

ATTI
del
Sodalizio Glottologico
Milanese

MILANO

2018

*Volume pubblicato grazie al contributo del Dipartimento di Studi Letterari,
Filologici e Linguistici dell'Università degli Studi di Milano*

© 2018

Edizioni dell'Orso S.r.l., via Rattazzi 47, 15121 Alessandria

Tel. 0131/25.23.49 - Fax 0131/25.75.67

E-mail: info@ediorso.it - commerciale@ediorso.it - <http://www.ediorso.it>

L'abbonamento si sottoscrive presso la Casa editrice:

– c/c bancario: IBAN IT22J0306910400100000015892 (specificando la causale);

– c/c postale: IBAN IT64X0760110400000010096154 (specificando la causale).

Realizzazione editoriale a cura di ARUN MALTESE (www.bibliobear.com)

Realizzazione grafica a cura di PAOLO FERRERO (paolo.ferrero@nethouse.it)

È vietata la riproduzione, anche parziale, non autorizzata, con qualsiasi mezzo effettuata, compresa la fotocopia, anche a uso interno e didattico. L'illecito sarà penalmente perseguibile a norma dell'art. 171 della Legge n. 633 del 22.04.41

ISSN 1972-9901

ISBN 978-88-6274-820-9

ATTI DEL SODALIZIO GLOTTOLOGICO MILANESE

Rivista fondata da Vittore Pisani
successivamente diretta da Giancarlo Bolognesi e Renato Arena

Direttore

Maria Patrizia Bologna

Comitato editoriale

Laura Biondi, Maria Patrizia Bologna, Rosa Bianca Finazzi,
Andrea Scala, Massimo Vai

Comitato scientifico

Alain Blanc, Giuliano Boccali, José Luis García Ramón,
Martin Joachim Kümmel, Marco Mancini, Andrea Moro,
Velizar Sadvski, Wolfgang Schweickard, Thomas Stolz,
Jaana Vaahtera

Comitato di redazione

Massimo Vai (Responsabile), Francesco Dedè (Segretario),
Paola Pontani, Alfredo Rizza, Andrea Scala

*I contributi sono sottoposti
alla revisione di due revisori anonimi*

Direttore Responsabile: Maria Patrizia Bologna

Registrata presso il Tribunale di Milano al n. 387 (24 giugno 2008)

TIZIANA PONTILLO

*From the more iconic to the less iconic linguistic form:
morphological syntagms in Pāṇini*

Starting from Kastovsky's definition of "morphological syntagm", I try to understand whether any similarity exists between complex word forms (such as compounds and secondary derivatives) and the matching source-phrases which should be taken into account in the relevant formation-rules according to Pāṇini's teaching. Thus, A 2.1.1 is interpreted and tested in a fresh manner, leading to the outline of a scalar pattern of iconicity which encompasses the several outputs of the provisions it governs.

1. Premise

Before starting with the present reflection on the pattern Pāṇini invented to teach the nominal morphemes obtained by means of derivation or compounding, I shall spend a few words about the title of this paper. As far as the final part is concerned, Kastovsky's (1969: 1) definition of a "morphological syntagm" ("das morphologische Syntagma" / "das Wortbildungs-syntagma") has indeed been adopted, conceived as a "combination of morphemes based on a *Determinans-Determinatum* relation" ("Kombination von Morphemen, die in der Relation von *Determinans* und *Determinatum* zueinander stehen". Of course, the adjective "morphological" aims at highlighting the implicit feature of this relation and thus at setting this kind of syntagm apart from the current true syntagm, i.e. from a phrase ("Satz"), in which this relation is explicit. The first Scholar who used this technical term was possibly Marchand (1966: 133) who, three years earlier, had conceived of morphological syntagms as being nothing else than reduced forms of sentences (explicit syntagms). However, he

* I would like to acknowledge the great help and inspiration I received in the course of my research on this subject from Maria Piera Candotti and more recently from Davide Mocci. I am indebted to Velizar Sadovski and to the anonymous assessors of the present paper for their precious corrections and comments. I am sincerely grateful to Sally Davies, who once again patiently revised my English. All translations are by the author, unless explicitly stated. Of course I myself remain solely responsible for all mistakes.

was soon to replace this term with “morphological composites” (Marchand 1969: 31), which encompasses compounds, suffixal derivatives and prefixal combinations, to be analysed as “reduced” sentences shaped into nouns (adjectives included) and verbs.

Notwithstanding that the “sentential source” hypothesis of word-formation, as formulated in the traditional transformational view, is outdated for several reasons, including e.g. the doubts that arise about *where* word-formation actually takes place, independently or not of a matching explicit syntagm, I have decided to focus on a quite early syntactic approach to these complex morphemes which dates back to the 4th c. BCE at least. Thus, I shall try to give an overview of this assumed basic matching between the so-to-say “explicit” and “implicit” syntagms as it is involved (and sometimes perhaps merely entailed) in Pāṇini’s grammar system, in order to understand how the relevant crucial rules actually and theoretically work.

Furthermore, a second preliminary remark could be helpful in accounting for the more suggestive than conclusive terminology used in the first part of this paper’s title. The idea originally comes from a couple of insightful explanatory notes written by Domenico Silvestri several years ago. After a crystal-clear exposition of icons in strict terms of syntax, Silvestri (1994: 131; 133-134) added the following intriguing comments:

“Le icone o diagrammi motivati di un contesto istituzionale si strutturano linguisticamente come sintagmi, cioè come combinazioni non casuali di simboli arbitrari consistenti in unità linguistiche. [...] L’affissazione ha un carattere sintagmatico meno evidente in quanto combina non parole con parole ma morfemi con morfemi che per lo più non sono liberi, ma legati e pertanto non immediatamente riconoscibili. [...] Anche l’affissazione, non appena siano riconosciuti gli assetti sintagmatici, rivela un forte carattere diagrammatico ed una intrinseca motivazione (si tratta per l’esattezza, di una derivazione, a partire da un morfema lessicale di base”¹.

I consider that Pāṇini’s complex word-formation architecture – in particular the set of rules which are targeted on nominal compounding and denominal derivation – might be better understood against such a general background. In particular, the optionality pattern, a core framework in this aphoristic grammar, might also have to

¹ “There is a diagrammatic analogy between semantic and morphotactic compositionality (or transparency)”, for instance since the Engl. word *read-er* is “motivated both semantically and morphologically” by its base verb (to *read*) and “the agentive language-specific suffix” (*-er*), there is a diagrammatic relationship between semantic and morphological motivation.” (Dressler 1987: 102). Moreover, “Morphological motivation is most diagrammatic in the case of morphotactic transparency [...] i.e. if perceptual, morphological segmentation into base and affix is undisturbed”. As a consequence, according to Dressler (1987: 103-104), on the one hand, phonological or morpho-phonological rules can blur morphotactic transparency; on the other hand, conversion (i.e. zero-affixation), as in *a cut* derived from *to cut*, subtractive word formation rules, as in Russ. *matematik* ‘mathematician’ derived from *matematika* ‘mathematics’, and total suppletion of the stems, as in *Anicien = Podot = Ponot* ‘inhabitant of *Le Puy*’, are examples where the diagrammaticity is low. For the two scales of naturalness taken into account by Dressler (1987: 104) see below, fn. 27.

cope with the assumed scalarity of the several morphological syntagms, conceived as morphologically distinct outputs depending on the same analytic input. Since these several outputs might have been ordered according to their greater or lesser degree of likeness to the matching source-phrase, I use the concept of iconicity of language to catch this specific kind of likeness. Which parameters are indeed useful in deciding whether a nominal stem is “iconic” or not? And in particular, what exactly has to be evaluated in order to define the above-mentioned similarity of each derived or compound morpheme? And what does this likeness refer to?

Thus, I have decided to focus on this subject here, with the mere ambition of trying to answer this question within the limits of Pāṇini’s descriptive model by paying special attention to the internal arrangement of his relevant rules. A crucial step in my research work is an innovative proposal for interpreting a capital rule of the *Aṣṭādhyāyī* (2.1.1)² in a manner which is completely different from the traditional one, i.e. far from that adopted by the indigenous early commentaries and from the current interpretation followed by universal scholarship. The method of research I shall try to rely on is based on Kiparsky’s renowned 1979 model, i.e. on his discussed but successful work on optionality. His work managed to recover the multiplicity of types of optionality involved in the *Aṣṭādhyāyī*, flattened by the commentaries which had incorrectly translated several technical terms as if they were synonyms. Thus, I shall attempt to read Pāṇini *ex Pāṇini ipso*, instead of uncritically staying with the commentaries. It goes without saying that the latter did however play an important role in making known the philosophical and linguistic debates which circulated around several technical or general linked issues and which, moreover, are a precious collection of examples, i.e. they inform us about the linguistic material to which each rule can be extended. This is why I shall often quote and discuss them in order to argue my point.

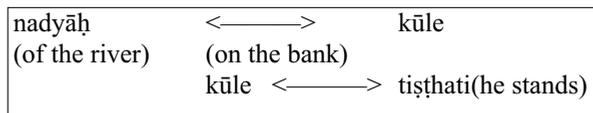
2. The general *samartha*-constraint of word-formation rules in the Pāṇinian tradition: *status quaestionis*

The content of A 2.1.1 is commonly mentioned as the “*sāmarthya* principle”, generally considered as a semantic condition which has to be fulfilled in the context of syntax, on the basis of the commentaries (see below). As a first step, it could be useful to look at the almost linear history of how modern scholarship has interpreted the term *sāmarthya* and, consequently, the nature of the constraint taught by this rule, according to some of its authoritative interpreters:

² This interpretative proposal for A 2.1.1 was advanced for the first time in Pontillo 2013: 111-118, which actually focused on the so-called “single remainder” (*ekāśeṣa*), i.e. the linguistic phenomenon according to which e.g. the meaning of two lexically distinct items, which however denote a male and female of the same type (such as *pitā ca mātā ca* “father and mother”), can optionally be denoted just by the former noun inflected as a dual noun, i.e. by the so-called elliptic dual *pitarau* “mother and father, parents” (see e.g. Wackernagel 1905: 150-151; Edgerton 1909; Oliphant 1912: 54; Wackernagel 1926: 82-3; Kiparsky 2010).

TRANSLATION	INTERPRETER
“Logical connection of <i>padas</i> ”	Faddegon 1963 [1936]: 28
“Semantic connection as indicated by syntactic elements” ³	Joshi 1968: 1
“Immediate syntactic relation”	Mahavir PhD Thesis 1971; 1978: 19-22; 1984: 9
“Syntactic relation”	Roodbergen 1974: 29
“Syntactic and semantic relation”	Cardona 1976: 212; 339 n. 264
“Semantic and syntactic relationship”	Deshpande 1980: 16
“Semantic and syntactic connection between the constituents of compounds”	Vergiani 1994: 65
“Semantic (and syntactic) connection”	Houben 1997: 94

The so-called “elasticity” of this concept became a well-known feature of the Pāṇinian grammatical descriptive tradition especially thanks to Deshpande’s contributions. Even though in 1968 Joshi had provided a comparably long list of these relations, Deshpande (1980: 14-20; 1987: 58-71) makes the original assumption that the *sāmarthya* notion also has to be extended to the so-called “networks” of semantic-syntactic relations, “networks” whose boundary is governed by pitch, in accordance with A 8.1.28 *tiññ atīnaḥ* which states that “an inflected verbal word [is *anudātta*] after an inflected non-verbal word”. If we take a look at this diagram (Deshpande 1980: 18), we can clearly see how the *sāmarthya*-relation links both *kūle* with *tiṣṭhati* – dealing with a *kāraṇa*-relation (since the river bank *kūla-* plays the role of the substratum, *adhikaraṇa*, for the action of staying *sthā-*) and *nadyās* with *kūle* – namely a non-*kāraṇa* relation, i.e. a *sambandha*-relation (i.e. “the bank *kūla-* of the river *nadyās*”).



Indeed, Deshpande showed how the *sāmarthya* notion covers a large range of relationships, from minimal combinations to more complex units.

³ Renou (1966 vol. 1: 54) also concentrates on the semantic connection. Cf. his translation of the rule: “Une prescription visant des mots (entiers, c’est à dire notamment une règle concernant la composition et la dérivation, doit être compris comme s’appliquant auxdits mots en tant que) leur sens les associe (les uns aux autres).”

RELATION	EX.
<i>kāraka-</i> (between an inflected noun and a verbal inflected form)	<i>odanam pacati</i> “he cooks rice”
<i>sambandha-</i> (between two inflected nouns)	<i>daśarathasya putraḥ</i> “Daśaratha’s son”
<i>upapada-</i> (co-occurrence)	<i>vṛkṣam anu</i> “near the tree”, <i>kumbha-kāra</i> “pot-maker”
<i>sāmānādhikaraṇya-</i> (co-referentiality)	<i>vṛkṣaḥ tiṣṭhati</i> “the tree stands” / <i>vīraḥ puruṣaḥ</i> “brave man”
<i>taddhita-</i> (secondary derivatives)	<i>dāśarathi-</i> “Daśaratha’s son”
<i>samāsa-</i> (compounds)	<i>daśarathasuta-</i> “Daśaratha’s son”

Nonetheless, insightful as this assumption on Pāṇini’s *sāmarthyam* may seem, it is far from proven. Even though several scholars agreed with Deshpande about this “elasticity” (Radicchi 1985: 40; Vergiani 1994), others, such as Cardona (1999: 194) have refuted it. As is well known, he restricts the domain of the *samarthaḥ padavidhiḥ* rule to the set of rules of the first two sections of the second book, thus merely regulating nominal composition. Furthermore, he does not accept the emphasized discontinuity between Pāṇini and his commentators.

In point of fact, we have to deal with two traditional problems already tackled by Kātyāyana and Patañjali, namely:

– What is this rule’s domain? ⁴
– What does the term <i>samartha-</i> mean?

First of all, one wonders if this rule is actually a heading-rule (i.e. an *adhikāra*), restricted to the section devoted to nominal composition or whether it is a general statement aimed at helping the correct interpretation of the text (i.e. a *paribhāṣā*) to be extended to at least all the types of *vṛtti* i.e. *samāsa*, *kṛt*, *taddhita*, derivative verbal

⁴ M 1.359 ll. 4-8 *ad A 2.1.1: kiṃ punar ayam adhikāra āhosvit paribhāṣā. kaḥ punar adhikāra-paribhāṣāyor viśeṣaḥ. adhikāraḥ pratiyogaṃ tasyānirdeśārtha iti yoge yoga upatiṣṭhate. paribhāṣā punar ekadeśasthā satī sarvaṃ śāstram abhijvalayati pradīpavat. tad yathā. pradīpaḥ suprajvalita ekadeśasthaḥ sarvaṃ veśmābhijvalayati. kaḥ punar atra prayatnaviśeṣaḥ. adhikāre sati svarayitavyaṃ paribhāṣāyām punaḥ satyāṃ sarvaṃ apekṣyam*, “- What [kind of rule] is this? *adhikāra* or *paribhāṣā*? - But what difference is there between *adhikāra* and *paribhāṣā*? - an *adhikāra* stands alongside every rule, so that it may not be specifically mentioned at each rule. On the other hand, a *paribhāṣā* illuminates the whole corpus of rules [although] it is located in only one place like a kindled lamp which illuminates the whole house. - But what difference is there with regard to the effort [which is involved here]? If it is an *adhikāra* it should be *svarita-* pitched. On the other hand, if it is a *paribhāṣā*, all (every relevant injunction) is required [to interpret it].”

bases (*sanādyantāḥ*), *ekaśeṣa*⁵ and *paraṅgavadbhāva*⁶. We know that Patañjali considers the rule itself as an *adhikāra*, i.e. as a rule working only for compounds, in the sense of *ekārthībhāva* (i.e. “merging words having separate objects in a single integrated meaning” – in accordance with Vt. 1)⁷. According to Patañjali’s examples, the proposed *ekārthībhāva* could describe the phenomenon according to which the separated objects of the words in the sentence *rājñāḥ puruṣaḥ* stay as such, while the compound *rājapuruṣaḥ* denotes a single object, namely a king’s officer⁸.

Yet Patañjali (M 1.359 ll. 15-16 ad A 2.1.1) is conscious that a wider application of the *sāmarthyā* principle for all the *vṛttis*, i.e. treating this rule as a *paribhāṣā*, could make the rule more consistent, less vulnerable: *tatraikārthībhāvāḥ sāmarthyam paribhāṣā cety evaṃ sūtram abhinnatarakaṃ bhavati*, “Among these alternatives, (if we accept) that ‘semantic connection’ is (here) ‘single integrated meaning’ and (the rule is) a *paribhāṣā*, then the rule can be better kept as it is (than in other alternative interpretations)” (transl. Joshi 1968: 10).

On the other hand, we know that a second traditional option for the meaning of *samartha* – advanced by Kātyāyana himself in Vt. 4 – is *vyāpekṣā*, i.e. “mutual expectancy, semantic and syntactic interdependence”, mainly focused as the distinctive *samartha* feature for a *vākya* to explain the relation which links for instance *rājñāḥ* to *puruṣaḥ* by means of the sixth ending of *rājñāḥ* (*vibhaktividhāna*). Actually, the discussion of this long commentary goes beyond the scope of this present paper and, for our purposes, we can even re-start from one of the more recent steps in the traditional interpretation, namely from the matching *Siddhānta-Kaumudī* rule 647⁹, as it is explained by the *Subhodinī* commentary (*sāmarthyam ca dvividhaṃ vyapekṣālakṣaṇam ekārthībhāvalakṣaṇam ceti*). The latter definitely explains that this rule is a *paribhāṣā*, and that *sāmartha* has to be interpreted in two manners, i.e. as *ekārthībhāva* and as *vyapekṣā*¹⁰. The two examples are respectively the single inflected

⁵ A 1.2.64 (*sarūpānām ekaśeṣa ekavibhaktau*) teaches that just one of a possible series of items having the same form occurs, as a single remainder, provided that a single ending is used.

⁶ A 2.1.2 (*sub āmantrite parāṅgavat svare*) teaches that as far as the pitch is concerned, a nominal inflected word is treated as if it were a part of the following *pada*, provided that this latter has been termed *āmantrita* (the use of the nominative ending as a *sambodhana* “vocative form” is called vocative form according to A 2.3.48).

⁷ Vt. 1 tells us that *samartha* is merging words having separate objects in a single integrated meaning: *prthagarthānām ekārthībhāvāḥ samarthavacanam* (M 1.361 l. 26 [Vt. 1 ad A 2.1.1]), “The expression *samartha* is the merging in a single integrated meaning of words having separate objects.”

⁸ M 1.361 l. 28 ad Vt. 1 on A 2.1.1: *vākyaḥ prthag arthāni. rājñāḥ puruṣa iti. samāse punar ekārthāni. rājapuruṣa iti*, “In a sentence, objects are separated: e.g. the man / servant of the king; on the other hand, in a compound, objects constitute a single object: e.g. the royal servant.”

⁹ It is noteworthy that even though this work by Bhaṭṭoji Dikṣita dates back to the early 17th century, i.e. almost two thousand years later than Pāṇini’s work (4th century BCE), it constitutes a sort of standard Pāṇini grammar manual, even more popular than the *Aṣṭādhyāyī* itself.

¹⁰ See Vasu’s (1906: 385) explanation: “When a single word is capable of expressing the sense of a sentence, on analysis, it is called *ekārthībhāva sāmarthyam*; while that which depends upon the words of a sentence, as connected in sense, is called *vyapekṣā*.”

word (compound) *rājapurusaḥ* and the phrase *rājñāḥ purusaḥ*, where the two single inflected words depend on each other. Nonetheless, even more interesting is the interpretation of the present rule given by the relevant *Tattvabodhinī* commentary:

padasambandhī yo vidhiḥ sa samarthāśrito bodhyaḥ, “This rule has to be understood as *samarthāśritaḥ*, i.e. as relying on words which are connected”. Indeed, with regard to the *uddeśya*, i.e. “that which is enunciated first and with reference to which a rule is stated”, all the available translations – to the best of our knowledge – follow this interpretation. Thus, the current reading of *padavidhi* is “a rule relating to *pada* or complete words”¹¹.

All the more recent translations of Pāṇini’s rule interpret *padavidhi* in almost similar way:

TRANSLATION	QUOTATION
“An operation on <i>padas</i> [takes effect] only when they are semantically and syntactically connected”	Katre 1987: 105
“An operation concerning fully inflected words is to be syntactically related”	Sharma 1995: 1
“An operation pertaining to <i>padas</i> applies to <i>padas</i> that are syntactically and semantically related”	Cardona 1997: 66
“An operational rule concerning finished words takes effect only if the elements to which the rule refers are <i>samarthaḥ</i> ‘semantically (and syntactically) connected’”	Houben 1997: 94

As a consequence, even the general history of linguistics registers this selfsame interpretation. For instance, Koerner (1995: 63), quotes this rule as follows:

A general constraint of the grammar restricts word-formation rules to semantically connected (*samartha*) elements.

i.e. the compound *padavidhi*- in our rule is interpreted as generally denoting “word-formation rules” – leading me to believe that he is hinting at a *paribhāṣā*-oriented interpretation of the rule, not restricted to the compounds. Nonetheless he also comments that “the semantically unrelated words [...] cannot be compounded with each other”, which indicates that he, too, faithfully follows Patañjali’s conclusion.

¹¹ The *uddeśya* is *padavidhiḥ* because there is no connection with previous rules whatsoever, so that we have to apply Joshi – Bhate’s convention 4 (*yatnānuvṛtti*) (1984: 271; 14; 32) concerning the automatic cancellation of previous *uddeśya* and *vidheya*, when a new, incompatible *uddeśya* and *vidheya* are introduced (“a special effort offers us a clue with regard to the continuation or the discontinuation of items”). A 2.1.1 comes at the beginning of a new section which deals with compound formation, which furthermore is supposed to constitute a later addition to the core of the *Aṣṭādhyāyī* according to Joshi – Roodbergen (1983: 60-62; 91-93).

At any rate, I wonder whether this is the correct interpretation of the compound *padavidhi-* involved in our rule and the analysis of this compound in Pāṇini's *sūtra* is precisely my new starting point.

3. A fresh interpretative proposal

An important piece of evidence for a part of this interpretation could be supplied by the internal lexical analysis of the five other occurrences of the noun *vidhi* used in the *Aṣṭādhyāyī* as a second member of a compound. Candotti and Pontillo began to focus on the latter, while they were working on the compound *an-al-vidhi* (see Candotti – Pontillo 2004; Candotti – Pontillo 2012; Candotti – Pontillo 2015a p. 67 n. 32) in A 1.1.56 (*sthānivad ādeśo 'nalvidhau*)¹² to demonstrate that the restriction *analvidhau* has to be translated as “except in respect of a provision mentioning a sound (of the placeholder)” instead of (more generically) as “except for the case of rules based on / concerning sounds (*aL*)” (see Candotti – Pontillo forthcoming a § 5; Pontillo 2013: 115).

<i>X-vidhi-</i>	<i>Aṣṭādhyāyī</i> rule
<i>analvidhi-</i>	A 1.1.56: <i>sthānivad ādeśo 'nalvidhau</i>
<i>pūrvavidhi-</i>	A 1.1.57: <i>acaḥ parasmin pūrvavidhau</i>
<i>padānta-dvirvacana-vareyalopa-svara-savarṇānusvāra-dīrgha-jaś-car-vidhi-</i>	A 1.1.58: <i>na padānta-dvirvacanavareyalopasvara-savarṇānusvāradīrghajaścarvidhiṣu</i>
<i>pratyayavidhi-</i>	A 1.4.13: <i>yasmāt pratyayavidhis tadādi pratyaye 'ṅgam</i>
<i>pada-vidhi-</i>	A 2 1 1: <i>samarthaḥ padavidhiḥ</i>
<i>sup-svara-samjñā-tuK-vidhi</i>	A 8.2.2: <i>na lopaḥ supsvarasamjñātukvidhiṣu kṛti</i>

The focus of this whole list of expressions is regularly some unit mentioned in the rules themselves, even if this unit does not constitute the object or the condition of the rule itself. By means of the compounds *X-vidhi*, Pāṇini seems to merely point to a starting “level”, which represents the real consistency of the rule taken as a sentence (consisting of *padas* explicitly included in the wording of the rule or alluded to by means of synonyms or hyperonyms). Thus, this lexically internal evidence allows us to answer to the first traditional question (“What is this rule’s domain? Does it include

¹² ‘The substitution-procedure i.e. the whole behaviour in case of a substitution has to be as if we were in the presence of the placeholder (the substitute - lit. “that which is specifically enjoined” - is as if it were the placeholder), except in respect of a provision mentioning a sound (of the placeholder)’ (Candotti – Pontillo 2013).

only compounds or all types of *vṛtti*¹³?) in a different manner, so that I assume that *padavidhi* in A 2.1.1 refers to “a provision that depends on *padas*”. In other words, this rule’s domain should be restricted to types of word-formation which are actually taught by means of rules mentioning a string of *padas*.

As a consequence, our attention moves from the everyday linguistic usages, namely from the concurrence between common syntagms (*vākya*) and morphologic syntagms (such as *samāsa*, *taddhita*), to a functional comparison between the precise wording of every single word-formation-rule (governed by *samarthah padavidhih*) and the relevant linguistic forms these rules realize, i.e. between metalinguistic input and relevant linguistic output – in a sort of *laukika* and spontaneous substitution pattern. This is the first point of the fresh proposal in Pontillo 2013: 111-118.

On the other hand, as far as the scope of “that which is to be prescribed” (the *vidheya*) of our rule is concerned, the word *samartha* has at least four meanings:

- 1) “capable” – which is not in question here;
- 2) “syntactically (and semantically) connected” – which is the current translation – as I have just recalled;
- 3) “having an integrated meaning”, an interpretation that has recently been adopted by Scharfe (2009: 157ff.) with reference to *ekārthībhāva*
- 4) “having the same meaning” / “semantically equivalent” / “synonymous”

Nonetheless, in Pāṇini’s rules 1.3.42, 2.3.57, 3.3.152; 8.1.65 *samartha* clearly means *tulyārtha* that is “having the same meaning”, as has overtly been explained in KV on A 1.3.42 (*propābhyām samarthābhyām*).

As regards its etymology, I propose the adoption of the second brief explanation advanced by Joshi – Roodbergen (1994: 71)¹⁴: “Alternatively, the form can be derived as *sam* + *artha* in which *sam* means *sama*.”, seeing that the expected word-form is actually *samārtha-* instead of *samartha* in the sense of “whose meaning is equivalent”¹⁵. Unfortunately, the two scholars omit to quote any rule but I think that they are hinting at A 6.3.84-7, rules which teach the replacement of *samāna* “equal, common, similar” with *sa-* in various contexts. This interpretation of *samartha-* as “conveying the same meaning” (in the rule in question) had already been promoted by Joshi – Roodbergen (1996: 1), who in fact signalled that their translation “deviates substantially” from the translations offered in Joshi 1968: 1. Nonetheless, their (1996) translation is: “An operation involving finished words conveys the same meaning”, while, in my opinion, there is more to this rule than a simple change in the sense of

¹³ See the list of *vṛttis* above, § 2.

¹⁴ In their comment on A 1.3.42, Joshi and Roodbergen (1994: 70-71) also recall another possibility, suggested by the *Padamañjarī*, which refers to Vt. 4 (*śakandhvādiṣu ca*) ad A 6.1.94 (*eni pararūpam*, “A single substitute, i.e. the latter of two contiguous phonemes (replaces both the former phoneme-class *a* as a final phoneme of a preverb and the latter one, i.e.] a vowel *e* or *o*”) in order to extend the list *śakandhvādi* to the nominal base *samartha*.

¹⁵ Bhatē’s (1989: 2) translation of A 4.1.82 is already in line with Joshi – Roodbergen’s (1994: 71) proposal. See below, fn. 24.

the *vidheya*. Staying with this easy meaning of *samartha* as “having the same object”, and resorting to the just explained (metalinguistically oriented) interpretation of the *uddeśya*, I shall thus propose to translate the whole rule *samarthaḥ padavidhiḥ* as follows:

A provision (a *vidhi*) which depends on inflected words denotes the same object [of the output of rule, i.e., of the *pada* formed in accordance to the rule itself].

Therefore, in my opinion, the target of this rule might have been the equivalence of the denotation which is taught by the formation rule and the output of the formation itself, i.e. between the *vigraha* enunciated or suggested by *vṛtti*-rules and the newly-formed (and then inflected) *pada*. In other words, *samarthaḥ padavidhiḥ* should continue to be a semantic constraint, as in Joshi – Roodbergen’s (1996: 1) interpretation, but it has to be understood in a completely different functional context, entirely within the grammar and more precisely within Pāṇini’s substitution pattern. As a consequence, if one wondered whether this string of *padas* constitutes a *laukika-vigrahavākya*, i.e. a meaning paraphrase, matching a sentence actually included in the everyday linguistic usage or rather an *a-laukika-* or *śāstrīya-vigrahavākya*, i.e. a technical constituent analysis, as Joshi and Roodbergen wonder¹⁶, I would answer that it is not the point, since the optionality is taught in a different manner, by means of Pāṇini’s specific technical terms (*vā* “preferably”, *vibhāṣā* “marginally”, *anyatarasyām* “either way”). The string of *padas* taught in each *vṛtti*-rule has somehow to be replaced by the newly-formed *vṛtti*, provided that their denotation is the same. It does not matter if this string is actually used, even though this often happens. The optionality between phrase, compounds and secondary derivatives etc. is a linguistic phenomenon governed by distinct rules. A 2.1.1 is rather a metalinguistically oriented rule.

Strictly from the philological point of view, the advantage of this plain proposal is self-evident. The nominative singular masculine *samarthaḥ* becomes consistent as it is, i.e. it easily agrees with the nominative masculine singular noun *vidhiḥ* and I can accordingly avoid resorting to integrations for more complex translations – as all the current translations seem to do (see above). All these translations are probably inspired by Kātyāyana’s new wording of the rule as *samarthānām padavidhiḥ*¹⁷, where the reading of *samartha-* points at a syntagmatic relation between words combined in a phrase, i.e. to an input phrase, while, in the translation here proposed, *samartha-* refers to a paradigmatic relation between the “input phrase” and the complex word which is the output of the relevant rule¹⁸.

¹⁶ According to Joshi – Roodbergen (1996: 1-2) it constitutes an *a-laukika-vigrahavākya*.

¹⁷ M 1.369.10 (Vt. 18 adA 2.1.1): *siddhaṃ tu samarthānām iti vacanāt*.

¹⁸ I am grateful to one of the assessors of the present contribution, who underlined this difference between the common interpretation of *samartha-* (see tables above, § 2) and my proposal, and also suggested me the lexical choice here adopted.

Furthermore, in this new frame of interpretation, the general equivalence taught by *samarthaḥ padavidhiḥ* would result as being indifferent to the nature attributed to the relationship between the constituents of the un-compounded string, i.e. independently from the long-debated choice of a synonymous word for *samartha*, be this relationship classified as either *ekārthibhāva* or *vyāpekṣā*¹⁹ – even though the majority of *padavidhis* actually realize an *ekārthibhāva*.

4. Applying A 2.1.1

Here I shall try to apply *samarthaḥ padavidhiḥ* in the specific sense I proposed above. For instance, as is well known, all the *sūtras* devoted to the formation of compounds have to indicate two *padas* as a rule, namely the *upasarjana*, expressed in the nominative case, and the non-*upasarjana*, inflected in the instrumental case, in accordance with the syntactic metalinguistic pattern taught by the *adhikāra* rule A 2.1.4 ([*sup* 2] *saha supā*). The rule *samarthaḥ padavidhiḥ* enables the speaker to check the meaning of the compounds, which have to match the meaning of the *vidhi* itself. For example, in A 2.1.34 (*annena vyañjanam*, “A *pada* denoting a flavour [= *upasarjana*] combines with a *pada* denoting food [= non-*upasarjana*]”), this pair of inflected nominal forms is represented by two common and general nouns, *vyañjanam* ‘flavour’ and *annam* ‘food’. With regard to the specific classical example, i.e., *dadhyodanaḥ* “*dadhi*-flavoured rice”, the two constituent *padas* *dadhi* and *odanaḥ* would have to be considered as a sort of hyponym of *vyañjanam* and of *annam*, respectively. Nonetheless *dadhi* is not a *vyañjanam* by nature, at least according to the lexicon. It is this specific *padavidhi* which limits the usage to this sense.

The meaning handed down by Patañjali himself (on the basis of Vt. 4) as *dadhnopasikta odanaḥ*, actually corresponds to the general combination expressed as *annena vyañjanam*, since, for instance, *dadhi* is certainly understood as a *vyañjanam*, if this noun combines with any kind of food (*odanaḥ* included). As a consequence, the *vidhi* A 2.1.34, which depends on the two mentioned *padas* (*annena* and *vyañjanam*), shares the same meaning of the compounds which it forms.

On the other hand, albeit from a different point of view, it is a fact that *dadhyodhanaḥ* is an option with respect to the everyday linguistic usage of the *vākya* *dadhnopasikta odanaḥ*. Indeed, when he explains one of the consequences of the proposal advanced in Vt. 1, namely the meaning of the term *samartha-* used in A 2.1.1, as *pṛthagarthānām ekārthibhāvaḥ*²⁰, Kātyāyana points out the risk of vanifying some of Pāṇini’s well-known rules on optionality²¹. In fact, since such an option is always taught in rules concerning *samartha-* formations, i.e. formations where an analytical

¹⁹ Moreover, the questioned *abhidhāna* would not be *svabhāva* but consistently predicted by means of the *vigrahavākya* (Candotti – Pontillo 2010; Candotti – Pontillo 2015b: 86-89)

²⁰ ‘The condition of becoming a single-meaning object of the words having different-meaning objects’.

²¹ M 1.364 l. 1 *ad* A 2.1.1 Vt. 2: *vāvacanānarthakyaṃ ca svabhāvasiddhatvāt*, “And the expression

form is concurrent with a synthetic form considered ‘as having one single meaning’, the relevant formations could be used at will, independently of each other²². In this case, the target is rather to teach the output meaning of the compound by means of the relevant rule (which either mentions the constituent *padas* or some of their hyperonyms). This sort of replacement relies on the metalinguistic level of language and is based on a grammar-taught equivalence of meaning between the metalinguistic place-holders and the linguistic substitutes.

An easier but more illustrative case of *padavidhi* is that of a *tatpuruṣa*, such as *vṛkabhayam* “fear of wolves” or *rājapurūṣaḥ* “king’s man, royal servant”, whose relevant formation rules are A 2.1.37 *pañcamī bhayena* and A 2.2.8 *ṣaṣṭhī*, respectively. Here the constituent *padas* are only partially mentioned but in accordance with the general formula taught by A 2.1.4 [*sup*] *saha supā*, the fifth and sixth *vibhaktis* are regularly mentioned in the rule as *upasarjana padas* in the nominative case and the second *pada*, in the instrumental case, is the generic *supā* and *bhayena*, respectively. Thus, for all these *samāsa*-rules, the crucial feature of being a *pada-vidhi*, as a rule that is dependent on *padas*, is ensured by the formula supplied by the *adhikāra* 2.1.4 [*sup*] *saha supā*, that is, *padam saha padena*.

I believe that the substitution frame I am assuming for the *vṛtti*-rules governed by *samarthaḥ padavidhiḥ* is somehow suggested by the initial genitive *samarthānām* in the general *taddhita* rule A 4.1.82 *samarthānām prathamād vā*. It is tempting to translate it as:

“Preferably [in order to form a *taddhita*-nominal base], in the place of the *padas* which convey the same meaning [on which the relevant *taddhita* rule depends²³], [a *taddhita* affix] is introduced after their first *pada*”²⁴.

It is self-evident that *samarthānām* could work as a partitive genitive with respect to *prathama-* because this rule teaches where the *taddhita-* affixation apply, namely after the first among the *padas* mentioned or alluded by the relevant *taddhita* rule, but this is implicit and automatically involved by the mention of *prathama-*. Indeed I am advancing that the genitive case in the initial emphatic position is crucially used in the sense of *substituendum* with respect to the output (i.e., *prathama-* stem + *taddhita*-affix). It is *vā* which governs the optionality relation which links each analytic phrase

of optionality is vain because of its being obtained by its own condition.” — transl. Candotti — Pontillo 2015 (b): 88. See also above, § 3.

²² See Candotti — Pontillo 2015 (b): 88.

²³ The relevant rule can directly mention the *padas* which constitute the matching *vigrahavākya* or merely suggest them by means of synonyms, hyperonyms, etc..

²⁴ Cf. some other current translations, such as Katre’s (1987): “A *taddhita* affix is introduced optionally after the first *pada* syntactically (and semantically) connected with others (*samarthānām*) (provided by the rules themselves)”; Bhate’s (1989: 2): “(the *taddhita* suffixes are) preferably (added) to the first among the semantically equivalent words”; Sharma’s (1999): “An affix, termed *taddhita*, occurs [optionally] (from here on prior to 5.3.1 *prāg diśo vibhaktiḥ*) after the first among syntactically related (*samartha*) nominal stems”.

directly involved or indirectly taught by the *taddhita*- rule and the *taddhita*- derivative which is its relevant output²⁵.

A set of *padas* such as the easy example of A 4.1.92 *tasyāpatyam* suggests the exact equivalent of a *taddhita* as far as the meaning is concerned. For instance, *upagor apatyam* is the meaning of *aupagavaḥ*. Both the syntagm and the derivative can denote one of Upagu's descendants.

Once again, the fact that it deals with two concurring expressions from the syntactical point of view, is of course not determined by A 2.1.1, but the equivalence between these two expressions is granted by the string of *padas* mentioned in the relevant *taddhita* rule.

Analogously, the strict relationship between the *vigraha* taught by each *ekaśeṣa* rule as an input and the corresponding output, is another case of substitution governed by *samarthaḥ padavidhiḥ*. For instance, according to A 1.2.70 (*pitā mātrā [anyatarasyām]*) which depends on the *padas pitā mātrā*, the denotation of this group of *padas* in the relative *vigrahavākya (pitā ca mātā ca)* is equivalent to *pitarau*. Once again the initial genitive *sarūpānām* of A 1.2.64: *sarūpānām ekaśeṣa ekavibhaktau* – just like the *samarthānām* of A 4.1.82 – seems to suggest a substitution frame for the *ekaśeṣa* procedure, too, something that is explicitly denied by tradition. The meaning of *pitarau* cannot be obtained by means of mere morphological analysis. I need the specific *ekaśeṣa*-rule, in order to understand that *pitarau* denotes mother and father, as explicitly mentioned in the relevant *padavidhi*²⁶.

To sum up, it is self-evident that I do not consider A 2.1.1 as an *adhikāra*, since it has to be applied to the general *ekaśeṣa*-rule which is taught before, in A 1.2.64. It seems that interpreting A 2.1.1 in this fresh manner can also apply to the whole list of *vṛttis* in Pāṇini's grammar and this is therefore well tuned to Deshpande's notion of Pāṇini's elasticity in using the *samartha* device, so that the discontinuity between Pāṇini and his commentators is also confirmed. What might remain unconfirmed is that the *sāmarthyam* is Pāṇini's crucial syntactic unit, because, in my opinion, A 2.1.1 is a mere semantic constraint used to check the output of word-formation, relying on the specific *padas* mentioned or alluded to in the relevant word-formation rules.

²⁵ Cf. Scharf (2013: 243): "A 4.1.82 specifies that in the following rules the relevant affix or affixes optionally occur after the first syntactically and semantically related words in the phrase modelled in the rule. Since the provision of the affix is optional, the derivate alternates with the expression modelled".

²⁶ Cardona (2015: 94) considers *sarūpānām* as a mere "bound genitive", "linked with *eka-*, which is coreferential with *-śeṣa* in the compound *ekaśeṣaḥ*" and explains: "Accordingly, A. 1.1.49 is not required for interpreting A. 1.2.64, so that it is not brought into play here. The rule does not provide for substitution by a single unit". In a dedicated footnote Cardona (2015: 94 fn, 99) also adds: "Pontillo (2013: 118-24) attempts to show that the rule does provide for substitution, but does not consider the syntax of the genitive *sarūpānām*". Indeed, as in A 4.1.82 (see above), I consider the common sense of the genitive (*sarūpānām*) as a bound genitive (or simply as a partitive genitive) automatically involved by the mention of *eka-*. It can also remain implicit. By contrast, the substituendum has to explicitly be taught (in the genitive case).

In conclusion, if we consider compounds, secondary derivatives and *ekaśeṣas* in this complex frame of Pāṇini's system of substitutions, where each single provision supplies a sort of metalinguistic input for more than one kind of these formations (additionally governed by some optionality indications), the scalar character of these word formations will clearly come to appearance. All of them have to comply with A 2.1.1, as far as their metalinguistic input is concerned (i.e. with respect to the relevant provision) and thus they share the same linguistic referent.

However, if we consider phrases as being maximally diagrammatic, then secondary derivatives and the so-called elliptic duals/plurals (*ekaśeṣas*) can be situated at the minimal diagrammatic level, and compounds are in between²⁷. This becomes especially clear both in the case of secondary derivatives and in that of the *ekaśeṣas*, where a combination of two inflected words, as they are enunciated or hinted at by the relevant *taddhita-* or *ekaśeṣa-* provision, is replaced by only one stem to which a secondary derivative affix or even a mere dual or plural case-ending, respectively, apply. The second lexeme is completely intransparent.

However, the *vidhi* is generally not different from a syntactic combination of inflected words in a common sentence, but when this combination is envisioned as a predicative structure, then it is important to understand how the *padavidhi*-wording might have been conceived by Pāṇini. A tentative explanation is advanced in a forthcoming contribution co-authored by Davide Mocci, whose provisional title is "Predication in *Aṣṭādhyāyī* 2.1.56 and 2.3.46: how the syntax of a *karmadhāraya* can help to understand a controversial provision for the nominative ending."

Bibliographic References

Primary Sources

- [A] *The Aṣṭādhyāyī of Pāṇini*, ed. and transl. R.N. Sharma, 6 vols., New Delhi, Munshiram Manoharlal, 1987-2003.
- [KV] *Kāśīkā[vṛtti]*, a Commentary on Pāṇini's Grammar by Vāmana and Jayāditya, ed. A. Sharma, Sri Kh. Deshpande, Sri D.G. Padhye, 2 vols. Hyderabad, Sanskrit Academy, Osmania University, 1969; 1970.

²⁷ Dressler (1987: 104) established "two interlacing scales of naturalness which both reflect the decreasing degree of adequacy in serving the function of motivation of W[ord] F[ormation]":

I. 1) iconic affixation WFRs, 2) non-iconic conversion WFRs, 3) anti-iconic subtraction WFRs;

II. 0) no modification, 1) modification by (allophonic, prosodic) P[honological]R[ules], 2) by M[orpho]PRs (and neutralizing PRs and M[orphological]Rs) leaving the morpheme boundary relatively intact, 3) by fusing MPRs (and PRs, MRs) completely blurring morpheme boundaries, 4) partial suppletion, 5) total suppletion.

See also above, fn. 1.

- [M] *The Vyākaraṇa-Mahābhāṣya* of Patañjali, ed. F. Kielhorn, 3 vols. Bombay, Government Central Press, 1880-85, quoted according to the third edition revised by K.V. Abhyankar, Bhandarkar Oriental Research Institute, 1970.
- [SK] *Siddhānta-Kaumudī* with the Tattvabodhinī Commentary of Jñānendra Sarasvatī and the Subodhinī Commentary of Jayakṛṣṇa edited by V.L.S. Panashikar, Delhi, Chaukhamba Sanskrit Pratishthan, 2002.
- [Vt.] Kātyāyana's *Vārttika* quoted according to M.

Secondary Sources

- Bhate, S. 1989, *Pāṇini's Taddhita Rules*, Poona, University of Poona.
- Candotti, M.P. – Pontillo, T. 2004, *Substitution as a descriptive model in Pāṇini's grammar: towards an opposition between phonological and morphological level?*, in R. Ronzitti – G. Borghi (eds.), *Atti del Secondo Incontro Genovese di Studi Vedici e Pāṇiniani* (Genova, 23 luglio 2003-15 ottobre 2003), Recco, Le Mani: 1-45.
- 2010, *The Autonomous Process of Denotation: Kātyāyana and Patañjali on the Limits of Analysis*, in P. Caracchi – A.S. Comba – A. Consolaro – A. Pelissero (eds.), *Tīrthayātrā. Essays in Honour of Stefano Piano*, Alessandria, Edizioni dell'Orso: 41-61.
- 2013, *The Earlier Pāṇinian Tradition on the Imperceptible Sign*, in T. Pontillo – M.P. Candotti (eds.), *Signless Signification in Ancient India and Beyond* (Cultural, Historical and Textual Studies of Religions), London-New York-Delhi, Anthem Press: 99-153.
- 2015a, *Pāṇini's zero morphs as allomorphs in the complexity of linguistic context.*, in É. Aussant – J. L. Chevillard (eds.), *Workshop Les études sur les langues indiennes. Leur contribution à l'histoire des idées linguistiques et à la linguistique contemporaine (XI International Conference on the History of Language Sciences)*, Bulletin d'Études Indiennes 32 (2014): 55-86.
- 2015b, *svabhāva in grammar: notes on the early history of a philosophical term*, in R. Torella – G. Milanetti (eds.), *The human person and nature in Classical and Modern India*. Proceedings of the International Conference held at Roma, La Sapienza – Museo Nazionale di Arte Orientale 'Giuseppe Tucci' (MNAO) 14-15 marzo 2013, Supplemento n° 2 alla Rivista di Studi Orientali N. Serie, 88, Pisa-Roma, Fabrizio Serra Editore: 85-110.
- Forthcoming a, *In favour of a linear reading of the Aṣṭādhyāyī: materials from the discussion on substitution*, in J.E.M. Houben (ed.), *Proceedings of the 15th World Sanskrit Conference*, Delhi 5th-10th January 2012 (Linguistics Session), New Delhi, D.K. Printworld.
- Forthcoming b, *Lexical subordination in derivation and compounding: the case-study of the so-called Pāṇini's upamā-samāsas*, in J.E.M. Houben (ed.), *Proceedings of the 16th World Sanskrit Conference*, Bangkok, 28th June -2nd July 2015 (Linguistics Session), Bangkok, Sanskrit Studies Centre, Silpakorn University – New Delhi, D.K. Publishers.

- Cardona, G. 1976, *Pāṇini. A Survey of Research*, The Hague, Mouton.
- 1997, *Pāṇini. His Work and Its Tradition. Background and Introduction*, Delhi, Motilal Banarsidass.
- 1999, *Recent Research in Pāṇinian Studies*, Delhi, Motilal Banarsidass.
- 2015, *Derivation and Interpretation in Pāṇini's grammar*, in P. M. Scharf (ed.), *Sanskrit Syntax*. Selected Papers presented at the Seminar on Sanskrit syntax and discourse structures, 13-15 June 2013, Université Paris Diderot, with an updated and revised bibliography, by H.H. Hock, Providence, The Sanskrit Library: 53-108.
- Deshpande, M.M. 1980, *Evolution of Syntactic Theory in Sanskrit Grammar: Syntax of the Sanskrit Infinitive -tumUN* (Linguistica Extranea, Studia 10), Ann Arbor, Karoma Publishers.
- 1987, *Pāṇinian Syntax and the Changing Notion of Sentence*, Annals of the Bhandarkar Oriental Research Institute 68: 55-98.
- Edgerton, E.F. 1909, *Origin and development of the elliptic dual and of dvandva compounds*, *Zeitschrift für Vergleichende Sprachforschung* 43: 110-20.
- Faddegon, B. 1936, *Studies on Pāṇini's Grammar* (Verhandelingen der Koninklijke Nederl. Akademie van Wetenschappen te Amsterdam, Afdeling Letterkunde, N. R., 38,1), Uitgave Van De N.V. Noord-Hollandsche Uitgeversmaatschappij [Reprint 1963].
- Houben, J. 1997, *The Sanskrit Tradition*, in W. Van Bakkum – J. Houben – I. Sluiter – K. Versteegh (eds.), *The Emergence of Semantics in four Linguistic Traditions. Hebrew, Sanskrit, Greek, Arabic*, Amsterdam-Philadelphia, John Benjamins Publishers: 51-145.
- Joshi, S.D. 1968, *Patañjali's Vyākaraṇa-Mahābhāṣya. Samarthāhnikā* (P. 2.1.1), Introduction, Translation and Notes by S.D. Joshi, Poona 1968 (Publications of the Centre of Advanced Study in Sanskrit Class C n° 3).
- Joshi, S.D. – Bhate, S. 1984, *Fundamentals of Anuvṛtti*. Pune, University of Poona.
- Joshi, S.D. – Roodbergen, J.A.F. 1983, *The Structure of the Aṣṭādhyāyī*, in S. D. Joshi – S.D. Laddu (eds.) *Historical Perspective. Proceedings of the International Seminar on Studies of the Aṣṭādhyāyī of Pāṇini* (Publications of the Centre of Advanced Study in Sanskrit Class E n° 9), Pune, University of Poona: 59-95.
- 1993, *The Aṣṭādhyāyī of Pāṇini with Translation and Explanatory Notes*, vol. II (I.2.1-1.2.73), New Delhi, Sahitya Akademi.
- 1994, *The Aṣṭādhyāyī of Pāṇini*, Vol. 3, New Delhi, Sahitya Akademi.
- 1996, *The Aṣṭādhyāyī of Pāṇini*, Vol. 5, New Delhi, Sahitya Akademi.
- Kastovsky, D. 1969, *Wortbildung und Nullmorphem*, *Linguistische Berichte* 1,2: 1-13.
- Katre 1987 *Aṣṭādhyāyī of Pāṇini*, ed. and transl., Austin, University of Texas Press.
- Koerner. E.F.K. 1995, *Concise History of the Language Sciences: From the Sumerians to the Cognitivists*, Pergamon, Asher Oxford.
- Kiparsky, P. 1979, *Pāṇini as a Variationist*, ed. by S.D. Joshi, Cambridge (Mass.) MIT – Centre of Advanced Study in Sanskrit, Pune.
- 2010, *Dvandvas, blocking, and the associative: the bumpy ride from phrase to word*, *Language* 86: 302-331.

- Mahavir 1978 *Pāṇini as Grammarian (With special reference to compound formations)* [Originally a Ph.D. thesis, Kurukshetra University, 1971] with a foreword by R.V. Joshi, Delhi-Varanasi, Bharatiya Vidya Prakashan.
- 1984, *Samartha-Theory of Pāṇini and Sentence Derivation*, New Delhi, Munshiram Manoharlal.
- Marchand, H. 1966, *On attributive and Predicative Derived Adjectives and Some Problems Related to the Distinction*, *Anglia* 84: 131-149.
- 1969², *The Categories and Types of present-day English word-formation*, München, Verlag C. H. Beck.
- Oliphant, S.G. 1912, *The Vedic Dual: Part VI, The Elliptic Dual, Part VII, The Dual Dvandva*, *Journal of the American Oriental Society* 32 (1912), 33-57.
- Pontillo, T. 2013, “Where the sense is intended although the corresponding speech unit is not employed”: the *ekaśeṣa* case, in G. Cardona (ed.), *Vyākaraṇa across Ages. Proceedings of the 15th World Sanskrit Conference*, Delhi 5th-10th January 2012, Vol. 2 (*Vyākaraṇa* Session), New Delhi, DK Printworld: 97-132.
- Radicchi, A. 1985, *La teoria pāṇiniana dei samāsa secondo l'interpretazione delle scuole grammaticali indiane dal quinto all'ottavo secolo d.C. (parte prima)*, Firenze, Elite.
- Renou, L. 1966, *La grammaire de Pāṇini: texte sanskrit, traduction française avec extraits des commentaires*, Paris, École française d'Extrême-Orient.
- Roodbergen, J.A.F. 1974, *Patañjali's Vyākaraṇa-Mahābhāṣya. Bahuvrīhi-dvandvāhnika* (P 2.2.23-2.2.38). Text, Translation and Notes (PCASS C n° 9), Poona, Centre of Advanced Study in Sanskrit Class.
- Scharf, P.M. 2013, *Linguistic in India*, in K. Allan, *The Oxford Handbook of the History of Linguistics*, Oxford, Oxford University Press, 227-57.
- Scharfe, H. 2009, *A New Perspective on Pāṇini*, Torino, Comitato AIT.
- Sharma, R.N. 1995, *The Aṣṭādhyāyī of Pāṇini*, Vol. 3, New Delhi, Munshiram Manoharlal.
- 1999, *The Aṣṭādhyāyī of Pāṇini*, Vol. 4, New Delhi, Munshiram Manoharlal.
- Silvestri, D. 1994, *La forbice e il ventaglio. Descrivere, interpretare, operare da un punto di vista linguistico. Lezioni di glottologia*, Napoli, Arte Tipografica.
- Vasu, S.C. 1906, Bhaṭṭoji Dīkṣita, *The Siddhānta Kaumudī*, ed. and transl. by S.C. Vasu, Allahabad, Pāṇini Office, 2 vols. [Reprint 1982].
- Vergiani, V. 1994, *The Negative asamarthasamāsa in the Pāṇinian Tradition*, *Rivista degli Studi Orientali* 67 [1993]: 65-81.
- Wackernagel, J. 1905, *Einleitung zur Wortlehre. Nominalkomposition* (Altindische Grammatik, Band II.1), Göttingen, Vandenhoeck & Ruprecht [Reprint 1957]
- 1926, *Vorlesungen über Syntax mit besonderer Berücksichtigung von Griechisch, Lateinisch und Deutsch*, Erste Reihe, Basel, Birkhauser.