

# 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 stage”
- 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

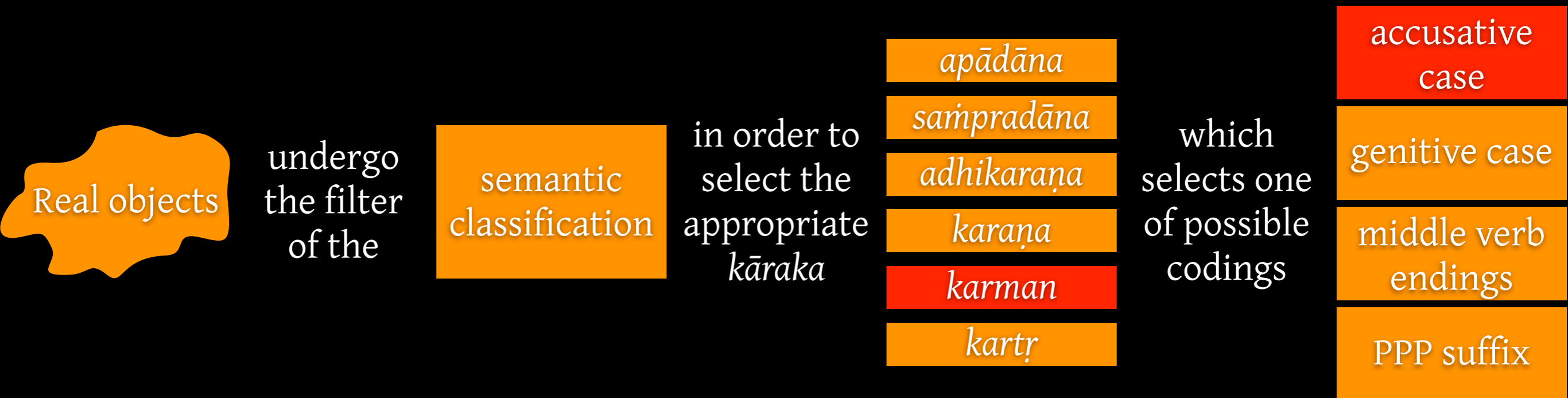
# *Kāraḥas vs. vibhaktis:* semantic roles vs. case forms

- *apādāna* ‘source’
- *saṁpradāna* ‘receiver’
- *adhikaraṇa* ‘locus’
- *karaṇa* ‘instrument’
- *karman* ‘patient’
- *karṭṛ* ‘agent’
- 1st *prathamā* ‘nominative’
- 2nd *dvitīyā* ‘accusative’
- 3rd *ṭṛtīyā* ‘instrumental’
- 4th *caturthī* ‘dative’
- 5th *pancamī* ‘ablative’
- 6th *ṣaṣṭhī* ‘genitive’
- 7th *saptamī* ‘locative’

# *Kāra*ka roles (defined in the *Karake* section)...

- ...have **allusive** names mostly involving the root *kr̥* 'to do', e.g.:  
*kartr̥* 'doer', *karman* 'something done'
- ...however, are **defined** explicitly, with abstract but still semantic definitions, e.g.:  
*kartr̥* '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 *kartr̥*

# General diagram of the *kāraḥa/vibhakti* device





# Example of the *kāraka/vibhakti* mechanism

- The *karman* role is defined as «the most desired by the *karṭṛ*» (s. 1.4.49 *kartur īpsitatamaṅ karma*)
- The *karman* is assigned the **accusative** case as its **canonical realization** (s. 2.3.2 *karmaṅi 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’

# *Kāra*kas 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.:
  - karṭṛ* 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 *karṭṛ*, 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

# *Kāraḱa/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 misleading 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**

# *Kāra*kas' definitions emended

- After having defined each of *kāra*ka roles, Pāṇini inserts a number of *sū*tras 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*)



# *Kāra*kas confused with case categories

- In some instances, however, the emendations are of a different structure
- S. 1.4.42 defines *karāṇa* ‘instrument’ as *sādhakatamaṅ karāṇam* ‘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'

<i>Vibhakti</i> section (ss. 2.3.1–73)	<i>Kāraka</i> section (ss. 1.4.23–55)
The <i>karman</i> argument of this verb is taught to be expressible also with the genitive	The <i>karāṇa</i> of this verbs is re-classified as <i>karman</i> 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. *Kāra*ka terms themselves, possibly of Pre-Pāṇinian origin, etymologically alluding to the semantic categories they indicated
2. *Kāra*ka definitions: semantics and morphology are strictly separated, the *kāra*ka/*vibhakti* device is established
3. First group of *kāra*ka emendations: *kāra*kas' definitions are enlarged by additional semantic characterizations
4. Second group of *kāra*ka emendations: *kāra*ka categories are identified with their own canonical realizations
5. *Samāsa* (compounding) section: *kāra*ka 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 *kāraḥ*
- *Saddanīti* (a Prakrit grammar) attempts for a macrorole-like treatment of *kāraḥ*

# 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 *kāraḱas* are partly syntactic and partly semantic in nature
- However, this amount to say that *kāraḱas* are *kāraḱas*, 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!