

On the Semantic Foundation of Pāṇinian Derivational Procedure: The Derivation of *kumbhakāra*

PETER SCHARF
BROWN UNIVERSITY

The treatment of upapada-tatpuruṣa compounds in Grimal, Venkataraja Sarma, and Lakshminarasimham's (2007) *Book of Compound Words* and the treatment of the starting point in Pāṇinian derivation in several recent papers by Houben (2003, 2009a, 2009b, 2010) occasion a rearticulation of initial phases and particular points of Pāṇinian derivational procedure. Grimal et al. (2007) omit early steps from their derivations and, as a result, show nominal terminations present at their first step in the derivation of upapada tatpuruṣa compounds.¹ Even though their annotations reveal the correct understanding of Pāṇini's derivational procedure, omitting early steps gives the incorrect impression that Pāṇini's derivational procedure begins with these speech forms present rather than with the semantic and syntactic conditions that occasion them. Their exposition closely follows that of Bhaṭṭojidīkṣita; yet the latter himself diminishes the role of semantic and syntactic conditions in derivational procedure in departure from his predecessors. Houben (2003, 2009a, 2009b, forthcoming) deliberately argues that Pāṇinian derivation begins with speech forms and does not begin with the early steps in question at all. He asserts that the derivation begins with a sentence or phrase that the speaker uses the grammar to check for correctness. He argues that semantic and syntactic conditions are incapable of determining speech forms without the guidance of user decisions, and that the grammar is used merely to reconstitute a preliminary sentence that the user of the grammar has in view in order to validate its correctness. Given these challenges to the view that Pāṇinian derivation begins with semantics, the occasion is ripe for an investigation of just what speech forms are in view at the start of a Pāṇinian derivation and what semantic conditions are required. The pivotal issue arises in the derivation of the upapada-tatpuruṣa compound *kumbhakāra* 'potter'.

1. WHAT THE POTTER HAS TO DO WITH SEMANTICS

1.1 *Basic assumptions in linguistics*

The clarification of what speech forms and what semantic conditions are in view at the start of a Pāṇinian derivation requires first a clarification of some basic assumptions about the nature of linguistic science as it was conceived by the ancient Indians. Ancient Indian linguists begin from the conception of speakers and end with speech. While Indian grammatical works presuppose an analysis of speech and early modern Indian semantic works are concerned with cognition from the perspective of a listener, none of the extant Sanskrit grammars begins with actual speech. They all, from the ancient phonetic treatises proper to particular Vedic traditions (Prātiśākhya) to medieval non-Pāṇinian grammars and early modern reworkings of Pāṇinian grammars, derive actual speech from basic elements previously abstracted in accordance with an assumed prior analysis. The rules produce speech; they themselves, formulated to take the prior analysis into account, do not analyze it. In that

1. See the review by Scharf 2009b.

sense Indian grammar is generative. It is constructed from the point of view of the speaker, not of the listener. Pāṇinian grammar in particular uniformly instructs which speech forms are to be used under various conditions, including some 735 semantics conditions described in Scharf 2009a (101–9); conversely, the grammar *never* instructs what meaning is to be understood from a speech form. Pāṇinian grammar is therefore a generative grammar beginning from basic linguistic units and semantics and ending with actual speech forms. While Pāṇinian grammar is generative, it is not fully transformational; that is, it does not transform one actual utterance into another. While it is transformational to the extent that certain morphemes are posited as basic and variations are produced by replacements, it does not give preference, for instance, to the active voice over the passive voice in the basic speech forms posited (as some forms of modern transformational grammar do). Instead, alternate syntactic constructions that express some common meaning are derived from abstract non-phonetic categories. Identical conditions stated in various rules account for the common meaning while variant conditions or unconditioned alternation account for the differences in the alternate speech forms. Pāṇinian grammar therefore does not have a sentence as its starting point. It has as its starting point a conception in the mind of a speaker embodied to a limited extent, before the application of any rules, already in certain basic phonetic elements, namely roots and underived nominal stems.

The question of what, if any, speech forms are in view as the starting point for Pāṇinian derivation is determinable from an examination of the set of rules and its supplementary lists. The only speech forms permissible at the start of a derivation are those (roots and stems) listed as basic elements, those inferrable as being of the same kind in lists of exemplary elements (*ākṛtiḡaṇa*), and those included by specific semantic criteria. The supplementary lists consist in particular of the *Dhātupāṭha* and *gaṇas* to which rules of the *Aṣṭādhyāyī* refer. Numerous rules provide operations on some 282 lists (*gaṇa*) mentioned in those rules, beginning with A. 1.1.27 *sarvādīni sarvanāmāni* by which speech forms in the list beginning with *sarva* ‘all’ are termed *sarvanāman* ‘pronoun’. Roots listed in the *Dhātupāṭha* are termed *dhātu* by 1.3.1 *bhūvādayo dhātavaḥ*. Finally an open class of additional speech forms is included as basic elements under the sole specification that they be meaningful. By A. 1.2.45 *arthavad adhātur apratyayaḥ prātipadikam*, meaningful speech forms (*arthavat*), other than roots, affixes, and speech forms that end with them, are termed *prātipadika* ‘nominal base’. By A. 1.2.46 *kṛtaddhitasamāsāś ca*, complex speech forms derived by the grammar, including derivatives from roots, derivatives from nominal stems, and compounds, are also termed *prātipadika*. Other basic elements (affixes and augments) are explicitly introduced by rules. Nominal bases and roots are then generally referred to as preceding contexts in rules that provide affixes after them (e.g., *dhātoḥ* in 3.1.91 and *prātipadikāt* in 4.1.1). These are the only speech forms present at the start of Pāṇinian derivation; there are no others. Semantic conditions serve as the remainder of the initial conditions for the operation of rules of the *Aṣṭādhyāyī*.

1.2 Reconstitution rather than synthesis?

Houben accepts that there is a synthetic part to a grammar user’s use of Pāṇinian grammar. What he denies is that semantics lie at the foundation of sentence generation. He (2009b: 13) rightly points out that certain basic units of speech are included at the start of a Pāṇinian derivation when he writes, for instance, “the selection of a suitable root is normally the starting point of the synthetic part of his consultation cycle.” He indicates (p. 14) the complementary absence of pure semantics while elaborating on the presence of basic units of speech—writing, “the concrete starting point for a derivation in the synthetic phase

of the consultation cycle of a user of grammar in Pāṇini's time will then never be 'pure' meaning or an autonomous level of semantic representations but the selection of a root—for instance, *bhū* 'to be'—or a form from lists of underived stems, pronominal forms, etc. in which form and meaning are inseparably integrated." He reiterates (p. 13) criticism formulated in Houben 1999 of the views of Kiparsky and Staal (1969), Bronkhorst (1979), Joshi and Roodbergen (1975), and Kiparsky (1982) "according to which 'semantics' or 'meanings' form the starting point of the derivation," and directs that criticism against Kiparsky (2009), who postulates a level of semantic information that forms the starting point of the derivation of a complete sentence in which "kāraḥ are assigned on the basis of 'semantic information'." While accepting "at least two distinct levels of derivation . . . a level of morphological representations (where we find roots, stems, suffixes) and a level of phonological representations (with words in their final form after the application of all substitution rules including those of sandhi)" (p. 15), Houben writes, "no additional level of representation is needed to account for Pāṇini's system." He regards syntax and semantics "as domains of consultation, which allow the user of the grammar to label the linguistic forms of his preliminary sentence according to the syntactically relevant categories of meaning or according to semantically relevant generalizations of form (suffixes)" (p. 15), stating, "As I argued extensively in 1999[; 26–27], the view that Pāṇini's grammar is a device 'to encode a given meaning and to produce an expression' is untenable" (p. 13).

Rather than accepting a semantic foundation for Pāṇinian derivation, Houben asserts instead that the starting point is a preliminary statement. Houben asserts that "the starting point" of a Pāṇinian derivation "is a preliminary sentence that needs to be checked or that needs some little extra refinement" (2009a: 524). He writes (2009b: 14),

The system of Pāṇini's grammar "clearly requires a user who wants to check and possibly improve a preliminary statement" (Houben 2003: 161). The system implies the presence of a knowledgeable user, a preliminary statement, and the application of first analytic and next synthetic procedures to the words in it, with the user keeping in mind the preliminary statement and its purport, and aiming at the best possible, *saṃ-skṛta* form of his preliminary statement.

Houben writes (2009b: 19), "no-one has ever produced a correct form through Pāṇini's system that was not already his starting point, or among his starting options. Usually the correct form is put at the beginning after which it is derived through the system." He continues, "the derivation of a word in a preliminary statement by any potential user of Pāṇini's grammar will normally start with the selection of a root in the Dhātu-pāṭha corresponding to a selected problematic word in his statement." In conclusion, he considers it "more comprehensive and realistic" to view "Pāṇini's grammar as 'reconstitutive' rather than one-sidedly 'synthetic'" (p. 19). Houben reiterates these views in his most recent work (forthcoming: 3–4), disputing that "the starting point is in semantics (meaning elements, meaning conditions, etc.)" and asserting instead that it is "in a preliminary statement."

1.3 Karman: conceptual object rather than speech unit

Although much of Houben's concern is with the sociological question of the practical use of the grammar rather than with its formal features, his description betrays a fundamental misconception of Pāṇini's linguistic system: he views speech forms rather than meanings as the fundamental conditions for syntactic organization. In Houben's view, speech forms rather than meanings are designated by kāraḥ terms, and speech forms rather than meanings are the conditions for abstract tense. He would assign kāraḥ terms and abstract tenses (*laṭ*, etc.) "to the words of the preliminary utterance" rather than "to the semantic representations of

level one” (2009b: 16). Although his critical analysis of *Vākyapadīya* 1.46 (2003: 148–55) is perspicuous in other respects, he is confused himself when he calls “confused and confounding” understanding that the term *bruvikarman* refers to an object of saying (p. 151 n. 32). He insists there that the karman ‘object’ of saying cannot refer “to an extralinguistic object,” that it must refer to “a grammatical object” and hence, “requires *bruvi* to refer to the verb, not to its meaning.” Here Houben asserts that a karman is a speech form rather than a semantic object denoted by a speech form, and that it has relation to a speech form, i.e., a verb, rather than to the object denoted by a verb, namely an action. Such an assertion is erroneous. Semantic objects, not speech forms, are classed as karman under conditions stated in A. 1.4.49–53 *kartur īpsitatamaṁ karma*, etc. Semantic objects so classed are then the conditions for speech forms, namely, for nominal terminations, as provided by 2.3.2 *karmaṇi dvitīyā*, etc. The karman is not a speech form; it is an object, viewed as a participant in an action, that is desired by the agent of the action. It is objects, not speech forms, that participate in action, and it is participants in action, not speech forms, that are designated by *kāraka* terms.

It is precisely the issue of the status of what is termed *karman* as the condition for the occurrence of *ṛt*-affixes and nominal terminations that is the crux of a problem in the derivation of the upapada tatpuruṣa compound *kumbhakāra* by Bhaṭṭojidīkṣita and hence by Grimal et al. The fact that the derivation of the compound does not begin with a corresponding phrase is significant for Houben’s contention that the derivation must begin with a “preliminary statement.” The sequence in which speech elements in the derivation are introduced and the conditions for them reveal the extent to which Pāṇinian derivation begins with abstract semantic entities. Examination of Pāṇinian discussions concerning the derivation of the compound *kumbha-kāra* ‘pot-maker’ demonstrates that nominal terminations are not present at the stage of the provision of *ṛt*-affixes, that *ṛt*-affixes are conditioned by speech forms denoting semantic items designated by specific *kāraka* terms, which in turn are conditioned predominantly by semantics.

2. THE UPAPADA-TATPURUṢA COMPOUND *KUMBHAKĀRA*

A reader seeing the compound *kumbhakāra* would easily recognize that it consists of the element *kumbha* ‘pot’ compounded with *kāra* ‘maker’ and that the latter term governs the former. The first assumption concerning its Pāṇinian derivation might be that it is a *ṣaṣṭhī-tatpuruṣa* compound equivalent to the corresponding phrase (*vīgraha vākya* ‘analytic phrase’), **kumbhasya kāraḥ*, as provided for by A. 2.2.8. A. 2.2.8 *ṣaṣṭhī* provides that a word (*pada*) terminating in a sixth-triplet nominal termination is optionally compounded with another word ending in a nominal termination and that the resulting compound is termed *tatpuruṣa*. Such compounds are merely optional because A. 2.2.8 occurs under the heading A. 2.1.11 *vibhāṣā*, which allows the corresponding phrases to occur usually. The sūtra accounts for compounds such as *rāja-puruṣa* that have corresponding phrases such as *rājñāḥ puruṣaḥ*.

The possibility that *kumbhakāra* is a *ṣaṣṭhī-tatpuruṣa* compound is indeed raised by Patañjali, who mentions the example as falling within the scope of 2.2.8 as well as 2.2.19 under 2.2.19 vt. 3. He later rejects this position, however, with linguistic justification. The phrase **kumbhasya kāraḥ* never occurs in Sanskrit, and *kāra* in the meaning ‘maker’ never occurs as an independent word, only as the final element of a compound. Hence, commentators on the *Aṣṭādhyāyī* cite *kumbha-kāra* as an example of an upapada-tatpuruṣa compound provided by A. 2.2.19 *upapadam atīṇ*. For instance, Patañjali cites the example *kumbhakāraḥ* in the *Mahābhāṣya* on this sūtra as does Jayāditya in the *Kāśikā*.


Pāṇini accounts for derivatives that occur only as compound-final elements in composition with the terms they govern by stating the governed words (*upapada*) as conditions in rules that provide an affix after a root, and by having syntactically subordinate speech forms serve as conditions for the morphological derivation of the final compound elements. He proceeds as follows. The governed terms are stated in the locative in rules under the heading 3.1.91 *dhātoḥ*, valid through the end of the third adhyāya. A. 3.1.92 *tatropapadam saptamīstham* states the principle that an item taught in the locative in a sūtra under that heading is termed *upapada*. The obligatory compounding of a governed word with the word that governs it is accounted for by A. 2.2.19–20. The term *nityam* ‘obligatorily’ recurs in A. 2.2.19–20 from A. 2.2.17. These rules occur under the heading A. 2.1.1 *samarthaḥ padavidhiḥ*, which requires that potential compound elements be syntactically connected with each other. The order of elements in the compound is determined by two additional metarules. A. 1.2.43 *prathamānirdiṣṭam samāsa upasarjanam* provides that an item taught in the nominative in a sūtra in the compound section is termed *upasarjana*, and A. 2.2.30 *upasarjanam pūrvam* provides that an item termed *upasarjana* occurs first in the compound. The sūtra A. 2.2.19 provides that a word termed *upapada*, excluding one that terminates in a finite verbal affix (*tiñ*), is obligatorily (*nityam*) compounded with a second item. Because the term *upapada* is taught in the nominative in 2.2.19, the governed words under the heading 3.1.91, termed *upapada* by 3.1.92, are termed *upasarjana* by 1.2.43 and therefore occur first in the compound.

The compound *kumbha-kāra* is derived as an *upapada-tatpuruṣa* compound with the *vigraha* vākya *kumbham karoti*, instead of as a *ṣaṣṭhī-tatpuruṣa* compound formed in accordance with A. 2.2.8 with the *vigraha* vākya **kumbhasya kāraḥ*. The full derivation of the compound (excluding accent) is shown in Table 1.² The entry under *kumbhakāra* in Grimal et al.’s (2007: 266) *The Book of Compound Words* clearly lays out the steps of the derivation immediately relevant to compound formation. The steps in their derivation in order are steps 7, 9, 17, 20, 21, 18, 19, 22, 24, 25 of the derivation shown in Table 1. The first line of their derivation cites A. 3.2.1 *karmaṇy aṇ* (cf. Table 1, step 7), which occurs under the heading A. 3.1.91 *dhātoḥ*. The term *karman* in A. 3.2.1 is taught in the locative in a sūtra under the heading A. 3.1.91 and so is termed *upapada* by A. 3.1.92 (cf. Table 1, step 5). The affix *aṇ*, termed *kṛt* by A. 3.1.93 *kṛd atiñ* (cf. Table 1, step 6), occurs under the condition that an agent is to be denoted in accordance with A. 3.4.67 *kartari kṛt* (cf. Table 1, step 7a). Grimal et al. explain, in their brief comment on their first derivational step, that the affix *aṇ* occurs after the root *kṛ* (marked with *ñ*) on the condition that the agent (*kartṛ*) is to be denoted if a direct object (*karman*) is the subordinate term (*upapada*) connected with it (*karmaṇy upapade kṛñ-dhātoḥ kartari aṇ-pratyayaḥ*). After accounting for strengthening (*vṛddhi*) of the root *kṛ* in the second step (cf. Table 1, step 9), Grimal et al. cite A. 2.2.19 *upapadam atiñ* in the third step (cf. Table 1, step 17) and explain that it accounts for the compound of the *upapada* *kumbha* with *kāra* which ends in a *kṛt*-affix. In the sixth step they cite A. 1.2.43 *prathamānirdiṣṭam samāsa upasarjanam* (cf. Table 1, step 18) and explain that it accounts for the speech form *kumbha* being termed *upasarjana* (*kumbha-śabdasya upasarjana-samījñā*). In the seventh step they cite A. 2.2.30 *upasarjanam pūrvam* (cf. Table 1, step 19) and explain that it accounts for the *upasarjana* *kumbha* being placed first (*upasarjanasya kumbha-śabdasya pūrvā-nipātaḥ*). Grimal et al. explain the formation of the compound in their notes (*tippanī*): the affix *aṇ* occurs after the root *kṛ* ‘make’ in the meaning of the agent where the speech form *kumbha* ‘pot’,

2. Accent is not shown since it would needlessly complicate the issue at hand to which it is not relevant. For a discussion of accentuation replete with the derivation of examples see Scharf 2008.

Table 1
Early steps in the derivation of *kumbha-kāra*

[irrelevant stages, such as the deletion of markers, are left out; ‘-’ designates compounding; ‘+’ designates affixation]

1				The thought of the speaker is represented in an image incidentally. [A masculine form is derived rather than the feminine <i>kumbhakārī</i> which is accounted for by 4.1.15. As the grammarians would say, in the current derivation feminine gender is unintended (<i>strītvam avivakṣitam</i>); see table 2 for the derivation of a feminine form. Image from http://www.mainlesson.com/display.php?author=jacobs&book=indian&story=notes]
2	<i>kumbha</i> [īpsitatama] <i>kṛ</i> [dhātu]			Basic lexical speech forms are selected to denote objects and actions the speaker has in mind.
3	<i>kumbha</i> [īpsitatama] <i>kṛ</i> x[kartṛ]	1.4.54	<i>svatantraḥ kartā</i>	The independent participant in the action is termed ‘agent’ (<i>kartṛ</i>).
4	<i>kumbha</i> [karman] <i>kṛ</i> x[kartṛ]	1.4.49	<i>kartur īpsitatamaḥ karma</i>	The object most desired by the agent is termed ‘direct object’ (<i>karman</i>).
5	<i>kumbha</i> [karman][upapada] <i>kṛ</i> x[kartṛ]	3.1.92	<i>tatropapadaḥ saptaṁ-sṭham</i>	The speech form denoting the item termed <i>karman</i> , because the term <i>karman</i> occurs in the locative, is termed <i>upapada</i> .
6	[dhātu]- <i>an</i> [kṛt]	3.1.93	<i>kṛd atin</i>	The affix <i>an</i> in 3.2.1 is termed <i>kṛt</i> .
7	<i>kumbha</i> [karman] <i>kṛ</i> - <i>a</i>	3.2.1	<i>karmanṇ an</i>	The affix <i>an</i> occurs after the root <i>kṛ</i> on condition that a speech form denoting a direct object (<i>karman</i>) is the subordinate term (<i>upapada</i>) connected with it.
7a		3.4.67	<i>kartari kṛt</i>	The affix <i>an</i> , termed <i>kṛt</i> , occurs on condition that the agent (<i>kartṛ</i>) is to be denoted.
8	<i>kumbha</i> <i>kṛ</i> [aṅga]- <i>a</i>	1.4.13	<i>yasmāt pratyayavidhis tadādi pratyaye ’ṅam</i>	That speech form beginning with that after which an affix is provided is termed <i>aṅga</i> with respect to that affix.

9	<i>kumbha</i> <i>kā</i> [aṅga]- <i>a</i>	7.2.115	<i>aco ṇīti</i>	Before an affix marked with <i>ṇ</i> or <i>n</i> , the final sound of a stem (<i>aiga</i>) ending in a vowel is replaced by its closest <i>vṛddhi</i> sound.
10	<i>kumbha</i> <i>kāra</i>	1.1.51	<i>ur an raparāḥ</i>	An <i>a</i> , <i>i</i> , or <i>u</i> that replaces the vowel <i>r</i> is followed by an <i>r</i> .
11	<i>kumbha</i> [prātipadika] <i>kāra</i>	1.2.45	<i>arthavad adhātur apratyayaḥ prātipadikam</i>	A meaningful speech form, other than a verbal root or an affix, is termed <i>prātipadika</i> .
12	<i>kumbha-ṇas</i> <i>kāra</i>	4.1.2	<i>svaujasamautchaś ...</i>	A nominal termination occurs after a nominal stem, or a speech form ending in a feminine affix <i>ṇi</i> or <i>āp</i> .
12a		1.4.22	<i>dvyekayor dvivacanaikavacane</i>	A dual or singular nominal termination occurs to denote dual or singular number respectively.
12b		2.3.65	<i>kartr-karmanoh kṛti (an- abhihite 1)</i>	The sixth triplet nominal termination occurs if the agent or direct object, being undenoted (<i>an-abhihita</i>) by a verbal termination, kṛt-affix, taddhita affix, or compound, is to be denoted and a nominal base ending in a kṛt affix is used (for the action in which the agent or direct object participate).
13	<i>kumbha</i> [aṅga]- <i>ṇas</i> <i>kāra</i>	1.4.13	<i>yasmāt pratyayavidhis tadādi pratyaye 'ṅgam</i>	That speech form beginning with that after which an affix is provided is termed <i>aṅga</i> with respect to that affix.
14	<i>kumbha-ṇas</i> [pada] <i>kāra</i>	1.4.14	<i>suptāntaṁ padam</i>	A speech form ending in a nominal or verbal termination is termed <i>pada</i> .
15	<i>kumbhasya</i> [pada] <i>kāra</i>	7.1.12	<i>ṭānasīnasām ināisyāḥ</i>	After an <i>a</i> -final stem (<i>aiga</i>), <i>ṭā</i> , <i>ṇasi</i> , and <i>nas</i> are replaced by <i>ina</i> , <i>āt</i> , and <i>syā</i> respectively.
16	<i>kumbhasya</i> [pada] <i>kāra</i> [prātipadika]	1.2.46	<i>kṛttaddhitasamāśās ca</i>	A meaningful speech form that ends in a kṛt or taddhita affix or is a compound is termed <i>prātipadika</i> .
*	<i>kumbhasya</i> [pada] <i>kāra-s</i>	4.1.2	<i>svaujasamautchaś ...</i>	A nominal termination occurs after a nominal stem, or a speech form ending in a feminine affix <i>ṇi</i> or <i>āp</i> .
*a		1.4.22	<i>dvyekayor dvivacanaikavacane</i>	A dual or singular nominal termination occurs to denote dual or singular number respectively.

Table 1.—continued

*b		2.3.46	<i>prātipadikārtha-linga-parimāṇa-vacana-mātre prathamā (an-abhihiite 1)</i>	The agent being denoted (<i>abhihiita</i>) already by the <i>krt</i> -affix <i>an</i> , the first-triplet nominal termination <i>s</i> arises to denote just the meaning of the nominal base, gender, and number.
17	<i>kumbhasya</i> [pada]+ <i>kāra</i>	2.2.19	<i>upapadam atii</i>	An upapada that does not end in a verbal termination is obligatorily compounded with a syntactically related speech form.
18		1.2.43	<i>prathamānirdiṣṭaṁ samāsa upasarjanam</i>	A speech form taught in the nominative in the compound section is termed <i>upasarjana</i> .
19		2.2.30	<i>upasarjanaṁ pūrvam</i>	A speech form termed <i>upasarjana</i> occurs initial in the compound.
20	<i>(kumbhasya+kāra)</i> [prātipadika]	1.2.46	<i>kṛttaddhitasamāsās ca</i>	A meaningful speech form that ends in a <i>kṛt</i> or <i>taddhita</i> affix or is a compound is termed <i>prātipadika</i> .
21	<i>(kumbha+kāra)</i> [prātipadika]	2.4.71	<i>supo dhātuprātipadikayoh</i>	Nominal terminations within a <i>prātipadika</i> are deleted without a trace (i.e., are replaced by <i>luk</i>).
22	<i>(kumbha+kāra)-s</i>	4.1.2	<i>svaujasamañchas . . .</i>	A nominal termination occurs after a nominal stem or a speech form ending in a feminine affix <i>nī</i> or <i>āp</i> .
22a		1.4.22	<i>dvyekayor dvivacanaikavacane</i>	A dual or singular nominal termination occurs to denote dual or singular number respectively.
22b		2.3.46	<i>prātipadikārtha-linga-parimāṇa-vacana-mātre prathamā</i>	A first-triplet nominal termination occurs if just the meaning of the nominal base, gender, a measure, or number are to be denoted.
23	<i>((kumbha+kāra)-s)</i> [pada]	1.4.14	<i>suptiñtantiṁ padam</i>	A speech form ending in a nominal or verbal termination is termed <i>pada</i> .
24	<i>((kumbha+kāra)-ru)</i> [pada]	8.2.66	<i>sasajūso ruḥ</i>	The final <i>s</i> of a pada is replaced by <i>ru</i> (<i>r</i> marked with <i>u</i>).
25	<i>kumbhakāraḥ</i>	8.3.15	<i>kharavasānayovisar-janīyaḥ</i>	Before a voiceless consonant or pause, pada-final <i>r</i> becomes visarga.

denoting the direct object (*karman*), is the governed item (*upapada*) (*karma-vācini kumbha-śabde upapade kṛñāḥ kartr-arthe aṇ-pratyayaḥ*).

Although the sixth-triplet nominal termination arises after the nominal base *kumbha* in syntactic connection with *kāra*, it is not the case that a nominal termination arises after *kāra* (Table 1, step *). A sixth-triplet nominal termination is provided after a base, such as *kumbha* in syntactic connection with an item ending in a *ḥ*-affix, *kāra*, by A. 2.3.65 *karṭṛ-karmaṇoḥ kṛti* (Table 1, step 12b). The condition for the nominal termination in A. 2.3.65 is that it be an agent (*karṭṛ*) or direct object (*karman*) in syntactic connection with an item ending in a *ḥ*-affix. These conditions are satisfied. The form *kāra* ends in the *ḥ*-affix (*aṇ*), and *kumbha* denotes the *karman* of the action of making denoted by the root *kṛ*. After step 16 the step marked with an asterisk would provide the nominal base *kāra* with a nominal termination, which steps *a and *b would restrict to a singular first-triplet nominal termination. However, the steps never occur because the obligatory compounding between the prior element and the subsequent element that ends in the *ḥ*-affix in step 17 preempts it. The arising of a nominal termination after the separate speech form *kāra* is prevented because the *tatpuruṣa* compound of the *upapada* *kumbha* with the speech form *kāra* is brought about by A. 2.2.19 *upapadam atiṇ* before nominal terminations have the opportunity to arise.

The issue of the non-occurrence of nominal terminations after *upapada-tatpuruṣa* compound constituents is discussed in Patañjali's *Mahābhāṣya* under A. 2.2.19 (Kielhorn vol. 1, p. 418, lines 1–13), which Grimal et al. aptly summarize in their notes. The principle (*paribhāṣā*) 75 *gati-kāraḥ upapadānām kṛdbhiḥ saha samāsa-vacanāṁ prāk sub-utpatteḥ* states that the provision of a compound of a *gati*, *kāra*, or an *upapada* with an item ending in a *ḥ*-affix occurs prior to the arising of nominal terminations. Since a nominal termination has not yet arisen, there is not even a chance for the formation of a *ṣaṣṭhi-tatpuruṣa* compound in accordance with A. 2.2.8, which requires that an item terminating in a sixth-triplet nominal termination compound with another item ending in a nominal termination. As Grimal et al. write, *an-utpanne supi ṣaṣṭhi-samāsa-prasaktir eva nāsti*. Even if one could somehow form a *ṣaṣṭhi-tatpuruṣa* in accordance with A. 2.2.8 before nominal terminations arose, such a compound is optional (*vibhāṣā* recurs in A. 2.2.8 from A. 2.1.11) while in contrast A. 2.2.19 is obligatory (*nityam* recurs in A. 2.2.19 from A. 2.2.17). The obligatory *upapada-tatpuruṣa* compound would occur, leaving no scope for the optional compound. The result is that rule A. 2.2.8 never even comes into conflict (*vipratishedha*) with A. 2.2.19, so that even the *vigraha vākya* **kumbhasya kāraḥ* has no opportunity to occur.

The derivation provided in the entry under *kumbhakāra* by Grimal et al. (2007: 266) is almost entirely correct. Yet despite the practical utility of the *kumbhakāra* entry and the penetrating analysis of subtle issues by the authors in the notes, there appears to be a problem with the derivation, which the authors have overlooked. Although Grimal et al. in their notes clearly recognize that the sixth-triplet nominal termination cannot arise prior to the provision of the *ḥ*-affix *aṇ*, the first step of derivation shows the sixth-triplet termination *ṇas* (as marked with *ṇ*) already present when the *ḥ*-affix *aṇ* (a marked with *ṇ*) is provided. They silently include the sixth-triplet nominal termination *ṇas* after the nominal stem *kumbha* in the first step of their derivation at the step in which A. 3.2.1 *karmaṇy aṇ* provides the *ḥ*-affix *aṇ* (cf. Table 1, step 7). Their step 1 first presents the string *kumbha-as + kṛ-a*. However, such a string is impossible. The nominal termination cannot be present already in step one of the derivation where the *ḥ*-affix is provided, as it is presented, because the *ḥ*-affix must be provided first in order to serve as a condition for the provision of the sixth-triplet nominal termination.

Grimal et al. recognize that the *ḥ*-affix is a condition for the sixth-triplet nominal termination in their notes, which state, “the sixth-triplet nominal termination arises after the

nominal base *kumbha* on condition that the latter occurs in syntactic connection with an item ending in a *ṛt*-affix (*ṛd-yoge kumbha-śabdāt ṣaṣṭhī*).” Yet they apparently overlook the implication for the first step of their derivation. The sixth-triplet nominal termination after a base in syntactic connection with an item ending in a *ṛt*-affix is provided by A. 2.3.65 *kartṛ-karmaṇoḥ ṛti* (cf. Table 1, step 12b). The condition for the nominal termination in A. 2.3.65 is that it be in syntactic connection with an item ending in a *ṛt*-affix. In the case of *kumbha-kāra*, the *ṛt*-affix *aṇ* is provided by A. 3.2.1 (cf. Table 1, step 7). The application of A. 2.3.65 requires A. 3.2.1 to have already applied; A. 2.3.65 has no scope prior to the application of A. 3.2.1. Hence the nominal termination cannot be present already in step 1 of the derivation.

Moreover, a nominal termination never has the opportunity to arise after the speech form *kāra* by itself (Table 1, steps *, *a, *b) since compounding occurs obligatorily (Table 1, step 17) and takes precedence over the provision of the nominal termination there. In contrast to an upapada, which is subject to obligatory compounding with an element ending in a *ṛt*-affix by A. 2.2.19, words ending in sixth-triplet nominal terminations provided by A. 2.3.65 are subject to optional compounding with another element ending in a nominal termination (*supā*) by A. 2.2.8 *ṣaṣṭhī*. The terms *sup* and *supā* recur in A. 2.2.8 from A. 2.1.2 and A. 2.1.4 respectively so that the compounding takes place between elements termed *pada* by A. 1.4.14 *suptiṇantaṁ padam*. In particular, the *vārttika* stated under A. 2.2.8., *ṛdyogā ca*, allows such compounds with syntactically connected words whose nominal bases end with *ṛt*-affixes. Only where there is such optional compounding is there the possibility for a nominal termination to arise after the *ṛt*-affix and then for compounding to take place between the two elements both of which end in nominal terminations. That there is no equivalent corresponding phrase **kumbhasya kāraḥ* in Sanskrit usage for the compound *kumbha-kāra* is therefore critical: it is for this very reason that Pāṇini forms the compound with the subsequent element without the nominal termination by A. 2.2.19 rather than with one by A. 2.2.8.

It is crucial to note that there is no equivalent corresponding phrase **kumbhasya kāraḥ* in Sanskrit usage for the compound *kumbha-kāra* with which to begin a Pāṇinian derivation, nor does Pāṇini’s derivational procedure begin with the string *kumbha-as + ṛt-a* since the *ṛt*-affix *aṇ* does not arise until step 7, and the sixth-triplet nominal termination *nas* does not arise until step 12. The only speech forms available for a “preliminary statement” are *kumbha* and *ṛt*. A preliminary statement consisting of these speech forms would be incomplete and incapable of determining the derivation of the desired compound. The derivation would still depend upon pure semantics—disembodied meanings still unencumbered by corresponding speech forms—to condition the proper affixes and compound formation.

3. COMPOUND ELEMENTS WITHOUT NOMINAL TERMINATIONS

3.1 Upapada-tatpuruṣa compounds

A close examination of the commentaries demonstrates that Pāṇini’s derivation of upapada-tatpuruṣa compounds does not begin with a corresponding phrase (*viśraha-vākya*) nor with nominal terminations present. Such an examination also reveals complex linguistic issues in the syntax and morphology of compounds and the techniques adopted by various commentators to account for the complexities within the Pāṇinian linguistic system. Some of the techniques employed by certain commentators to solve certain difficulties create undesirable side effects which are then dealt with by subsequent commentators. The presence of a sixth-triplet or second-triplet nominal termination on the initial compound element in upapada-tatpuruṣa compounds before the application of A. 3.2.1 *karmāṇy aṇ* is such an undesirable side effect produced by medieval commentators. That the presence of a nominal

termination at this stage of derivation is a problem has apparently remained unnoticed. Its solution requires revision of the conclusions of the commentators in question as well as of the scholars who relied upon them.

In the *Aṣṭādhyāyī*, compounds are generally formed from words ending in nominal terminations and alternate with corresponding phrases. To ensure that compounds be formed from elements ending in nominal terminations, the technical term for nominal terminations *sup* recurs throughout most of the compound section, which extends from A. 2.1.3 *prāk kaḍārāt samāsaḥ* to A. 2.2.38 *kaḍārāḥ karmadhāraye* at the end of the second pāda of the second adhyāya. Interpreted in accordance with A. 1.1.72 *yena vidhis tadantasya*, *sup* refers to a speech form that ends in a nominal termination. The term recurs in two inflected forms, in the nominative from A. 2.1.2 *sub āmantrite parāṅgavat svare* and in the instrumental from A. 2.1.4 *saha supā*. Together with other headings, these terms indicate that a speech form ending in a nominal termination compounds with a semantically and syntactically connected speech form that ends in a nominal termination. Likewise, the term *vibhāṣā* ‘optionally’ is stated as a heading in A. 2.1.11 and recurs throughout most of the compound section to allow compounds to alternate with corresponding phrases.


There are, however, compounds that cannot properly be formed from constituent elements that end in nominal terminations. These include compounds in which the prior element must compound with a subsequent element that has not yet been supplied with a feminine affix. The feminine affix must in turn occur prior to the provision of a nominal termination. Because the selection of the appropriate feminine affix depends upon the specific semantic, syntactic, and co-occurrence conditions of the compound, the correct feminine affix can only be provided subsequent to compound formation, and the nominal termination only subsequent to that. Notable examples include compounds such as *dhanakṛtī* ‘(a female) bought with wealth’ formed from A. 2.1.32 *karṭṭkarāṇe kṛtā bahulam*, and *kacchapī* ‘a female tortoise’, an upapada-tatpuruṣa compound formed from A. 2.2.19. The derivation of the example *kacchapī* is presented in Table 2. If the compounds were required to be formed from constituent speech forms terminating in nominal terminations, erroneously only the form *dhanakṛtā* would result from A. 2.1.32, and the incorrect form *kacchapā* would result from A. 2.2.19 (Table 2, step 16). The feminine affix *ṭāp* would occur after the final constituents prior to compound formation in accordance with A. 4.1.4 *ajādyataṣ ṭāp* (Table 2, step * after 15). Instead, in the derivation of the correct form, the feminine affix *ṇīp* occurs after the compound stem subsequent to compound formation in accordance with A. 4.1.48 *kṛtāt karaṇapūrvāt* or A. 4.1.63 *jāter astrīviṣayād ayopadhāt* (Table 2, step 19).

In exception to the general pattern of forming compounds from words already equipped with nominal terminations, nominal terminations are avoided on the final compound element prior to compound formation in these examples. In the derivation of *dhanakṛtī*, the term *kṛtā* in A. 2.1.32 specifies that the initial compound element combine with a subsequent element that is a nominal base ending in a *kṛt*-affix rather than with a word ending in a nominal termination. (The term *bahulam* ‘variously’ in A. 2.1.32 is interpreted as allowing *dhanakṛtā* as well.) Likewise, to form the upapada-tatpuruṣa compound *kacchapī* correctly, A. 2.2.19 *upapadam atin* must be made to apply in the absence of nominal terminations on the final compound element. The term *a-tin*, referring to a speech form that does not end in a verbal termination, indicates that the restriction to speech forms that end in nominal terminations is no longer valid. Commentators and modern translators differ in their characterization of the criteria specified by the rule and the interpretation of the significance of the term *a-tin*. They do agree that the term *nityam* ‘obligatorily’ in A. 2.2.17 *nityam kṛḍājīvikayoḥ*, which recurs through A. 2.2.20, stops the recurrence of *vibhāṣā* in the rule, which thereby forms compounds obligatorily and does not permit corresponding phrases.

Table 2

The derivation of *kaccha-pī*

[Irrelevant stages, such as the deletion of markers, are left out; ‘+’ designates compounding; ‘-’ designates affixation]

1			The thought of the speaker is represented in an image incidentally. The image depicts the penultimate scene in the tale of the tortoise and two geese (<i>Kacchapa jāṭaka</i> Fausbøll 215; <i>Pañcatantra</i> 1.13; <i>Hitopadeśa</i> 4.2). [Image from: http://www.allindiaarts.com/painting_detail.asp?paint_id=205&country=eu]
2	<i>kaccha</i> [sādhakatama] <i>pā</i> [dhātu] x[svatantra]		Basic lexical speech forms are selected to denote objects and actions the speaker has in mind.
3	<i>kaccha</i> [sādhakatama] <i>pā</i> x[kartṛ]	1.4.54	The independent participant in the action is termed ‘agent’ (<i>kartṛ</i>).
4	<i>kaccha</i> [karaṇa] <i>pā</i> x[kartṛ]	1.4.42	The object most efficacious in accomplishing the act is termed ‘instrument’ (<i>karaṇa</i>).
5	<i>kaccha</i> [karaṇa][prātipadika] <i>pā</i> x[kartṛ]	1.2.45	A meaningful speech form, other than a verbal root or an affix, is termed <i>prātipadika</i> .
6	<i>kaccha-ā</i> <i>pā</i> x[kartṛ]	4.1.2	A nominal termination occurs after a nominal stem or a speech form ending in a feminine affix <i>ñī</i> or <i>āp</i> .
6a		1.4.22	A dual or singular nominal termination occurs to denote dual or singular number respectively.
6b		2.3.18	The third triplet of nominal terminations occurs on condition that an agent or instrument not already denoted is to be denoted.
7	<i>kaccha</i> [aṅga]-ā <i>pā</i> x[kartṛ]	1.4.13	That speech form beginning with that after which an affix is provided is termed <i>aṅga</i> with respect to that affix.

8	<i>kaccha-ina</i> <i>pā</i> x[kartṛ]	7.1.12	<i>ṭānasīnasām inātsyāḥ</i>	After an <i>a</i> -final stem (<i>aṅga</i>), <i>ṭā</i> , <i>nāsi</i> , and <i>nās</i> are replaced by <i>ina</i> , <i>āt</i> , and <i>syā</i> respectively.
9	<i>kacchena</i> <i>pā</i> x[kartṛ]	6.1.87	<i>ād guṇaḥ</i>	Short or long <i>a</i> and a following dissimilar simple vowel are replaced by the latter's corresponding guṇa sound.
10	<i>kacchena</i> [upapada] <i>pā</i> x[kartṛ]	3.1.92	<i>tatropapadaṇi saptami-sṭham</i>	The speech form ending in a nominal termination, because the term <i>supi</i> occurs in the locative, is termed <i>upapada</i> .
11	[dhātu]- <i>ka</i> [kartṛ]	3.1.93	<i>kṛd atin</i>	The affix <i>ka</i> in 3.2.4a is termed <i>kṛt</i> .
12	<i>kacchena</i> [upapada] <i>pā</i> - <i>a</i> [kartṛ]	3.2.4a	<i>supi</i> (<i>ātaḥ kaḥ</i> 3) [yoga-vibhāga]	The affix <i>ka</i> occurs after an <i>ā</i> -final root on condition that a speech form ending in a nominal termination is the subordinate term (<i>upapada</i>) connected with it.
12a		3.4.67	<i>kartari kṛt</i>	The affix <i>ka</i> , termed <i>kṛt</i> , occurs on condition that the agent (<i>kartṛ</i>) is to be denoted.
13	<i>kacchena</i> [upapada] <i>pā</i> [aṅga]- <i>a</i> [kartṛ]	1.4.13	<i>yasmāt pratyayavidhis tadādi pratyaye 'ṅgam</i>	That speech form beginning with that after which an affix is provided is termed <i>aṅga</i> with respect to that affix.
14	<i>kacchena</i> [upapada] <i>pā</i> [kartṛ]	6.4.64	<i>āto lopa ṛti ca</i>	The final <i>ā</i> of a stem (<i>aṅga</i>) is deleted (replaced by <i>lopa</i>) if . . . an affix marked with <i>k</i> or <i>n</i> follows.
15	<i>kacchena</i> [upapada] <i>pā</i> [prātipadika]	1.2.46	<i>kṛttaddhitasamāsās ca</i>	A meaningful speech form that ends in a <i>kṛt</i> or <i>taddhita</i> affix or is a compound is termed <i>prātipadika</i> .
*	<i>kacchena</i> [upapada] <i>pā</i> - <i>ā</i>	4.1.4	<i>ajādyataḥ tāt</i>	The affix <i>tāt</i> occurs after a nominal base (<i>prātipadika</i>) in the feminine.
16	<i>kacchena</i> + <i>pā</i>	2.2.19	<i>upapadam atin</i>	An <i>upapada</i> that does not end in a verbal termination is obligatorily compounded with a syntactically related speech form.
17	(<i>kacchena</i> + <i>pā</i>) [prātipadika]	1.2.46	<i>kṛttaddhitasamāsās ca</i>	A meaningful speech form that ends in a <i>kṛt</i> or <i>taddhita</i> affix or is a compound is termed <i>prātipadika</i> .
18	<i>kacchapa</i> [prātipadika]	2.4.71	<i>supo dhātuprātipadikayoh</i>	Nominal terminations within a <i>prātipadika</i> are deleted without a trace (i.e., are replaced by <i>luk</i>).
19	<i>kacchapa-i</i>	4.1.63	<i>jāter astrīviṣayād ayopadhāt</i>	The feminine affix <i>nīṣ</i> occurs after a nominal base (<i>prātipadika</i>) that is a generic term, that does not occur exclusively in the feminine, and that does not have a penultimate <i>y</i> .

Table 2.—continued

20	<i>kacchapa</i> [aṅga]-ī	1.4.13	<i>yasmāt pratyayavidhiḥ tadādi pratyaye 'ṅgam</i>	That speech form beginning with that after which an affix is provided is termed <i>aṅga</i> with respect to that affix.
21	<i>kacchapa</i> [aṅga][bha]-ī	1.4.18	<i>yaci bham</i>	A speech form followed by an affix beginning with <i>su</i> (taught in 4.1.2 and following rules) not termed <i>sarvanāmasthāna</i> that begins with <i>y</i> or a vowel is termed <i>bha</i> .
22	<i>kacchapī</i>	6.4.148	<i>yasyeti ca</i>	A vowel of the <i>i</i> or <i>a</i> class, final in a stem (<i>aṅga</i>) termed <i>bha</i> , is deleted (replaced by <i>lopa</i>) if an affix beginning with <i>ī</i> or <i>a</i> taddhita affix follows.
23	<i>kacchapīs</i>	4.1.2	<i>svaujasamauṭchas . . .</i>	A nominal termination occurs after a nominal stem or a speech form ending in a feminine affix <i>ñī</i> or <i>āp</i> .
23a		1.4.22	<i>dvyekayor dvivacanaikavacane</i>	A dual or singular nominal termination occurs to denote dual or singular number respectively.
23b		2.3.46	<i>prātipadikārtha-liṅga- parimāṇa-vacana-mātre prathamā</i>	A first-triplet nominal termination occurs if just the meaning of the nominal base, gender, a measure, or number are to be denoted.
24	<i>kacchapīs</i> [pada]	1.4.14	<i>suptinantam padam</i>	A speech form ending in a nominal or verbal termination is termed <i>pada</i> .
25	<i>kacchapī</i>	6.1.68	<i>halhyābbhyo dīrghāt sutisy aprktaṁ hal</i>	After a speech form that ends in a consonant, or a long vowel that is a feminine affix <i>ñī</i> or <i>āp</i> , the singular first-triplet nominal termination <i>su</i> , or the third or second person singular verbal terminations <i>si</i> or <i>ti</i> , when a single consonant, are deleted.

3.2 Kātyāyana and Patañjali

Examination of the statements of commentators concerning the prevention of nominal terminations on final compound constituents prior to compounding begins with Kātyāyana (fourth or third century B.C.E.). In A. 4.1.48 vārttika 4 *gati-kāra-kopapadānām kṛdbhiḥ saha samāsavacanam*, Kātyāyana requires that certain initial compound elements be compounded with a final compound element that is a nominal base terminating in a kṛt-affix. The initial compound constituents to which the requirement applies include preverbs and other pre-verbal elements termed *gati*, speech forms denoting participants in action (*kāra*kas), and upapadas. The second category includes compounds such as *dhanakṛtī* provided by A. 2.1.32; the third includes compounds such as *kacchapī* provided by A. 2.2.19.

Among the reasons for stating the vārttika, Patañjali (c. 150 B.C.E.) mentions the provision of the feminine affix *ñiṣ* after a generic term (*jāter ñiṣvidhāne prayojanam*) and supplies *vyāghrī* ‘tigress’ and *kacchapī* ‘female tortoise’ as examples. Patañjali explains the motivation for the vārttika with respect to the first example;³ his explanation is adapted here to apply to the latter, since *kaccha-pa* is an upapada-tatpuruṣa compound, so that reference may be made to the derivation in Table 2. Patañjali cites *kacchapah* as an example to which the first portion of A. 3.2.4 divided into two rules is applicable (Table 2, step 12). If compound constituents ended in nominal terminations, the feminine affix *ṭāp* would occur after the nominal stem of the final constituent prior to compounding by A. 4.1.4 *ajādyataṣ ṭāp* (Table 2, step * after 15), and the final constituent *pā* terminating in long *ā* would be compounded. The feminine affix *ñiṣ* would then not occur by A. 4.1.63 *jāter astrīviṣayād ayopadhāt* (Table 2, step 19) since it is provided only after a nominal base ending in a short *a*. (As the *Kāśikā* observes, the term *ataḥ* ‘after a short *a*’ recurs from A. 4.1.4.) The statement of the vārttika solves the problem.

Under A. 2.2.19, Patañjali argues that it is not necessary to state vārttika 4 under A. 4.1.48 because the mention *a-tiñ* in A. 2.2.19 *upapadam atin* achieves its purpose. The recurrence of *sup* and *supā* in A. 2.2.19 would disallow the rule from applying to finite verbs anyway, even without mentioning that it does not apply to speech forms ending in verbal terminations (*a-tiñ*). Patañjali writes,

Therefore, since it is successful in this way, the fact that the teacher (Pāṇini) mentions the negation, “not a speech form ending in a verbal termination,” serves to make known that the terms *sup* and *supā* do not recur in these two rules (A. 2.2.18–19). What is the reason for making this known? The principle (*paribhāṣā*) that a *gati*, *kāra*ka, or upapada is compounded with a nominal base ending in a kṛt-affix need not be stated. (*evam tarhi siddhe sati yad atin iti pratiṣedham śāsti taj jñāpayaty ācāryo ’nayoṛ yogayor nivṛttaṁ sup supaiti. kim etasya jñāpane prayojanam. gati-kāra-kopapadānām kṛdbhiḥ saha samāso bhavaty eṣa paribhāṣā na kartavyā bhavati. MBh. 1.417.18–20*)⁴

Finally, Patañjali clarifies that the final compound constituent with which elements termed *gati*, speech forms denoting participants in action (*kāra*kas), and upapadas are compounded is simply a semantically and syntactically related speech form. The *Mahābhāṣya* passage continues, “If this is made known, then with what are they compounded? With a semantically and syntactically related speech form” (*yady etaj jñāpyate kenedānīm samāso bhaviṣyati. samarthena*). The final compound constituent can be any speech form; it need not be one that ends in a nominal termination.

3. *subantānām samāsaḥ. tatrāntaraṅgatvāṭ ṭāp. ṭāpy utpanne samāsaḥ. ghrāśabdaḥ samasyeta. tatra jāter astrīviṣayād ayopadhād akārāntād iti ñiṣ na prāpnoti. MBh. vol. 2, p. 218, line 26—p. 219, line 2.*

4. Cf. Joshi and Roodbergen’s (1973: 214–15) translation.

As mentioned in section 2, Kātyāyana's vārttikas 3–4 under A. 2.2.19 and Patañjali's commentary thereon conclude that the formation of an upapada-tatpuruṣa compound by A. 2.2.19 takes precedence over the formation of a ṣaṣṭhī-tatpuruṣa compound by A. 2.2.8. Vārttika 3, "an upapada-tatpuruṣa compound takes precedence over a ṣaṣṭhī-tatpuruṣa compound by *vipratīṣedha*" (*ṣaṣṭhīsamāsād upapadasamāso vipratīṣedhena*. MBh. 1.418) suggests that A. 2.2.19 takes precedence after the two rules come into conflict (*vipratīṣedha*) since each rule has its own scope while they both have scope in the formation of compounds such as *kumbhakāra*. Presumably, the latter rule would apply in accordance with the principle stated in A. 1.4.2 *vipratīṣedhe param kāryam* that the latter rule applies in cases of such conflict. Kātyāyana in vārttika 4 and Patañjali in his comments thereon reject vārttika 3's suggestion that A. 2.2.19 takes precedence over A. 2.2.8 by *vipratīṣedha*. Vārttika 4 states, "no, an upapada-tatpuruṣa compound occurs because there is no ṣaṣṭhī-tatpuruṣa compound" (*na vā ṣaṣṭhīsamāsasyābhāvād upapadasamāsaḥ*. MBh. 1.418). A. 2.2.8 has no scope to form compounds such as *kumbhakāra*, Patañjali points out, because of the statement of the principle that a gati, kāraṇa, or upapada is compounded with a nominal base ending in a kṛt-affix prior to the arising of nominal terminations (*gatikārapapadānām kṛdbhiḥ saha samāsavacanam prāk subutpatter iti vacanāt*. MBh. 1.418.7–8). Since he has just argued that the statement of this principle is not necessary, he offers a second reason: A. 2.2.19 is obligatory while A. 2.2.8 is optional (*upapadasamāso nityasamāsaḥ ṣaṣṭhīsamāso vibhāṣā*. MBh. 1.418.10). An obligatory rule takes precedence over one that is not obligatory.

The fact that Kātyāyana and Patañjali consider the possibility that the compound be formed by A. 2.2.8 *ṣaṣṭhī* implies that they consider that a sixth-triplet nominal termination is present in the initial compound constituent at the stage of compounding (Table 1, step 17). The statement of the principle that a gati, kāraṇa, or upapada is compounded with a nominal base ending in a kṛt-affix prior to the arising of nominal terminations preempts the occurrence of a nominal termination only in the final compound constituent. The inclusion of *a-tiñ* in A. 2.2.19 that makes the statement of this principle unnecessary likewise preempts the occurrence of a nominal termination only in the final compound constituent.

Although Kātyāyana and Patañjali accept that the initial compound constituent in an upapada-tatpuruṣa compound terminates in a nominal termination prior to compounding, Patañjali nowhere insists that the term *upapada* itself implies the presence of nominal terminations. Hence there is no reason to assume the presence of a nominal termination in *kumbha* at the time of application of A. 3.2.1 *karmanṇi aṇ* (Table 1, step 7) just because that which denotes the direct object (*karman*) is termed *upapada* by A. 3.1.92 *tatropapadam saptamīstham* (Table 1, step 5). The question arises as to whether the term *upapada* implies the technical sense of the term *pada* provided by A. 1.4.14 *suptīnantam padam*, namely, that it terminate in a nominal termination because the term *upapada* includes the string *pada*. A similar question arises with regard to the terms for compound constituents *pūrvapada* and *uttarapada*. The answer is that the terms do not imply the technical sense of the term *pada* provided by A. 1.4.14; they do not necessarily have to terminate in nominal terminations.

Under A. 3.1.92, Patañjali accepts that the reason for stating the long technical term *upapada* is that it be understood as a term in accordance with its conventional meaning (*mahatyāḥ sañjñāyāḥ karaṇa etat prayojanam anvarthasañjñā yathā vijñāyeta*. MBh. 2.76.7–8). The term *upapada* is a long term (*upapadam iti mahatīyam sañjñā kriyate*. MBh. 2.76.6). The conventional meaning to be understood from it is the adjacent word uttered (*upocāri padam upapadam*. MBh. 2.76.8). The hint of the word *pada* in the term *upapada* serves to induce the principle in rules in which the term is mentioned that the rule concerns syntactically related speech forms (*yāvata cedānīm padagandho 'sti padavidhir ayam bhavati. padavidhiś ca samarthānām bhavati*. MBh. 2.76.9–10). The term thereby prevents rules from applying to

syntactically unrelated speech forms. The point is that the speech forms must be syntactically related, not that they terminate in nominal terminations.

In this context, Patañjali debates the application of A. 3.2.1 *karmaṇy aṇ* to cases where the verb has an independent connection with two verbal complements not directly connected with each other. He considers the case in which the *vigrahavākya* contains two accusatives, *mahāntaṁ kumbhaṁ karoti*. If the sentence means “he makes a great pot,” there is a direct syntactic connection between the two accusatives, and these have a uniform connection with the verb. In that meaning Patañjali permits the rule to apply (*bhavitavyaṁ yadaitad vākyaṁ bhavati: mahān kumbho mahākumbhaḥ, mahākumbhaṁ karotīti mahākumbhakāraḥ*. MBh. 2.75.22–76.1). However, if the sentence means “he makes the pot large,” there is no direct unmediated syntactic connection between *kumbhaṁ* and *mahāntaṁ*, so the rule does not apply (*yadā tv etad vākyaṁ bhavati: mahāntaṁ kumbhaṁ karotīti tadā na bhavitavyaṁ*. MBh. 2.76.2). In that case Patañjali disallows the rule to apply because of the lack of syntactic connection (*tatra asāmārthyān na bhaviṣyati*. MBh. 2.76.10). He does, however, make an exception in the similar case of at least one compound formed with the affix *cvi* (*iṣṭam evaitad gonardīyasya*). In the sentence “I want a maker of wild sugarcane grass into mats” (*icchāmy ahaṁ kāśakaṭikāram*), A. 3.2.1 does provide the affix *aṇ* after *kṛ* with two complements *kāśa* ‘wild sugarcane grass’ and *kaṭa* ‘mat’ (MBh. 2.76.13–14).

While the debate concludes by broadening the scope of rules that include an upapada as a condition so that they include cases of slightly looser syntactic connection, it illustrates well what Patañjali means the purpose of stating the long term *upapada* to be: it indicates that rules apply to syntactically related speech forms, not to speech forms that are not syntactically related. Patañjali makes no mention of a requirement that the hint of the word *pada* (*pada-gandha*) in the term *upapada* implies that an upapada in a rule such as A. 3.2.1 must terminate in a nominal termination in accordance with the formal requirements of A. 1.4.1 *suptiṇantaṁ padam*. Hence there is no need for a nominal termination in *kumbha* at the time of application of A. 3.2.1 (Table 1, step 7). In contrast, the reason a nominal termination is required in *kacchena* at the time of application of A. 3.2.4a *supi* (Table 2, step 12) is that the rule specifically refers to a speech form ending in a nominal termination *sup*.

3.3 Jinendrabuddhi and Bhoja

According to Jinendrabuddhi (c. 750 C.E.) in his *Nyāsa* on the *Kāśikā* (seventh century) under A. 2.2.19 *upapadam atin*, nominal terminations are generally present neither in the initial nor in the final compound element in upapada-tatpuruṣa compounds. He considers that the mention of the term *a-tin* serves as an indication that neither *sup* (from A. 2.1.2) nor *supā* (from A. 2.1.4) recurs in A. 2.2.19. Jinendrabuddhi considers it appropriate that neither term recurs (*yuktā dvayor api nivṛttiḥ*) because the indication applies generally to interrupt the nominal termination heading (*sāmānyena sub-adhikāra-nivṛtṭy-upalakṣaṇārthatvāt*). He considers that the term *upapada* does not necessarily mean a speech form ending in a nominal termination (*subantaṁ*) in accordance with the technical sense of *pada* in A. 1.4.14 *suptiṇantaṁ padam*. First, in accordance with Patañjali’s statement under A. 3.1.92, he accepts that the term *upapada* includes not only what is taught in the locative under the heading A. 3.1.91 in accordance with A. 3.1.92 *tatropapadam saptamīstham (na hi dvitīyadhātavadhikāre yat saptamīyā nirdiṣṭaṁ tad evopapadasamjñam bhavati)* but also that which is enunciated nearby (*api tu yad apy upocārītaṁ padam tad apy upapadam bhavaty eva*). Moreover, he takes the term *pada* in *upapada* to mean “that by means of which a meaning is understood” (*padatvaṁ punas tasya padyate gamyate ’nenārtha itī kṛtvā*), not “that which ends in a nominal termination” (*na tu subantatvāt*). The reason he interprets *pada* in this way is that it is impossible

that a nominal termination occur after the final compound element in the derivation of forms such as *aśvakṛitī* ‘a female bought with a horse’ (*iha supo ’sambhavāt*). In *aśvakṛitī* as in *kacchapī*, nominal terminations occur after the feminine affix (Table 2, steps 23, 23a, 23b). The feminine affix *ī* occurs in accordance with A. 4.1.50 *kṛitāt karaṇapūrvāt* only after the compound *aśva-kṛita* is formed (cf. Table 2, step 19); before compound formation, the affix *ā* would occur after the final compound element *kṛita* in accordance with A. 4.1.4 *ajādyataṣ ṭāp* (Table 2, step *). Therefore, nominal terminations do not arise in upapada-tatpuruṣa compounds prior to compounding (*subanutpatteḥ prāk samāsāt*).

Jinendrabuddhi is aware that there are cases in which nominal terminations are required after the first compound element. To account for these, he asserts that the indication that neither *sup* nor *supā* recurs does not apply universally (*asarvaviśayatvād asya jñāpakasya*). He asserts that the indicated principle (*paribhāṣā*) that compounding occurs prior to the provision of nominal terminations for certain speech forms including upapadas does not apply universally (*na hy anena sarvatra ’gati-kārapapadānām kṛdbhiḥ prāk subutpatteḥ samāso bhavati’ iti jñāpyate*). Rather (*kiṃ tarhi*) it applies only in certain desired instances (*kva cid eveṣṭa-viṣaye*). It is known that Pāṇini permitted nominal terminations to occur at the end of the initial compound element before a final element ending in a *kṛt*-affix because he allows nominal terminations not to be deleted in such compounds. A. 6.3.14 provides non-deletion (*a-luk*) of a seventh-triplet nominal termination before a final compound element that ends in a *kṛt*-affix (*tatpuruṣe kṛti bahulam iti kṛdanta uttarapade saptamāyā aluḡ-vidhānāt*). If nominal terminations never arose at the end of initial compound elements before final compound elements that end in *kṛt*-affixes, it would make no sense to provide for the non-deletion of seventh-triplet nominal terminations because they would not have arisen in the first place. Moreover forms such as *bileśaya* ‘lying in a cave’, where the singular seventh-triplet termination occurs, would not be accounted for. Therefore, Jinendrabuddhi concludes that a compound occurs prior to the arising of nominal terminations only in certain instances (*tasmāt kvacid eva prāk subutpatteḥ samāsaḥ*), not universally (*na sarvatra*). In this way one can account for *dhanakṛitā*, where the feminine affix *ṭāp* does occur after the final compound element prior to compounding, as well as *dhanakṛitī*, where it doesn’t. In the latter, the final compound element is left ending in a short *a* so that instead the feminine affix *ṇīṣ* occurs after compound formation (cf. Table 2, step 19).

In his *Śṅgārāprakāśa* (1005–1062 C.E.), Bhoja agrees with Jinendrabuddhi on the one hand that neither *sup* nor *supā*, which specify that compound constituents end in nominal terminations, recurs in A. 2.2.18–19, and on the other that the principle that a *gati*, *kāraka*, or upapada is compounded with a nominal base ending in a *kṛt*-affix prior to the arising of nominal terminations does not apply absolutely. He argues that the term *sup* does not recur because the mention of *a-tiñ*, which is explained as a separate sūtra divided from A. 2.2.19 that completes both A. 2.2.18 and A. 2.2.19, stops it (*’kugatiprādayaḥ’*, ‘*upapadam atin’ ity atra atīṅgrahaṇenobhayaśūtraśeṣatayā vyākhyāyamānena sub ity etasya nivṛttiḥ kriyate*. *ŚPr.*, p. 46). Likewise the term *supā* does not recur because in A. 2.1.32 it is understood that compounds form at the stage where the final constituent ends in a *kṛt*-affix. One gets that the final constituent ends in a *kṛt*-affix already just by the fact that the compound is provided for initial constituents that denote an agent (*kartṛ*) or an instrument (*karaṇa*). (Agents and instruments are participants in action. Action is denoted by roots, and *kṛt*-affixes are provided after roots. Hence the only speech forms that denote participants in action that take nominal terminations are *kṛt*-derivates.) Because *kṛt* is specifically mentioned even though one already understands this, its mention particularly indicates a *kṛt*-final nominal base without a nominal termination. (*’kartṛkaraṇe kṛtā bahulam’ ity atra ca kartṛkaraṇayoḥ samāsavidhānād uttarapadasya kṛdantatāyām labdhāyām kṛdgrahaṇād atiriktāt tadantāvasthāyām eva samāsābhyanujñāne supety etad api nivartate*. *ŚPr.*, p. 46.) Bhoja concludes that the non-

recurrence of these terms justifies the formation of *gati*, *kāraka*, and *upapada* compounds from speech forms that don't end in nominal terminations.

Conversely, Bhoja concludes that the inclusion of the term *bahulam* in A. 2.1.32 allows such terminations where desired.

Therefore, the principle that a *gati*, *kāraka*, or *upapada* is compounded with a nominal base ending in a *kṛt*-affix prior to the arising of nominal terminations is made known. And it is determined that compounding occurs in some instances between two nominal bases, in some instances between two speech forms ending in nominal terminations, and in some instances between a speech form ending in a nominal termination and a nominal base because the mention of 'variously' (*bahulam*) in A. 2.1.32 serves the purpose of achieving whatever is desired. (*tataś ca gatikārakopapadānāṃ kṛdbhiḥ saha samāsavacanāṃ subutpatteḥ prāg eva bhavātīty ākhyātām. bahulagrahaṇasya ceṣṭasiddhyarthatvāt sa kvacin nāmabhyāṃ kvacit subantābhyāṃ kvacin nāmasubantābhyāṃ niścīyate.* (ŚPr., p. 46 with correction of sentence and paragraph segmentation.)

Bhoja cites and justifies examples of compounds that require nominal terminations on initial constituents (*carmakāraḥ*) and on final constituents (*dadhisek*, *dhanakṛtā*). He also cites and justifies examples of compounds that require the absence of nominal terminations on initial constituents (*asūryampaśyā*) and on final constituents (*dhanakṛtī*). It is necessary to allow the initial or final element in *kāraka* and *upapada* compounds to end in a nominal termination to account for operations on the initial or final element that can only occur under the condition that it is termed *pada*. A. 1.4.14 *suptiṇantaṃ padam* provides that a speech form that ends in a nominal or verbal termination is termed *pada*. A number of rules in the eighth adhyāya of the *Aṣṭādhyāyī* provide operations that take place at word boundaries. For example, A. 8.3.109 *sātpadādyoḥ* negates retroflexion of the initial *s* of a *pada* where retroflexion would otherwise occur after a simple vowel other than *a* or *ā* located in a prior compound element by A. 8.3.104 *pūrvapadāt*. Many rules provide replacements to sounds that occur final in a *pada*. Thus A. 8.2.7 *nalopaḥ prātipadikāntasya* occurs in the section headed by A. 8.1.16 *padasya*. Thereby the term *padasya* is understood to recur in A. 8.2.7. This rule then provides the deletion of the final *n* in a nominal stem (*prātipadika*) that is termed *pada*. The rule accounts for the deletion of the *n* of *rājan* 'king' in the masculine nominative singular *rājā*, and in oblique forms beginning with a stop or spirant such as the instrumental plural *rājabhiḥ* and locative plural *rājasu*. A. 8.2.7 likewise accounts for the deletion of the final *n* when the word occurs as the initial element in compounds such as *rāja-puruṣa*.

Bhoja gives *dadhi-sek* 'yogurt-sprinkler' as an example of a compound requiring its final constituent to end in a nominal termination (ŚPr., p. 46). A. 8.3.109 *sātpadādyoḥ* negates retroflexion of the initial *s* of *sek* if it is a *pada*. If the final compound constituent *sek* did not end in a nominal termination prior to compounding, it would not be termed *pada* by A. 1.4.14, and the initial *s* of *sek* would be subject to retroflexion by A. 8.3.104.

As an example of a compound formed from an initial constituent ending in a nominal termination and a final constituent consisting of a nominal base, Bhoja gives *carmakāraḥ* 'leather-worker' (ŚPr., p. 46). The compound *carma-kāra* is an *upapada-tatpuruṣa* compound accounted for by A. 2.2.19 just as *kumbha-kāra* is (Table 1, step 17). Prior to compound formation, A. 3.2.1 provides the affix *aṇ* after the root *kṛ* when *carman* occurs as an *upapada* in relation to the root *kṛ*, just as it does when *kumbha* occurs as an *upapada* in relation to the same root (Table 1, step 7). The deletion of the final *n* of *carman* 'leather' is required when it occurs as the prior member in the compound *carma-kāra*. Now if the prior element did not end in a nominal termination, it would not be termed *pada* by A. 1.4.14, and the deletion of the final *n* would not occur by A. 8.2.7.

Bhoja writes, “the final subsequent compound constituent in *dadhisek* is made to end in a nominal termination to achieve the negation of replacement by retroflex *ṣ* initial in a pada by A. 8.3.109 *sātpadādyoḥ*, and the prior compound constituent in *carmakāra* is made to end in a nominal termination for the purpose of deletion of *pada*-final *n*.” (*‘dadhisek’ ity atra uttarapadasya, ‘sātpadādyoḥ’ iti padādi-nibandhana-ṣatva-pratiṣedha-siddhaye ‘carmakāra’ ity atra tu pūrvapadasya padānta-lakṣaṇa-nalopārthaṁ subantatā kriyate. ŚPr.*, p. 46.)

Why *dhanakṛtī* requires the absence of nominal terminations on the final constituent to condition the feminine affix *nīṣ*, and *dhanakṛtā* requires their presence to condition the feminine affix *ṭāp* has been explained above. Finally, Bhoja cites *asūryampaśyāḥ*. The initial constituent *a-sūrya*, he asserts, is a compound formed from the nominal bases *nañ* (the negative particle with the final marker *ñ*) and *sūrya* ‘sun’ without nominal terminations.

There are no nominal terminations on *nañ* and *sūrya* in *asūryampaśyā* because *nañ* and *sūrya* are not in direct syntactic connection. The negative particle *nañ* and *sūrya* ‘sun’ are mutually unconnected because negation denoted by *nañ* and the sun denoted by *sūrya* are both connected with the action of seeing denoted by the root *drś* (and by the present stem *paśya* which replaces it by A. 7.3.78 *pāghrādhmā . . .*). For here, in the corresponding phrase, “They don’t see even the sun” (*sūryam api na paśyanti*), the negative particle *nañ* expects the action of seeing which has the sun as its direct object; it does not expect the entity the sun directly. The compound is formed just of the two nominal bases (*nāman*), *nañ* and *sūrya* (devoid of nominal terminations), even though they are not syntactically connected, because of the explicit mention of *a-sūrya* in A. 3.2.36 *asūrya-lalāṭayor drśi-tapoḥ*. (*‘asūryampaśyā’ ity atra nañsūryayor drśikriyayā sambandhāt parasparam asambandhe sāmartyābhāvād vibhaktiyabhāvaḥ, atra hi sūryam api na paśyanti nañ sūryakarmikāṁ drśikriyām apekṣate, na sūryasattām, ‘asūryalalāṭayor drśitapoḥ’ (A. 3.2.36) iti vacanād asāmartye ‘pi nāmnor eva samāso bhavati. ŚPr.*, pp. 46–47.)

Jinendrabuddhi and Bhoja understand Patañjali (see section 3.2) to mean that neither *sup* nor *supā* recurs in A. 2.2.18–19 and that the mention of *a-tiñ* allows both initial and final compound elements in upapada-tatpuruṣa compounds to lack nominal terminations at the time of compound provision. They account for the required presence of nominal terminations on these elements at the time of compounding in numerous examples by broadening the scope of indeterminate variation indicated by the term *bahulam* in A. 2.1.32 *kartṛkarmaṇoḥ kṛti bahulam*. Rules of indeterminate variation carry a cost to the robustness of linguistic description. Linguistic science in general and Pāṇinian grammar in particular engage in the systematic explanation of language. Rules of indeterminate variation should be appealed to as little as possible to preserve the robustness of the scientific explanation. As I wrote (2008: 16), paraphrasing Thieme (1935: 61), “it is likely that Pāṇini formulated such rules to account for such unusual occurrences after he had exhausted all attempts at systematic explanation.” I therefore concluded (p. 15), “the new school account of the subjunctive is more convincing than the old school account because it provides a more precise systematic account of a larger scope of data than the old school and relies on rules of indeterminate variation for a smaller scope of data.” It is the undesirability of broad rules of indeterminate variation that prompts Kaiyaṭa, Haradattamiśra, and later grammarians to frame the rules regarding terminations on compound constituents more precisely.⁵

3.4 Kaiyaṭa and Haradattamiśra

In disagreement with Jinendrabuddhi and Bhoja, Haradattamiśra (c. 1100 C.E.) in his *Padamañjarī* on A. 2.2.19 *upapadam atin* understands that the *paribhāṣā gatikāra* *kopapadānām*

5. Regarding the account of the subjunctive examined by me in Scharf 2008, Haradattamiśra and Nāgeśa, in contrast, opt for broad coverage of rules of indeterminate variation over a more precise systematic account.

kṛdbhiḥ prāk subutpatteḥ samāso bhavati concerns the occurrence of nominal terminations only after the final compound element. He writes that the principle means, “the compound formed from a gati, kāraka, or upapada as initial element compounded with a kṛt-derivate as final element is to be formed before the occurrence of nominal terminations on the final element, but the initial element does indeed terminate in a nominal termination when it compounds” (*gatinām kārakānām upapadānām ca kṛdbhiḥ saha yaḥ samāsaḥ tena tena lakṣaṇena sa uttarapadāt subutpatteḥ prāg eva kāryaḥ, pūrvapadam tu subantam eva samasyate*). With Bhoja’s remarks regarding *asūryam̐paśya* in view, he apparently mocks his predecessors who allow terminations to occur at random and apparently pays respect to Kaiyaṭa’s *Pradīpa* commentary on Patañjali’s *Mahābhāṣya*. For he concludes with the verse

tad etat pratipadyantām bhāṣye kṛtapariśramāḥ.

nānye sahasram apy andhāḥ sūryam̐ paśyanti nāñjasā.

Let those who have exerted effort in the *Mahābhāṣya* understand this;

Even a thousand other blind people do not see the sun without ointment.

In his *Pradīpa* commentary on the *Mahābhāṣya* on A. 2.2.19, Kaiyaṭa (c. eleventh century C.E.) remarks on Patañjali’s statement that *a-tiñ* serves to make known that the terms *sup* and *supā* do not recur in the two rules A. 2.2.18–19. He writes that the inclusion of the term *a-tiñ* indicates that only the term *supā* ceases to recur, but the term *sup* does indeed recur in order to allow operations that take place on a *pada* to occur on the initial constituent (*tena supety asyaiva nivṛttir jñāpyate. subgrahaṇam̐ tu pūrvasya padasya padakāryārtham̐ anuvartata eva*). The term *supā* in the instrumental indicates that the final compound element ends in nominal terminations; its cessation allows the final element not to have nominal terminations. Kaiyaṭa takes the term *a-tiñ* in apposition to the heading *samāsaḥ* in A. 2.1.3 *prāk kaḍārāt samāsaḥ*. That the resulting compound is *a-tiñ* amounts to making the final compound element, which ends in a kṛt-affix, *a-tiñ*.⁶

Kaiyaṭa initially rejects the example *dadhi-sek* ‘yogurt sprinkler’ adduced by Bhoja as evidence of an upapada-tatpuruṣa compound whose final compound constituent has nominal terminations prior to compound formation. Kaiyaṭa suggests that the compound is not an upapada-tatpuruṣa compound formed by A. 2.2.19 *upapadam̐ atiñ* at all; rather it is a *ṣaṣṭhī*-tatpuruṣa compound formed by A. 2.2.8 *ṣaṣṭhī*. The final element is not a derivate formed on condition that an upapada occurs in syntactic connection with a root; rather, it is a derivate formed by provision of the affix *kvip* after the causative of the root *sic* without dependence upon an upapada by A. 3.2.178 *anyebhyo ’pi dṛśyate (kvip 177)*.⁷ Since there is no doubt that A. 2.2.8 requires nominal terminations on both constituents, it is clear that the final constituent *sec* is termed *pada* and is subject to the negation of retroflexion stated in A. 8.3.109. Kaiyaṭa represents the rejected view as follows:

But if a nominal termination does not arise after the final compound constituent, then in compounds such as *dadhisecau* (masculine or feminine nominative or accusative dual of *dadhi-sec*), the negation of replacement by retroflex *ṣ* by A. 8.3.109 *sātpadādyoḥ* would not occur because the dental *s* does not occur at the beginning of a *pada*. And because it is not termed *pada*, it cannot be designated a final compound constituent *uttara-pada* and therefore the accent that depends upon it being so termed would not succeed. (*yadi tarhy uttarapadāt sub notpadayate tadā dadhisecāv ity adau padādītvābhāvāt ṣatvapraṭiṣedho na prāpnoti. padatvābhāvād uttarapadavyapadeśaś ca na, tataś ca tannibandhanasvaro na sidhyati.*)

6. See Joshi and Roodbergen 1973: 218 for detail.

7. Joshi and Roodbergen (1973: 223) suggest alternatively that the final constituent *sec* is derived from the root *sic* + *vic* by A. 3.2.75 *anyebhyo ’pi dṛśyate* without causative meaning.

A. 6.2.139 *gatikāarakopadāt kṛt* (*uttarapada* 6.2.111) provides that the original accent of the final constituent following a *gati*, *kāraka*, or *upapada* is retained in a *tatpuruṣa* compound. Kaiyaṭa rejects the objection:

This is not a problem. The negation of replacement by retroflex *ṣ* will occur because a *ṣaṣṭhī-tatpuruṣa* compound will be formed after having provided the affix *kvip* following the causative of the root *sic* without an *upapada*. (*naiṣaḥ doṣaḥ. nirupapadāt secayateḥ kvipi kṛte ṣaṣṭhīsamāsaḥ kriyata iti śatvaniṣedho bhaviṣyati.*)⁸

However, Kaiyaṭa subsequently withdraws his suggestion for reinterpreting the compound *dadhi-sec* as a *ṣaṣṭhī-tatpuruṣa* instead of an *upapada-tatpuruṣa* because he recognizes that it is necessary to accept indeterminate variation regarding the presence or absence of nominal terminations on the final compound constituent anyway in order to account for *dhanakṛitā*, which requires nominal terminations on the final compound constituent, as well as *dhanakṛitī* which requires the absence of nominal terminations on the final compound constituent (see section 3.3).

Or rather, since the term *supā* ceases to recur, in order to achieve operations as desired, a compound is formed in some instances after a nominal termination has arisen and in some instance before a nominal termination arises. In this way, because of the mention of *bahulam* ‘variously’, a *kāraka* compound too occurs in some instances after a nominal termination has arisen. Thus the usage “For she is his woman bought with money (*dhanakṛitā*)” is accounted for.⁹ (*yad vā supety asya nirvṛtau satyām yatheṣṭam kāryasiddhaye kvacid utpanne supī samāsaḥ kvacit prāk subutpatteḥ. evam kārakasamāso 'pi bahulagrahaṇāt kvacit subutpatter bhavatīti sā hi tasya dhanakṛiteṭi prayoga upapannaḥ.*)

Now if the final compound constituent in *dadhi-sec* is accepted as being a nominal base without nominal terminations at the time of compound formation, it remains to justify the accent in accordance with A. 6.2.139, which requires that the final compound element be termed *uttarapada*. Kaiyaṭa concludes that the term *uttarapada* conventionally refers to any speech form that occurs as a subsequent compound constituent. It does not refer to what is termed *pada* in the technical sense of the term; that is, its scope is not limited to what ends in nominal or verbal terminations as required by A. 1.4.14 *suptinantaṁ padam*. Kaiyaṭa therefore concludes, “there is no problem there either because the term *uttarapada* conventionally refers to a particular part of a compound” (*uttarapadaśabde samāsāvayavaviśeṣasya rūḍhir iti tatrāpy adoṣaḥ*). Regarding the accentual rule A. 6.2.139, which provides that the original accent of the final constituent following a *gati*, *kāraka*, or *upapada* is retained in a *tatpuruṣa* compound, Joshi and Roodbergen (1973: 223) clearly state, “in these rules the term *uttarapada* does not mean a case-inflected final cp.-member, that is, a *pada* in the technical sense of the word, but it only means the final part of a cp.”

According to Kaiyaṭa, the recurrence of *sup* in the nominative in A. 2.2.19 requires that the initial compound constituent terminate in a nominal termination, not the final compound constituent. The initial constituent is then termed *pada* in the technical sense of the term by A. 1.4.14. Since the initial compound constituent is termed *pada*, the principle stated in A. 2.1.1 *samarthaḥ padavidhiḥ*, which is relevant to rules concerning a *pada*, applies. The principle restricts compound formation to semantically and syntactically connected speech forms. Where Patañjali writes under A. 2.2.19 that an element termed *gati*, a speech form denoting a participant in action (*kāraka*), or an *upapada* is compounded with a semantically

8. See Joshi and Roodbergen 1973: 216–17.

9. See Joshi and Roodbergen 1973: 217.

and syntactically related speech form (see section 3.2), Kaiyaṭa states that this is due to the fact that the principle of semantic and syntactic connection presents itself because compound formation is a rule concerning a *pada* by virtue of the fact that the term *sup* recurs (*sub ity asyānuvṛtau satyāṁ samāsasya padavidhivāt samarthaparibhāṣopasthānāt*). The final compound constituent, according to Kaiyaṭa then, can be any semantically and syntactically related speech form.

3.5 Bhaṭṭojidīkṣita, Nāgeśa, and their commentators

Bhaṭṭojidīkṣita (early seventeenth century) adopts the view propounded by Kaiyaṭa and Haradattamiśra that in upapada-tatpuruṣa compounds the initial compound constituent terminates in a nominal termination and that just the final compound constituent does not. He goes further in stating that it is a *pada* that is termed *upapada* by A. 3.1.92 *tatropapadam saptamīstham* in rules under the heading A. 3.1.91 *dhātoḥ*. He thereby departs from Jinendra-buddhi's conclusion that the term *upapada* does not include the technical sense of *pada* as that which ends in a nominal or verbal termination (see section 3.3). He makes clear that the nominal termination present at the time of compounding by A. 2.2.19 *upapadam atin* in the derivation of *kumbha-kāra* is a sixth-triplet termination (a genitive ending), not a second-triplet one (an accusative ending). Nāgeśa (eighteenth century) concurs.

In the *Siddhāntakaumudī*, Bhaṭṭojidīkṣita makes clear that a nominal termination occurs at the end of the upapada, which occurs as the initial member of the compound, but not on the derivate formed from the root, which occurs as the final member. The term *sup*, designating the subordinate compound element that ends in a nominal termination, recurs in A. 2.2.19 from A. 2.1.2 *sub āmantrite parāṅgavat svare*, but the term *supā* in A. 2.1.4 *saha supā*, designating a principal compound element that ends in a nominal termination, does not. He writes under A. 2.2.19 *upapadam atin*, “an upapada that ends in a nominal termination is obligatorily compounded with a syntactically connected item” (*upapadam sub-antam samarthena nityam samasyate*). In contrast, he states that the term *supā* in the instrumental does not recur from A. 2.1.4 (*supā iti ca nivṛttam*). It is the absence of the nominal termination on the subsequent compound element, the derivate *-kāra*, at the time of compound formation by A. 2.2.19 that satisfies the principle (*paribhāṣā*) that the compounding of an upapada with a *kṛt*-derivate occur prior to the arising of a nominal termination (*tathā ca 'gatikāra-kopapadānām kṛdbhiḥ saha samāsavacanam prak subutpatteḥ' iti siddham*).

Vāsudevādīkṣita provides the example of *carmakāra* in the *Bāṣamanorama* to demonstrate the necessity of understanding that a nominal termination occurs generally after the prior element in upapada-tatpuruṣa compounds. The deletion of the *n* in *carman* is required if it occurs as an upapada in an upapada-tatpuruṣa compound. He writes, “nor can one argue that there is no reason for the term *sup* to recur (in A. 2.2.19 from A. 2.1.2) because it serves the purpose of the deletion of *n* in *carma-kāra*” (*na caivam sub ity anuvṛtteḥ prayojanābhāva iti vācyam, carmakāra ity atra nalopārthakatvāt*).

In order to demonstrate that no nominal termination occurs after the subsequent compound element that is a *kṛt*-derivate in an upapada-tatpuruṣa compound, Bhaṭṭojidīkṣita cites the form *kacchapī* ‘female tortoise’. Vāsudevādīkṣita indicates that the parallel sentential usage that illustrates the meaning of the compound is either *kacchena pibati* “. . . drinks by means of the edge,” or *kacche pibati* “. . . drinks at the edge.” He writes *kacchaḥ tīraṁ, tena tasmin vā pibatīti kacchapī*. The derivation of the form shown in Table 2 assumes the first meaning.

In a departure from the views of Kaiyaṭa and Bhoja, Bhaṭṭojidīkṣita introduces an innovation in stating that it is a *pada* that is termed *upapada* in a sūtra of the section headed by A. 3.1.91 *dhātoḥ*. He writes under A. 3.1.92 *tatropapadam saptamīstham*,

When there is a word ending in a seventh-triplet nominal termination, such as *karmaṇi*, a pada such as *kumbha* that denotes a direct object (*karman*), present as that which is to be denoted by the term *karmaṇi*, is termed *upapada*. And only when that is present does the affix that will be provided occur. (*saptamy ante pade karmaṇi ity ādau vācyatvena sthitam kumbhādi tadvācakaṁ padam upapadasaṁjñam syāt. tasmimś ca saty eva vakṣyamāṇaḥ pratyayaḥ syāt.*)

In the *Bālamānoraṇa*, Vāsudevadīkṣita writes thereon,

The affix *aṇ* occurs after the root in the meaning of an agent, but the pada that denotes the direct object (*karman*), such as *kumbha*, is to be understood as termed *upapada*. The result is that only when the *upapada* is present does the affix *aṇ* occur. (*dhātor aṇ syāt kartary arthe, karmavācakaṁ tu kumbhādipadam upapadasaṁjñam pratyetyam. tasminn upapade saty evāṇ syād iti phalati.*)

Commenting on A. 3.1.92 in his *Laghuśabdenduśekhara*, Nāgeśa too insists that the *upapada* terminates in a nominal termination in A. 3.2.1 *karmaṇy aṇ* as well as in sūtras in which the term *supi* occurs. In commenting on Bhaṭṭojidīkṣita's use of the term *pada* in the phrase "the pada that denotes that (*karman*)" (*tadvācakaṁ padam*), he states, "a pada here ends in a nominal termination" (*padam atra vibhaktyantam*). Bhairavamiśra, in his commentary *Candrakalā* on the *Laghuśabdenduśekhara*, summarizes Nāgeśa's conclusion, "the term *upapada* applies only to a pada" (*padasyaivopapadasaṁjñā*).

Nāgeśa confirms that the prior element in *upapada*-*tatpuruṣa* compounds ends in a nominal termination, commenting on A. 2.2.19 in the *Laghuśabdenduśekhara*. He writes that Bhaṭṭojidīkṣita's qualification of the term *upapada* with the term 'ending in a nominal termination' (*subanta*) is gotten by force of the fact that it is a long term (*subantam iti mahāsaṁjñābalalabdham*). The *Candrakalā* glosses Nāgeśa's use of the term *mahāsaṁjñā* under A. 3.1.92 stating that a long term is used for the purpose of indicating a sense in accordance with its meaning. In this case that meaning is the word (*pada*) enunciated nearby (*sā cānvarthatvāya kṛtā—samīpa uccāritam padam iti*). Nāgeśa considers that any use of the term *upapada* refers to a word that ends in a nominal termination. Nāgeśa makes very clear, in sharp contrast to Jinendrabuddhi, that he considers that the term *upapada* includes the term *pada* in its technical sense, even in sūtras headed by A. 3.1.91. He interprets the principle stated in A. 3.1.92 *tatropapadaṁ saptamīstham* in application to A. 3.2.1 *karmaṇy aṇ* to mean that the word ending in a nominal termination that denotes the direct object (*karman*) is termed *upapada*.

Likewise in his *Paribhāṣenduśekhara*, Nāgeśa writes that the reason for stating *paribhāṣā* 76 *gatikārapapadānām kṛdbhiḥ saha samāsavacanāṁ prāk subutpatteḥ* is to prevent the incorrect feminine affix *ā* (*ṭāp*) from occurring on the final compound element *aśvakṛtī*, *vyāghrī*, and *kacchapī*. The correct affix *ī* (*ṇīṣ*) occurs after the compound stem and requires that the compound be formed prior to the occurrence of nominal terminations. That the *paribhāṣā* is not obligatory (*nitya*) allows *ā* where it occasionally occurs, as in *aśvakṛtī*. Alternatively, such words are included in the list *ajādi*, allowing *ṭāp* to occur in exception to *ṇīṣ* by A. 4.1.4 *ajādyataḥ ṭāp*, and the *paribhāṣā* is obligatory, including in cases such as *kumbhakāra*. The *paribhāṣā* does not prevent terminations from occurring after the initial compound element. Quite the contrary. Not only does Nāgeśa want the termination after the initial compound element prior to compound formation, he wants it prior to provision of the *kṛt*-affix *aṇ* that forms the final compound constituent.

The termination that occurs on the initial compound element is a sixth-triplet nominal termination, not a second-triplet nominal termination. The sentence with an accusative ending is provided just as an actual usage in parallel meaning, not as a prior step in the derivation of the compound. Immediately after he gives the example *kumbhakāra* and shows its

meaning with a parallel sentential usage that contains the word *kumbha* in the accusative (i.e., with a singular second-triplet nominal termination) (*kumbhaṁ karotīti kumbhakāraḥ*), Bhaṭṭojidīkṣita shows a grammatical formula at a step in the derivation prior to the formation of the compound. The derivational formula contains a singular sixth-triplet nominal termination (*iha kumbha as kāra ity alaaukikaṁ prakriyāvākyam*). Vāsudevadīkṣita makes clear in the *Bālamānorama* that the grammatical formula, not the parallel sentential usage, is the precondition for the derivation of the compound: “the essence is that only the grammatical formula is the basis for the occurrence of the compound; the sentence *kumbhaṁ karoti* is merely for showing its meaning” (*alaaukika-vigraha-vākya eva samāsa-pravṛttiḥ. kumbhaṁ karotīti tadartha-pradarśana-mātram iti bhāvaḥ*). He goes on to emphasize that a sixth-triplet nominal termination, not a second-triplet one, occurs in the derivational formula. He states that *kumbha-am kāra* is an erroneous reading because the sixth triplet is provided in conjunction with a *kṛt*-derivate (*kumbha am kāra ity apapāṭhaḥ, kṛdyoge ṣaṣṭhyā vidhānāt*). The sixth triplet occurs in accordance with A. 2.3.65, as explained above and shown in Table 1, step 12b.

Nāgeśa likewise affirms that it is a sixth-triplet nominal termination and not a second-triplet nominal termination that occurs at the end of the word *kumbha* in the derivation of the upapada-tatpuruṣa compound *kumbha-kāra*. The sixth triplet provided by A. 2.3.65 *karṭṭkarmanoh kṛti* occurs in exception to A. 2.3.2 *karmaṇi dvitīyā*. It is not the case that the latter takes precedence over the former by virtue of the principle of being more internally conditioned (*antaraṅga*). He entertains the supposition that A. 2.3.2 would take precedence over A. 2.3.65 because A. 2.3.65 depends on the direct object having connection with action denoted by a *kṛt*-affix because the sūtra states *kṛti*. He rightly dismisses this supposition because A. 2.3.2 equally depends upon the direct object having connection with action, even without mentioning a term referring to action, just by virtue of a direct object (*karman*) being a participant in action (*kāraḥ*): “and here a sixth triplet occurs conditioned by connection with a *kṛt*-affix—nor is the second triplet more internally conditioned (*antaraṅga*)—because a general rule applies considering the domain of its exceptions” (*kṛdyogalakṣaṇā cātra ṣaṣṭhī. na cāntaraṅgā dvitīyā. prakalpyāpavādaṣayam utsargappravṛtteḥ*). At the same time Nāgeśa denies that *kumbha-kāra* is a ṣaṣṭhī-tatpuruṣa compound formed by A. 2.2.8. The reason he denies this is that an upapada-tatpuruṣa compound formed by A. 2.2.19 is more internally conditioned because it is provided prior to the arising of nominal terminations on the final compound constituent (*atra ṣaṣṭhīsamāso na. uttarapade vibhaktiyutpatteḥ pūrvam evāśya pravṛtīyāntaraṅgatvāt*).¹⁰

3.7 Joshi and Roodbergen

Joshi and Roodbergen (1973: 42) accept that *sup* recurs in A. 2.2.18–19 and just *supā* is discontinued, in disagreement with Jinendrabhuddhi and Bhoja, and in agreement with Kaiyaṭa, Haradattamiśra, Bhaṭṭojidīkṣita, and Nāgeśa. The result is that in an upapada-tatpuruṣa compound an initial compound constituent that ends in a nominal termination is compounded with a final constituent that is any syntactically related speech form. They comment, “Tradition rejects the continuation of the condition *sup supā* as a whole. . . . Our assumption is that *supā* is discontinued on the basis of *sāmarthyā*. . . . The point is that the cp.-constituents are joined together before a case ending (or a fem. suffix) is added to the second cp.-constituent.” Likewise they write (p. 203), “But the fact is that in all desired *upapada* cps the *upapada* is always a case-inflected word. . . . What we want is the discontinuation of *sup* with reference

10. Bhairavamiśra’s *Candrakalā* glosses *asya* here as *upapadasamāsasya*.

to the word with which the *upapada* is to be compounded. That is to say, we want the discontinuation of the condition *supā*.” They correctly observe (p. 220), regarding the derivation of *kacchapī*, “in order to derive the desired form, the *upapada* is compounded with a *kṛdanta* stem, before the case-ending has been added.” The purpose of discontinuing *supā* is to prevent the feminine affix *ṭāp* from arising after the stem *pa* in *kacchapī*, after the stem *ghra* in *vyāghrī*, and after the stem *kṛta* in *dhanakṛtī*, *aśvakṛtī*, *vastrakṛtī*, etc. They provide derivations of several of these forms.¹¹

Working out the details of the derivation of the forms under discussion in the commentaries brings problems to light that went unnoticed previously. One such problem is determining exactly which nominal termination is present on the *upapada* prior to compounding. A second is determining the sequence of the provision of the nominal termination on the *upapada* and the provision of the *kṛt*-affix. In the derivation of *kacchapī*, Joshi and Roodbergen show the first step as (*kaccha-am* + *pā-ka*) with the nominal termination after *kaccha* already present at the time of the provision of the *kṛt*-affix after the root *pā*. There they make the provision of the *kṛt*-affix simultaneous with the compounding of the *upapada* with the *kṛt*-derivate *kāra* by A. 2.2.19.¹² They argue that the *upapada* denoting the *karman* in *kumbha-kāra* is accusative rather than genitive. In their translation of Patañjali’s *Mahābhāṣya* on A. 2.2.19, they comment (p. 203), “we can derive *kumbhakārah*: ‘pot-maker’ from (*kumbha* + *am*) + *kāra*,” and show a singular second-triplet nominal termination on the *upapada* *kumbha*. In their translation of the *Aṣṭādhyāyī* (1997: 45), they analyze the compound differently to show that the *upapada* denoting the *karman* is a condition for the affix *añ*: ((*kumbha-am* + *kṛ*)-*añ*)-*su*. Their braces indicate that the second-triplet termination is present before the affix *añ* is provided by A. 3.2.1 *karmaṇy añ*. They rule out a genitive because the rule that provides a sixth-triplet nominal termination requires the presence of the *kṛt*-affix in advance. In their translation of A. 2.3.65 *karṭṛkarmaṇoḥ kṛti*, they write (1998: 112), “(the sixth case endings are added after a *prātipadika*) in the sense of *karṭṛ* ‘agent’ or *karman* ‘(direct) object’, given (construction with a word ending in a) *kṛt*-(suffix) (unless the *karṭṛ* or *karman* has already been expressed otherwise).” The phrase, “given construction with a word ending in a *kṛt*-suffix,” implies that the affix *añ* is already present before the rule applies. They recognize (1973: 232) that a problem of mutual dependence would arise if the sixth-triplet nominal termination provided by A. 2.3.65 were required to be present prior to the provision of the *kṛt*-affix *añ* by A. 3.2.1: “P. 2.3.65 only applies when the word representing the object is connected with a *kṛdanta* form. That is to say, unless *kāra* has been derived we cannot apply P. 2.3.65. But in order to derive *kāra* from the root *kṛ*- we must show that *kṛ*- is accompanied by a *karma-upapada*.” They propose to solve the mutual dependency by having the *karman* be denoted by a second-triplet nominal termination provided by A. 2.3.2 *karmaṇi dvitīyā* instead: “the only rule by which we can show that *kumbha* is a *karma-upapada* is P. 2.3.2. Therefore the technical analysis should read [(*kumbha* + *am*) + *kṛ*]- + *añ* (1973: 232).”

Joshi and Roodbergen must be credited with recognizing that the problem of mutual dependency would arise if the sixth-triplet nominal termination denoting a *karman* were required prior to the provision of the *kṛt*-affix *añ*. As pointed out towards the end of section 2 above, the sixth-triplet nominal termination denoting a *karman* is provided after a nominal base by A. 2.3.65 under the condition that it occurs in connection with a speech form ending

11. *vyāghrī* on pp. 218–19, **vyāghrā* on pp. 219–20; *kacchapī* on p. 220, and **kacchapā* on pp. 221–22; *vastrakṛtī* and *vastrakṛtā* on p. 222.

12. It is apparently an oversight that they provide (p. 220) a second-triplet termination rather than the third or seventh indicated as possibilities by Vāsudevādīkṣita and give the sūtra number for the affix *añ* (A. 3.2.2) rather than *ka* (A. 3.2.4). See section 3.5 above and Table 2, steps 6b and 12.

in a *kṛt*-affix, but the *kṛt*-affix *an* is provided by A. 3.2.1 after a root on the condition that an upapada denoting a *karman* occurs. It is impossible for the upapada to get the sixth-triplet termination before the root gets the *kṛt*-affix that is a condition for getting the sixth-triplet termination. The only solution they see is to provide a second-triplet termination to denote the *karman* rather than a sixth-triplet termination. They therefore conclude (1973: 238), “For the derivation of the form *kāra* we require an *upapada* which is a *karman*: ‘object’. In order to assign the sense of *karman* to the *upapada*, we can only apply the general rule P. 2.3.2, which prescribes the accusative case and not the genitive. Therefore the analysis of *kumbhakāraḥ* can only be [(*kumbha* + *am*) + *kr*-] + *an*.”

Historically, their proposal has some merit. Many similar compounds, such as *janamejaya*, *priyāmvada*, and *vācamyama* preserve what appears to be an accusative termination on the prior compound constituent. Yet Pāṇini does not analyze them thus. He does not provide non-deletion (*aluk*) of a second-triplet nominal termination before a final compound constituent (*uttarapada*), although he provides such non-deletion in some twenty-four rules headed by A. 6.3.1 *alug uttarapade* for third- through seventh-triplet nominal terminations. Instead he provides the augment *mum* at the end of the initial compound constituent by A. 6.3.67–72. The first of these, A. 6.3.67 *arurdviṣadajantasya mum*, provides the augment where the final compound element is formed by adding affixes marked with *kh* after roots. The affixes *khaś* and *khac* are provided by A. 3.2.28–47 after roots under the condition that there is an upapada. A. 3.2.28 *ejeḥ khaś* provides the affix *khaś* after the root *ji* in the example *janamejaya*, and A. 3.2.38 *priyavaśe vadaḥ khac* and *vāci yamo vrata* provide the affix *khac* after the roots *vad* and *yam* in the examples *priyāmvada* and *vācamyama* respectively. A. 2.2.19 then forms upapada-tatpuruṣa compounds. If Pāṇini had provided non-deletion (*aluk*) of the second-triplet nominal termination before a final compound constituent (*uttarapada*), then there would be the possibility that the wrong termination, namely the sixth-triplet nominal termination rather than the second-triplet termination, would enter into usage in examples such as *janamejaya*, etc. However, since Pāṇini derives such examples with the augment *mum* instead, there is no such possibility. What looks like an accusative singular in these examples is not, according to Pāṇini; hence it cannot serve as evidence of the provision of a second-triplet nominal termination rather than a sixth-triplet in upapada-tatpuruṣa compounds like *kumbha-kāra* in Pāṇinian derivation.

In spite of its historical merit, and in addition to the linguistic evidence adduced in its favor in the preceding paragraph being irrelevant, Joshi and Roodbergen’s conclusion is untenable. In Pāṇini’s derivational system a second-triplet nominal termination does not have the opportunity to arise. The second-triplet nominal termination is provided after nominal bases by A. 2.3.2 *karmaṇi dvitīyā* on condition that a *karman* is to be denoted and under the additional condition that it has not already been denoted. A. 2.3.2 comes under the heading A. 2.3.1 *anabhihite* ‘not already denoted’. In answer to the question, “Not already denoted by what?” (*kenānabhihite?*), Jayāditya replies in the *Kāśikā* “by a verbal termination, a *kṛt*-affix, a *taddhita* affix, or a compound” (*tiṅkṛttaddhitasamāsaiḥ*), citing Kātyāyana’s *vārttika* 5 and Patañjali’s comment thereon (*tiṅkṛttaddhitasamāsaiḥ parisamkhyānam*. *MBh.* 1.441.20–22). Nominal terminations are not provided after nominal bases denoting participants in action until after verbal terminations and *kṛt*-affixes are provided after the roots denoting the action to which the participants are subordinate. Even in the equivalent sentence *kumbhaṁ karoti*, derived from *kumbha-am kr-u-tip*, the verbal termination *tip* is provided by A. 3.2.78 *tiptas-jhi*, etc., prior to the provision of the nominal termination *am* by A. 4.1.2 *svaujas*, etc. This is necessarily so, because it is only by virtue of being undenoted by the verbal termination *tip* that the direct object (*karman*) is denoted by the second-triplet nominal termination by A. 2.3.2 *karmaṇy an*. If the *karman* were denoted by the verbal termination *te* (< *ta*), A. 2.3.2

would not apply. The first-triplet nominal termination would occur instead by A. 2.3.46 *prātipadikārtha-liṅga-parimāṇa-vacana-mātre prathamā*, and the passive sentence *kumbhaḥ kriyate* would result instead. Just as selection of the nominal termination depends upon the selection of the verbal termination in the derivation of the equivalent sentence, it depends upon the selection of the *ṛt*-affix in the derivation of the upapada-tatpuruṣa compound. No nominal termination can arise on the upapada denoting a direct object (*karman*) until an affix arises after the verbal root denoting the action in which the direct object participates. Therefore, the rule that provides the *ṛt*-affix *añ* after the root occurs prior to either of the rules that provide a nominal termination after the upapada come into play. In particular, A. 3.2.1 *karmaṇy añ* applies prior to either A. 2.3.2 *karmaṇi dvitīyā* or A. 2.3.65 *karṭṛkarmaṇoḥ ṛti* coming into play.

Joshi and Roodbergen are correct to state (1973: 238), “for the derivation of the form *kāra* we require an *upapada* which is a *karman*: ‘object’.” However, it is incorrect for them to suggest that A. 2.3.2 has anything to do with assigning the sense of *karman* to the upapada. They argue (1973: 238), “in order to assign the sense of *karman* to the *upapada*, we can only apply the general rule P. 2.3.2, which prescribes the accusative case and not the genitive.” Moreover, their statement (1973: 232) that A. 2.3.2 is “the only rule by which we can show that *kumbha* is a *karma-upapada*” is irrelevant. Such statements confuse the relation between semantics and phonetics in Pāṇinian grammar. Pāṇini does not “assign sense.” He does not teach meanings on the ground of phonetic conditions; he teaches speech forms on the ground of semantic conditions. The sense of *karman* does not depend upon the accusative case or the genitive case; rather second-triplet or sixth-triplet nominal terminations are provided in various contexts under the condition that a *karman* is to be denoted. That an object is termed *karman* does not necessarily require any speech form at all; an object may be termed *karman* under purely semantic conditions without reference to any speech forms whatsoever. Although certainly some rules do take co-occurrence conditions into account, it is essential to note that general *kāraka* rules do not. A. 1.4.49 *karṭur īpsitatamaṁ karma*, for example, terms a pot *karman* in the derivation of *kumbhakāra* (Table 1, step 4) under the sole condition that it is most desired by the agent. The pot is termed *karman* regardless of the speech form used to denote it, and, patently, regardless of the nominal termination (second triplet or sixth triplet) used to denote that it is a *karman*.

Moreover, the accusative case is not necessary to condition the affix *añ* by A. 3.2.1; only that an object has been termed *karman* is. It is irrelevant whether or how the presence of such an object can be shown by speech forms. The upapada that serves as a condition for the affix *añ* in A. 3.2.1 must therefore be any semantically and syntactically related speech form that denotes an object termed *karman*; it need not be a pada, in the technical sense of the term, ending in a nominal termination.

Therefore, Kaiyaṭa is correct in his suggestion that the *prātipadika* denotes the *karman*. Commenting on *kumbhakāraḥ* under A. 2.2.19, vārttika 3, Kaiyaṭa suggests that the *prātipadika* itself, possessed of five meanings (a generic property, an individual object, its gender, its number, and its participation in the action), denotes the *karman*: “if the group of five is the meaning of a nominal base, then because the nominal base itself denotes the direct object, the affix *añ* must be provided on the condition that just the nominal base is the upapada” (*pañcake prātipadikārthe prātipadikenaiva karmaṇa uktatvāt tattraivopapade 'ñā bhāvyaṁ*). A. 2.3.2 or A. 2.3.65 would still apply to provide a nominal termination after the nominal base, even though its being the direct object in relation to the action was denoted by the nominal base, since the nominal base is not among the speech forms denoted by which a participant in action would not condition a nominal termination. Hence A. 3.2.1 applies when just the nominal base (*prātipadika*) is upapada. Moreover, this works even if participation

in action is not accepted as being denoted by a nominal base. A. 3.2.1 requires that a speech form that denotes a direct object (*karman*) be upapada; it does not require that the speech form denote the relation of being a direct object (*karmatva*). The nominal base denotes the direct object already, even without a second-triplet or sixth-triplet termination conditioned by its being termed *karman*. Therefore, mutual dependency is avoided in the derivation of *kumbha-kāra* even if a sixth-triplet nominal termination is provided after the nominal base *kumbha*; A. 2.3.65 will apply after the affix *an* has been provided by A. 3.2.1 but before A. 2.2.19 where a nominal termination is required. Although not required in the derivation of *kumbha-kāra*, a nominal termination is required in the derivation of like compounds such as *carma-kāra* to allow operations that depend upon its being termed *pada*, in the technical sense of the term, to apply to the initial compound constituent.

3.8 Grimal et al.

The derivation of *kumbha-kāra* presented in Grimal et al. follows the views expressed by Bhaṭṭojidīkṣita, Vāsudevādīkṣita, Nāgeśa, and Bhairavamiśra. The initial compound constituent, the upapada, in an upapada-tatpuruṣa compound terminates in a nominal termination; the final compound constituent terminating in a *kṛt*-affix does not. The sixth-triplet nominal termination provided by A. 2.3.65 is accepted as the termination on the upapada. The presence of the sixth-triplet nominal termination on the upapada at the time of application of A. 3.2.1 indicates that they accept that the term *upapada* implies the technical sense of the term *pada*; that is, to be termed *upapada*, it must end in a nominal termination just as it must to be termed *pada*. Unfortunately, Grimal et al. did not notice the mutual dependency that these views entail.

3.9 Mutual dependency

In a few instances¹³ Patañjali escapes from the mutual dependence of the provision of an affix upon the presence of a preceding speech form and vice versa by stating that the affix in the locative is a locative of domain (*viśaya-saptamī*) rather than a right-context locative (*para-saptamī*). For example, he escapes from the mutual dependence of the provision of an *ārdhadhātuka*-affix conditioned by a preceding root and a root replacement conditioned by a following affix in this way. At the conclusion of his commentary on A. 2.4.35 *ārdhadhātuke* he proposes that the term *ārdhadhātuke* is a *viśaya-saptamī*. The replacement thereby occurs in the intended domain of an *ārdhadhātuka*-affix rather than when followed in sequence by the speech form (*asati paurvāparye viśayasaptamī vijñāsyate. ārdhadhātukaviśaya iti*). Jayāditya in the *Kāśikā* on A. 2.4.35 states that thereby the replacements are made under the intention to use an *ārdhadhātuka*-affix; once the replacements have been made, the affixes occur as provided afterwards (*viśayasaptamī ceyam, na parasaptamī. tenārdhadhātuka-vivakṣāyām ādeśeṣu kṛteṣu paścād yathāprāptaṁ pratyayā bhavanti*). For example, A. 2.4.52 *aster bhū* provides that the root *as* is replaced by the root *bhū* in the domain of an *ārdhadhātuka*-affix. A. 3.1.97 *aco yat* provides that the affix *yat* occurs after a vowel-final root. In order to obtain the form *bhāvyaṁ* the affix *yat* must occur after the root *bhū*. However, the affix *yat* cannot occur until the root *as* is replaced by *bhū* since it only occurs after vowel-final roots; it doesn't occur after the root *as*, which ends in a consonant. If *ārdhadhātuke* were a *para-saptamī*, the replacement of the root *as* by the root *bhū* could only occur after the *ārdhadhātuka*-affix had been provided.

13. *ārdhadhātuke* in A. 2.4.35 *ārdhadhātuke*; *ārdhadhātuke* in A. 3.1.31 *āyādaya ārdhadhātuke vā*; and *aci* in A. 4.1.90 *yūni luk (aci 89)*.

Similarly, the question of the mutual dependence of a secondary-root-forming affix and a following ārdhadhātuka-affix arises under A. 3.1.31 *āyādaya ārdhadhātuke vā*. There Patañjali writes,

This is not a problem. *ārdhadhātuke* is not a para-saptamī; rather it is a viṣaya-saptamī meaning ‘in the domain of an ārdhadhātuka-affix’. In that case, once the secondary-root-forming affixes beginning with *āya* (provided in A. 3.1.28–30) have been provided in the domain of an ārdhadhātuka-affix, the affix that would occur after the secondary root occurs. (*naiṣa doṣaḥ. ārdhadhātuka iti naiṣa parasaptamī. kā tarhi. viṣayasaptamī. ārdhadhātukaviṣaya iti. tatra ārdhadhātukaviṣaya āyādi prakṛter āyādiṣu kṛteṣu yaḥ yataḥ pratyayaḥ prāpnoti saḥ tato bhaviṣyati. MBh. 2.41.17–19*)

The *Kāśikā* states, “the secondary-root-forming affixes beginning with *āya* (provided in A. 3.1.28–30) optionally occur in the domain of an ārdhadhātuka-affix, i.e., when there is the intention to articulate an ārdhadhātuka-affix” (*ārdhadhātukaviṣaye ārdhadhātukavivakṣāyām āyādayaḥ pratyayā vā bhavanti*).

The third and final situation in which Patañjali solves the question of mutual dependence by resorting to a locative of domain is under A. 4.1.90. A. 4.1.90 *yūni luk (aci 89)* provides deletion (*luk*) of the affix previously provided in the sense of a yuvan-descendant. The deletion occurs if a vowel-initial affix in the section headed by A. 4.1.83 is to follow. The vowel-initial affix provided after the nominal base denoting the yuvan-descendant occurs after the form of the stem once the yuvan-affix has been deleted, but the yuvan-affix is deleted on condition that the vowel-initial affix is provided. If the locative in the term *aci* were a parasaptamī, the rule would provide deletion before a vowel-initial affix that had already been provided after the form of the nominal base terminating in the yuvan-affix. Thus wrong affixes would result. (*yūni lug acīti cet pratyayasyāyatheṣṭaprasaṅgaḥ. A. 4.1.90, vārttika 1. MBh. 2.242.15.*) To get the correct form, provision of the vowel-initial affix has to occur once the deletion has been done. To avoid mutual dependence, Patañjali states that the term *aci* in A. 4.1.90 is a viṣaya-saptamī meaning “in the domain of a vowel-initial affix.” In that case, the affix that occurs after the nominal base is the affix that would occur once deletion has been done in the domain of the vowel-initial affix. (*naiṣa doṣaḥ. acīti naiṣa parasaptamī. kā tarhi. viṣayasaptamī. ajādaḥ viṣaya iti. tatrāci viṣaye luki kṛte yaḥ yataḥ pratyayaḥ prāpnoti saḥ tato bhaviṣyati. MBh. 2.242.21–23.*) The *Kāśikā* states, “deletion (*luk*) occurs in place of the yuvan-affix when the vowel-initial affix provided under the heading A. 4.1.83 is intended to be articulated, still in mind, not yet arisen. Once the yuvan-affix has been deleted, the affix that would occur after the nominal base in that form occurs” (*prāgdivyatiye ajādaḥ pratyaye vivakṣite buddhisthe ’nutpanna eva yuvapratyayasya lug bhavati. tasmin nirvṛte sati yo yataḥ prāpnoti sa tato bhavati*).

The viṣaya-saptamī is only resorted to under duress. It is preferable to find another means to achieve derivation. Pāṇini avoids similar situations of the mutual dependence of stem and affix by stating the relevant rules in the *asiddhavad* section headed by A. 6.4.22 *asiddhavad atrābhāt*. For example, the verbal stem *śās* is replaced by *śā* before the second person singular active imperative termination *hi* by A. 6.4.35 *śā hau*. At the same time, the second person singular active imperative termination *hi* is replaced by *dhi* after the root *hu* and roots ending in a non-nasal stop or spirant by A. 6.4.101 *hujhalbhyo her dhiḥ*. Neither rule would apply if subject to the conditions produced by the other having applied first. The derivation works by applying rules in the section headed by A. 6.4.22 *asiddhavad atrābhāt* as if operations provided by other rules in that section had not taken place.

If nominal terminations were required on upapadas prior to the provision of kṛt-affixes, the result would be mutual dependence between the rules that provide the nominal termina-

tions and the rules that provide the *kṛt*-affixes. The fact that the *Mahābhāṣya* does not raise the issue of mutual dependence between rules that provide *kṛt*-affixes and rules that provide nominal terminations on upapadas serves as evidence, though it be evidence of silence, that Patañjali did not consider nominal terminations to be required.

The conditions under which the *kṛt*-affix *aṇ* occurs require that there be a speech form termed *upapada* denoting an object termed *karman*. For the object to be termed *karman*, a nominal termination is not required. Quite the opposite; it is the condition for the occurrence of the nominal termination. The only circumstance that suggests that there is a nominal termination present at the time of A. 3.2.1 coming into play is the interpretation of *pada* in the term *upapada* in the technical sense that it is provided by A. 1.4.14 *suptiñantaṁ padam*. A. 1.4.14 terms a speech form *pada* if it ends in a nominal or verbal termination. This interpretation is questionable. It requires accepting that the purpose of using a long term (*upapada*) is that the term carry its meaning and that the specific meaning it carry be the technical sense required by A. 1.4.14. That the purpose of using a long term (*upapada*) is that the term carry its meaning is not objectionable. But that *pada* therein carries the technical meaning of a speech form ending in a nominal termination is objectionable. The latter is not accepted by Jinendrabuddhi or Bhoja. Jinendrabuddhi provides a conventional meaning for the term *pada* instead: that by means of which a meaning is understood. Although Haradatta is quite right to point out that a nominal termination must be permitted to occur on the upapada prior to compounding so that it does get termed *pada* according to A. 1.4.14 and become subject to operations that require the technical term (such as deletion of *pada*-final *n* by A. 8.2.7 in which the term *padasya* recurs), there is no need for the term *upapada* to carry that technical sense of the term *pada*. After the occurrence of the *kṛt*-affix *aṇ* (Table 1, step 7), conditions are satisfied to allow a sixth-triplet nominal termination to arise in accordance with A. 2.3.65 (Table 1, step 12b) and for the upapada, which now does end in a nominal termination, to be termed *pada* by A. 1.4.14 (Table 1, step 14). Not before. Conditions are simply not present to allow a nominal termination to arise on the upapada prior to the provision of an affix after the root. The morphology of the governing word determines that of the governed.

4. SEMANTICS DRIVE PĀṆINIAN DERIVATION

Grimal et al. did not include early steps in the derivation. They did not work out the steps by which a nominal termination would arise on the upapada prior to the provision of the *kṛt*-affix *aṇ* after the root. The result is that they reproduced the views of Bhaṭṭojidīkṣita, Nāgeśa, and their commentators, and steps critical to demonstrate both the sense of the compound and Pāṇini's methodology are absent. One is allowed to get the impression that the derivation begins with speech forms already in mind, either in the form of a *viraha* *vākya* such as **kumbhasya kāraḥ* or in the form of a string such as *kumbha-as + kṛ-a*. The latter string could result directly from the provision of the affix *aṇ* by A. 3.2.1 *karmaṇy aṇ* only if the term *kṛti* in A. 2.3.65 *karīṅkarmaṇoḥ kṛti* were a *viśaya-saptamī*. In that case the speaker's anticipation of a certain speech form would serve as the condition for the provision of another speech form. This anticipation of speech forms in Pāṇinian derivation is resorted to only rarely, only three times under duress in the case of mutual dependence of speech forms on each other. It is not necessary in the derivation of upapada-tatpuruṣa compounds, nor is it the general procedure adopted in Pāṇinian grammar.

That Pāṇinian derivation begins with speech forms already in mind is the assertion Houben erroneously makes. He asserts that the derivation begins with some sort of sentence that the speaker uses the grammar to check for correctness (see section 1.3). Yet, as explained in section 1.1, the only speech forms available at the start of a derivation are roots and

nominal bases. Semantic conditions are required in the grammar to determine their relation, the proper affixes used to denote those relations, and compound formation. The only speech forms available at the start of the derivation of *kumbha-kāra* are the nominal base *kumbha* and the root *kr*. The derivation of *kumbha-kāra* does not require any other speech form at all until the affix *an* is introduced after *kr* in step 7 of Table 1. As sections 2–3 have argued, the condition for the affix *an* is a semantic object termed *karman*, not a sixth-triplet nominal termination as stated by Bhaṭṭojidīkṣita, Nāgeśa, and their commentators, and reiterated by Grimal et al., nor a second-triplet nominal termination as argued by Joshi and Roodbergen. The condition for the affix *an* is not a speech form at all; it is a semantic object devoid of any speech form whatsoever; it is a disembodied meaning intended by the intellect of a speaker.

Although a user of the grammar may have sentences in mind he wants to check, the procedure of the grammar he uses to check them derives such sentences by relying on semantic conditions. It is not the case that semantics are resorted to just to “label the linguistic forms of his preliminary sentence according to the syntactically relevant categories of meaning,” as Houben asserts. It is not the linguistic form that gets labeled; it is a meaning, accompanied or not by any linguistic form. In the derivation of *kumbha-kāra*, it is not the speech form *kumbha* that is termed *karman*, it is the pot, regardless of the word used for it or the language. The pot is termed *karman* solely by that object’s relation to an action, without regard to any speech form. Even the presentation of the derivation in Table 1 is susceptible to the misinterpretation that the speech forms such as *kumbha* are *kāra*kas. They are not. The semantic objects denoted by these speech forms are *kāra*kas. *Kāra*kas are participants in the action. It is the objects that participate in action, not the words that denote those objects. The words that denote objects are introduced in the derivational steps in the tables only because in some derivations, though not in the ones presented, co-occurrence conditions are taken into account even at the stage in which objects are designated by *kāra*ka terms.

Pāṇini derives speech forms from the point of view of the speaker. He begins with semantics, with what the speaker wants to express. Objects in the conception of the speaker are the starting point. Specifying semantic objects and co-occurring speech items as conditions, he designates items by *kāra*ka terms. Items designated by specific *kāra*ka terms condition verbal terminations, *kr*-affixes, and compounding. Only semantic conditions that remain undenoted after verbal terminations, *kr*-affixes, *taddhita*-affixes, or compounds have been provided condition the occurrence of nominal terminations. Therefore, nominal terminations would not arise after *kumbha* in the derivation of *kumbha-kāra* until steps 12–12b, after the provision of the *kr*-affix *an* in step 7.

Patañjali explicitly states in several places that semantics drives the derivation of speech forms and not vice versa, and details the sequence of derivational steps from verbal semantics, to the semantics of participation in the action of the verb, to the provision of *kāra*ka terms for those participants, and finally to the arising of nominal terminations. He does so, for example, under 2.3.50 vt. 5 *uktaṁ pūrveṇa*. The context concerns an explanation of why a sixth-triplet nominal termination arises after the stem *rājan* and not after the stem *puruṣa* in the phrase *rājñāḥ puruṣaḥ*. While his remarks concerning the derivation of the particular phrase in question there are not relevant for the derivation of *kumbhakāra*, his general remarks are.

na hi śabdakṛtena nāmārthena bhavitavyam. arthakṛtena nāma śabdena bhavitavyam.
For it is not the case that meaning occurs caused by speech forms; speech forms occur caused by meanings. (*MBh.* 1.464.15–16; also at 1.362.17–18)

Patañjali proceeds to provide details of the sequence of derivational steps as follows:

Particular relations of the objects denoted by nominal stems originate caused by the action. And the terms *karman*, *karaṇam*, *apādānam*, *saṃpradānam*, *adhikaraṇam* arise caused by those particular relations. And those in turn are sometimes adopted as conditions for the arising of triplets of nominal terminations, sometimes not. And when are they adopted as conditions for the arising of triplets of nominal terminations? When they differ from the meaning of a nominal base. For when they don't differ from the meaning of the nominal base, then the explicit terms themselves, *karman*, *karaṇam*, *apādānam*, *saṃpradānam*, *adhikaraṇam*, occur. (*prātipadikārthānām kriyākṛtā viśeṣā upajāyante tatkr̥tāś cākhyāḥ prādurbhavanti karma karaṇam apādānam saṃpradānam adhikaraṇam iti. tāś ca punar vibhaktīnām utpattau kadācin nimittatvenopādīyante kadācin na. kadā ca vibhaktīnām utpattau nimittatvenopādīyante? yadā vyabhicaranti prātipadikārtham. yadā hi na vyabhicaranty ākhyābhūtā eva tadā bhavanti karma karaṇam apādānam saṃpradānam adhikaraṇam iti. MBh. 1.464.18–23*)

Kaiyaṭa provides the example “he cuts with a knife” (*dātṛeṇa lunāti*) to show what happens when the object denoted by the nominal base participates in an action. The relation the knife (*dātṛa*) has with the action differs from the meaning of the nominal base; the relation is not denoted by the base, but instead conditions a third-triplet nominal termination. He provides the example “the knife is the instrument” (*dātṛam karaṇam*) to show what happens when the relation is explicitly stated by the nominal base. The relation does not differ from the meaning of the nominal base and does not condition a third-triplet nominal termination; it occurs in the nominative.

The crucial point is that semantics drive Pāṇinian derivational procedure. Semantics condition the naming of certain intentional objects by *kāraka* terms. These *kāraka* terms then condition speech forms. It is worth reiterating my explanation (Scharf 2009a: 101) that the *Aṣṭādhyāyī* is composed in a manner that selects certain speech forms for use on the basis of certain semantic conditions. Subrahmanyam (1983) demonstrates the significant role semantics plays in the *Aṣṭādhyāyī*, and I describe the role of some 735 semantic conditions stated therein (2009a: 101–11). The procedure of the grammar models the fact that a speaker selects speech forms to use on the basis of the meaning he wishes to convey. As I explained (1995), Kātyāyana himself says so in his very first *vārttika* (*MBh. 1.6.8*): “since the usage of speech is prompted by meanings in accordance with ordinary usage, the science (of grammar) restricts (usage to correct speech forms) for the sake of dharma.” The restriction set forth by the grammar limits speech forms on the basis of semantic conditions in the same manner speakers select speech forms on the basis of the meanings they wish to convey.

REFERENCES

- Bronkhorst, J. 1979. The Role of Meanings in Pāṇini's Grammar. *Indian Linguistics* 40: 146–57.
- Cardona, George. 1967–68. Anvaya and vyatireka in Indian Grammar. In Dr. V. Raghavan *Felicitation Volume*. *Adyar Library Bulletin* 31–32: 313–52.
- Grimal, F.; V. Venkataraja Sarma; and S. Lakshminarasimham. 2007. *Pāṇinīyavyākaraṇodāharaṇakośaḥ; La Grammaire paninéenne par ses exemples; Paninian Grammar through Its Examples*, vol. II: *Samāsaprakaraṇam, Le Livre des mots composés; The Book of Compound Words*. Rashtriya Sanskrit Vidyapeetha Series, no. 150; Collection indologie 93.2. Tirupati: Rashtriya Sanskrit Vidyapeetha; Pondichéry: École Française d'Extrême-orient; Institute Française de Pondichéry.
- Houben, Jan E. M. 1999 [2001]. Meaning Statements in Pāṇini's Grammar: On the Purpose and Context of the *Aṣṭādhyāyī*. *Studien zur Indologie und Iranistik* 22: 23–54.
- _____. 2003. Three Myths in Modern Pāṇinian Studies. (Review of *Recent Research in Pāṇinian Studies*, by George Cardona.) *Asiatische Studien / Études Asiatiques* 57: 121–79.
- _____. 2009a. Bhartṛhari as a “Cognitive Linguist.” In *Bhartṛhari: Language, Thought, Reality: Proceedings of the International Seminar on Bhartṛhari, New Delhi, December 2003*, ed. Mithilesh Chaturvedi. Pp. 523–43. Delhi: Motilal Banarsidass.

- _____. 2009b. Pāṇini's Grammar and Its Computerization: A Construction Grammar Approach. In *Sanskrit Computational Linguistics: Third International Symposium, Hyderabad, India, January 15–17, 2009, Proceedings*, ed. Amba Kulkarni and Gérard Huet. Pp. 6–25. Lecture Notes in Artificial Intelligence, no. 5406. Berlin: Springer-Verlag.
- _____. Forthcoming. Studies in India's Vedic Grammarians, 1: Nārāyaṇabhaṭṭa's *Prakriyāsarvasva* and Pāṇini's *Śe* (ms. provided by author, a preliminary version of which was presented at the 14th World Sanskrit Conference, 1–5 September 2009, Kyoto University, Kyoto). In *Proceedings of the 14th World Sanskrit Conference, 1–5 September 2009*, Kyoto University, Kyoto: Vyākaraṇa, ed. George Cardona and Hideyo Ogawa.
- Joshi, S. D., and J. A. F. Roodbergen. 1973. *Patañjali's Vyākaraṇa-Mahābhāṣya tatpuruṣāhnikā (P. 2.2.2–2.2.23): Edited with Translation and Explanatory Notes*. Pune: University of Poona.
- _____. 1975. *Patañjali's Vyākaraṇa-Mahābhāṣya kārakāhnikā (P. 1.4.23–1.2.55): Introduction, Translation, and Notes*. Publications of the Centre of Advanced Study in Sanskrit, Class C, no. 10. Pune: University of Poona.
- _____. 1997. *The Aṣṭādhyāyī of Pāṇini: with Translation and Explanatory Notes*, vol. VI: 2.2.1–2.2.38. New Delhi: Sahitya Akademi.
- _____. 1998. *The Aṣṭādhyāyī of Pāṇini: with Translation and Explanatory Notes*, vol. VII: 2.3.1–2.3.73. New Delhi: Sahitya Akademi.
- Kiparsky, P. 1982. Some Theoretical Problems in Pāṇini's Grammar. Post-graduate and Research Department Series, no. 16. Pune: Bhandarkar Oriental Research Institute.
- _____. 2009. On the Architecture of Pāṇini's Grammar. In *Sanskrit Computational Linguistics: First and Second International Symposia, Rocquencourt, France, October 2007; Providence, RI, USA, May 2008; Revised Selected and Invited Papers*, ed. Gérard Huet, Amba Kulkarni, and Peter Scharf. Lecture Notes in Artificial Intelligence, no. 5402. Berlin: Springer-Verlag, 2009. <http://sanskrit.inria.fr/Symposium/Program.html>.
- Kiparsky, P., and F. Staal. 1968. Syntactic and Semantic Relations in Pāṇini. *Foundations of Language* 5: 83–117.
- MBh.: *The Vyākaraṇa-mahābhāṣya of Patañjali*. Ed. Lorenz Franz Kielhorn. 3 vols. BPS 18–22, 28–30. Bombay: Government Central Press: Vol. 1, 1880; Vol. 2, 1883; Vol. 3, 1885. Second edition: 1892, 1906, 1909. Third edition revised and furnished with additional readings references and select critical notes by K. V. Abhyankar. Pune: BORI, 1962, 1965, 1972. Reprint: 1985. (references: volume, page, line)
- Scharf, Peter. 1995. Early Indian Grammarians on a Speaker's Intention. *JAOS* 115: 66–76.
- _____. 2008. Pāṇinian Accounts of the Vedic Subjunctive: *leṭ kṛṇvaṭte*. *Indo-Iranian Journal* 51.1: 1–21.
- _____. 2009a. "Modeling Pāṇinian Grammar." In *Sanskrit Computational Linguistics: First and Second International Symposia, Rocquencourt, France, October 2007; Providence, RI, USA, May 2008; Revised Selected and Invited Papers*, ed. Gérard Huet, Amba Kulkarni, and Peter Scharf. Pp. 95–126. Lecture Notes in Artificial Intelligence 5402. Berlin: Springer-Verlag, 2009.
- _____. 2009b. Review of Grimal et al. 2007. *JAOS* 129.4: 715–19.
- Subrahmanyam, P. S. 1983. Pāṇini's Use of Semantics. In *Proceedings of the International Seminar on Studies in the Aṣṭādhyāyī of Pāṇini (Held in July 1981)*, ed. S. D. Joshi and S. D. Laddu. Pp. 127–36. Pune: University of Poona.
- ŚPr.: *Śrgāraprakāśa [Sāhityaparakāśa]*, vol. 1 [1–14 Prakāśa], critically edited by Rewāprasāda Dwivedī and Sadāśivakumāra Dwivedī. New Delhi: Indira Gandhi National Centre for the Arts; Varanasi: Kālidāsamsthāna, 2007.
- Thieme, Paul. 1935. *Pāṇini and the Veda: Studies in the Early History of Linguistic Science in India*. Allahabad: Globe Press.