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Form, function and interpretation: a case study in the textual criticism of Pāṇini's *Aṣṭādhyāyī*

The purpose of this paper is twofold. First, the tools of textual criticism as they will be applied to the analysis of Pāṇini's *Aṣṭādhyāyī* are discussed, and in the process some unproven assumptions, widespread in this field, concerning the alleged perfect textual transmission of the *Aṣṭādhyāyī* are critically reviewed. Next, some formal criteria are suggested, in addition to those already devised by other scholars, for identification of textual interpolations in the text of the *Aṣṭādhyāyī*. It will be argued that, with no critical edition of the received text at our disposal, a theory based on investigation of the possible interpolations must be accepted as a *prima facie* approach to the philology of Pāṇini's grammar. The second part of the paper represents the application of the suggested method to the syntactical sections of the *Aṣṭādhyāyī* (covering the *kāraka/vibhakti* device). The theoretical and formal heterogeneity of the *sūtras* of this section, and their incompatibility with other sections of the grammar, are used as a criterion for postulating interpolations in the received text of the *Aṣṭādhyāyī*.

1. *Some basic assumptions*

1.1 *Specificity of Pāṇinian philology*

I use the term “Pāṇinian philology” here to refer to every kind of evidence-based critical study and analysis of the text of the ancient Indian grammatical treatise named *Aṣṭādhyāyī* that has been, for millennia, attributed to Pāṇini, a half-legendary, yet impressively brilliant, Indian grammarian datable to ca. 500 B.C.¹ Some of the questions concerning the

¹ According to Renou (1942: 435, fn. 2), the dates proposed so far are apparently based on the “subjective convictions”. Cardona formulates the date in two different although not incompatible ways: “hardly later than mid IV cent. B.C.” in Cardona (1976: 268) and

textual criticism and especially the compositional history of the *Aṣṭādhyāyī* have never received the treatment they deserve. Besides the intrinsic and unavoidable complexity of the matter, a further obstacle to such an approach has been the persistence of a number of largely accepted, yet unproven, assumptions (both those shared by Indian philologists in general, and those assumptions that are topic-specific, since Pāṇini's grammar is, indeed, a unique object for philological analysis, not only with respect to the Western classical tradition, but also within the Indian cultural domain).

The metalinguistic nature of the *Aṣṭādhyāyī* is its most remarkable feature. The *Aṣṭādhyāyī* is a highly formalized technical text describing, in an algebraic manner, the Sanskrit language (limitedly to its morphology with some insights into phonology and syntax). The terseness of the grammatical *sūtras* 'rules' or 'aphorisms' makes every *akṣara* 'letter' of a grammatical rule highly relevant for the comprehension of the meaning of rule in its entirety. The economy of expression is balanced by a high meaningfulness density per text unit.² Thus, for example, the categories of the grammar are indicated through a very fine-tuned system of symbols, called *anubandhas*, usually no longer than a single *akṣara*, attached directly to a grammatical element. This implies that even the least philological intervention or emendation we might make, for example canceling or correcting just one word-final vowel, would radically affect the grammatical significance of the rule in its entirety. And since the rules describe something apparently objective, i.e. the Sanskrit language, we can always tell — according to the Indian grammarians' claims — whether a given emendation of the grammar makes sense meta-linguistically, i.e. leads to a correct description of Sanskrit. Because of this, the philological analysis of Pāṇini's text is far more complicated than that of a literary text.

To a certain extent this difficulty is shared also by the poetical texts. Philologists who work with poetry have to take into account metrics (and possibly other poetical features, such as rhymes) as an overriding principle: an emendation that fails to take into account meter is hardly acceptable. Similarly, while editing a metalinguistic text, such as a grammatical treatise, the philologist has to account for two different but interwoven levels: the grammar itself as well as its object-language, which prevents him from emending the meta-text against the evidence coming from the object-language.

500 B.C. in Cardona (1999: 3).

² There is no need to cite Patañjali's well-known aphorism depicting the principle of economy of the Indian grammarians, which in fact has turned out to be less overriding and lacking in exceptions than has been generally believed; see Cardona (1999: 186).

Thus, to take just one example, P. Deussen (1897: 124fn1), in his edition of the *Upaniṣads*, corrects the form *kāme* ‘in the pleasure’ (occurring in the traditional reading of *Chāndogya* 4.9.2) into *kāmaṁ* ‘please!’, simply because it makes a better sense and the symbol for the nasalisation *m* can be easily confused, in the *devanāgarī* script, with that of the *e* vowel (this emendation not being constrained by any metrical considerations, since the *Chāndogya Upaniṣad* is in prose). On the other hand, my proposal for a very similar emendation of Pāṇini’s rule 1.4.23 reading *kārake* into *kārakam* has required more rigorous argumentation because of its far reaching consequences: not only does such an emendation, if accepted, shed new light on this passage of Pāṇini’s grammar, but it also implies a new solution to a long standing debate among the ancient commentators of the *Aṣṭādhyāyī* concerning the interpretation of the locative form *kārake*. The meta-semiotic consequences of this emendation are much more significant than its philological soundness (see Keidan 2007).³

The general situation with the textual criticism of ancient texts is not as satisfying as one might wish. P. Olivelle (1988), in a quite polemical manner, illustrated some negative aspects of both western and indigenous Indian philological traditions when he stated that many of even most important Sanskrit texts (such as the *Upaniṣads*) have not been properly edited up to the present day. Olivelle's desire was for editions based on a comparative analysis of all the relevant extant manuscripts and with emendations clearly signalled in the apparatus. In this respect, Pāṇini’s grammar makes no exception. Specialists cannot but rely on Böhtlingk’s (1887) translated edition, which effectively constitutes a sort of “textus receptus” of the *Aṣṭādhyāyī*. Little progress, if any, has been made since F. Kielhorn’s (1887: 178) complaint about the lack of a manuscript-based critical edition of this text. Only in very recent times has a team of scholars started critically editing the *Kāśikāvṛtti* (the most ancient indigenous, annotated redaction of Pāṇini’s grammar in its entirety).⁴

In similar circumstances the only thing that Pāṇinian philologists can do is to formulate hypotheses concerning what A. Aklujkar (1983: 1) calls “secondary textual criticism”, i.e. suggesting emendations of possible

³ Note that the confusion between the masculine locative ending *-e* and nominative *-aḥ* (and even the neuter *-am*) is, in itself, fully possible and indeed well attested in the Indian written tradition, for instance in the form of variant readings in the *Vedas* (Bloomfield, Edgerton and Emeneau 1934: 221ff). Therefore, my suggestion of emending *kārake* into *kārakam*, as well as Deussen’s proposal, are perfectly plausible from a purely palaeographical point of view.

⁴ Some preliminary results of this work, being presently at its very initial stage, are illustrated in Haag and Vergiani (2010).

interpolations in the received text — and therefore to reconstruct the compositional history of the grammar — based only on indirect evidence, i.e. with no reference to the existing manuscripts and the possible variant readings. Among the indirect facts, those based on the internal logical and theoretical contradictions are of the foremost importance in this respect. In other words, any change in the theoretical apparatus of the grammar (especially those apparently unneeded), as well as formal and terminological redundancy, or interpretational variation and ambiguity, must be viewed as good indices — even if not the crucial evidence — for postulating different chronological textual strata, reflecting the evolution of the grammatical analysis within the Pāṇinian school.

While the textual criticism of a text with an ascertained authorship aims at reconstructing the text as it was originally conceived by the author, in the case of an oral tradition of uncertain authorship there is no “original” text to reconstruct. In the best such cases the only thing that can be done is to try to deduce the relative chronology of the different parts, or layers, within the received text, drawing on whatever external or internal evidence that may be available. An instructive comparandum is the case of the ancient Greek epic texts, the *Iliad* and *Odyssey*, which originated in an oral tradition and have linguistic features that may tentatively be identified with distinct developmental phases.⁵

In the present paper I am concerned with the possible strata of theoretical approaches to the grammar that can be singled out in the sections of the *Aṣṭādhyāyī* that are concerned with syntax, and that, in my opinion, can be correlated to a complexity of the compositional history of Pāṇini’s grammar.

1.2 *The “myths of Pāṇinian studies” reconsidered*

The lack of a well-conceived textual critical edition of the *Aṣṭādhyāyī*, together with its complexity and formalism, has given rise to a number of preconceived ideas or “myths of Pāṇinian studies,” as J. Houben (2003: 158) termed them, namely: 1) the myth of the formal and descriptive perfection of Pāṇini’s grammar; 2) the myth of a purely descriptive — rather than prescriptive — grammar; 3) the myth of the well-defined object-language given in advance and immune to diachronic change (the so-called “Eternal Sanskrit”).

⁵ For a survey of the “Homeric question” in general see Nagy (1996: chap. 2); more specifically on the idea of the Homeric phases see Janko (1994: 15-19). A methodological discussion of the textual criticism of texts deriving from oral traditions, exemplified with the situation in the Middle Persian oral literature in Book Pahlavi, is to be found in Ciancaglini (1994).

I cannot but agree with Houben's point of view, particularly with regard to the significance of the first myth, which I prefer to refer to as the myth of flawlessness: Pāṇini himself, alongside the received tradition of the oldest commentaries, is believed to be errorless and to describe perfectly and exhaustively the grammar of Sanskrit. When an inconsistency is discovered, it is usually explained as a consequence of the reader's technical incompetence in the grammatical analysis, rather than a mistake or an inaccuracy on the part of Pāṇini or his most authoritative commentators (Kātyāyana and Patañjali).⁶ Further consequences of this assumption will be explored further below.

Moreover, I consider appropriate, for my purposes, to enlarge Houben's list by adding further theoretical and especially philological points. Strictly linked to the presumption of flawlessness is what I should call the (4) myth of textual integrity. It is usually believed that the *Aṣṭādhyāyī* has been preserved without any additions at all, unchanged through millennia, at least from Patañjali onwards; cf. Cardona (1976: 160) with reference to Kielhorn (1887: 184). Some scholars have even claimed that the extant manuscripts of the *Aṣṭādhyāyī* have no variant readings at all (Renou 1969: 484). No direct evidence has been ever made available to support such a strong claim. Moreover, all that we know about the transmission of the ancient texts speaks strongly against it. Indeed, the very first attempts to analyze directly the extant manuscripts made by philologists already led to the realization that the textual integrity myth was unsustainable. Thus, the team working on the edition of the *Kāśikāvṛtti* has easily discovered a good number of different readings in the text of the comments and examples referring to even the first few *sūtras* of the grammar. Similarly, a very preliminary and random examination of the manuscripts of the *Aṣṭādhyāyī* preserved at the Bodleian Library (the *Chandra Shum Shere collection*) was sufficient for me to identify a few textual variants, some trivial and some not (i.e. some meaningful variants in the grammatical text rather than mere *lapsus calami*).⁷ So, needless to say, acceptance of the manifest shortcomings of this myth is a precondition for the present study.

Closely related to the preceding myth follows (5) the myth of unwritten transmission: it is commonly claimed that the transmission through the centuries of Pāṇini's grammar had been primarily, if not

⁶ It is to be noted that traditionally Kātyāyana's glosses are believed to override Pāṇini, while the comments by Patañjali override Kātyāyana as well.

⁷ By textual variants I mean here differences between the text witnessed by the existing manuscripts and the text of Böhtlingk's edition. Indeed, these readings deserve a systematic investigation of their own.

exclusively, oral. Some scholars even believe that this might have been *the* condition that shielded the *Aṣṭādhyāyī* from textual corruption (e.g. Misra 1966: 21). Now, the orality is questionable already from a general point of view: for mnemonic reasons, non-poetical texts are hardly ever transmitted accurately without a written support. More specifically, the problem arises that some passages of the *Aṣṭādhyāyī* not only go against the rules of Sanskrit phonology (for instance, the *sandhi* rules are very often violated in the wording of Pāṇini's *sūtras*), but are sometimes almost unpronounceable. This is the case with some Pāṇinian technical terms created by clustering together certain consonantal *anubandhas*; for instance, such a term as *kiit*⁸ can scarcely be articulated (because of the cluster of a velar stop *followed* by a velar nasal), and would present insurmountable obstacles to oral transmission in the absence of a written support.

The aforementioned myths combine to form what could be termed the (6) myth of the additivity of the grammar. Thus, although theoretical and logical inconsistencies and even textual errors have been known to the scholars of Pāṇini since antiquity,⁹ the principle of Pāṇini's flawlessness (his grammar must be perfect), along with those of the textual integrity (the transmission is never destructive) and of the eternal Sanskrit (the object language cannot change), have nevertheless meant that the only way to overcome such inconsistencies was to invent new interpretations — actually, manipulations — of the received text and to ascribe them to Pāṇini himself.¹⁰ These new interpretations are often quite tricky and even counterintuitive, but are nevertheless freely added to the official theory (which therefore appears somehow additive), as if they unveiled grammatical truth that was known to Pāṇini, but that he had deliberately “concealed” from posterity.¹¹ Such new explanatory hypotheses are often

⁸ See s. 1.1.5 *kiiti ca* ‘and also if provided with the *anubandha* *k*, *g* or *ṅ*’. An instance of possible textual interpolation for euphonic reasons discussed already by the authors of the *Kāśikāvṛtti* is the term *cli* ‘aorist suffix’ introduced in s. 3.1.43: its vowel *i* could have been added later in order to facilitate the pronunciation of an otherwise very uncommon consonantal cluster.

⁹ A number of variant readings already known to the medieval commentators of the *Aṣṭādhyāyī* are surveyed in Iyer (1983).

¹⁰ Thus, according to Whitney (1893b: 248), “[...] the orthodox method is to consult the facts, and to force Pāṇini's statements by interpretation into an alleged conformity with them”.

¹¹ In his strong defence of this approach Cardona (1976: 158) argues that: “[...] 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”.

stated in the form of *paribhāṣās* ‘meta-rules of grammar’ (and indeed, almost all of the *paribhāṣās* are themselves known only from later comments, rather than from the *Aṣṭādhyāyī* itself, cf. Scharfe 2009). A very representative example in this respect is the meta-rules qualified as *jñāpakasiddha* ‘implicitly stated’: Pāṇini is believed to have purposefully told us something without actually telling it; the reader is invited to understand the truth notwithstanding, or even *thanks to*, an explicit omission in the text of the grammar (see Cardona 1976: 168).

Again, from the viewpoint of the present study, these myths have to be abandoned. To begin with, Sanskrit must have evolved from Pāṇini’s period onwards, for which reason Pāṇini’s grammar could sometimes appear incomplete or even wrong with respect to some other diachronic stage of the language; the text of the grammar could never have been transmitted to the present day without errors and changes added by subsequent anonymous grammarians. An appropriate textual analysis of Pāṇini’s grammar must accordingly rely on the text of the *Aṣṭādhyāyī* only.¹²

1.3 *Philological criteria for the textual criticism of the Aṣṭādhyāyī*

In the present paper I intend to continue my preceding investigation (Keidan 2012) of the compositional history of the *sūtras* that belong to the thematic section of the *kāraḥas* ‘semantic roles’ (headed by s. 1.4.23 *kāraḥe*), and to the section describing the usage of the so-called *vibhaktis* ‘nominal case-forms’ (headed by s. 2.3.1 *anabhihite*).

I wish to start by discussing criteria that can be adopted for the “secondary textual criticism” of this portion of Pāṇini’s grammar. In this respect I take for granted Joshi and Roodbergen’s (1983) criteria for the identification of textual interpolations in the *Aṣṭādhyāyī*, at least as general guidelines.¹³ I propose to add some further principles that are especially needed for the analysis of the *kāraḥa*-section.

In my opinion, the following features can be considered diagnostic for the identification of interpolations in the *Aṣṭādhyāyī*. Thus, a given *sūtra* can be considered spurious if:

¹² The limited relevance of the commentatorial literature for the study of Pāṇini is stressed by Bahulikar (1973: 80), who argued, quite successfully in my opinion, that Pāṇini’s *sūtras* belong to longer statements that were artificially divided into smaller parts only by the subsequent tradition. According to her, it was only these later commentators who established the official division of the text into *sūtras*.

¹³ Joshi and Roodbergen’s criteria overlap somewhat with those suggested already by R. Birwé (1955; 1966).

- (a) the theoretical meaning of this *sūtra* is inconsistent with other parts of the grammar, especially those to be found in the surrounding context (for the reason that it is easier to explain such inconsistency in terms of a number of subsequent interpolations made from different theoretical viewpoints than in terms of a single author producing a self-contradictory theory);
- (b) it interrupts the logical order of the *sūtras*, inserting unrelated material in an otherwise homogenous thematic section (given that the *Aṣṭādhyāyī* tends to have a clear thematic structure);
- (c) it makes use of rare, or even singularly attested, metalinguistic markers or terminology (such rare markers being at odds with the otherwise very consistent and constant formalism that obtains throughout in the *Aṣṭādhyāyī*);
- (d) it presents discrepancies in phrasing, style, and relative position of the *sūtras*, compared to the general usage of the *Aṣṭādhyāyī* (for even if the style can vary from section to section, usually it remains unchanged within any given thematic section of the grammar);
- (e) it appears suspiciously similar to some other Indian learned tradition (since such extra-grammatical influence is the only possible explanation for some otherwise inexplicable oddities in the text of Panini's grammar; e.g. the case of the *mīmāṃsāka* influence on the *kāraka* definitions suggested by Butzenberger 1995);
- (f) it generates morphological forms that are not attested in Vedic or Classical Sanskrit, but are known from Middle Indo-Aryan sources (for the reason that, generally, the *Aṣṭādhyāyī* gives evidence of having been written in a period when confusions between Old and Middle Indo-Aryan varieties were still relatively infrequent; see, in such respect, ss. 2.3.57–60, which prescribe case-government instances known only from Prakrit sources, cf. Speijer 1886: 90, fn. 3);
- (g) it mentions unattested Sanskrit forms in its own wording that can be understood only through the commentaries of later grammarians (for it is hardly conceivable that the *Aṣṭādhyāyī* would depend on later commentaries for its intelligibility; e.g., the meanings conditions in s. 1.4.39 make no sense in the context of Classical Sanskrit unless one resorts to the specific additional information provided by later grammarians);

- (h) it is a *paribhāṣā* ‘meta-rule of the grammar’ (such rules being more often provided in the commentaries, while some could have been interpolated into the *Aṣṭādhyāyī* itself);
- (i) ancient scholarship considers it an emendable rule or a quotation from a *pūrvācārya* ‘preceding author’ (which situation points to doubts about its authenticity already in the past);
- (j) it is criticized as useless and considered emendable by Patañjali in his *Mahābhāṣya* (because we can easily imagine that Patañjali could have had several different versions of the grammar at his disposal and consequently may have been compelled to perform some acts of textual criticism);
- (k) it resembles, in style, form or content, Kātyāyana’s *vārttikas* ‘glosses’ (indeed, undeniable cases of such interpolations are known to scholars, see Joshi & Roodbergen 1975: 59 on s. 1.4.24);
- (l) it is neither discussed nor mentioned in the *Mahābhāṣya* (which would be evidence that Patañjali knew a version of the grammar quite different from what is known today).¹⁴

It is true that any singular feature taken per se does not guarantee that the passage where it is attested is an interpolation. However, a passage characterized by a number of these features can be considered an interpolation with a good reason.

Some of these criteria have been already used, separately or in combination, in earlier works in Pāṇinian philology. In particular, criterion (a) has been taken into consideration in a famous paper by Joshi and Roodbergen (1983), where it is suggested that *taddhita* ‘secondary derivation’ and *samāsa* ‘compounding’ sections of the *Aṣṭādhyāyī* could be considered post-Pāṇinian with respect to the *kṛt* ‘primary derivation’ section, which is said to belong to the original version of the grammar. Indeed, in the *taddhita* and *samāsa* sections a very important theoretical and terminological device of Pāṇini’s grammar, namely the *kāraka* system, is completely ignored.

Kārakas are quite similar to what modern language theory calls semantic roles; they represent one of the most sophisticated and refined achievements of the ancient Indian grammatical tradition. Usually Pāṇini uses *kāraka* categories when a semantic condition needs to be expressed for the derivation of certain morphological elements. Thus, the *kṛt* ‘primary

¹⁴ The last criterion has received strong criticism and is often rejected (cf. Cardona 1976: 158) because, among other reasons, the number of such rules is very large, which would make the *Aṣṭādhyāyī* known to Patañjali excessively short.

suffixes' are added to the roots — we are told — in order to “express a certain *kāraka*”, i.e., as we would put it today, the suffixes have semantic roles as their meaning.

Instead, in the two sections considered by Joshi and Roodbergen (1983) this pattern is abandoned. In the *samāsa* section the semantic categories are replaced by the inflectional ones. That is, the names of the nominal cases expressing certain semantic roles are used as if they indicated also the semantic roles themselves, or are only denoted indirectly (as in the *taddhita* section where inflected pronouns are used in order to denote symbolically their own case category, and therefore the related semantic role).

The present analysis concerns the internal structure of the *kāraka* section per se, plus the section prescribing the *vibhaktis*. My claim is that even there we can distinguish among different textual strata that have resulted from an additive development of the grammar through centuries. In this way I, so to speak, extrapolate the idea of textual stratification defended by Joshi and Roodbergen (1983) into a series of subsequent additions that started even earlier than they supposed.

In defending my hypothesis I will mostly rely on the first criterion, namely that of the theoretical discrepancies. However, as I shall demonstrate, my other criteria are also verified in many *sūtras* that appear theoretically abnormal, and thereby further strengthening the stratification hypothesis.

2. Formal classification of the rules

My ultimate goal is to show that the syntactical rules of the *Aṣṭādhyāyī* fall into two or perhaps three theoretically inconsistent groups that are clearly visible, especially if we try to translate Pāṇini's theory into the terminology of contemporary linguistics. In order to do so I begin by classifying the *sūtras* under consideration here on the basis of their form and composition. My approach is not unprecedented. A similar classification, limitedly to the *kārakasūtras*, was already suggested in Singh (1974), and – in a more evolved and formalistic version – in the same author's book of 2001 (especially chap. 3). However, Singh's analysis is still too close to some of the traditional views and technicalities of the Pāṇinian school that I aim to avoid in my classification.

First of all, I identify three different types of *sūtras* in the *kāraka* and the *vibhakti* sections:

- those dealing with the “definition rules” that provide the six *kāraka* categories with semantically based definitions;

- those dealing with the “exception rules” that emend and enlarge the primary definitions;
- those dealing with the “case-form rules” that teach the expression of the *kāraka* categories through the nominal declension.

The definition and exception rules are all contained in the *kāraka* section of the *Aṣṭādhyāyī* (ss. 1.4.23 up to 1.4.55). The case-form rules, on the other hand, correspond to the section headed by s. 2.3.1 *anabhihite*, up to the end of the *pada*.

2.1 Definition rules

The *kāraka* categories are six in number, and have the following, sometimes etymologically evocative, names: *apādāna*, *saṁpradāna*, *karaṇa*, *adhikaraṇa*, *karman* and *kartṛ* (this is the order in which they are introduced in the grammar). The corresponding definition *sūtras* have the following structure. First of all – but not in every rule – a semantic context is presented in the form of a rather elliptical sentence describing some real-world situation. Next, a prototypical participant is identified (sometimes this component is merged with the preceding one). At the end, a *kāraka* category is assigned to the prototype. According to this analysis, the six definitions of the *kāra*kas can be presented as shown on the Table 1.

<i>Sūtra</i>	Text	Semantic context	Prototype	<i>Kāraka</i> assignment
1.4.24	<i>dhruvam apāye'pādānam</i>	<i>apāye</i> ‘during the movement away’	<i>dhruvam</i> ‘what is fixed’	<i>apādāna</i>
1.4.32	<i>karmaṇā yam abhipraiti sa saṁpradānam</i>	<i>karmaṇā ... abhipraiti</i> ‘whom someone wants to reach through the <i>karman</i> ’	<i>yam ... sa</i> ‘the one ... whom’	<i>saṁpradāna</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

2.2 Exception rules

The three constituent parts mentioned so far, though not present in all of the definition rules, are nonetheless necessary in order to explain the structure of the other *sūtras* of the *kāraka* section, i.e. the exception rules, which have

quite a rigid form as well. Their structure can be better defined if we take into account what is meant by ‘exception’ in this context.

At first sight, the exception rules are needed in order to assign a *kāra* category to those semantic entities that do not seem to be covered by the primary definitions of the *kāras*. The modifications taught in the exception rules involve at least one of the constituent parts of the corresponding definition, i.e. either the real-world scene that serves as the semantic context, or the prototypical participant as it has been previously identified, or, otherwise, the *kāra* category assignment.

Most of the exception rules are activated by a “trigger”, i.e. are considered valid only under certain conditions. There can also be no trigger at all (which means that such an exception is valid unconditionally), as well as more than one trigger. The following triggers are attested:

- most frequently there is a verb that primes the exception; the relevant verbal root is marked by the metalinguistic genitive case;¹⁵
- secondarily, there may be a verbal prefix that, being added to a verb, entails the exception; formally, the prefix in question is put into the metalinguistic ablative case, or, sometimes, compounded with the root;
- eventually, a semantic class of verbs may imply the exception; such classes are marked by compounding their semantic prototype to the mark *artha* ‘sense’, and putting such a compound into the metalinguistic genitive case.

Taking into consideration all of the features mentioned so far, the exceptional *sūtras* may be classified into three types: (a) zero triggered rules that change the semantic context and/or the prototypical participant of the definition, but leave unchanged the *kāra* assignment; (b) those similar to 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 abridged *sūtra* numbers in the last column all refer to the *pada* “1.4”, which is not signed.

¹⁵ Pāṇini uses inflected case-forms in order to denote the function that is carried out by the element thus marked, which are commonly referred to as “metalinguistic cases”. See Misra (1966).

	Semantics	<i>Kāraka</i> assignment	Trigger	<i>Sūtras</i>
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

The exception *sūtras* that are neither commented upon directly nor mentioned indirectly in the *Mahābhāṣya* are marked by a minus sign. I have used Lahiri (1935) as the main reference in this respect. Regardless of the disagreement among scholars on the real significance of the lack of mention of a *sūtra* in the *Mahābhāṣya*, the fact in itself deserves our attention. The *sūtras* marked by an asterisk are those based on unattested verbal meanings and are therefore completely unintelligible without the purport of later commentators, cf. criterion (g) above.

2.3 Case-form rules

Eventually we come to the case-form rules (ss. 2.3.1-2.3.72). These prescribe the usages of *vibhaktis* ‘case-form categories’ in order to express either *kāraka* 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’, *dvitīyā* ‘second’, *tr̥tīyā* ‘third’, *caturthī* ‘fourth’, *pañcamī* ‘fifth’, *ṣaṣṭhī* ‘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 what type of semantic function is prescribed in each of them. The following groups can be clearly distinguished:

- (a) Six rules that define what is nowadays called the “canonical realization” of each *kāraka*, i.e. a case-form that would express a certain *kāraka* role as a default choice. From the formal point of view, the *kāraka* names are put into the metalinguistic locative case and the *vibhakti* terms into the nominative.
- (b) Rules that prescribe an alternative case-form marking for some *kāra*kas. Triggers of different nature, marked with the metalinguistic genitive case, may be present here.
- (c) Rules that prescribe the use of the case-forms to express semantic relations between the verb and its arguments that do not fall into any of the *kāraka* categories; some of these rules present triggers.
- (d) Rules devoted to the so-called *upapadavibhakti*, i.e. case-forms governed by nominals instead of verbs. The governing word is

coded either by the metalinguistic ablative, by the instrumental in its non-technical comitative sense, or by compounding the governing root with the marker *yukte* ‘in conjunction with’. The metalinguistic ablative here indicates the so-called “left context” of a grammatical operation, which, in this case, corresponds to the governing word.

- (e) Rules describing the formation of indeclinable adverbials from some “frozen” nominal inflected forms. This type is completely different from the others since the rules here use the metalinguistic ablative in order to mark not a syntactic “left context”, but a morphological one, intended as the nominal stem to which a termination is affixed.

The five groups of case-form rules can be summarized as follows (The abridged *sūtra* numbers in the last column refer all to the *pada* “2.3”, which is not signed):

	Content	Sūtras
Group a	canonical realization of <i>kāraḥas</i>	2, 13, 18, 28, 36
Group b	alternative coding of <i>kāraḥas</i>	3, 12, 14-, 17*, 22*, 51-, 52, 53, 54, 55-, 56-, 57-*, 58*, 59*, 60*, 61, 63-, 64-, 65, 66, 67, 69 [?] , 70 [?] , 71
Group c	coding of non- <i>kāraḥa</i> semantic features	5, 6, 7, 20, 21, 23, 24-, 25-, 26-, 27, 37, 38-, 41-, 42, 46, 47-, 50, 62
Group d	<i>upapadavibhakti</i>	4, 8, 9, 10, 11-, 15-, 16, 19, 29, 30, 31*, 32, 34-, 39, 40-, 43, 44, 68-, 72, 73-
Group e	formation of adverbials	33-, 35, 36, 45

Table 3

The use of symbols in Table 2 (p. 183) applies here, too: the minus sign marks *sūtras* lacking a reference in the *Mahābhāṣya*, while the asterisk marks those based on otherwise unattested verbal meanings. Among the latter I could mention, e.g., the verb *saṃjñā* ‘recognize’ governing an object in the instrumental case-form, as prescribed in s. 2.3.22: according to the St. Petersburg Dictionary, this usage is only known as a grammatical prescription, and never seems to be attested in the literary sources (not even in the Middle Indian sources, see Franke 1890: 88; see also Liebich 1886b: 289).

Note also that s. 2.3.36 has a double nature, since it belongs both to group *a* and group *e* (it prescribes the locative case-form as the canonical realization of the *adhikaraṇa* ‘location’, but also describes the formation of some adverbials deriving from a “frozen” locative form of some nouns). Furthermore, ss. 2.3.69 and 70 are marked with “?” as they are difficult to classify, being mere negations of previously prescribed rules.

3. *Inconsistencies within the kāraka section*

3.1 *Kāraka-vibhakti device*

The theory of *kāra*kas and *vibhaktis* represents Pāṇini's most important and insightful achievement. With these two categories he distinguished two fundamental aspects of the language: the form and the function, or, in Hjelmslev's (1953) terms, "expression plane" and "content plane". On the one hand, he identified a small number of abstract entities (*kāra*kas) and gave them very general and abstract – but still semantic – definitions. On the other hand, he explained how these semantic entities can be expressed by morphological means (such as case-forms, verbal endings, primary and secondary derivative suffixes, compounding).¹⁶ Thus, morphology is viewed as pure form, so that the case-form categories per se do not have any functional definition and are termed numerically (in contrast with the semantically grounded case names of the Western tradition from antiquity to the mid-20th century, when morphological cases and semantic roles began to be treated separately).

It must be emphasized that the semantic entities and morphological elements 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, that *vibhaktis* can have more than one function. Each *kāra*ka relates to one case-form as its canonical realization, and often has a certain number of alternative realizations, some of which can be triggered (or governed, in modern terms) by particular verbs. The *vibhaktis* are completely neutral as to the grammatical function they express.

Let us turn to Pāṇini's analysis of a simple sentence in Sanskrit:

1) *Devadattaḥ kaṭam karoti.*

Devadatta-NOM.SG mat-ACC.SG make-3SG

'Devadatta makes a mat'.

Let us consider the word *kaṭam* 'mat'. The reasoning of a Pāṇinian grammarian would be as follows. The word under consideration can be

¹⁶ It must be noted that Pāṇini's theory of verbal endings expressing *kāra*ka roles (limitedly to *karṭṛ* and *karman*) is not only odd from a modern point of view, but seemed odd already to Kātyāyana who, in order to justify this device, suggested a *samānādhikarāṇya* 'co-reference' between the nominative case and the finite verbal endings (see his *vārttika* 6 on s. 2.3.46). Indeed, intuitively, in an Indo-European language the nominative case, rather than the verb, expresses the agent. In Pāṇini's system, instead, the nominative does not express any semantic relation. For a general overview see Joshi & Roodbergen (1975: vii-ix), Verhagen (2001: 282).

qualified as ‘what the doer of the action mostly desires’, thus matching perfectly the primary semantic definition of the semantic category of *karman* ‘patient’ as presented in s. 1.4.49. Therefore, it is 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). However, the verbal affix here (for instance, the active present singular 3rd person ending *-ti*) is already used to express the *karṭṛ* ‘agent’. Thus, the *karman* that results is *anabhihita* ‘not expressed’ (by a verbal affix), so that nominal expressing is selected. Rule 2.3.2 *karmaṇi dvitīyā* prescribes the ‘second case’ (i.e., accusative) in order to express a *karman* in such a situation; thus we obtain the form *kaṭam* of the example.

Alternatively, in a different context, it would be possible to express the *karman* with the ‘sixth case’ (i.e., genitive), provided that it is governed by a past participle (or other deverbal adjectives generally termed as *kṛt*), as prescribed by rule 2.3.65 *karṭṛkarmaṇoḥ kṛti*. 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’.

Optionally, the “third case” (i.e., instrumental) can also be used to express the *karman*, if it is governed by the verb *saṁjñā* ‘to recognize’ (as prescribed by s. 2.3.22 *saṁjñō ’nyatarasyām karmaṇi*):

- 3) *pitṛā saṁjānīte.*
 father-INSTR.SG recognize-MID.3SG
 ‘He recognizes his father’.

What we observe here is a “one-*kāraka*-to-many-*vibhaktis*” relation: one and the same *kāraka* 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 *kāraka* role (“one-*vibhakti*-to-many-functions”).

However, each *kāraka* has a series of additional definitions (those prescribed in the exception rules). For example, in the following sentence the argument being ‘the most effective means’, regularly classified as *kaṛaṇa* ‘instrument’, can also be classified as *karman* ‘patient’, provided that the governing verb is *div* ‘to gamble’ (s. 1.4.43 *divaḥ karma ca*); it is, accordingly, marked by the accusative instead of the instrumental case:

- 4) *akṣān dīvyati.*
dice-ACC.PL play-3SG
'He plays dice'.

If we consider the primary definitions of *kāraḥ* per se, it can be noted that, being grounded on the individuation of a prototypical semantic participant within a semantic context, they appear as purely semantic categories. Contrarywise, the exception rules are more ambiguous as far as the form vs. function distinction is concerned, since they mix up semantic and morphological criteria.

3.2 Type (a) exception rules

The exception rules of Type (a) enlarge and emend the basic definitions of the *kāraḥ* with additional semantic characterizations. This may have become necessary because of two different factors:

- *Kāraḥ* are limited in number and randomly chosen (among all the possible semantic characterizations), so that many semantic nuances (either highly relevant or merely peripheral) are left completely out of the categorization.
- The basic definitions of the *kāraḥ* may have been considered excessively ambiguous or inadequate for a real-world interpretation of concrete verbal semantics; i.e., it is not always obvious which *kāraḥ* category applies to a certain concrete situation.

An example of such rules can be found in ss. 1.4.28-29, which provide some additional semantic characterization to the category of *apādāna* 'source'. The new semantics provided by these two exception rules consists mainly in a more abstract interpretation of the concrete notion of 'source' as defined in s. 1.4.24. For this reason, already Patañjali considered these rules emendable insofar as these further shades of meaning could have been metaphorically inferred from the basic, quite concrete, definition of *apādāna*.

3.3 Type (b) exception rules

Exceptions of Type (b) subordinate the *kāraḥ* category to certain governing lexical or morphological elements (prefixes, verbs, or verb classes), a move that represents a departure from the purely semantic definitions of *kāraḥ* categories. Morphology starts to prevail over semantics: the case-form categories become eponyms of those *kāraḥ* for which these very same case-forms are the canonical realizations. In such a way, information about

some verb-specific case-form government instances – which normally would have been taught in the *vibhakti* section – is transferred into the *kāraka* section. This amounts to saying that, in order to account for a specific verb-bound *vibhakti* usage, the grammarian emended the definition of a *kāraka* for the simple reason that this particular *vibhakti* represented the canonical realization of this *kāraka*.

Let us take as an example s. 1.4.26 *parājer asoḍhaḥ* ‘with the verb *parāji* ‘to be overcome’, what is unbearable [is classified as *apādāna* ‘source’]’. The underlying logic here can be analyzed in the following steps.

- This rule is an exception to the primary 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 to offer an appropriate classification for the concept of *asoḍha* ‘unbearable’.
- Still, something ‘unbearable’ is governed by the verb *parāji* ‘to be overcome by’ as its semantic argument.
- The verb in question selects the ablative case-form for this argument.
- In its turn, the ablative case-form is prescribed as the canonical realization of the *apādāna* semantic category (see s. 2.3.28 *apādāne pañcamī*).
- Therefore, a new rule (namely, the one that is taught in s. 1.4.26) is to be formulated, so as to extend the definition of the *apādāna* to include the semantics of the problematic ablative-coded argument of the verb *parāji*.

In brief, a particular verbal argument marking results in an emendation of the *kāraka* definition.

3.4 Type (c) exception rules

A real paradigm change is represented by the exception rules of Type (c). Here, what is modified is the assignment of a *kāraka* category to a semantic prototype. The goal is to accommodate some particular verbal argument marking. 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 entirely disrupted, since *kāra*kas are identified with their canonical *vibhaktis*: an unexpected argument coding is solved by changing its semantic category.

Ideally, it would have been more appropriate to deal with such cases in the *vibhakti* section rather than here. In other words, 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 manipulate *kāraka* definitions artificially in order to include such instances of verbal case government. Such alternative prescriptions are sufficiently well attested in the *vibhakti* section (e.g. s. 2.3.51 that prescribes the genitive to express *karāṇa* in certain circumstances).

Let us analyse the exception 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 *karāṇa* (see s. 1.4.42 *sādhakatamaṅ karaṇam*).
- The verb *div* ‘to gamble’ actually exhibits an argument that matches the aforementioned semantic definition of *karāṇa*.
- However, this argument is often coded with the accusative, while the canonical realization of the *karāṇa* is represented by the instrumental (as prescribed in s. 2.3.18 *karṭṛkaraṇayos ṛtīyā*).
- 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 *karmaṅi dvitīyā*).
- It is then implied that everything that appears marked by the accusative case-form must belong to the category of *karman*.
- Therefore, an exception rule is introduced (namely the one we are concerned with) in which the semantics of *karāṇa* is optionally classified as belonging to the *karman* category only in presence of the verb *div* ‘to gamble’.

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 *karāṇa* ‘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’.

Morphologically, nominative and instrumental case-forms, and also a verbal termination, represent potential expressions of *kāraka* categories.

Semantically, there seem to be a *kartṛ* (thieves) and a *karāṇa* (dice) involved in the action. Now, the nominative usually does not express any *kāraka* role at all, and the verbal endings can express either *kartṛ* or *karman*, while the instrumental expresses either *kartṛ* or *karāṇa*. If the verbal ending here expressed the *kartṛ*, then the word *caurair* ‘by the thieves’ would express the *karāṇa*, which is ontologically improper (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 re-classified here as *karman* (s. 1.4.43) instead of *karāṇa* (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 *karāṇa* ‘instrument’ is changed into the *saṃpradāna* ‘receiver’, which is neither involved in the passive transformation, nor can be expressed by a verbal ending. Therefore, this traditional hypothesis seems more like an *ad hoc* solution rather than a generally valid explanation.

4. Contemporary reading of *kāra*kas

If one reads the *kāraka* section as a whole, i.e. without distinguishing the different types of exception rules (see Table 2 above), then *kāraka* gives rise to a semantically non-prime and ambiguous category that establishes a “many-to-many” relationship between the elements of the expression plane and those of the content plane of the language. This ambiguous nature of the *kāraka* category became a source of confusion within the contemporary western reception and interpretation of Pāṇini’s system and terminology. Different approaches are attested in this respect. The first solution, defended initially by Whitney (1893a: 171), consisted in considering *kāraka* categories as equivalent to, and derived from, the grammatical cases, despite the fact that the *kāra*kas are six, while the case-forms are seven (excluding the vocative). This approach implies a total disregard for the importance of the form vs. function distinction made by Pāṇini, and therefore is no longer tenable. Some decades ago, several scholars suggested interpretations of *kāra*kas 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 minor discrepancies. The Fillmorean interpretation of *kāra*kas has, since then, been tacitly accepted by many scholars as the ultimate solution to the problem, leaving no need for further

investigation (see Verhagen 2001: 278, to cite a recent author).¹⁷ On the other side, more traditionally oriented scholars have defended the view of *kāraḥas* as a kind of “intermediate” notion bridging semantics and syntax (see Cardona 1974; Verhagen 2001: 278-280). Such an approach is the closest one to the ancient Indian point of view, since it tries to explain the *kāraḥas* as a whole, taking into account both the primary definitions and the exception rules. But for this same reason it is quite uninformative, since the conclusion is easily inferred that *kāraḥas* are unparalleled by any modern linguistic category, so no explanation is effectively provided for the western reader.

In the present paper, on the other hand, I assume that the *kāraḥas* as they result from the basic definitions must be treated separately from what is implied by the exception rules. Among the latter, different types are to be set apart as well. Only through such a separate analysis can the vagueness of Cardona’s “semantico-syntactic categories” be avoided. Moreover, concerning the definition of the *kāraḥa* category as a whole, the contribution of the exception rules has to be considered, in my opinion, to be of lesser relevance than that of the primary definitions.

Thus, if we base our analysis on the definitions only, *kāraḥas* seem to be akin to the present day notion of semantic (or also thematic) roles. First of all, similarly to semantic roles, *kāraḥas* are abstract classes, rather than properties of concrete entities, as has been explained already in Patañjali’s *vārttikas* 36-39 on s. 2.3.1. The basic definitions of *kāraḥas* are noticeably more abstract than the ones that may be inferred from the everyday meaning of the *kāraḥa* terms (as long as we understand them correctly). 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. Thus, for example, the literal and etymological meaning of the Sanskrit word *karṭṛ* is ‘doer, maker’. Nevertheless, Pāṇini re-defined *karṭṛ* as *svatantra* ‘the independent one’. The other *kāraḥas* have analogous evocative names, especially those deriving from the root *kr* ‘to do (*karman*, *karāṇa* and *adhikarāṇa*), but are all re-defined explicitly. It is generally

¹⁷ Note however that today Fillmore’s theory has been superseded by more sophisticated and detailed theories of contemporary linguistics. On the formalist side, Chomsky (1981 : §2.2 ; §2.6) incorporated a ‘Case theory’ and a ‘ θ -theory’, based on an almost unrecognizable modification of Fillmore’s ideas, into the Generativist framework. In the functionalist milieu, on the other hand, Fillmore’s Deep Cases have been further analysed into such categories as semantic valences, semantic roles and macroroles, syntactic valences, arguments, and the like (see e.g. Van Valin and LaPolla 1997 : §4.1 ; §4.2). These developments suggest that the Deep Cases interpretation of Pāṇini’s *kāraḥas* needs at least a revision.

acknowledged that Pāṇini could have inherited these etymological *kāraka* terms (see Joshi & Roodbergen 1975: i-iv). A similar situation, i.e. when an etymologically evocative term is nonetheless given a new formal definition, is to be observed elsewhere in the grammar. Thus, the two terms *parasmaipada* and *ātmanepada*, indicating, respectively, the active and the middle verbal terminations, although being etymologically quite self-evident (the former means ‘a word for another’, the latter ‘a word for one’s self’), are explicitly re-defined by Pāṇini (from s. 1.3.12 onwards).¹⁸

Secondly, the *kāra*kas are limited in number, but sufficiently flexible to describe the most relevant and prototypical semantic situations. Today the semantic roles are usually thought of as an open list, but only the “core” categories (such as agent, patient, beneficiary, experiencer, stimulus), effectively matter in the grammatical analysis, while the many possible peripheral roles are disregarded as long as they conform to the core ones in their morphological coding (for a general discussion see Van Valin & Lapolla 1997: 85-86).

On the other hand, Pāṇini does not clearly distinguish between the valency structure of a predicate at the lexicon level on the one hand and concrete arguments of a predicate in a real sentence on the other. This amounts to saying that he does not distinguish between obligatory arguments and optional sentential adjuncts.¹⁹ In fact, it seems that all six *kāra*kas can be governed by every verb.

Limitedly to the *karṭṛ* ‘agent’, we can note that, although being more or less equivalent to the semantic role of agent, it is better described as a macro-role, and has also some features of a syntactic category. Indeed, *karṭṛ* subsumes many semantic qualifications in addition to that of the agent, importantly the experiencer, i.e. someone who experiences a feeling or a mental condition, which is not recognized as a separate role by Pāṇini.²⁰ Therefore, it seems more appropriate to establish the equivalency between *karṭṛ* and the Actor macro-role. And, even if there is nothing in Pāṇini’s grammar that can be compared to the modern theory of syntax, *karṭṛ* recalls

¹⁸ Note that Pāṇini is a better formalist than modern linguists, who use, for the semantic roles, evocative terms that symbolically depict their own semantic essence, often without any explicit and formal definition.

¹⁹ For example, English verb *to go* cannot be used without mentioning the agent of going (the resulting sentence would be infelicitous or even ungrammatical). The agent is therefore an obligatory argument of the verb. On the contrary, it can be freely used without mentioning the point of departure, which is then an example of an optional adjunct.

²⁰ Nor is the experiencer recognized as a separate role when it is expressed by a dative case-form: Pāṇini considers this an instance of the *sampradāna* ‘beneficiary’ (see s. 1.4.33).

also a syntactic subject, in that it is an obligatory element of every sentence, since it is always *abhihita* ‘expressed’, either by the verb termination or by a nominal case-form.

In any case, the *kāraka* vs. *vibhakti* – i.e., semantics vs. morphology – distinction is what makes Pāṇini’s grammar so powerful, not 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 ergative alignment.²¹

Given this circumstance, the shift in approach observed in the exception rules, with respect to the definitions, becomes even more striking. Basically, the exception rules of Type (c) represent a complete abdication to the principle of the separate treatment of forms and functions, since they are based on an implicit identification of *kāraka* roles with corresponding canonical *vibhakti* realizations. If a *kāraka* assignment can be changed in consequence of a change in the case-form governed by a verb, as happens especially with exception rules of Type (c), then the categorization of the semantic roles becomes quite useless. It is no longer the *kāra*kas that determine their morphological coding, but the coding that determines the *kāraka* roles.

The contradiction between the definition rules and the exception rules, often too little appreciated by scholars, is a very strong and important one, representing a real paradigm shift that calls for an explanation. My claim is that the grammarian who invented the *kāraka* / *vibhakti* device, and the one who disregarded such an important distinction, cannot be the same person; and indeed it is hard to imagine why Pāṇini would articulate a gratuitously self-contradictory theory.²²

5. Interpolation hypothesis

The theoretical inconsistencies are the grounds on which my interpolation hypothesis is based, since they are in my opinion serious enough to demand an explanation. They cannot simply be dismissed out of hand, in the manner of Cardona’s (1999: 112-140) vehement criticism of Joshi and Roodbergen’s (1983) interpolation hypothesis that is one of the starting

²¹ 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 European approach failed in describing the ergative alignment until very recently.

²² As said before, Pāṇini could have avoided inconsistencies here and put the alternative coding of the *kāraka* roles in the *vibhakti* section, as he actually did in many cases.

points for my argumentation here. If we take into account Pāṇini's grammar as a whole, there are at least five different theoretical approaches to the description of the nominal case-forms and their functions. What follows is a mere listing of these layers, without any claims as to their relative chronology.

5.1 *Kāraka terms*

First of all, we must observe the most "primitive" layer corresponding to the literal/etymological meanings of the *kāraka* names, which is not part of the main Pāṇinian doctrine since the *kāra*kas are completely re-defined by Pāṇini, regardless of their etymology. This layer was probably inherited by Pāṇini from the preceding tradition of grammatical studies and was superseded by him probably because it strongly relied on intuition, while Pāṇini preferred a formal and explicit approach to grammar. However, he retained the terminology, probably under the pressure of the preceding tradition.

Note that this approach is paralleled by the European grammatical case nomenclature (terms like nominative, genitive, dative, accusative, ablative, and so on), whose definition is mostly based on the etymological (mis)interpretation of the terms themselves.²³ Later, the names of semantic roles (such as agent, patient, etc.) were coined in the same fashion.

I envision Pāṇini as a brilliant grammarian who inherited a primitive grammatical tradition and transformed it into a completely new theory, with an accurate distinction between the forms and the functions of language. This is only a convention that I adopt for simplicity, and as an homage to Pāṇini's millennial fame. Strictly speaking, there is no evidence associating the name of Pāṇini precisely with the most refined layer of the *Aṣṭādhyāyī*. He could also have been the author of the least refined layer, or even simply have been the last contributor to a compilation of different traditions, which then would have been canonized with his name attached to the entire grammar.

5.2 *Kāraka/vibhakti device*

The definition *sūtras* of the *kāraka* section, together with Types (a) and (b) case-form *sūtras* listed in the *anabhihite* section, correspond to the core of Pāṇini's syntactic theory, where a perfect distinction between semantic categories and their morphological realization is observed. The theoretical sophistication of Pāṇini's *kāraka/vibhakti* device has been paralleled by Western linguistics only in the second half of the 20th century, with the work of such scholars as Ch. Fillmore.

²³ The history of this misinterpretation is surveyed in De Mauro (1965).

Most of the *kāraka* terms are redefined here in terms that are more general and abstract, yet plainly semantic. In this way, some less important semantic roles have been included in the *kāraka* categories, which therefore receive the status of macro-roles. Thus, if *karṭṛ* ‘agent’ is redefined as *svatantra* ‘self-standing, independent,’ this is nothing but an attempt to provide a more general definition of this (macro)role, and goes far beyond the etymological meaning of the word *karṭṛ*, which is ‘doer, maker’.

Some scholars (for example Sharma 1995: 108) claim that the numbering names of the *vibhaktis* ‘case-form categories’ were pre-Pāṇinian as well. This is not, however, self-evident, especially since their relative order reflects Pāṇini’s theory, with the case-forms coming exactly in the order that Pāṇini needs for his grammar to describe a Sanskrit sentence properly.

5.3 Exception rules of Types (a) and (b)

In the case of the exception *sūtras*, we must admit that the exceptions of Type (a) are not so self-contradictory as to suggest multiple authorship. There are some semantic extensions to the basic *kāraka* definitions, but these could, in theory, have been added by the same author. The Type (a) exceptions were designed to include some peripheral semantic shades that at first sight could not be inferred from the basic definitions (thus contributing to transform *kāra* into semantic macro-roles). However, a few of them were dismissed as semantically redundant and therefore unnecessary already by Patañjali (e.g. rules 1.4.28-29, which describe some metaphorical extension to the notion of *apādāna* ‘source’). It was probably at this same period that the real sense of Pāṇini’s definition of *karman* ‘patient’ as *īpsitatama* ‘the most desired’ began to be misconceived. Consequently, the two exception rules 1.4.50 and 51 were added in order to provide a better definition of this semantic category, under the pressure of the *Mīmāṃsā* tradition and terminology (as suggested by Butzenberger 1995).

The exceptions of Type (b) were created in order to accommodate some instances of non-standard verbal case government, since these exceptions are always triggered by a verb or a class of verbs. According to the *kāraka/vibhakti* device, all of these rules could have been placed into the *vibhakti* section, where other similar material is actually dealt with: an alternative morphological coding of a semantic role should not imply a change in its semantic definition. The Type (b) exceptions correspond to the first step in the degradation of Pāṇini’s most brilliant distinction.

5.4 Exception rules of Type (c)

Far more problematic are Type (c) exceptions, where the *kāraka* assignment is changed, regardless of the fact that the semantic definiendum remains unchanged. These rules too are meant to account for non-standard verbal

case government (a verbal trigger is always mentioned), but the *kāraka* categories seem to make their way towards identification with their canonical *vibhakti* realizations. Such a tendency is still only implicit, and the *kāraka* terms are still used, but the distinction between semantics and morphology appears weaker. Against the standard *kāraka/vibhakti* device, here the case endings are considered to be more pivotal categories than the semantic roles.²⁴

It may be noted that many of the exception *sūtras* of Types (b) and (c) are neither commented on nor mentioned in the *Mahābhāṣya*. This could imply that such *sūtras* were added after the canonization of the text of Patañjali's commentary. In addition, Patañjali often criticized as superfluous, and therefore emendable, the few exception rules that he did take into consideration. Some of Kātyāyana's *vārttikas* 'glosses' (commented on and discussed by Patañjali) are extremely similar to the exception rules with which we are concerned here, which similarity creates the suspicion that the latter were initially part of the former. Thus, for example, the *vārttika* 1 to s. 1.4.24 adds some semantic extension to the exception rules (where the definition of *apādāna* 'source' is provided), and something similar happens in the subsequent s. 1.4.25, which also presents an extension to *apādāna*, and has a very similar formal structure. Importantly, both are considered emendable by Patañjali.

It is also interesting that one of the rules within this group, namely s. 1.4.38, uses a non-standard terminology: apparently, the term *upasrṣṭa* is used to denote a 'prefixed verb' (Sharma 1990: 249) in this rule only, which is also a possible evidence of interpolation. Moreover, three rules of this group contain verbal meanings that are not attested in Classical Sanskrit (e.g. in s. 1.4.39 the roots *rādh* 'accomplish' and *īkṣ* 'observe' are intended in an otherwise unattested meaning 'make a prophecy').

5.5 Case-forms instead of *kāra*kas

As discussed by Joshi & Roodbergen (1983), in the *samāsa* 'nominal compounding' section – as well as in some other parts of the grammar – the *kāraka/vibhakti* distinction seems to be completely abandoned. Here, the *kāraka* terms appear to be unknown to the author, while the *vibhakti* names are used in order to express both the morphological entities and their

²⁴ Even traditional scholars of Panini, who do not foresee any stratification in the received text of the grammar, recognize that this confusion is problematic. Thus, concerning the same exception *sūtras*, Deshpande (1990: 33-34) remarks that "to the tradition of Sanskrit commentators, it was never totally clear whether Pāṇini's grammar had this sense of directionality, i.e. whether it proceeded from meaning to form or vice versa". Cf. also Ananthanarayana (1970: 18).

semantic functions. Such functions correspond to the semantic roles, the canonical expression of which coincides with the *vibhakti* in question.

The numbered name of the case-form category is joined, in such passages, to the word *arthe* ‘in the meaning’, as if the case-form per se were a meaning category. See, for example, the following rule:

- 6) *caturthyarthe bahulam chandasi*
 dative_meaning-LOC.SG sometimes Veda-LOC.SG
 ‘often in the Veda [is used] in the meaning of the dative (i.e. *saṁpradāna*)’ (*sūtra* 2.3.62)

5.6 Dismissal of the *kāraka/vibhakti* terminology

Eventually come those passages of the *Aṣṭādhyāyī* where the *vibhakti* terms are also completely dismissed. Instead, inflected pronouns denoting their own case-form categories are used, with reference to both the form and the function. To this stage belongs the *taddhita* ‘secondary derivatives’ section, discussed by Joshi & Roodbergen (1983), and – significantly – some of the *paribhāṣāsūtras* ‘meta-rules of the grammar’. Among the latter we can quote some typical examples, where the inflected forms of the third person neuter pronoun *tat* are used:

- 7) *tasminn iti nirdiṣṭe pūrvasya*
 it-LOC.SG so substituend-LOC.SG preceding-GEN.SG
 ‘[the rules apply] to what precedes an element marked by the locative’ (*sūtra* 1.1.66)
- 8) *tasmād ity uttarasya*
 it-ABL.SG so further-GEN.SG
 ‘[the rules apply] to what follows an element marked by the ablative’ (*sūtra* 1.1.67)

Interestingly, this layer is paralleled in the western grammatical tradition as well, from antiquity – possibly from Aristotle (see Belardi 1985: 176) – onwards, where inflected pronouns were sometimes used side-by-side with more explicit case terminology. Interrogative pronouns were also used for this purpose, especially as a didactic means of Stoic origin; from here comes the term *casus interrogandi* ‘the cases of asking’ that in the tradition of Latin grammar referred to the notion of ‘case’ per se (see Belardi & Cipriano 1990: chap. III).²⁵

²⁵ This usage survived in Europe until modern times, e.g. in the elementary grammar teaching in Germany and Austria: the case-forms are seen as “answers” to some “questions”, which the pupils are supposed to learn by heart. This is the reason why

Another iconic, but theoretically poor, way to represent semantic relations is the use of the inflected forms of the verb *kr̥* ‘to do’. Thus, in the following rule the 3rd singular present form *karoti* is used to denote the agent:

- 9) *śabdadarduraṃ karoti*
 voice_pot-ACC.SG do-3.SG
 ‘[the suffix *ika* applies] to roots *śabda* and *dardura* for denoting the doer’ (*sūtra* 4.4.34)

There can be added here, by similarity, another layer that reflects a complete disregard of the *kāraka/vibhakti* device in its basic functioning, for instance: the rules of Type (e) in the *vibhakti* section. These rules describe the formation of some adverbials from frozen inflected nominals, for example, such as *dūram* ‘far from’:

- 10) *dūrāntikārthebhyo dviṭyā ca*
 far_close_meaning-ABL.PL second-NOM.SG optionally
 ‘[adverbs] meaning ‘far’ or ‘close’ are optionally put into accusative’ (*sūtra* 2.3.35)

These rules have nothing to do with the rest of the *vibhakti* section. Indeed, they describe something that happens to some case-forms *after* they are derived, and not the semantic conditions *for* the derivation of such forms.

6. Reasons for interpolations: a conclusion

The most obvious explanation for the observed internal inconsistencies in the *Aṣṭādhyāyī* is to imagine a series of subsequent interpolations with a decreasing degree of theoretical sophistication. To a truly Pāṇinian core “Ur-*Aṣṭādhyāyī*” some later additions would have been made by some anonymous authors who underestimated or misunderstood the power of the *kāraka/vibhakti* distinction. Not all of such interpolations were yet known to Patañjali, but they were already complete at the time of the *Kāśikāvṛtti*, the oldest complete commentary to the *Aṣṭādhyāyī*.

The reason for adding a new rule was a perception of incompleteness when Pāṇini’s theory describes some linguistic data (certain constructions or forms in Sanskrit); the incompleteness could have one of the following explanations:

Liebich (1886a: 209, 215) glossed the *kāraka* categories in a similar way, e.g.: “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’”.

- Pāṇini could effectively have omitted some Sanskrit data (for example he could have considered irrelevant the case government of some specific verbs), which omission later grammarians tried to address by adding new rules, though they missed the correct functioning of the *kāraka/vibhakti* device;
- Later grammarians may have failed to appreciate the fact that the *kāraka/vibhakti* device effectively explains the data (for example, because the later figures missed the semantic generality of the *kāraka* definitions), and so added unnecessary rules;
- Pāṇini could have omitted some formations because they belonged to a later stage of the language with respect to the target language he aimed at describing.²⁶

The last option is particularly relevant. Sanskrit certainly underwent evolution in the post-Pāṇinian period. This evolution is usually interpreted as a sign that Sanskrit was still a spoken medium during Pāṇini's and perhaps Patañjali's time.²⁷ In my opinion, on the contrary, the evolution consisted primarily of an increase in MIA influence rather than in genuine linguistic change.²⁸ For, by the time Pāṇini's grammar was canonized, Sanskrit had already become a dead language of culture and learned literature with no real native speakers. Some new linguistic facts therefore appeared, necessitating a grammatical description.

Thus, from this diachronic perspective we can observe that the use of *samāsas* 'compounds' strongly increased in Late Sanskrit (cf. Renou 1956: 170). Perhaps also among the *taddhita* 'secondary suffixes' there could be some "barbarisms" that penetrated Late Sanskrit from the spoken vernaculars. Such developments could explain the interpolated origin, suggested by Joshi & Roodbergen (1983), of the *samāsa* and the *taddhita* sections of the *Aṣṭādhyāyī*.

The diachronic model, although a very intuitive one, is not the only possible explanation with respect to the internal inconsistencies in the *Aṣṭādhyāyī*. A synchronic model would be also possible here. From this perspective, different approaches to language could have coexisted in the same period, and Panini's *Aṣṭādhyāyī* would thus have been an attempt to

²⁶ See Laddu (1974: 7) for a similar explanation.

²⁷ This has been reaffirmed by Laddu (1974: 19).

²⁸ The influence exerted by Prakrits was already strong in Epic Sanskrit, and even stronger in the case of the so-called Buddhist Hybrid Sanskrit, which, according to Edgerton (1936: 504), must be considered a language in its own right.

reconcile them into one canonical grammar. Some of these traditions were more accurate in describing the relationship between semantics and morphology, others were more simplistic. Some put semantics first and described the expression of semantic relations by means of morphology; others inverted this directionality and used the forms to explain the functions. The mixing of these approaches would have created the internal contradictions.

Interestingly, the traditions that have thus been classed together are also attested individually. For example, in the *Cāndravyākaraṇa* (a non-Pāṇinian grammar by the Buddhist scholar Candragomin, 6th cent. A.D.), the *vibhakti* terminology was used for both morphology and semantics, while the *kāra*kas are ignored.²⁹ On the other hand, in the tradition of *Kātantra* (another Buddhist grammar dating not later than 400 A.D.), the etymological interpretation of *kāra*ka terms was restored in place of Pāṇini's abstract semantic definitions. For example, the *karman* is defined here with s. 2.4.13 *yat kriyate tat karma* 'what is done that is *karman*' (since this word is a passive deverbal adjective from the root *kr* 'to do').³⁰

The internal contradictions that arose from the confounding of different traditions are observable also in other passages of the grammar. The earliest commentators tried to hide such inconsistencies, especially since the grammar, supposedly perfect, was treated as almost a sacred text. It is interesting to note, however, that the virtual dialogue between two opposed voices – the *pūrvapakṣin* 'primary objector' and the *siddhāntin* 'upholder of the final view' – attested in Patañjali's commentaries could reflect an ongoing debate between different interpretations of the grammar. Many of *pūrvapakṣin*'s objections are far more rational and convincing than the statements of *siddhāntin*, which have often a certain scholastic flavor. Sometimes Patañjali reveals to us the existence of alternative theories in the act of condemning them as wrong or unnecessary. This is, for example, what emerges from his *bhāṣya* 7 to s. 2.3.1, where, referring to the problematic rule 3.1.68 *kartari śap*, he envisions the possibility that a thematic vowel, rather than the verbal ending, could express the agent (see Joshi & Roodbergen 1976: 13-14). He eventually rejects this explanation, but the fact that it is discussed means, in my opinion, that there were others who defended it.³¹

²⁹ However, Butzenberger (1995: 54) explains it diachronically, in terms of post-Pāṇinian decay of grammatical theory. This is also the position that I defend in Keidan (2012).

³⁰ In a late Pāli grammar called *Saddanīti* (1154 A.D.) a similar definition of the *karman* is also to be found; see s. 551 *yam kurute yam vā passati tam kammaṃ* 'what is done or seen is *karman*'.

³¹ Another example of this kind of covert allusion can be found in rule 1.4.23 *kāra*ke, the

To sum up, I think that the theoretical inconsistencies must lead us to the conclusion that the *Aṣṭādhyāyī* is a compilation of different theoretical layers. The relative chronology of these layers may be difficult to elucidate, and it is fully possible that they coexisted in different schools of grammar but were eventually unified into a canonical grammar.³²

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problematic locative form of which is ignored by Patañjali until the last part of his commentary, for which see Keidan (2007).

³² Similarly, the theory of a chronologic succession of phases in Homer is sometimes questioned by scholars who prefer to imagine parallel dialectal traditions, in particular Aeolic and Ionic, that influenced each other and remained traceable in the received text, see Horrocks (1997: 214-215).

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*Les études sur les langues indiennes.
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