Compositional history of Pāṇini's syntactic theory: how linguistics can help

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Pāṇini and his *Aṣṭādhyāyī*

- Pāṇini's date is unknown, but the most authoritative hypotheses suggested so far range between 6th cent. B.C. and 3rd cent. B.C.

- Pāṇini's grammar *Aṣṭādhyāyī* (lit. 'Eight chapters') provides an unparalleled description of morphology and syntax of Sanskrit

- *Aṣṭādhyāyī* is subdivided into 8 books, for a total amount of ca. 4000 *sūtras* 'grammatical rules'

- What we are concerned here are the passages of the grammar dealing with the syntactic structure of the simple sentence

Simple sentence syntax

- Structure: *verb* (or *predicate*) and its *arguments*, i.e. nominal constituents that specify participants involved in the action "on the sage"

- Semantics of the arguments: how does one define the semantic categories that classify all possible arguments of whatever verb?

- Morphology of the arguments: how are different arguments expressed or coded from a formal point of view

- What we obtain is: a restricted set of semantic categories called *semantic roles*, and a variety of possible codings that are used to express such semantic values

Semantic roles and their realization: English ex.

- *I give the book to you* — the receiver is coded by the preposition *to*

- *I give you a book* — the receiver is coded simply by putting it into the post-verbal position, with no preposition

- There are two possible realizations of one semantic entity

Semantic roles and their realization: Italian ex.

- *Gianni va in Francia* 'John goes to France'

- *Gianni va a Roma* 'John goes to Rome'

- *Gianni va da Maria* 'John goes to Mary's place'

- There are three possible realizations of one semantic entity, namely the *destination*

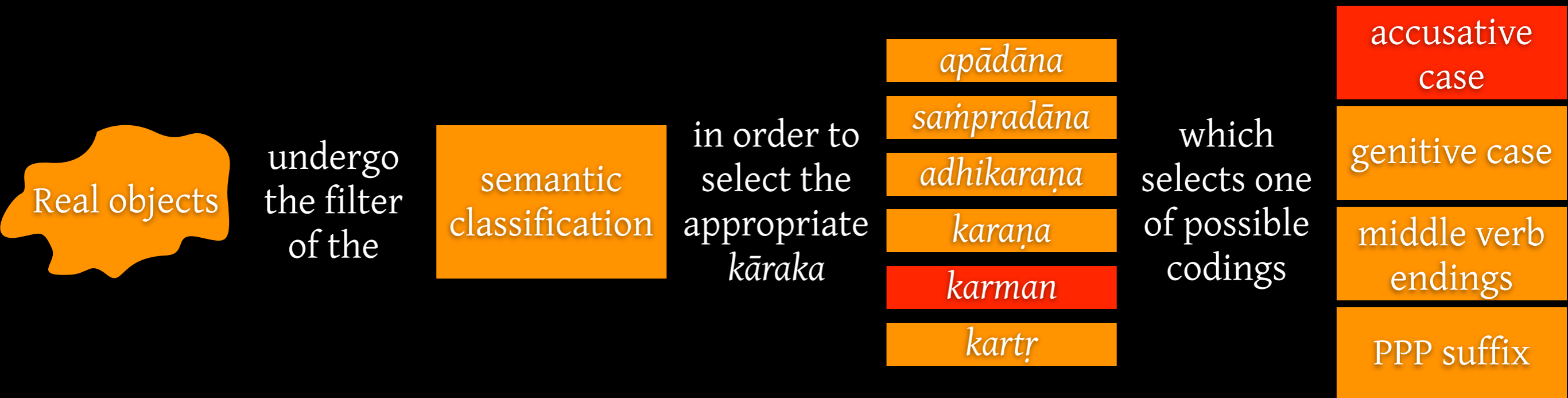- To understand this we must distinguish between semantic categories and morpho-syntactic categories

Kārakas vs. *vibhaktis:* semantic roles vs. case forms

- *apādāna* 'source'

- *saṃpradāna* 'receiver'

- *adhikaraṇa* 'locus'

- *karaṇa* 'instrument'

- *karman* 'patient'

- *kartṛ* 'agent'

- 1st *prathamā* 'nominative'

- 2nd *dvitīyā* 'accusative'

- 3rd *tṛtīyā* 'instrumental'

- 4th *caturthī* 'dative'

- 5th *pancamī* 'ablative'

- 6th *ṣaṣṭhī* 'genitive'

- 7th *saptamī* 'locative'

Kāraka roles (defined in the *Karake* section)...

- ...have allusive names mostly involving the root *kṛ* 'to do', e.g.:
  kartṛ 'doer', *karman* 'something done'

- ...however, are defined explicitly, with abstract but still semantic definitions, e.g.:
  kartṛ 'agent' is defined as «the autonomous one»
  karman 'patient' is defined as «what is mostly desired by the agent»

- ...are put into a *many-to-many* relation with cases:
  karman is primarily expressed by the accusative, but some times also by the genitive; the latter express also the *kartṛ*

General diagram of the *kāraka/vibhakti* device

Real objects undergo the filter of the **semantic classification** in order to select the appropriate *kāraka*

- *apādāna*
- *saṃpradāna*
- *adhikaraṇa*
- *karaṇa*
- *karman*
- *kartṛ*

which selects one of possible codings

- accusative case
- genitive case
- middle verb endings
- PPP suffix

Example of the *kāraka/vibhakti* mechanism

- The *karman* role is defined as «the most desired by the *kartṛ*» (s. 1.4.49 *kartur īpsitatamaṅ karma*)

- The *karman* is assigned the accusative case as its canonical realization (s. 2.3.2 *karmaṇi dvitīyā*)

- Limitedly to the verb *div* 'to play' the *karman* is expressed non canonically by the genitive (s. 2.3.58 *divas tadarthasya*)

Vibhaktis (defined in the *Anabhihite* section) can...

- ...express the canonical realization of *kāraka* roles

- ...express some non canonical realizations of *kāraka* roles

- ...express some semantic values that are not covered by any *kāraka* role, e.g.: s. 2.3.42 *pañcamī vibhakte* 'the ablative is used to code the term of comparison'

Kārakas can be viewed as equivalent to...

- ...modern linguistics' conception of *semantic roles*, because they are based on purely semantic definitions

- ...modern linguistics' conception of *semantic macro-roles*, because they are limited in number and some of them ignore lesser semantic subtleties, e.g.:

  kartṛ is actually 'agent', but also 'experiencer' (i.e. someone who experiences a feeling or sensation or thought'), similarly to modern *Actor* macro-role

- ...modern linguistics' conception of *grammatical relations*, limitedly to the *kartṛ*, since it turns out to be obligatory in each sentence, as only Subject might be

Briefly

With respect to how a simple sentence is constructed, the semantics is primary while morphology is only a consequence of semantics

Kāraka/vibhakti device: Pāṇini's greatest achievement

- For the first time in the history the semantics of the sentence is clearly distinguished and opposed to its morphology

- It represents one of the most interesting parts of the whole grammar

- There have been no similar conceptualization in the western linguistic science until Charles Fillmore's "Deep Cases theory" (1968)

  Chomsky's Generative theory had totally ignored this opposition in its initial variants, and timidly adopted a similar approach only in recent times
  Fillmore's terminology is far more misguiding than Pāṇini's

But...

But...

- Some parts of Panini's grammar seem to contradict his own theoretical model

- In some parts the distinction between semantics and morphology is not as univocal and clearcut as supposed by the standard *kāraka/vibhakti* device

- In some parts such a distinction seems to be even totally ignored

- My hypothesis is that such inconsistencies must be explained as a result of later interpolations

Kārakas’ definitions emended

- After having defined each of *kāraka* roles, Pāṇini inserts a number of *sūtra*s where such basic definition are enlarged or emended

- The *apādāna* ‘source’ is defined, by s. 1.4.24, as *dhruvam apaye’pādānam* ‘the fixed point in a movement away’

- Also the semantics of ‘source of fear’ is licensed as appropriate for being classified as *apādāna* (by s. 1.4.25 *bhītrārthānām bhayahetuḥ*)

Kārakas confused with case categories

- In some instances, however, the emendations are of a different structure

- S. 1.4.42 defines *karaṇa* 'instrument' as *sādhakatamaṅ karaṇam* 'the most effective means'

- S. 1.4.43 (*divaḥ karma ca*) states that with verb *div* 'to play', the most effective means can be alternatively classified as... *karman*

The underlying logics of such *sūtras*

a. The instrument of an action is primarily classified as *karaṇa* by s. 1.4.42

b. The verb *div* 'to play' exhibits an argument matching the semantics of the *karaṇa* role

c. The canonical *vibhakti* realization of *karaṇa* is the instrumental case by 2.3.18

d. The *karaṇa* argument of the verb *div*, however, may also be coded by the accusative, e.g.: *Devadattaḥ akṣān/akṣair dīvyati* 'Devadatta plays with dice'

e. The accusative case, in its turn, is the canonical realization of *karman*

f. Ergo, the semantics of the instrumental argument of the verb *div* must be classified as belonging to the category of *karman* instead of *karaṇa*.

Briefly

Only because something is expressed with accusative it starts to be classified as belonging to the "semantic" category of *karman*

Thus, morphology becomes primary with respect to semantics

Notice that...

- ...this alternative paradigm is contradictory with respect to the standard *kāraka/vibhakti* device

- ...and it is also useless because such kind of problems are easily treated in the *vibhakti* section, even for the same verb *div*

- ...finally, it brings to a complete identification of *kāraka* categories with their canonical cases

The situation of the verb *div* 'to play'

Vibhakti section (ss. 2.3.1–73)	*Kāraka* section (ss. 1.4.23–55)
The *karman* argument of this verb is taught to be expressible also with the genitive	The *karaṇa* of this verbs is re-classified as *karman* only because it is coded with the accusative

should go here

Further developments within *Aṣṭādhyāyī*: 1

- In some sections of the *Aṣṭādhyāyī* the *kāraka* terms are totally replaced by *vibhakti* terms

- The identification process is complete: no semantics/morphology distinction is observed anymore

- E.g., instead of the term *karman* 'patient', the expression *dvitīyārthe* 'in the sense of the accusative' is used

Further developments within *Aṣṭādhyāyī*: 2

- In some sections of the *Aṣṭādhyāyī* even the *vibhakti* terms are ignored. Instead, inflected pronouns are used as symbols of both case categories and semantic roles

- E.g., instead of the term *adhikaraṇa* 'location' (and also of the term *saptamī* 'locative case') the expression *asmin* 'in it' is used

Hypothetical chronology of *Aṣṭādhyāyī*

1. *Kāraka* terms themselves, possibly of Pre-Pāṇinian origin, etymologically alluding to the semantic categories they indicated

2. *Kāraka* definitions: semantics and morphology are strictly separated, the *kāraka*/*vibhakti* device is established

3. First group of *kāraka* emendations: *kārakas'* definitions are enlarged by additional semantic characterizations

4. Second group of *kāraka* emendations: *kāraka* categories are identified with their own canonical realizations

5. *Samāsa* (compounding) section: *kāraka* terminology is abandoned, while *vibhakti* terms are used instead

6. *Taddhita* (secondary suffixes) section, metalinguistic rules: *vibhakti* terminology is abandoned, while inflected pronouns are used instead

Further developments outside *Aṣṭādhyāyī*

- *Mahābhāṣya* (most authoritative comment on Pāṇini) claims that the first group of *kāraka* emendation is useless

- *Candravyākaraṇa* (a late Buddhist grammar): *vibhakti* terms are used for both semantics and morphology

- *Kātantra* (a non-Pāṇinian tradition) restores a more etymological definition of *kārakas*

- *Saddanīti* (a Prakrit grammar) attempts for a macrorole-like treatment of *kārakas*

How to explain the theoretical contradictions

- The scholars who follow a traditional approach to Pāṇini try to explain these undeniable (but previously ignored) contradictions within the text of *Aṣṭādhyāyī* with some vayākaraṇist "trickery", but they do not actually *explain* anything

- Thus, George Cardona states simply that *kāraka*s are partly syntactic and partly semantic in nature

- However, this amount to say that *kāraka*s are *kāraka*s, while the contradiction remains

How to explain the theoretical contradictions

- Only recently some hypothesis of interpolated nature of the *Aṣṭādhyāyī* have been raised, namely in the S.D. Joshi and J.A.F. Roodbergen's pioneering work on *Sāmasa* and *Taddhita* sections

- My intention was to show that a similar analysis, based on a modern linguistics background, may be— and must be—made also for the *Kāraka* section itself

Do not underestimate linguistic facts!