of which I consequently use in order to translate *kāra*kas’ names.

The definitional *sūtras* have the following structure: (a) first of all a semantic definition, based on a linguistic representation of a real-world scene, is presented; (b) then, a prototypical participant is individuated; (c) at the end, a *kāraka* category is assigned to this prototype. According to this analysis, the six definitions of the *kāra*kas can be presented in tabular form:⁵

⁴ Cardona (1976: 158) sums up very clearly this way of thinking: “[...] the researcher should be intent not on finding an interpolation in every case where there is an apparent conflict but on studying carefully all such apparent anomalies and trying to reconcile them with the whole of the *Aṣṭādhyāyī*, this while taking into consideration what is said in the commentatorial literature”.

⁵ Note that the columns “real-world scene”, “prototype” and “category” translate fully the definitional *sūtras* given in the column “text”; a copular verb, as always in Pāṇini, is understood before the *kāraka* term.

<i>SŪTRA</i>	TEXT	REAL-WORLD SCENE	PROTOTYPE	CATEGORY
1.4.24	<i>dhruvam apāye</i> 'pādānam	<i>apāye</i> 'during the movement away'	<i>dhruvam</i> 'what is fixed'	<i>apādāna</i>
1.4.32	<i>karmaṇā yam abhipraiti sa saṃpradānam</i>	<i>karmaṇā ... abhipraiti</i> 'whom someone wants to reach through the <i>karman</i> '	<i>yam ... sa</i> 'the one ... whom'	<i>saṃpradāna</i>
1.4.42	<i>sādhakatamaṅ karaṇam</i>	[lacking]	<i>sādhakatamam</i> 'the most effective means'	<i>karaṇa</i>
1.4.45	<i>ādhāro 'dhikaraṇam</i>	[lacking]	<i>ādhāraḥ</i> 'place'	<i>adhikaraṇa</i>
1.4.49	<i>kartur īpsitatamaṅ karma</i>	[lacking]	<i>kartur īpsitatamam</i> 'the most desired by the <i>kartṛ</i> '	<i>karman</i>
1.4.54	<i>svatantraḥ kartā</i>	[lacking]	<i>svatantraḥ</i> 'the autonomous one'	<i>kartṛ</i>

TABLE 1.

The three constituent parts mentioned so far, though not present in all of the definitional rules, are nonetheless necessary in order to explain the structure of the other *sūtras* of the *kāraka* section, i.e. the exceptional rules, which are formally quite rigid as well. Their structure can be better defined if we clarify what is meant by “exception” in this context.

The exceptional rules – for reasons that will be discussed further – prescribe a modification of the basic *kārakas*' definitions in at least one of their constituent parts, i.e. either the real-world scene or the prototypical participant or, otherwise, the *kāraka* category assignment.

Most of the exceptional rules are activated by a “trigger”, i.e. they are considered valid only under a certain condition. There can also be no trigger at all (which means that such an exception is universally valid), as well as more than one trigger. Particularly, a singular verb can call for the exception; a prefix being added to a verb can also entail the exception; finally, an entire semantic class of verbs can imply the exception.

Taking into consideration all of the features mentioned so far, the exceptional *sūtras* can be classed into three types: (a) zero triggered rules that change the semantic definition of *kāraka* and/or the prototypical participant,

but leave unchanged the *kāra* assignment; (b) same as the preceding type, but with an explicit trigger; (c) rules that modify the *kāra* category assignment, always provided with an explicit trigger. These three types are summarized in TABLE 2. The *sūtra* numbers in the last column are stripped of the initial “1.4” signature:

	DEFINITION	KĀRAKA ASSIGNMENT	TRIGGER	SŪTRAS
Type a	changed	unchanged	zero	28, 29, 50, 51
Type b	changed	unchanged	prefix, verb or semantic class	25, 26, 27, 30, 31, 33, 34, 35, 36, 37, 39, 40, 41, 52, 53
Type c	unchanged	changed	prefix or verb	38, 43, 44, 46, 47, 48, 55

TABLE 2.

Eventually we come to the case-form rules (ss. 2.3.1-2.3.72). They prescribe the usages of *vibhaktis* ‘case-form categories’ in order to express either *kāra* relations, or other semantic content. Unlike European “symbolic” case terminology, Pāṇini’s *vibhaktis* are named by terms deriving from their ordinal number in the traditional case listing. Thus, *prathamā* ‘first’, *dvītiyā* ‘second’, *ṭṛtīyā* ‘third’, *caturthī* ‘fourth’, *pañcamī* ‘fifth’, *ṣaṣṭī* ‘sixth’ and *saptamī* ‘seventh’ stand for what the European tradition calls, respectively, nominative, accusative, instrumental, dative, ablative, genitive and locative. The case-form rules can be grouped into classes according to the type of semantic function they prescribe, namely: (a) there are six rules defining what is nowadays called the “canonical realization” of each *kāra*, i.e. a case-form that would express a certain *kāra* role as a default choice; (b) a number of rules prescribe alternative case-form markings for some *kāras* (often governed by a verb or a verbal class); (c) rules that prescribe the use of the case-forms to express semantic relations between the verb and its arguments that are not captured by any of the *kāra* categories; (d) rules devoted to the so-called *upapadavibhakti*, i.e. case-forms governed by nominals instead of verbs; and finally (e) rules describing the formation of indeclinable adverbials from some “frozen” nominal inflected forms.

Note that the groups of *sūtras* that have been delineated so far are distinguished also by some other features, notably of a philological and textual nature; for a detailed discussion see Keidan (forthcoming). With this formal grouping⁶ in mind we can now continue our discussion of the interpolation hypothesis of the *kāra* section.

⁶ This is not an unprecedented approach. A similar, though far more traditionalist, classification of the *kārasūtras* is suggested in SINGH 1974, and – in a more evolved and formalistic version – in the same author’s book of 2001 (especially chap. 3).

3. SOME PĀṆINIAN THEORY

The *kāraka* categories and the morphological elements coding them are not linked by a one-to-one correspondence. This means that *kāra*kas can be expressed in more than one way (i.e., by different case-forms, besides other morphological means), and, conversely, the *vibhaktis* can serve more than one function and are completely neutral in this respect. Each *kāraka* relates to one case-form as its canonical realization, but can also have a certain number of alternative realizations, some of which can be triggered (or *governed*, in modern terms) by certain verbs or verbal classes.⁷

In order to exemplify Pāṇini's syntactic analysis we could start from the following Sanskrit simple sentence:

- 1) *Devadattaḥ* *kaṭam* *karoti*.
 Devadatta-NOM.SG mat-ACC.SG make-3SG
 'Devadatta makes a mat'.

Let us analyse the word *kaṭam* 'mat' and see how the *kāraka-vibhakti* device works. The reasoning of a Pāṇinian grammarian would be as follows. The word in question can be qualified as 'what the doer of the action mostly desires', thus matching perfectly the basic semantic definition of the semantic category of *karman* 'patient' as presented in s. 1.4.49. Therefore, it is to be considered the *karman* of this sentence. How could it be expressed, generally speaking? Among the morphological means at our disposal in this sentence, we could opt for either a verbal ending (as a default choice), or a nominal ending (as a last resort choice).⁸ However, the active present singular 3rd person ending *-ti* attested here is already used to express the *karṭṛ* 'agent'. Thus, the *karman* results, in Pāṇini's terms, *anabhihita* 'not expressed by a verbal affix', and then the nominal expressing is selected. The rule 2.3.2 *karmaṇi dvitīyā* prescribes the 'second case', i.e., accusative, in order to express a *karman* in such a situation. And this is how the form *kaṭam* is obtained.

Alternatively, it is possible to express the *karman* with the 'sixth case' (i.e., genitive), provided that it is governed by a past participle or other deverbal formations generally termed as *kr̥t*, as prescribed by the rule 2.3.65 *karṭṛkarmaṇoḥ kr̥ti*. Thus, we could obtain a sentence like this:

- 2) *Devadattaḥ* *kaṭasya* *kartā*.
 Devadatta-NOM.SG mat-GEN.SG maker-NOM.SG
 'Devadatta is the maker of the mat'.

⁷ See CARDONA 1974 for a detailed presentation of the traditional theory of the *kāraka-vibhakti* device.

⁸ Cf. s. 3.4.69 *laḥ karmaṇi ca bhāve cākarmakebhyaḥ* 'Verbal endings express the patient [besides the agent], and also the action [per se] in case of intransitives'. A modern linguist may find unusual a verbal ending "expressing" a semantic role; still, this is a typically Pāṇinian way of reasoning, which cannot be further dealt with here due to a lack of space.

Optionally, also the “third case” (i.e., instrumental) can be used in order to express the *karman*, if it is governed by the verb *saṃjñā* ‘to recognize’ (as prescribed by s. 2.3.22 *saṃjñāḥ anyatarasyām karmaṇi*), cf. (3b):

- 3) a. *Pitraṃ saṃjānīte.*
 father-ACC.SG recognize-MID.3SG
 ‘He recognizes his father’.
 b. *Pitrā saṃjānīte.*
 father-INSTR.SG recognize-MID.3SG
 ‘He recognizes his father’.

What we observe here is a “one-*kāra*ka-to-many-*vibhaktis*” relation: one and the same *kāra*ka category has a canonical realization and also some alternative expressions. But obviously also the opposite is true, since each case termination can express many other things besides a certain *kāra*ka role (“one-*vibhakti*-to-many-functions”).

But a different situation is still possible, if we take into consideration the additional characterizations of *kāra*kas provided in the exceptional *sū*trās. For example, the argument defined as ‘the most effective means’ is normally classified as *karaṇa* ‘instrument’ and coded by the instrumental case, cf. (4a). However, it can also be classified as *karman* ‘patient’, provided that the governing verb is *div* ‘to gamble’ (as prescribed by s. 1.4.43 *divaḥ karma ca*); it should be, consequently, marked by the accusative instead of the instrumental case, see (4b):

- 4) a. *Akṣair dīvyate.*
 dice-INSTR.PL play-3SG
 ‘He plays with dice’.
 b. *Aksān dīvyate.*
 dice-C.PL play-3SG
 ‘He plays with dice’.

Note that this case is only apparently similar to the preceding one and differs in the fact that the modification of the case-form assignment is treated in the definitional section instead of the case-form section of the grammar.

4. SOME AMBIGUITIES IN THE KĀRAKA SYSTEM

The primary definitions of *kāra*kas are purely semantic in nature. Contrariwise, the additional characterizations of *kāra*kas in the exceptional *sū*trās are more ambiguous as for the form vs. function distinction. Not only do they emend and/or enlarge the basic definitions of *kāra*kas from a semantic point of view (for instance, when some semantic content appears not to be fitting with any of the basic definitions), but they can also modify the *kāra*ka category assignment to a given semantic prototype (in presence of certain trig-

gers). This may be confusing. Ideally, it would have been more appropriate to treat many such cases in the *vibhakti* section rather than in the definitional section. Indeed, it is more logical to prescribe some alternative coding of the basic *kāraka* categories governed by certain verbs within the *vibhakti* section rather than to artificially manipulate *kāraka* definitions in order to include such instances of verbal case government. The alternative prescriptions of this kind are effectively attested in the *vibhakti* section (e.g. s. 2.3.51 which prescribes the genitive – instead of the instrumental – to express *karāṇa* ‘instrument’ in certain circumstances).

All this makes the category of *kāraka*, as it results from the summation of definitional and exceptional rules, a semantically non-prime and ambiguous notion. However, if we distinguish clearly between the three types of exceptional rules as I defined them before (see TABLE 2) the whole picture becomes less confusing. The rules of type *a* (i.e. real-world scene changed, no trigger) enlarge and emend the basic definitions of the *kāra*kas with additional semantic characterizations. This may have become necessary because of two different factors: (a) *kāra*kas are limited in number and randomly chosen among all the possible semantic characterizations, so that many semantic nuances are completely left out of the categorization; (b) the basic definitions of the *kāra*kas may have been considered excessively ambiguous: it is not always obvious which *kāraka* category applies to a certain concrete real-world situation. The exceptional rules 1.4.28-29 offer one such example of disambiguation. Here, additional semantic characterization is provided to the category of *apādāna* ‘source’. The new semantics consists mainly in a more abstract – i.e. non-physical – interpretation of the concrete notion of ‘source’ defined simply as ‘what is fixed during the movement away’ in the definitional *sūtra* 1.4.24.

The underlying logic that led to the creation of the exceptional rules of type *b* (i.e. real-world scene changed, a trigger is attested) was probably the following. Given a certain verbal argument marked by a certain *vibhakti*, the definition of that *kāraka* was emended of which the canonical realization corresponded to this same *vibhakti*. Let us look at the exceptional rule 1.4.26 (*parājer asoḍhaḥ*) as an example.

- This rule emends the definition of the *apādāna* ‘source’ normally characterized as ‘the fixed entity involved in a movement away’ (see s. 1.4.24 *dhruvam apāye ’pādānam*).
- Neither the *apādāna*, nor any other *kāraka*, however, seems appropriate to classify the concept of *asoḍha* ‘unbearable’.
- Still, something ‘unbearable’ is governed by the verb *parāji* ‘to be overcome by’ as its semantic argument and is put into ablative case-form.
- In its turn, the ablative case-form is prescribed as the canonical realization of the *apādāna* category (see s. 2.3.28 *apādāne pañcamī*).
- Therefore, a new rule (namely, the one which is taught in s. 1.4.26) is to be formulated, extending the definition of the *apādāna* in order to include the semantics of the ablative-coded argument of the verb *parāji*.

In brief, a particular verbal argument marking results in an emendation of the *kāraka* definition. In other words, a formal category, namely, a *kāraka* expressing case-ending, becomes theoretically pre-eminent over the semantic category.

However, a real paradigm change (with respect to the basic definitions and the exceptions of types *a* and *b*) is represented by the exceptional rules of type *c* (i.e. real-world scene unchanged, *kāraka* assignment changed). Here, the *kāraka* category assignment itself undergoes modification, in order to accommodate some particular verbal argument marking. This amounts to a complete identification of *kāra*kas with their canonical *vibhaktis*: a non-canonical case-form is accounted for by changing the *kāraka* category that is assigned to the argument involved. This implies that one and the same semantic definition turns out to fit more than one *kāraka* category. With such an approach the semantic nature of the *kāraka* category and the brilliant form *vs.* function distinction of Pāṇini's are totally disrupted. Let us analyse the exceptional s. 1.4.43 (*divaḥ karma ca*) as an example. The implicit reasoning here seems to have been the following:

- The 'most effective means' involved in an action is primarily classified as *karaṇa* (see s. 1.4.42 *sādhakatamaṅ karaṇam*).
- The verb *div* 'to gamble' exhibits an argument that matches the semantic definition of *karaṇa*.
- However, this argument is often coded with the accusative, while the canonical realization of the *karaṇa* is represented by the instrumental (as prescribed in s. 2.3.18 *kartṛkaraṇayos tṛtiyā*).
- On the other hand, the accusative case-form is taught to be the canonical realization of another *kāraka* category, namely *karman* 'patient' (see s. 2.3.2 *karmaṇi dvitīyā*).
- It is then supposed that everything that is marked by the accusative must belong to the category of *karman*.
- Therefore, an exceptional rule is introduced (namely the one we are concerned with) in which the semantics of *karaṇa* is optionally classified as belonging to the *karman* category only in presence of the verb *div* 'to gamble'.

In brief, a particular verbal argument marking results, here, in a modification of the *kāraka* category assignment. Still, according to Pāṇini's *kāraka-vibhakti* device, such cases as that of the verb *div* should be normally treated in the case-form section and should not modify the *kāra*kas' basic definitions.

Interestingly, already the ancient grammarians felt uncomfortable with such a radical paradigm change. As an explanation, they claimed that the change in the *kāraka* category assignment (for instance, from *karaṇa* 'instrument' to *karman* 'patient') is necessary in order to account for the passive transformation of the verb involved. See the following example:

- 5) *Akṣāś* *caurair* *dīvyante*.
 dice-NOM.PL thief-INSTR.PL play-PASS-3PL
 ‘The dice are played with by the thieves’.

Here, we have a nominative and an instrumental case-form, and also a verbal termination, as potential expressions of *kāraka* categories. On the other hand, there seems to be a *kartṛ* (thieves), and a *karaṇa* (dice) involved in the action. Now, the nominative usually does not express any *kāraka* role at all, the verbal endings can express either *kartṛ* or *karman*, while the instrumental expresses either *kartṛ* or *karaṇa*. If the verbal ending here expressed the *kartṛ*, then the word *caurair* ‘by the thieves’ would express the *karaṇa*, which is ontologically unfitting (the thieves are agents, not instruments). Therefore, the instrumental case-form cannot express anything but *kartṛ*, while the verbal ending must express *karman*. So, the semantic characterization ‘the most effective means’ has to be reclassified here as *karman* (s. 1.4.43), instead of *karaṇa* (s. 1.4.42), because otherwise the *kāraka*-analysis of the passive sentence would be problematic.

This argumentation would be convincing if the change of the *kāraka* category assignment were always targeted to *karman*. However, this is not the case. E.g., in s. 1.4.44 an original *karaṇa* ‘instrument’ is changed into the *saṁpradāna* ‘receiver’, which is neither involved in the passive transformation, nor can be expressed by a verbal ending. Therefore, this seems more like an *ad hoc* solution rather than a generally valid explanation.

5. MODERN INTERPRETATION OF KĀRAKAS

The ambiguous nature of the *kāraka* category has made the contemporary reception and interpretation of Pāṇini’s system and terminology quite problematic. Different approaches are attested in this respect. Some decades ago, several scholars suggested interpretations of *kāraḥ* as semantic categories. Fillmore’s (1968) Deep Case theory, soon after its formulation, was proposed as the modern analogue of the *kāraka* device (see ANANTHANARAYANA 1970). In fact, the similarity appeared to be quite striking, notwithstanding some secondary technicalities that prevented this identification from being a perfect match. The Fillmorian interpretation of *kāraḥ* has, since then, been tacitly accepted by many scholars as the ultimate solution of the problem, with no need of further investigation (see VERHAGEN 2001: 278, to cite a recent author). On the other side, more traditionally oriented scholars have defended the view of *kāraḥ* as a kind of “intermediate” notion bridging semantics and syntax (see CARDONA 1974; cf. VERHAGEN 2001: 278-280). Such an approach is the closest one to the ancient Indian point of view, since it tries to explain the *kāraḥ* as a whole, taking into account both the primary definitions and the exceptional rules. But for this same reason it is quite uninfor-

mative, since the conclusion is easily inferred that *kāra*kas are totally unparalleled by any modern linguistic category.

In the present paper I shall analyse Pāṇini's theory under the viewpoint of a more refined Functionalist approach, which ultimately goes back to the ideas of Fillmore, among others, but evolved since the 70's towards a far more sophisticated analytical tool, with more subtle categorization of the grammatical elements compared to the Fillmorean Deep Cases.⁹ I suggest that such a methodology allows us to define the contemporary equivalent of *kāra*kas in a more appropriate and convincing way. My second assumption consists in the idea that the *kāra*kas as they result from the basic definitions must be treated separately from what is implied by the exceptional rules (the different types of which are to be treated apart as well). Only with such a separate analysis can the vagueness of Cardona's "semantico-syntactic categories" be avoided.

As a working hypothesis, I assume *kāra*kas, according to their basic definitions, to be akin to our current notion of semantic role. However, some features of *kāra*kas must be taken into consideration before we can accept such an equivalence. First of all, *kāra*kas are abstract notions and not properties of concrete entities, as is already explained in Patañjali's glosses 36-39 on s. 2.3.1. The basic definitions of *kāra*kas are indeed highly abstract and general. Furthermore, Pāṇini defined only six *kāra*ka categories, and this, eventually, turned out to be the main difficulty that the commentators had to face. The semantic roles, on the other hand, are usually thought of as an open list, with some "core" categories (such as agent, patient, beneficiary, experiencer, stimulus), attested in all languages, and some more peripheral ones, which are less universal and can be ignored in a general approach (see VAN VALIN & LAPOLLA 1997: 85-86).

Moreover, Pāṇini does not clearly distinguish between the individual valencies of a verb, and abstract classes of semantically similar valencies, i.e. what properly defines a semantic role in modern linguistics. He also does not distinguish between the abstract valency structure of a predicate as a lexicon entry, and concrete arguments of a predicate in a real sentence. The notion of syntactic valencies (i.e. classes of sentential arguments, forming the syntactic pattern of the predicate) is also completely lacking in Pāṇini. Similarly, no distinction between arguments (or actants, i.e. obligatory sentential constituents semantically required by the predicate) and adjuncts (or circumstantials, i.e. freely added sentential constituents) is being made. In fact, it seems that all six *kāra*kas can be governed by every verb. All these categories are summarized in TABLE 3. We can conclude that the notion of *kāra*ka corresponds to a somewhat indeterminate area covering almost completely the categories mentioned in this table, without any internal distinction.

⁹ With "Functionalism" I loosely mean here such theories as those supported by DIK 1997, VAN VALIN & LAPOLLA 1997, LAZARD 1994, and several other scholars.

	SINGLE VERB PROPERTIES	GENERAL CLASSES
Lexicon:	valencies	semantic roles
Sentence:	arguments (actants)	syntactic valencies
Non obligatory:	adjuncts (circumstantials)	

TABLE 3.

Furthermore, limited to the most important *kāra*kas, i.e. *karṭṛ* ‘agent’ and *karman* ‘patient’, an equivalency with the so-called macroroles (which are now defined as grammatically relevant generalizations across the semantic roles, with very general meaning and extreme limitation in number)¹⁰ may be suggested. Indeed, these two *kāra*kas have very abstract definitions and subsume other possible semantic roles that are disregarded by Pāṇini, for instance the experiencer (i.e. someone who experiences a feeling or a mental state) and the stimulus (the source of a feeling). Therefore, it seems more appropriate to establish the equivalency between *karṭṛ* and the macro-role called Actor (instead of the simple semantic role of agent), and between *karman* and the macro-role named Undergoer (instead of patient).

Eventually, concerning *karṭṛ* only, some similarity with the notion of grammatical subject may be traced. Undoubtedly there is no direct theorization of grammatical relations in Pāṇini, since there is no theory of syntax comparable to the modern conception thereof. However, it is to be noted that *karṭṛ* is practically compulsory in every sentence, since it is always expressed either by a nominal or by the verb. And, the obligatoriness is something that may characterize only a grammatical relation (such as subject), not a semantic role.

Given this circumstance, the shift in approach observed in the exceptional rules, with respect to the definitional rules, becomes even more striking. Basically, they represent a complete abdication to the principle of the separate treatment of forms and functions, since they are logically based on an implicit identification of *kāra*ka roles with corresponding canonical *vibhakti* realizations; the latter seem here to be more pivotal for the description of the sentence structure than the semantic roles do. The contradiction between the definitional rules and the exceptional ones (especially of type *c*) is a very strong and important one, representing a real paradigm change, though many scholars have underestimated it.

The claim of modern linguistics is that the forms are a consequence of the meaning, not the other way round: morphology expresses semantics. This means that the morphological form of the nouns must be determined by their semantic roles, either completely, or with a partial involvement of the

¹⁰ See VAN VALIN & LAPOLLA 1997: §4.1. However, among modern linguists, the notion of macroroles has often been deprecated because of the circularity of its definition, see LAZARD 1994: 37-40.

selective properties of the governing verb. The underlying logic of the traditional interpretation of Pāṇini's theory, on the other hand, inconsistently supports both views: in the defining rules and possibly in the exceptions of type *a* the morphology depends on semantics, while in the exceptions of type *b* and *c* semantics are determined by morphology. My claim is that the grammarian who invented the *kāra*ka/*vibhakti* device, and the one who disregarded such an important distinction, cannot be the same person: I suppose that Pāṇini would not state a self-contradictory theory. This is even more likely if we consider that, in order to account for non-canonical marking of *kāra*kas governed by certain verbs, Pāṇini could have put the relevant rules in the *vibhakti* section, as he actually did in many cases.

6. INTERPOLATIONS: PROPOSAL AND JUSTIFICATION

This theoretical contradiction represents the strongest basis for postulating textual interpolations in the *Aṣṭādhyāyī*. The exceptional *sūtras*, especially those of type *c*, must be recognized as a later textual layer, added to the original text by some less skilful anonymous authors. Some other scholars have already suggested possible interpolations because of similar theoretical inconsistencies, such as Joshi and Roodbergen's (1983) hypothesis which is fully convincing, notwithstanding Cardona's (1999: 112-140) vehement criticism, according to which such inconsistencies are too weak and may be disregarded. But in fact, from the viewpoint of a modern linguist, these inconsistencies are of enormous relevance and must be accounted for in some way, rather than be ignored. Moreover, if we accept the emendation of the exceptional rules of type *b* and *c* from the *kāra*ka section of the grammar, there will be no need to postulate such extravagant but at the same time vague and indefinite entities as Cardona's (1974) "syntactico-semantic" categories to explain the nature of *kāra*kas: the latter simply turn back to fully semantic categories.

If we take into consideration the grammar as a whole, there are at least five different theoretical approaches to the problem of semantic roles and morphological categories. What follows is an attempt to reconstruct the relative chronology of these layers. Only theoretical aspects are considered, whereas several other formal philological features are attested that distinguish the *kāra*ka definitions from the exceptional rules and make one think of a spurious origin of the latter (see Keidan forthcoming).

1. The first layer corresponds to *kāra*ka names in their literal meaning. Ideally, Pāṇini could have made use of the non-technical meaning of such terms as a clue for determining their function in the grammar, without defining them anew (which is what modern role terminology does). For example, the literal meaning of the Sanskrit word *karṭṛ* is 'doer, maker' which easily implies the grammatical notion of 'agent'. The other *kāra*kas have analogous evocative names, especially those deriving from the root *kr* 'to make' (*karman*,

karāṇa and *adhikarāṇa*). It is generally acknowledged that Pāṇini inherited these etymologically transparent *kāraṇa* terms from previous tradition.

ii. The next layer consists of a semantic definition of *kāraṇas* (in the definitional *sūtras*) as opposed to the case-form categories (listed in the *anabhihite* section); this represents the culminating point of the form vs. function distinction and the most refined and sophisticated result of the Ancient Indian grammatical tradition. Consequently I would like – somewhat arbitrarily – to identify it with Pāṇini’s authorship, even if Pāṇini’s date has never been convincingly ascertained.

iii. A third layer comprises all those passages (i.e., exceptional *sūtras* of the type *b* and especially *c*) where case-form categories appear more pivotal than *kāraṇas*; here, the forms vs. functions distinction starts to be misconceived.

iv. At the fourth chronological stratum a complete abandonment of the *kāraṇa* terminology is observed: the *vibhakti* terms are used in order to designate both forms and functions; it is attested in various sections of *Aṣṭādhyāyī* (e.g. that on *samāsa* ‘compounds’). No form vs. function distinction is held anymore.

v. Eventually, the *vibhakti* terms have been abandoned as well: inflected pronouns are used instead to denote their own case-form category; this device is attested in several parts of *Aṣṭādhyāyī*, including some meta-rules and the *taddhita* ‘secondary derivation’ section.

It might be asked why some unknown grammarians would dare to modify and interpolate Pāṇini’s grammar, an almost sacred text. There could be some reasons for this: (1) incompleteness of Pāṇini’s theory; (2) evolution of the linguistic data under consideration; (3) lack of comprehension, by post-Pāṇinian grammarians, of the general theoretical principle of the forms vs. functions distinction invented by Pāṇini.

Indeed, notwithstanding the traditional belief, the *Aṣṭādhyāyī* is far from being formally a complete grammar of Sanskrit as we would conceive it today. Therefore, some less gifted anonymous grammarians could have felt the necessity to add some new exceptional rules to the *kāraṇa* section in order to describe some data which were apparently unaddressed by Pāṇini. Still, Pāṇini could have omitted these data as unimportant or too peripheral to deserve a specific theorisation (such as case government of some specific verbs). Yet, what appeared irrelevant to Pāṇini started to be considered more pertinent in subsequent periods.

Secondly, one has to observe that the Sanskrit language underwent a certain evolution in the post-Pāṇinian period. Thus, the use of compounds strongly increased in Late Sanskrit (cf. RENO 1956: 170), and this could be a reason for postulating an interpolated origin of the *samāsa* ‘compounds’ section of the *Aṣṭādhyāyī* (effectively suggested in JOSHI & ROODBERGEN 1983). This evolution consisted primarily in an increase of the MIA influence rather than in a genuine linguistic change (Sanskrit would become a dead language

of culture and learned literature without the purport of native speakers soon after Pāṇini's time). Under the influence exerted by Prakrits some new linguistic facts could appear, necessitating a grammatical description.

Finally, all the emendations made show a continually poorer understanding of Pāṇini's brilliant syntactic theory. It seems that Ancient Indian grammatical thought, after reaching the highest point of sophistication with the *kāra-ka-vibhakti* device, underwent a process of gradual decline: less insightful layers should be considered later than the "smarter" ones. I thus considered the form vs. functions distinction as a departure point, and the disregard of it as a later stage. However, it is not strictly necessary to do so. Indeed, a purely formal approach to the language, i.e. such that only the formal plane is taken into consideration, is quite possible. For example the *Cāndravyākaraṇa*, a later Buddhist grammar, bases its analysis of the sentence structure exclusively on morphology, without any reference to the semantic categories. What is impossible, on the other hand, is the simultaneous use of two opposing approaches in the same grammar and by the same scholar. Therefore, an interpolation hypothesis seems to me the only convincing explanation for the theoretically contradictory layers to be found in Pāṇini's *Aṣṭādhyāyī*.

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